
ENTERPRISE LAND REVIEW – STAGE 2

Phase 1 report

Bega Valley Shire Council

Zenith

TOWN PLANNING PTY LTD

sustainable thinking

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Attachment A - Site attribute mapping

Attachment B - Bega Valley LEP 2013 mapping

Document Details & History

Project number	0417
Project title	Enterprise Land Review – Stage 2 – Phase 1
Client	Bega Valley Shire Council
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ABN	Zenith Town Planning Pty Ltd ABN 11 624 467 349
Version	Issue A – working draft 12 June 2017
	Issue B – draft 26 February 2019
	Issue C – final 5 May 2019

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1. INTRODUCTION

1.1 Aims

Stage 1 of Bega Valley Shire Council's *Enterprise Land Review* was completed in July 2016. The purpose of Stage 1 was to identify actions that may be taken and policy that may be developed by Council to secure sustainable industrial growth and job creation.

The Stage 1 report contained a series of recommendations that relate to further investigation of existing industrial zoned land and sites potentially suited to development of an eco-industry park, and incentives to facilitate industrial development. Council has now engaged Zenith Town Planning to progress Stage 2 of the project by further exploration of these recommendations.

It is expected that the final stage, Stage 3, will comprise preparation of a planning proposal to ensure that new land for industrial development is secured through zoning and development standards. The planning proposal would also rezone existing industrial land that is considered unsuitable for industrial development.

1.2 Scope

Stage 2 of the Enterprise Land Review is being carried out over three phases. The first phase deals with identifying a suitable and feasible location for a new enterprise park on land located on the Princes Highway between Bega and Wolumla. This report provides an assessment and makes of the suitability of certain parcels of land. These findings justify consultation with the owners of this land with a view to acquisition by Bega Valley Shire Council.

The second phase considers the suitability of existing industrial areas, with a particular focus on land at South Pambula, having regard to land owners intentions and the capacity to service existing industrial land with reticulated water and sewerage.

The third phase addresses incentive mechanisms to stimulate industrial development of new and existing industrial land, and planning principles for a new Council-owned enterprise park.

1.3 Methodology

1.3.1 Identification of potential greenfield sites

The Phase 1 study area spans a distance of nine kilometres from the point at which the Bega River runs parallel and close to the Princes Highway at about six kilometres south of Bega to three kilometres north of the village of Wolumla. Land located between Bega and Wolumla is centrally located alongside infrastructure uses (the central waste facility and NBN satellite dishes), is in relatively close proximity to the labour sources of the settlements of Bega, Wolumla and Merimbula-Pambula, and has good visibility along the frontage to the Princes Highway.

Stage 1 of the *Enterprise Land Review* considered the capacity of a specific vacant rural land holding held in a single ownership near Wolumla. The area of the site is 147.5 hectares and it is estimated that this site would yield approximately 600 lots at 2,000m² allowing for services and environmental constraints. Council seeks to further explore opportunities for the development of a new enterprise park on other land between Bega and Wolumla. With the assistance of Council officers, other sites in this area that are potentially capable of accommodating a new enterprise park have been identified.

Meetings with Council's planners have been held to identify potential sites and to carry out a preliminary investigation of physical attributes such as land area, uses on adjoining land, *Bega Valley LEP 2013* maps and satellite images, and site visits. The capacity of reticulated water and sewer systems to cater for each site and any headworks or distribution network augmentation requirements have been identified in collaboration with Council's engineering division.

1.3.2 Feasibility assessments of greenfield sites

A desktop analysis of each of the sites identified above has been carried out to determine the feasibility of developing each site for an enterprise park. Considerations include the capacity to service with reticulated water and sewer, arterial road access and exposure, and cultural/environmental factors such as cultural heritage, the potential for conflict with adjoining land uses, topographical factors such as slope and drainage, ecological sensitivity and affectation by natural hazards.

An estimate of the potential lot yield of land assessed to be suitable for development at a lot size of 2,000m² has been made by allowing for 10% of the land to be set aside for services and

easements. Land that has been assessed to be environmentally sensitive has been excluded from these potentially developable areas.

1.3.3 Consultation with land owners

Direct contact has been made with the owners of land that has been assessed to be suitable for future industrial development by mail with a follow-up telephone call to discuss investigations being undertaken by Council and the possibility of acquisition of their land for an enterprise park. The planning process and the findings of the feasibility analysis have been explained.

The intention of this consultation has been to ascertain the future development intentions of each land owner and to gauge their willingness to sell land to Council to rezone, subdivide and develop for industrial uses. Land owners have been advised that discussions are preliminary and 'commercial in confidence' and that any future zoning changes or acquisition by Council would be subject to contractual arrangements yet to be negotiated.

1.3.4 Identification of the preferred site

Chapter 6 *Conclusion and recommendations* contains details of the preferred site including the legal description of the land, known constraints to development, lot yield estimates, servicing requirements and the findings of consultation with land owners.

2. CONSIDERATIONS

2.1 Attribute descriptions

Below is an explanation of the attributes that have been used to assess the suitability of land for development grouped as land use and capability, landscape and ecology, natural hazards, heritage and *Bega Valley LEP 2013* mapping. Details of the zoning, land area and legal property descriptions are also given for each area.

Sources of information about physical attributes include data held on Council's GIS and by the Office of Environment & Heritage (OEH), the Aboriginal Heritage Information Management System (AHIMS), imagery available on the NSW Government's SIX Maps website and LEP mapping of terrestrial biodiversity, watercourses, natural resources and heritage. All attribute mapping is appended as Attachment A. Relevant *Bega Valley LEP 2013* mapping is appended as Attachment B.

2.1.1 Land use and capability

The description of land use is based on inspections of the study area verified using satellite and aerial imagery. Agricultural uses are not separately defined as the predominant activity is the grazing of cattle.

Land capability mapping has been prepared using data provided by the NSW Office of Environment & Heritage. The methodology for the classification of land is explained in *The land and soil capability assessment scheme – A general rural land evaluation scheme for NSW, 2nd Approximation*. Land capability classes are described in Table 2.1.

Table 2.1: Land capability classes

Land capability class	Description
Class 1	Extremely high capability land: Land has no limitations. No special land management practices required. Land capable of all rural land uses and land management practices
Class 2	Very high capability land: Land has slight limitations. These can be managed by readily available, easily implemented management practices. Land is capable of most land uses and land management practices, including intensive cropping with cultivation

Land capability class	Description
Class 3	High capability land: Land has moderate limitations and is capable of sustaining high-impact land uses, such as cropping with cultivation, using more intensive, readily available and widely accepted management practices. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation
Class 4	Moderate capability land: Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology
Class 5	Moderate-low capability land: Land has high limitations for high-impact land uses. Will largely restrict land use to grazing, some horticulture (orchards), forestry and nature conservation. The limitations need to be carefully managed to prevent long-term degradation
Class 6	Moderate capability land: Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology
Class 7	Very low capability land: Land has severe limitations that restrict most land uses and generally cannot be overcome. On-site and off-site impacts of land management practices can be extremely severe if limitations not managed. There should be minimal disturbance of native vegetation.
Class 8	Extremely low capability land: Limitations are so severe that the land is incapable of sustaining any land use apart from nature conservation. There should be no disturbance of native vegetation
Flood irrigation	<i>Flood irrigation</i> applies to specific areas of land that are irrigated with floodwaters
Mining and quarrying	<i>Mining and quarrying areas</i> are occupied by an existing extractive industry

The agricultural land classification of the study area has been sourced from the *Agricultural Land Classification Atlas*. The land classification system is used to determine the suitability of land for general agricultural use. Land is classed in the five categories described in Table 2.2.

Table 2.2: Agricultural land classification descriptions

Agricultural land classification	Description
Class 1	Arable land suited to continuous cultivation ¹ for uses such as intensive horticulture and field crops. Constraints to sustained high levels of production are absent or minor
Class 2	Arable land suited to regular cultivation for uses such as intensive horticulture and field crops. Constraints to sustained levels of production are minor to moderate
Class 3	Land suited to cropping but not continuous cultivation. Production risks are managed through: a pasture phase, conservation tillage and/or fallowing. Constraints to sustained levels of production are moderate
Class 4	Land suited to grazing but not cultivation. Agriculture is based on native pastures and/or improved pastures established using minimum tillage techniques. Overall level of production is comparatively low due to major environmental constraints
Class 5	Land not suited for agriculture or only light grazing. Agricultural production, if any, is low due to major environmental constraints

Council maintains a register of potentially contaminated sites due to current or past land uses. None of the land within the study area is identified as being potentially contaminated although current uses may lead to contamination in the future.

2.1.2 Landscape and ecology

Data made available by the NSW Office of Environment and Heritage has been examined to map vegetation types within and surrounding the study area. Of these vegetation types, potential threatened ecological communities have been identified using a desktop analysis carried out by ecologist Mark Harris.

The TEC vegetation mapping is indicative and would need to be ground-truthed for higher accuracy. Bega Valley Shire Council has also provided mapping of vegetation types across the study areas.

Vegetation types that exist within the study area are given in Table 2.3 below with reference to the source of data, whether the vegetation type is a threatened ecological community and the relevant protective legislation.

Table 2.3: Vegetation types within the study area

Vegetation type	Source of data	Potential threatened ecological community (Yes/No & legislation)
Freshwater wetlands on coastal floodplains	OEH	Yes, Threatened Species Conservation Act 1995
Lowland grassy woodland	OEH	Yes, Threatened Species Conservation Act 1995 & Environment Protection & Biodiversity Conservation Act 1999
River-flat eucalypt forest on coastal floodplains	OEH	Yes, Threatened Species Conservation Act 1995
South Coast wet sclerophyll forests		No
South Coast dry sclerophyll forests		No
Southern lowland wet sclerophyll forests		No

The following notes about threatened ecological community and vegetation mapping have been prepared by ecologist Mark Harris:

- The TEC/vegetation mapping is indicative, and would need to be ground-truthed for higher accuracy. The reference for the vegetation spatial layer is Tozer *et al.* (2006), i.e. Tozer, M., Turner, K., Simpson, C., Keith, D., Beukers, P., Mackenzie, B., Tindall, D. & Pennay, C. (2006) *Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands*. Version 1.0, NSW Department of Environment and Conservation and NSW Department of Infrastructure, Planning and Natural Resources, Sydney.
- There is likely to be some areas of 'Lowland Grassy Woodland - derived grassland' across the study area. In practical terms, this is less of a constraint to development than when the canopy remains intact, but warrants mention as it is a legal entity if the groundlayer is greater than 50% indigenous species. If areas were to be set aside for conservation and not developed, native grasslands are far more valuable than exotic grasslands over areas of intense grazing and cropping. It is not feasible to map native versus non-native grasslands at the broad scale, however, some patches of native derived grasslands may be present across lightly grazed paddocks.
- Fauna habitat: Hollow-bearing trees are one of the most important habitat features in the landscape and old remnant trees are quite common in the study area, many of which would contain hollows. Habitat connectivity is also important, so clusters of remnant vegetation

that are connected, or near connected (especially to large areas of bushland), are more valuable ecologically than isolated patches.

A search of the Bionet (NSW Wildlife Atlas) has been carried out. There are no records of any threatened plant populations within the study area. There are some old records of Koala sightings in the forest to the east (Black Range) just beyond the study area, however this species is now highly likely to be locally extinct. A few recorded sightings of more mobile species were also noted on Bionet.

- In summary, in order to protect threatened species it is important to minimise disturbance to older, larger and more connected vegetation communities and habitats, regardless of whether there are any species records in the locality. It is considered that the intensely managed and cleared country to the west of the Princes Highway is of less biodiversity value than land east of the highway. However, preserving as many habitat types as possible would ensure the protection of the range of species known to inhabit the various vegetation communities. It is recommended that preliminary biodiversity surveys be undertaken to inform the best location for particular land uses. The aim would be to identify the most significant and intact patches of each threatened ecological community and habitat corridors to ensure that at least minimum areas are preserved. The mapping prepared for this exercise only indicates the location of potentially remnant threatened ecological communities and requires ground-truthing to verify existence and integrity.

2.1.3 Natural hazards

None of the land within the study area is mapped as a *Flood Planning Area* in *Bega Valley LEP 2013*. Bushfire mapping has been supplied by Bega Valley Shire Council. The bushfire categories given in Table 2.4 below are used in the bushfire prone land map.

Table 2.4: Bushfire categories

Category	Mapping colour	Description
Bushfire Prone Vegetation - Category 1	Brown	Forests, woodlands, heaths and wetlands greater than one hectare
Bushfire Prone Vegetation - Category 2	Yellow	Forests, woodlands, heaths and wetlands less than one hectare within 100m of Category 1 or 30m of Category 2
Nil category	uncoloured	Rainforests, shrublands, open woodlands, mallee and grasslands

Bushfire Prone Vegetation Buffer Zone	Red	100m on Category 1 and 30m on Category 2
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2.1.4 Cultural heritage

Searches of the *Aboriginal Heritage Information Management System (AHIMS)* managed by the NSW Office of Environment and Heritage have been carried out to locate any sites, objects and places of indigenous heritage.

The location of non-indigenous heritage sites and places has been sourced from *Schedule 5 Environmental Heritage* and the *Heritage Map of Bega Valley LEP 2013*.

2.1.5 Bega Valley LEP 2013 mapping

The following maps of *Bega Valley LEP 2013* identify land in the study area that is affected by environmental sensitivity and that is subject to planning provisions that restrict development:

- Terrestrial Biodiversity Map (Sheet BIO_011)
- Natural Resources Land Map (Sheet NRL_011)
- Riparian Lands and Watercourses Map (Sheet WCL_011)

2.2 Service provision

2.2.1 Water and wastewater

Unchlorinated water trunk mains run along the road reserve of the Princes Highway. Water is sourced from Yellow Pinch Dam to the south of Wolumla. The dam is topped-up using bores in the Bega area accessing groundwater during periods of drought and low flow. The storage facility and mains have the spare capacity to cater to a new industrial site along the Princes Highway. Branch connections would be required to connect to the mains with a dedicated chlorination plant and reservoir constructed in any development site.

The Wolumla sewerage treatment plan has spare capacity of some 200 equivalent persons (EP). A new industrial area would rely upon an internal gravity system potentially with a shared low pressure system connecting to Wolumla STP. The approximate cost to install pipes to connect to the Wolumla plant is around \$50 per metre for a reasonable load across level ground and up to \$100 per metre for a rising main.

Alternatively, a stand-alone sewer treatment plant servicing industrial lots may be feasible. Estimated costs would be in the order of \$25,000 to \$30,000 to service 6 to 8 lots. An on-site treatment and disposal system may be feasible depending upon the types of industrial uses proposed to be developed. A shared pump-out system may also be possible such as that which is in place at North Bega with disposal of collections at Merimbula.

In summary, spare capacity in both the reticulated water and reticulated sewerage systems is available to cater to a new industrial estate within the study area. However, due to the source of potable water at Yellow Pinch Dam south of Wolumla and, similarly, the location of the sewer treatment plant at Wolumla, locations closer to the southern end of the study area would incur less costs due to the shorter distances to install mains pipes to connect to existing headworks.

2.2.2 Access

The northern end of the study area is approximately 6 kilometres from the urban area of Bega and the southern end is about 15 kilometres from Bega. The Princes Highway, a classified road, runs north to south through the study area providing easy access to the regional centre of Bega and southwards to Merimbula and Eden. Access to each property is readily available off the Princes Highway though modifications such as intersection treatments and bitumen sealing of internal roads may be required during detailed subdivision design.

2.3 Assessment criteria

A set of criteria has been established to determine the suitability of land within the study area for future industrial development. The criteria are based on the attributes described above and available information for Bega Valley LGA. Ideally, to be suitable for industrial development a property should be:

- a. **Constraints** - relatively unconstrained, already mostly cleared of native vegetation and not occupied by a threatened ecological community, free from bushfire and/or flooding hazard, not occupied by known cultural heritage and not identified as potentially contaminated land,
- b. **Topography** - of relatively level topography to minimise earthworks and visual impacts, and expenses associated with the construction of buildings and provision of infrastructure,
- c. **Exposure** - located so as to have some exposure to an arterial road but be visually acceptable and not adversely impact on rural landscapes (described as low, medium or high),

- d. **Location** - in close proximity to a centre so that access to linked commercial and freight services is optimized and distances to be travelled to these services are minimized,
- e. **Land use conflict** - of low potential for land use conflict with neighbouring development or rural uses (described as low, medium or high),
- f. **Land capability** - of low land capability and low agricultural land classification in terms of primary production potential due to low arability and/or size of parcels,
- g. **Clustering** - located where it forms a contiguous cluster with existing industrial development or similar, or is in close proximity to uses that facilitate economies of scale or are linked through the provision of inputs or that utilise outputs of industry, and
- h. **Services** - able to be efficiently serviced with reticulated water, sewerage disposal and access roads.

Land within the study area has been qualitatively assessed against the above criteria and the results are provided in the next chapter 3. *Assessment of suitability*. The conclusion as to whether or not an area of land is potentially suitable for industrial development is made 'on balance'. That is, if the majority of the criteria are satisfied and there are no absolute limiting constraints such as flooding, ability to provide services or limitations on land area, then an area may be considered suitable for industrial development at a strategic level.

3. ASSESSMENT OF SUITABILITY

The study area has been divided into five separate areas based upon ownership and the connectivity of the parcels of land. The attributes of each of these areas is described below. An additional area of land that is located east of the Princes Highway and adjacent the village of Wolumla has also been considered. This single allotment is described as Lot 18 DP 851163 and is 126 hectares in area. It is primarily farmland with an operating extractive industry located at the south-western corner. This parcel has been discounted from this assessment due to significant environmental constraints that affect the land, including steep slopes, the presence of threatened ecological communities (*lowland grassy woodland* protected under TSC Act the EPBC Act, and *freshwater wetlands on coastal floodplains* protected under the TSC Act) and a watercourse that runs north to south through the property. Large rural residential compartments adjoin the site to the north and most of the eastern boundary. These properties would look towards future industrial development due to topography. Access to the property is also problematic due to restricted sight distances along the highway towards Coral Park Road which is used to gain access to Lot 18.

3.1 Area 1

Area 1 is located to the west of the Princes Highway at the northern end of the study area. The boundaries of Area 1 are shown in Figure 3.1 below.

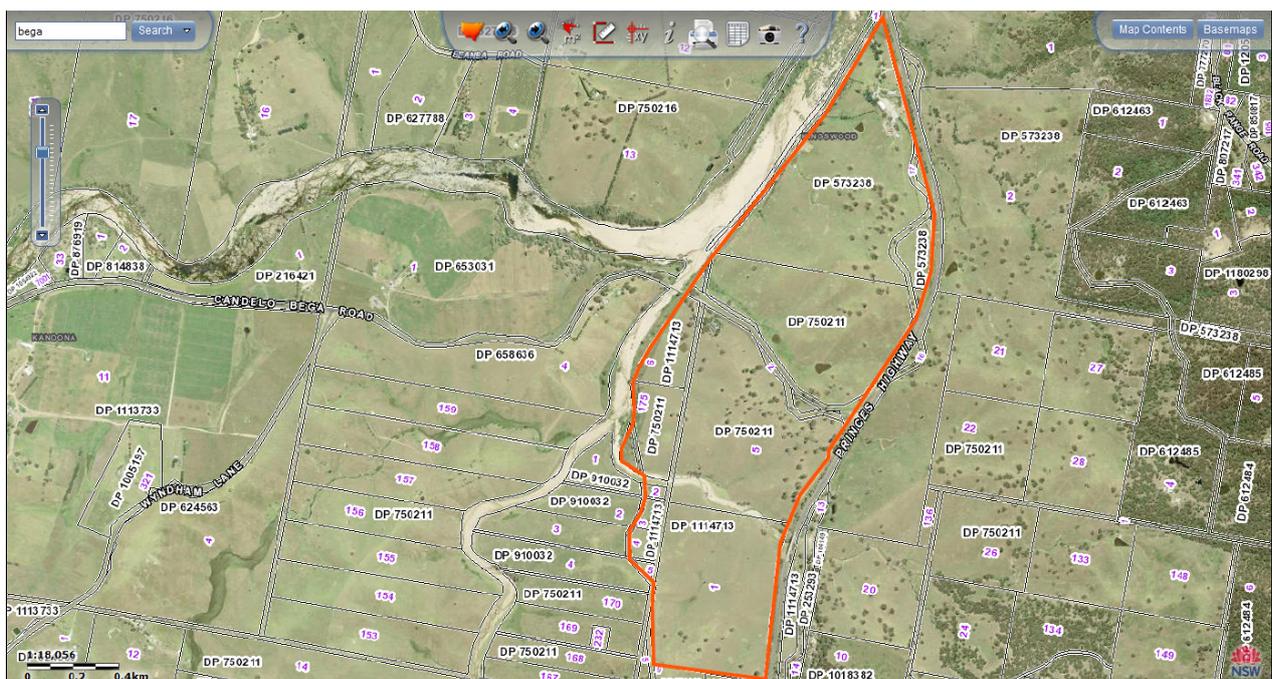


Figure 3.1: Area 1. Source: SIX Maps

Table 3.1: Area 1 – summary of attributes

ATTRIBUTE	DETAILS
Property description	Lot 2 DP 573238, Lots 5 and 175 DP 750211, and Lots 1 to 6 DP 1114713
Area	193 hectares
Land zoning	RU1 Primary Production
Land use and capability	Area 1 is used for primary production - agriculture
	A land capability mix of class 4 on higher ground, class 5 on low-lying wet land and class 8 on riparian areas adjoining the Bega River and tributary
	Agricultural land classification 3
	Adjoining land uses are rural primary production. Low land use conflict potential
	The property is not identified as a potentially contaminated site
	Princes Highway and Candelo-Bega Road frontage with high visual qualities as a rural landscape
Landscape and ecology	Two large patches of lowland grassy woodland in the centre of Area 1 and in the centre-north
	Gently undulating land topography with minor to moderate slopes. Bisected by a tributary of the Bega River running north-south
	bisected by several intermittent drainage lines and a perennial watercourse running east-west south of Candelo Road
Natural hazards	Area 1 is not mapped as a flood planning area
	The entire area is mapped as bushfire category 2
Heritage	There are no known or mapped indigenous or non-indigenous cultural heritage sites within this area. An on-line search of AHIMS was carried out on 5 April 2017. No Aboriginal sites or places have been recorded within the area
Bega Valley LEP 2013	Mapped as constrained land on <i>Natural Resources Land Map</i> (sheet NRL_011) coinciding with watercourse

Assessment:

- a. **Constraints.** This large area is relatively unconstrained by significant vegetation other than small patches of a threatened ecological community. The water quality of the tributary to the Bega River would require protection. There are no known items or places of cultural significance or potential contamination. The land is bushfire prone category 2
- b. **Topography.** That part of Area 1 south of the tributary is gently undulating and may be suited to development without major earthworks
- c. **Exposure.** Sections of Area 1 adjoining the Princes Highway and Candelo-Bega Road have high visibility to passing vehicles. The area is of scenic value due to its rural agricultural landscape and proximity to waterways
- d. **Location.** Area 1 is in very close proximity to the regional centre of Bega and the village of Wolumla
- e. **Land use conflict.** There is a low potential for land use conflict with neighbouring rural uses with the imposition of buffers to boundaries should industrial development take place
- f. **Land capability.** Area 1 has medium to low land capability and medium arability.
- g. **Clustering.** Area 1 is not adjoining or close to existing industrial development or similar
- h. **Services.** Reticulated water and sewer services may be provided to the site. Access to the site can be gained from both the Princes Highway and Candelo-Bega Road

The sections of Area 1 to the north and south of the tributary, described as Lot 1 DP 1114713 and Lot 5 DP 750211, appear to be suited to industrial development. The land is relatively flat and unconstrained by vegetation or watercourses. Allowing for setbacks to the highway and some vegetation screening, this area would still have some exposure without impacting on the surrounding rural landscape. Access may be gained from either Candelo-Bega Road which would be preferable to direct access from the Princes Highway.

The approximate developable area of both lots is a total of 22.5 hectares. Buffers to the watercourse and drainage lines are excluded. Asset protection zones would need to be managed due to being mapped as bushfire prone land.

Allowing for 10% of the land area for services such as internal roads and easements leaves 20.25 hectares or 202,500m². Subdivision of the land to a minimum lot size of 2,000m² the land could potentially yield approximately 100 industrial lots. The indicative developable area is shown edged with a blue line in Figure 3.2 below.

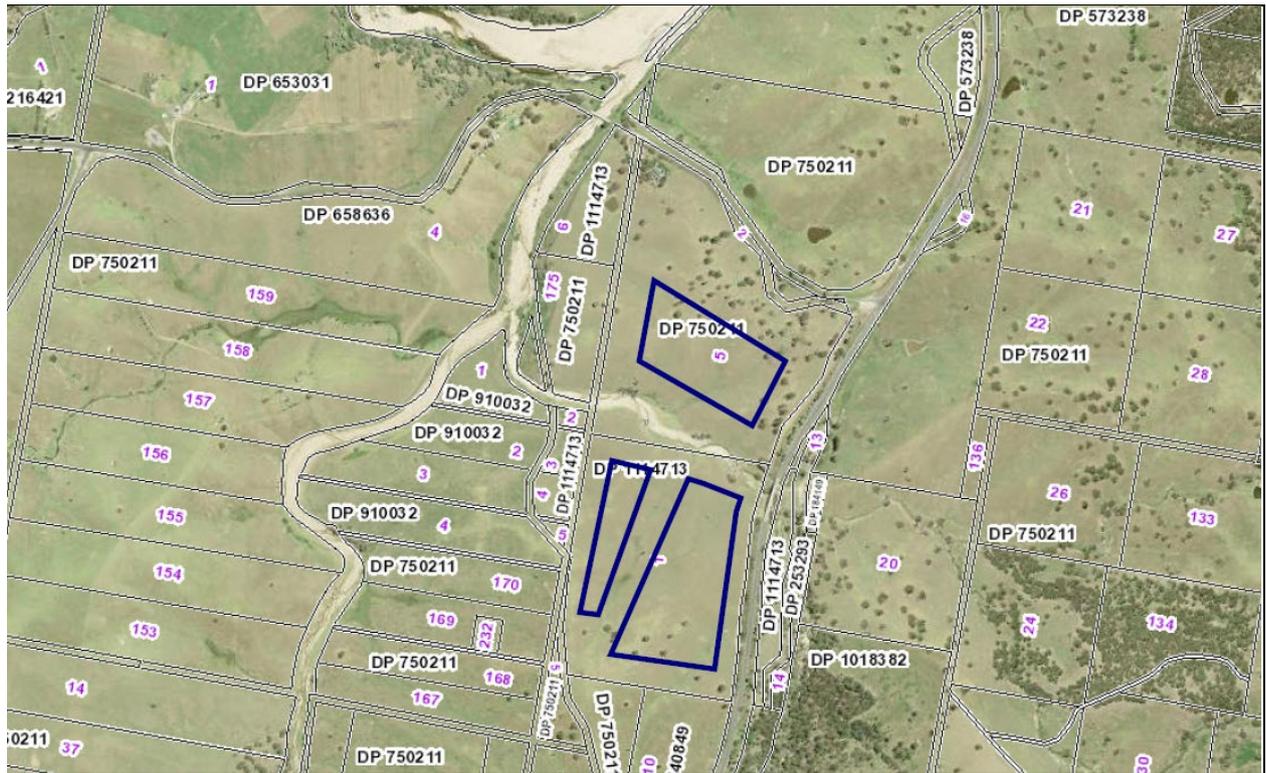


Figure 3.2: Area 1 indicative developable areas. Source: SIX Maps

3.2 Area 2

Area 2 is located to the east of the Princes Highway also at the northern end of the study area. It is in the same ownership as Area 1. The boundaries of Area 2 are shown in Figure 3.3 below.

Table 3.2: Area 2 – summary of attributes

ATTRIBUTE	DESCRIPTION
Property description	Lot 2 DP 573238 and Lots 20, 22, 24, 26 – 28, 128 – 131, 133, 134, 148, 149, 152, 177, 192, 193 and 206 DP 750211
Area	460 hectares
Land zoning	RU1 Primary Production
Land use and capability	Area 2 is used for primary production - agriculture A land capability mix of class 4 on land in the south, class 5 centre-west adjoining the highway and class 6 elsewhere to the east

ATTRIBUTE	DESCRIPTION
	<p>Majority agricultural land class 3, small patch of class 4 in the centre and at the northern boundary</p> <p>adjoins Black Range which is heavily forested national park and environmentally zoned land, land used for rural primary production and land zoned for environmental management to the west of the upper part of Area 2. Generally low land use conflict potential except high where adjoining small rural living lots to the east and south-west</p> <p>The property is not identified as a potentially contaminated site</p> <p>Princes Highway frontage with high visual qualities as a rural landscape with bushland backdrop</p>
Landscape and ecology	<p>Coastal valley grassy woodlands centre and along eastern boundary. Coastal floodplain wetlands centre and south-east corner</p> <p>Large patches of <i>lowland grassy woodland</i> TEC in centre and south. Small patches of <i>freshwater wetlands on coastal floodplains</i> TEC in centre</p> <p>bisected by several intermittent drainage lines and perennial watercourses. Large areas unaffected in centre</p> <p>Gently undulating, minor to moderate slopes with steeper slopes along the western boundary</p>
Natural hazards	<p>Area 2 is not mapped as a flood planning area</p> <p>The entire area is mapped as bushfire category 2</p>
Heritage	<p>There are no known or mapped indigenous or non-indigenous cultural heritage sites within this area. An on-line search of AHIMS was carried out on 5 April 2017. No Aboriginal sites or places have been recorded within the area</p>
Bega Valley LEP 2013	<p>Mapped as constrained land on the <i>Natural Resources Land Map</i> (sheet NRL_011) coinciding with watercourse at western boundary in centre of area</p> <p>Mapped as biodiversity on the <i>Terrestrial Biodiversity Map</i> (sheet BIO_011) in the centre and along the western boundary</p> <p>Affected by watercourses on the <i>Riparian Lands and Watercourses Map</i> (sheet WCL_011)</p>

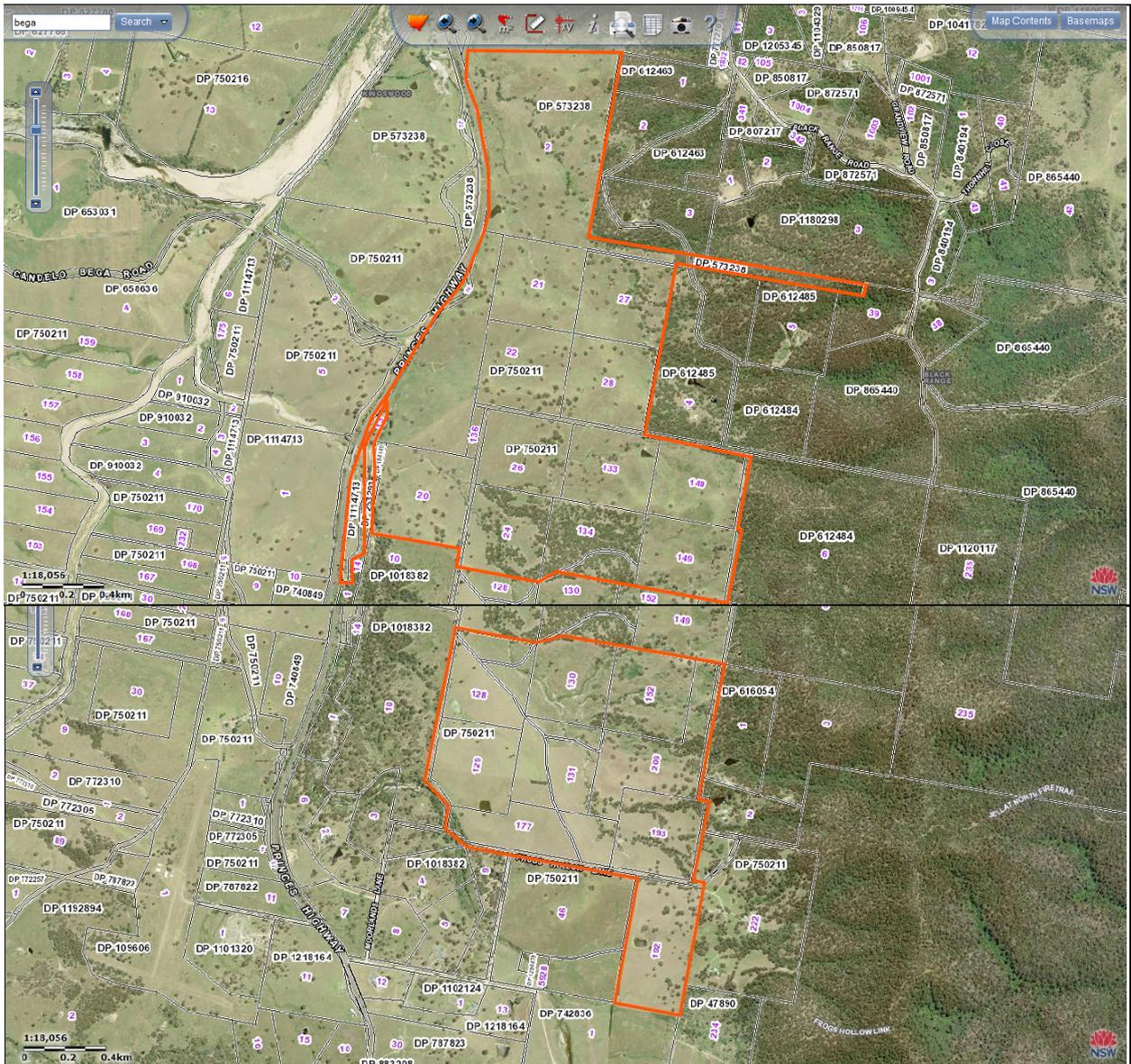


Figure 3.3: Area 2. Source: SIX Maps

Assessment:

- a. **Constraints.** This area is partially affected by threatened ecological communities and watercourses. The whole area is also bushfire prone category 2 meaning that asset protection zones which may involve vegetation removal would be required for development
- b. **Topography.** Area 2 is large but relatively homogenous in terms of visual landscape qualities and topography. Large parts of Area 2 are affected by moderate slopes which contribute to scenic qualities. Black Range is identified in *Bega Valley Development Control Plan 2013* as a significant scenic and cultural landscape with high levels of scenic exposure. The DCP aims to protect and maintain the natural and cultural rural landscapes by preserving and protecting their key qualities

- c. **Exposure.** Land adjacent the Princes Highway is of high visibility for a small depth to the east due to a rise in the land parallel to the highway. This rise would potentially screen development located to the east, however, industrial development would impact on the integrity of the rural landscape and that of the forested backdrop provided by Black Range.
- d. **Location.** Area 2 is in very close proximity to the regional centre of Bega and the village of Wolumla
- e. **Land use conflict.** There is a low potential for land use conflict with neighbouring rural uses with the imposition of buffers to boundaries should industrial development take place. There is the potential for high land use conflict with ecological values for development close to the eastern boundaries due to edge effects
- f. **Land capability.** Area 2 has medium to low land capability and medium arability
- g. **Clustering.** Area 2 is not adjoining or close to existing industrial development or similar
- h. **Services.** Reticulated water and sewer services may be provided to the site. Access to the site is gained from the Princes Highway

As noted in the notes provided by ecologist Mark Harris, land to the west of the highway is better suited to intense development due to lesser ecological values. There is the potential for land use conflict with the ecological values of threatened ecological communities both within Area 2 and Black Range as well as adjoining rural living allotments. Industrial development of Area 2 would also impact adversely on the scenic qualities of the rural landscape and Black Range and be contrary to the aims of *Bega Valley DCP 2013* to protect significant landscapes. For these reasons Area 2 is considered to be unsuitable for the development of an industrial estate.

3.3 Area 3

Area 3 is located west of the Princes Highway south of and separated by farmland from Area 1. It is shown in Figure 3.4 below.

Table 3.3: Area 3 – summary of attributes

ATTRIBUTE	DESCRIPTION
Property description	Lot 1 DP 109606 and Lot 1 DP 1101320
Area	54 hectares
Land zoning	RU1 Primary Production and SP2 Air Transport Facility
Land use and capability	Occupied by a light aircraft landing area and a go-kart track
	Land capability class 4

ATTRIBUTE	DESCRIPTION
	Agricultural land classification 3
	Adjoining land uses are rural primary production. Low land use conflict potential
	The property is not identified as a potentially contaminated site
	Nil highway exposure
Landscape and ecology	Small patches of <i>lowland grassy woodland</i> (TSC Act & EPBC Act) encroach across southern boundaries
	Intermittent drainage lines at centre-east
	Generally flat
Natural hazards	Area 3 is not mapped as a flood planning area
	Small area mapped as Bushfire prone (Category type 2 with 30m buffer in south-west corner)
Heritage	There are no known or mapped indigenous or non-indigenous cultural heritage sites within this area. An on-line search of AHIMS was carried out on 7 June 2017. No Aboriginal sites or places have been recorded within the area
Bega Valley LEP 2013	Mapped as biodiversity on the <i>Terrestrial Biodiversity Map</i> (sheet BIO_011) at south-western corner Affected by a watercourse at east on the <i>Riparian Lands and Watercourses Map</i> (sheet WCL_011)

Assessment:

- a. **Constraints.** A patch of remnant vegetation at the south-west corner is likely to be a threatened ecological community. Vacant land is bisected by a watercourse that flows around the facility to the south and west. The need to setback development to the watercourse to protect water quality and downstream impacts means that only small areas of land would be available for development. The land is flood-free and only a small area coinciding with the vegetation is bushfire prone. Area 3 is not affected by cultural heritage and is not potentially contaminated
- b. **Topography.** Area 3 is flat
- c. **Exposure.** The area does not have visual exposure to the Princes Highway
- d. **Location.** Area 3 is in close proximity to the regional centre of Bega and the village of Wolumla
- e. **Land use conflict.** Lot 1 DP 109606 is wholly occupied by a light aircraft landing strip. Lot 1 DP 1101320 is occupied by an operational go-kart track. There is a low potential for conflict with adjoining land uses if developed for industrial uses
- f. **Land capability.** The land is of medium land capability and arability



Figure 3.5: Area 4. Source: SIX Maps

Table 3.4: Area 4 – summary of attributes

ATTRIBUTE	DESCRIPTION
Property description	Lot 401 DP 1191314
Area	193 hectares
Land zoning	RU1 Primary Production
Land use and capability	Occupied by the central waste facility. The southern half of the lot is heavily forested
	A land capability mix of classes 4, 5 and 6
	Agricultural land classification is 3 across majority of the site with class 4 across the southern vegetated area
	NBN satellite receiving dishes are located within a 5 hectares lot in the centre of the site. Adjoins farmland and rural residential development at the south-eastern corner. Generally low potential for land use conflict, medium potential at southern boundary to rural living lots due to separation by bushland
	The property may be potentially contaminated due to the current use as a waste management facility
	Nil highway exposure
Landscape and ecology	Coastal valley grassy woodlands across southern half

ATTRIBUTE	DESCRIPTION
	<p><i>Lowland grassy woodland</i> across southern half with edge patch of <i>freshwater wetlands on coastal floodplains</i> separating cleared land</p> <p>Intermittent drainage lines running east-west across site</p> <p>Moderate slopes with steep slopes in forested areas</p>
Natural hazards	<p>Area 4 is not mapped as a flood planning area</p> <p>Southern vegetated area mapped as bushfire category type 2 with 30 metre buffer</p>
Heritage	<p>There are no known or mapped indigenous cultural heritage sites within this area. An on-line search of AHIMS was carried out on 5 April 2017. No Aboriginal sites or places have been recorded within the area</p> <p>Adjoins local heritage item 187 (Schedule 5 Bega Valley LEP 2013) Ayrdale Dairy Village located on adjoining land to the north</p>
Bega Valley LEP 2013	<p>Mapped as biodiversity on the <i>Terrestrial Biodiversity Map</i> (sheet BIO_011) across southern area</p> <p>Affected by a watercourse at east on the <i>Riparian Lands and Watercourses Map</i> (sheet WCL_011)</p>

Assessment:

- a. **Constraints.** The remaining vegetated land south of the waste facility is considered unsuitable due to the presence of threatened ecological communities which is mapped as environmentally sensitive on the *Terrestrial Biodiversity Map of Bega Valley LEP 2013*. A listed heritage item is located on adjoining land to the north
- b. **Topography.** The cleared land that is currently vacant to the north of the waste facility is of moderate slope towards a drainage line
- c. **Exposure.** Area 4 is not visible to the Princes Highway
- d. **Location.** Area 4 is in close proximity to the regional centre of Bega and the village of Wolumla
- e. **Land use conflict.** The potential for conflict with adjoining land uses is high given the vacant land directly adjoins land occupied by a heritage item to the north
- f. **Land capability.** The area is of medium to low land capability and low arability
- g. **Clustering.** Development for industrial uses would be an extension of existing industrial infrastructure uses
- h. **Services.** The site has direct access to the highway via Wanatta Lane and can be serviced with reticulated water and sewer

This property is in public ownership and managed by Bega Valley Shire Council as a waste management facility. Although synergies may be available to develop industries that are linked to the waste facility, the cleared land that is not used for this purpose is of moderate slope and is not visible to the Princes Highway.

Amenity for a new industrial estate located on the cleared land would be low due to proximity to the waste facility. It would also be in close proximity to the heritage homestead located immediately to the north. Industrial development may compromise the heritage values of that property.

Area 4 (Lot 401 DP 1191314) is assessed to be unsuitable for the development of an industrial estate.

3.5 Area 5

Area 5 is located west of the Princes Highway and adjoins Area 4 to the east. It is in single ownership. Area 5 is shown in Figure 3.6 below.

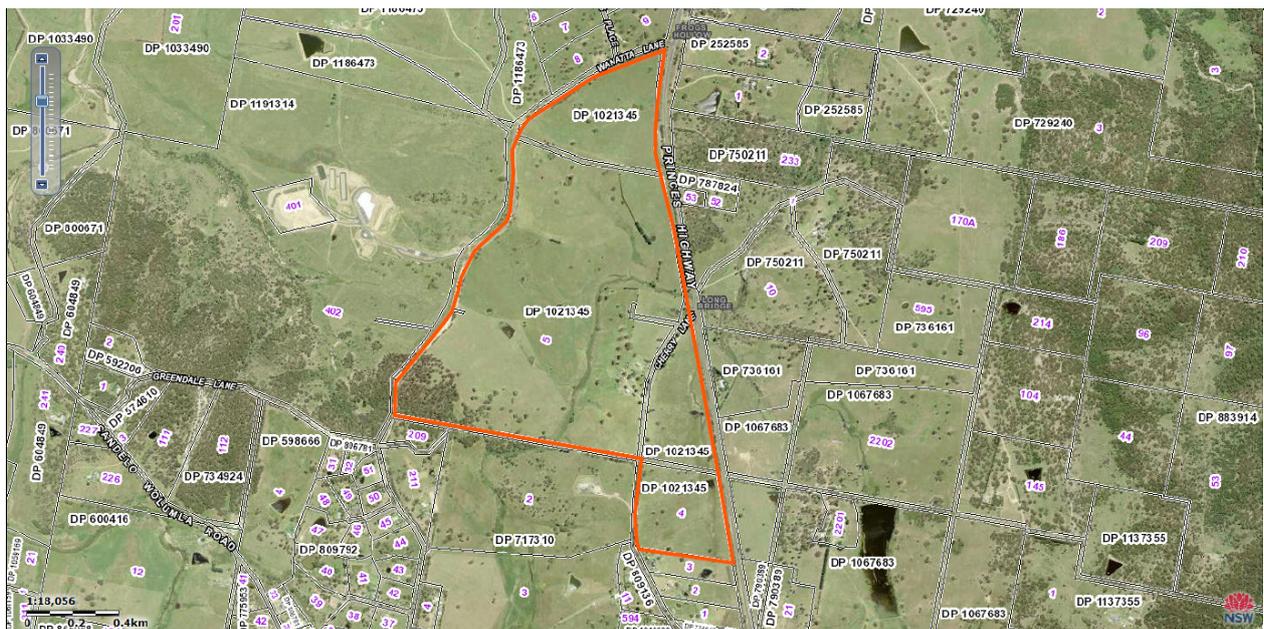


Figure 3.6: Area 5. Source: SIX Maps

Table 3.5: Area 5 – summary of attributes

ATTRIBUTE	DESCRIPTION
Property description	Lots 4 and 5 DP 1021345

ATTRIBUTE	DESCRIPTION
Area	162 hectares
Land zoning	Majority zoned DM (deferred matter) therefore 1 (a) (Rural General Zone) under <i>Bega Valley LEP 2002</i> , remainder RU1 Primary Production under <i>Bega Valley LEP 2013</i>
Land use and capability	<p>Area 2 is used for primary production – agriculture. Each allotment is occupied by a dwelling-house</p> <p>Land capability class 4</p> <p>The majority is agricultural land classification 3 with an area of class 4 at the south-western corner</p> <p>Adjoining land uses are rural primary production and waste management facility. Small lot subdivision adjoining the southern boundary. Generally low land use conflict potential except where boundaries adjoin rural living lots to north and south</p> <p>The property is not identified as a potentially contaminated site</p> <p>Princes Highway frontage with medium to high visual qualities as a rural landscape. Screened from adjoining rural and rural residential land by remnant vegetation and landform</p>
Landscape and ecology	<p>Coastal valley grassy woodlands centre-east and south-west corner. Southern lowland wet sclerophyll forest south-west corner</p> <p>Small patches of <i>lowland grassy woodland</i> at south-west corner and in centre</p> <p>Intermittent drainage lines running east-west from north-west corner and centre-south. Perennial watercourse running north-south through centre. Large areas unaffected in centre and south-east</p> <p>Gently undulating, moderate slopes to the west becoming minor to flat towards the highway</p>
Natural hazards	<p>Area 5 is not mapped as a flood planning area</p> <p>Small area mapped as bushfire prone category type 2 with 30m buffer in south-west corner coinciding with remnant vegetation</p>
Heritage	There are no known or mapped indigenous cultural heritage sites within this area. An on-line search of AHIMS was carried out on 5 April 2017. No Aboriginal sites or places have been recorded within the area

ATTRIBUTE	DESCRIPTION
	Adjoins local heritage item 187 (Schedule 5 Bega Valley LEP 2013) Ayrdale Dairy Village located on adjoining land to the north
Bega Valley LEP 2013	<p>Mapped as biodiversity on the <i>Terrestrial Biodiversity Map</i> (sheet BIO_011) at south-western corner and in vicinity of dwelling on eastern lot</p> <p>Affected by watercourses draining to the east on the <i>Riparian Lands and Watercourses Map</i> (sheet WCL_011)</p> <p>Mapped as constrained land on the <i>Natural Resources Land Map</i> (sheet NRL_011) running from southern end towards the north then east, coinciding with a watercourse</p>

Assessment:

- a. **Constraints.** Area 5 is constrained by vegetation, threatened ecological communities and bushfire hazard coinciding with remnant vegetation in the south-western corner. A listed heritage item is located on adjoining land to the north
- b. **Topography.** Land close to the highway is relatively flat. Steeper slopes towards the western boundary of Lot 5 provides an amphitheatre effect facing east towards the highway
- c. **Exposure.** The site is visible from the Princes Highway. Due to proximity to existing development – residential, the central waste facility and NBN satellite dishes – landscape values are less significant than elsewhere in the study area. However, development on the steeper slopes would have a greater impact on visual amenity due to visibility from the highway when looking west
- d. **Location.** Area 5 is in close proximity to the regional centre of Bega and the village of Wolumla
- e. **Land use conflict.** The potential for conflict with adjoining land uses is high across the northern section of Area 5 due to the heritage item located on land to the north and high across the southern section due to adjoining rural living development
- f. **Land capability.** Area 5 is of medium land capability and arability
- g. **Clustering.** Development for industrial uses would be in close proximity to existing industrial infrastructure uses
- h. **Services.** The site has direct access to the highway via Wanatta Lane and Cherry Lane. An unformed Crown road running east-west connects these two roads. Area 5 can be serviced with reticulated water and sewer

It is considered that part of Area 5 as shown edged blue in Figure 3.7 is suited to the development of an industrial estate. Relatively level land located in the centre of Lot 4 is visible to the highway and the potential for land use conflict with rural living lots to the south may be mitigated by a

4 CONCLUSION AND RECOMMENDATIONS

4.1 Findings

Five areas have been investigated for their suitability for industrial development. These are located on either side of the Princes Highway between just north of the Candelo-Bega Road and the township of Wolumla in the south.

It has been found that parts of two areas are suitable for rezoning to enable industrial development. These are:

- An approximate developable area estimated to be 22.5 hectares to the north and south of the tributary that bisects Lot 1 DP 1114713 and Lot 5 DP 750211. The land is unconstrained by environmental attributes and can be accessed from either Candelo-Bega Road or the Princes Highway. It could yield about 100 lots at a lot size of 2,000m² allowing for 10% of the land area for services and easements.
- An approximate developable area estimated to be 17.7 hectares of Lots 4 and 5 DP 1021345. Level land is unconstrained and access may be gained off Cherry Lane, and then by construction of the eastern section of the unformed Crown road. This area could yield approximately 80 lots at a minimum lot size of 2,000m² allowing for services and easements.

4.2 Recommendations

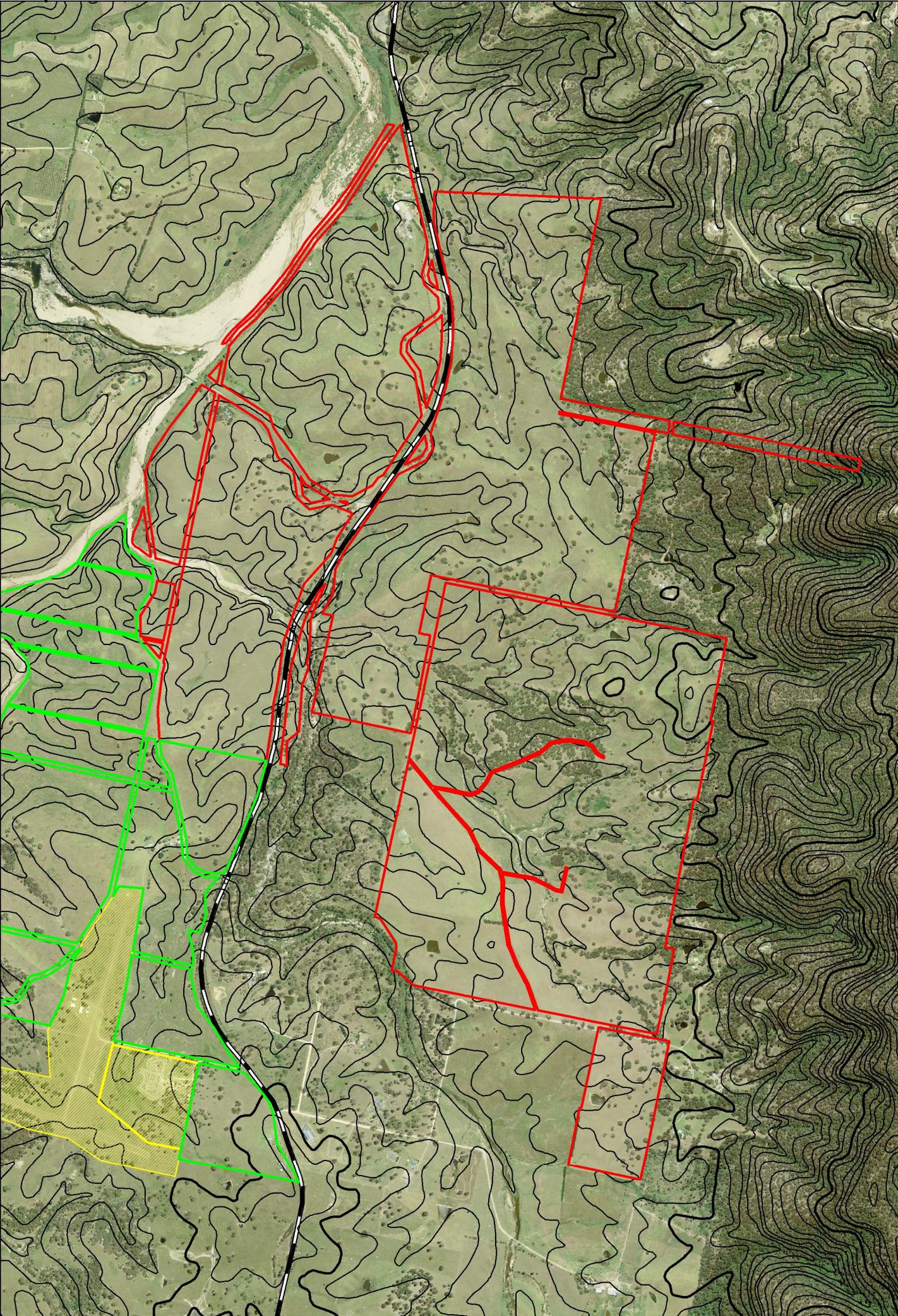
It is recommended that the owners of Lot 1 DP 1114713 and Lot 5 DP 750211, and the owners of Lots 4 and 5 DP 1021345 be approached regarding the potential rezoning of their land for industrial use.

Should Council resolve to develop an exemplary industrial area, such as an 'eco-industrial estate' based on the principles of sustainability, in order to stimulate further growth within Bega Valley Shire then negotiations should commence with the landowners with a view to acquisition of these parcels of land. The entire area of each lot would need to be acquired to enable the incorporation of buffers and setbacks to watercourses, rural living lots and the highway.

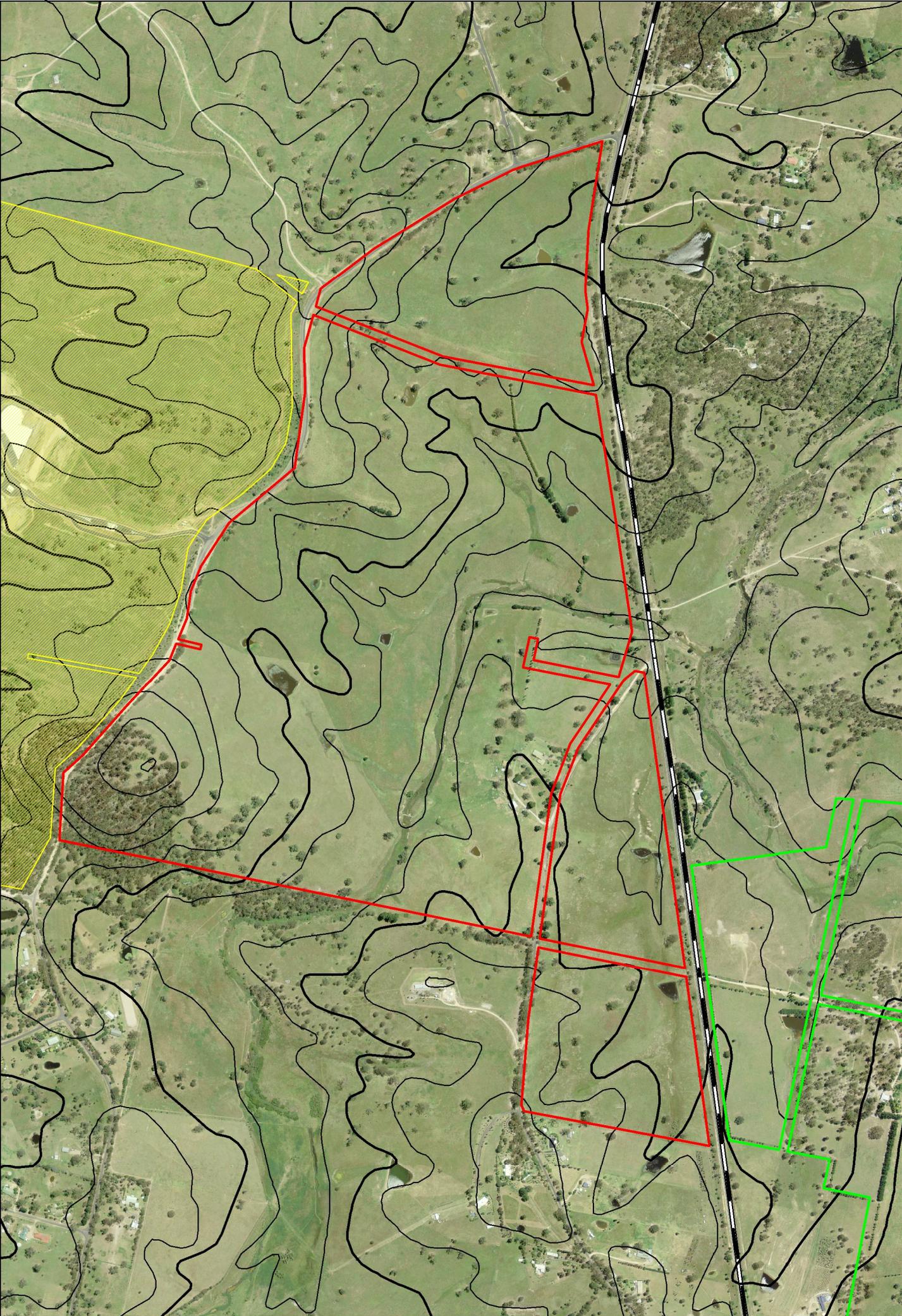
Alternatively, Council may commence discussions with the landowners to gauge interest in developing each parcel of land for industrial use. It would be appropriate for Council to provide advice regarding sources of funding to assist servicing industrial development and to assist with a masterplan for an industrial estate.

Attachment A – Site attribute mapping

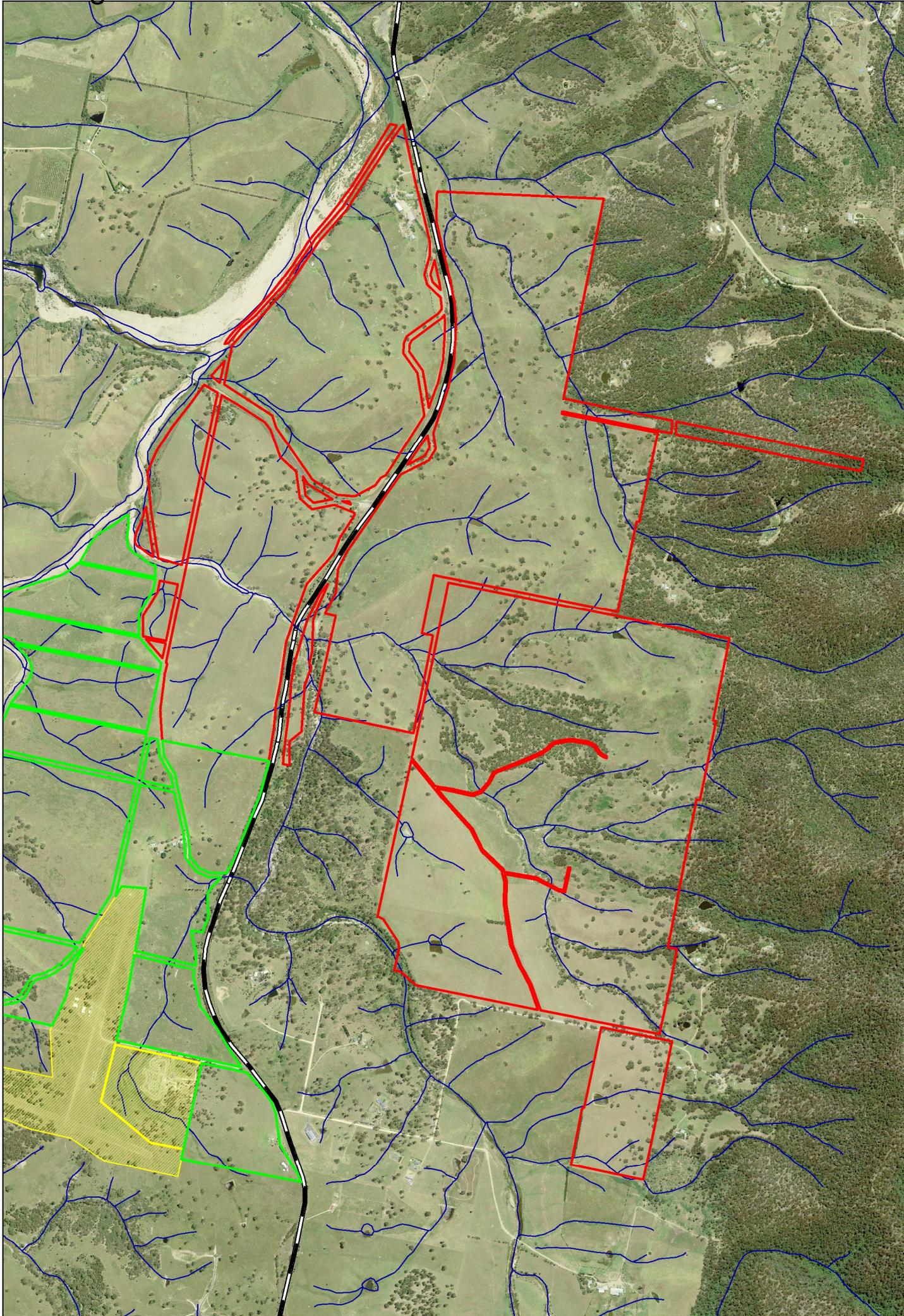
Slope - contours



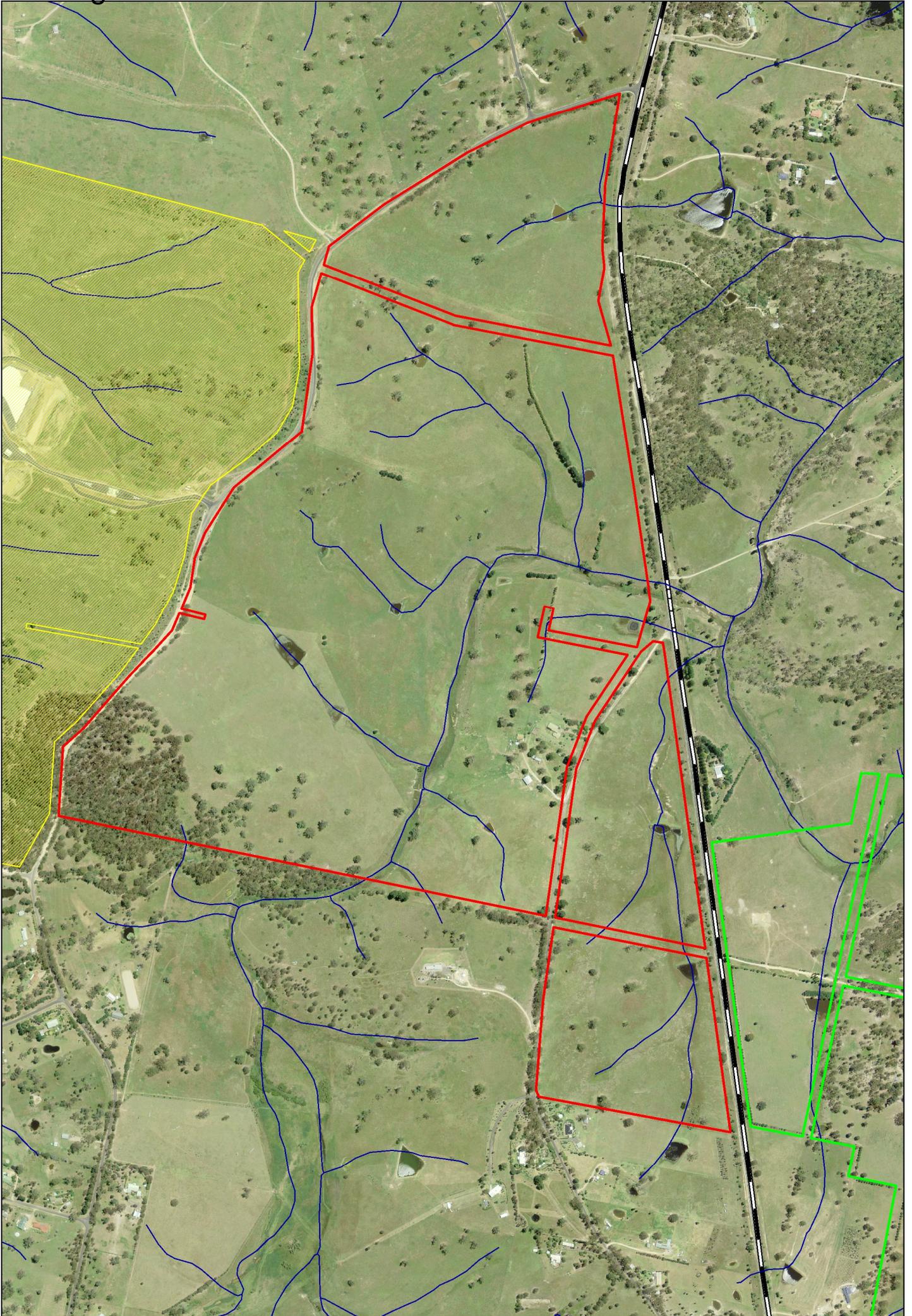
Slope - contours



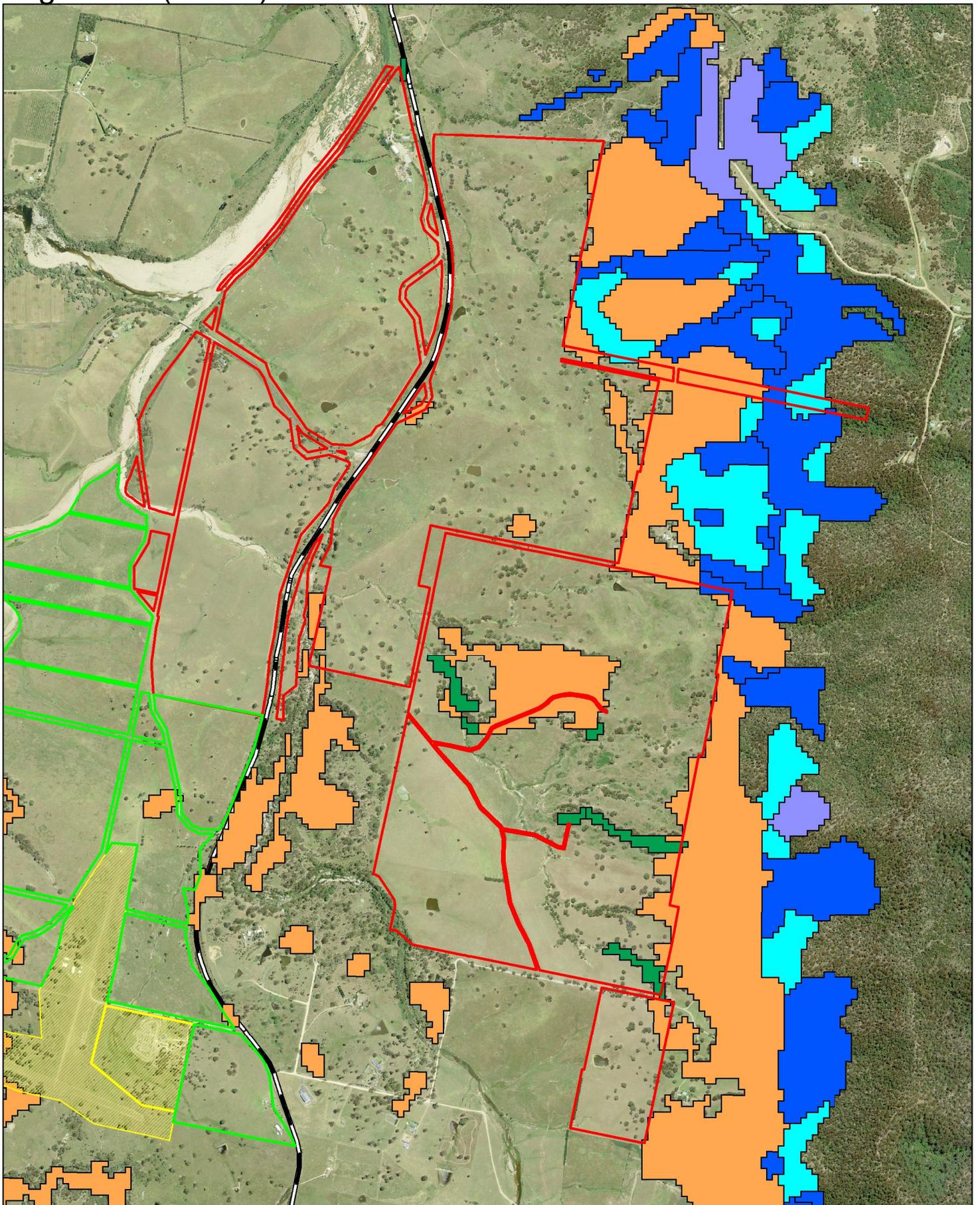
Drainage lines



Drainage lines



Vegetation (BVSC)



Coastal floodplain wetlands



South Coast wet sclerophyll forests



coastal valley grassy woodlands



South East dry sclerophyll forests

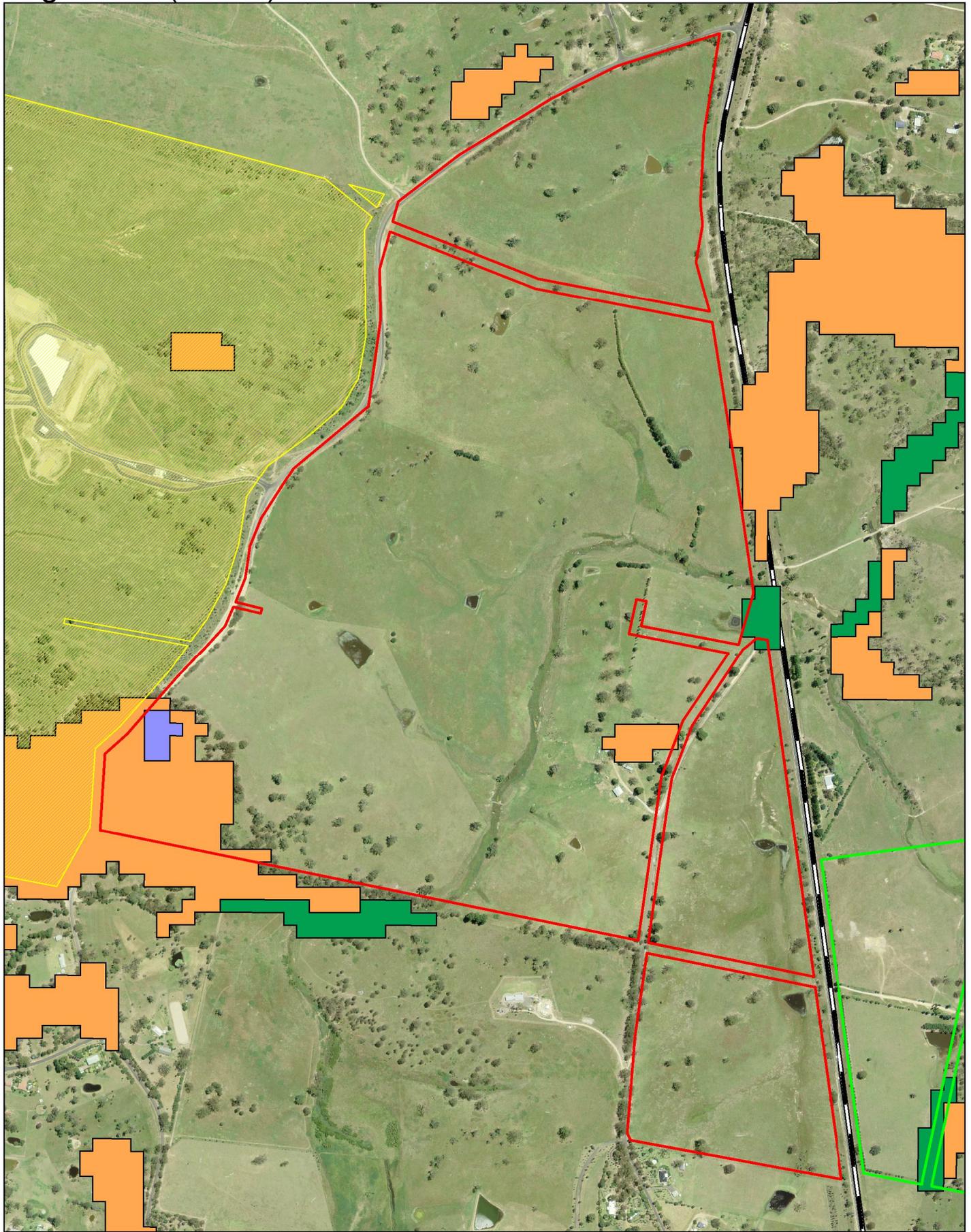


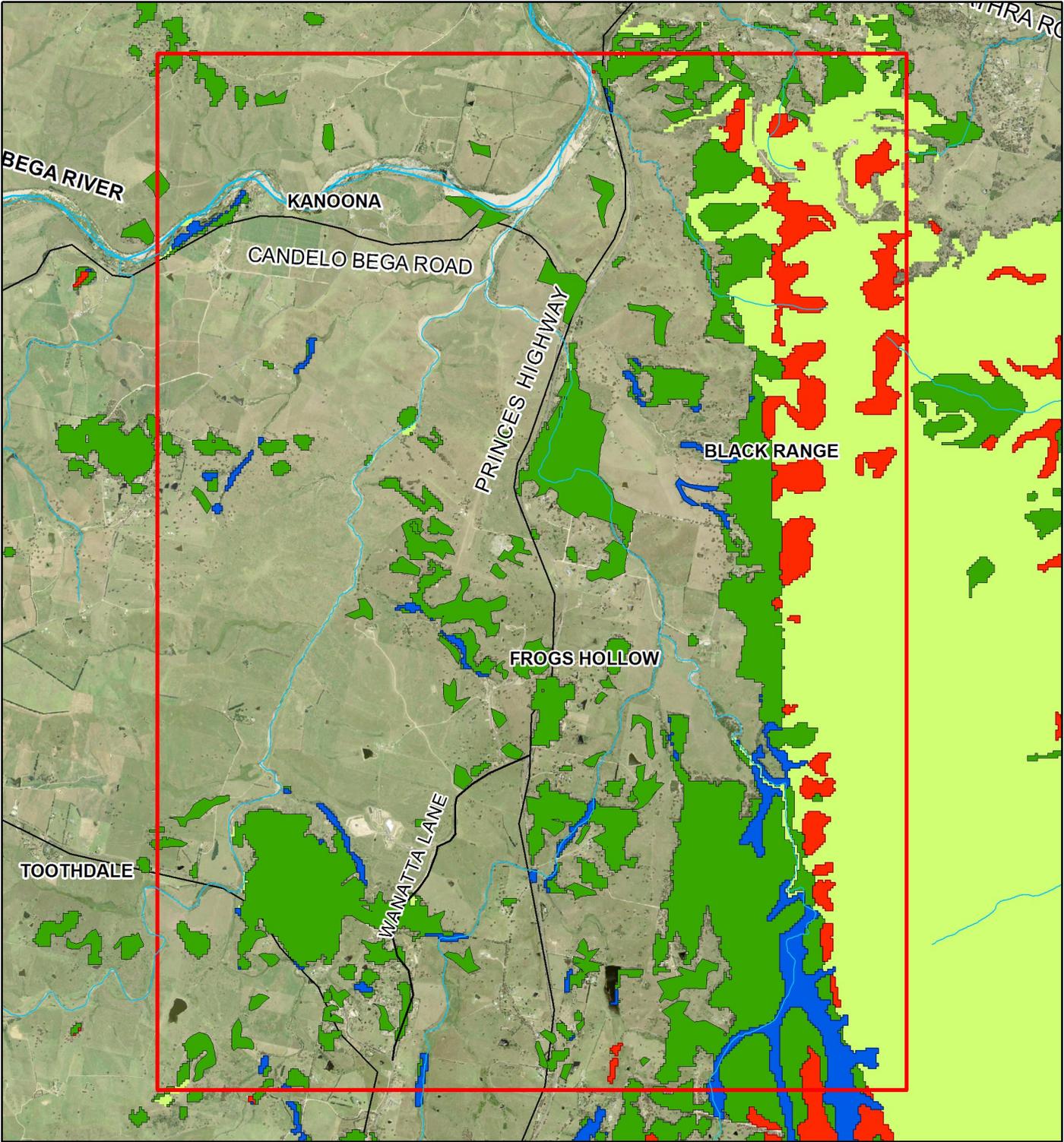
Eastern riverine forests



Southern lowland wet sclerophyll forests

Vegetation (BVSC)



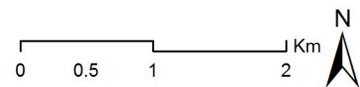


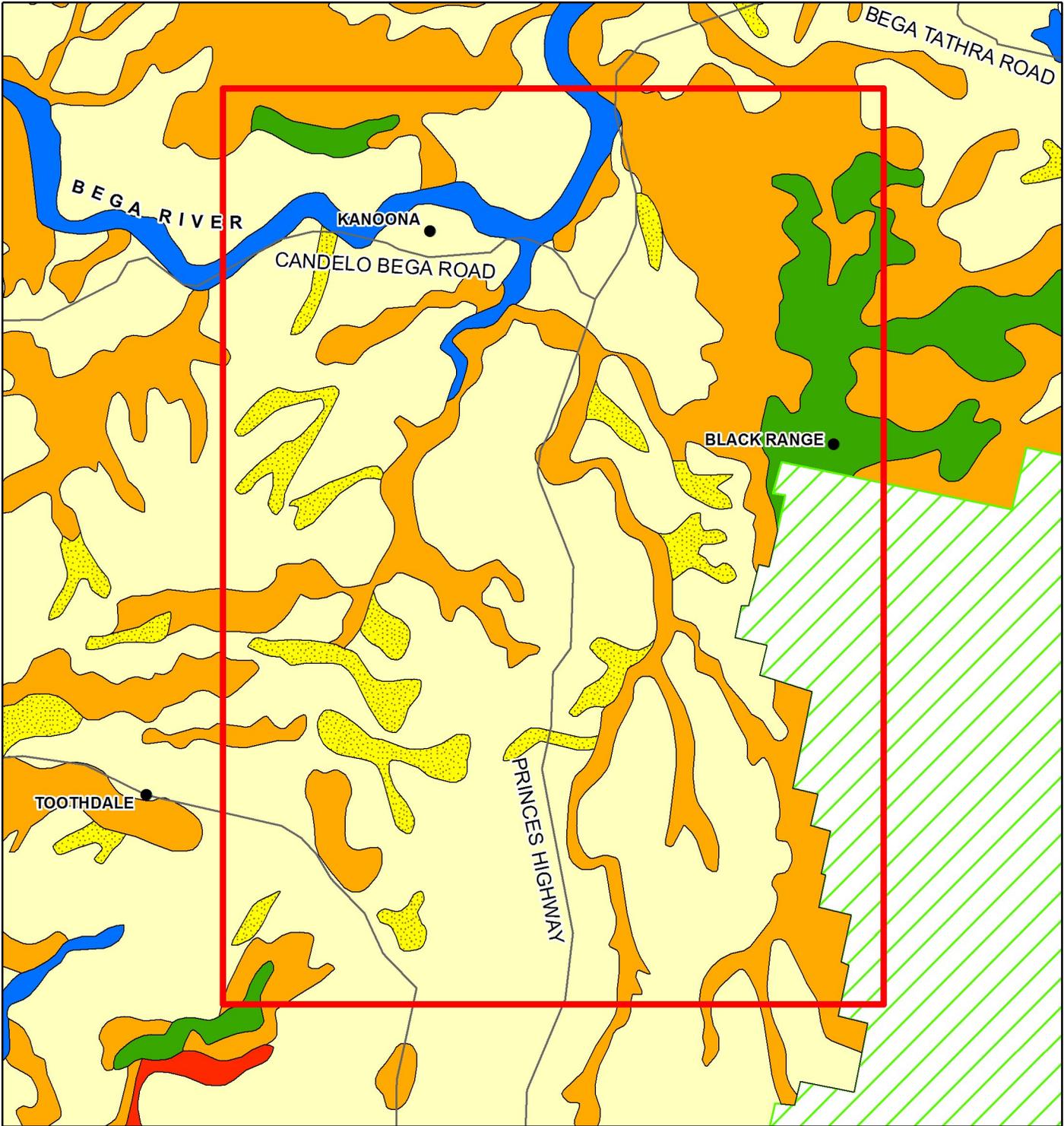
Threatened ecological community (TEC)

- Freshwater Wetlands on Coastal Floodplains (TSC Act)
- Lowland Grassy Woodland (TSC/EPBC Act)
- River-Flat Eucalypt Forest on Coastal Floodplains (TSC Act)
- Other vegetation (not a TEC)
- Study area

Data sources:
 Vegetation: Tozer et al. 2006 (SCIV1, amended by Zenith via air photograph interpretation).
 Roads: Geoscience Australia.
 Aerial image: SIX (NSW LPI).

Mapping date: 23 May 2017





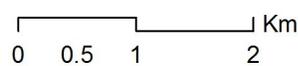
Land capability class

- CLASS 2, SUITABLE FOR REGULAR CULTIVATION
- CLASS 4, SUITABLE FOR GRAZING WITH OCCASIONAL CULTIVATION
- CLASS 5, SUITABLE FOR GRAZING WITH OCCASIONAL CULTIVATION
- CLASS 6, SUITABLE FOR GRAZING WITH NO CULTIVATION
- CLASS 7, LAND BEST PROTECTED BY GREEN TIMBER.
- CLASS 8, CLIFFS/LAKES/SWAMPS & LANDS UNSUITABLE FOR PRODUCTION
- NATURE RESERVE
- Study area

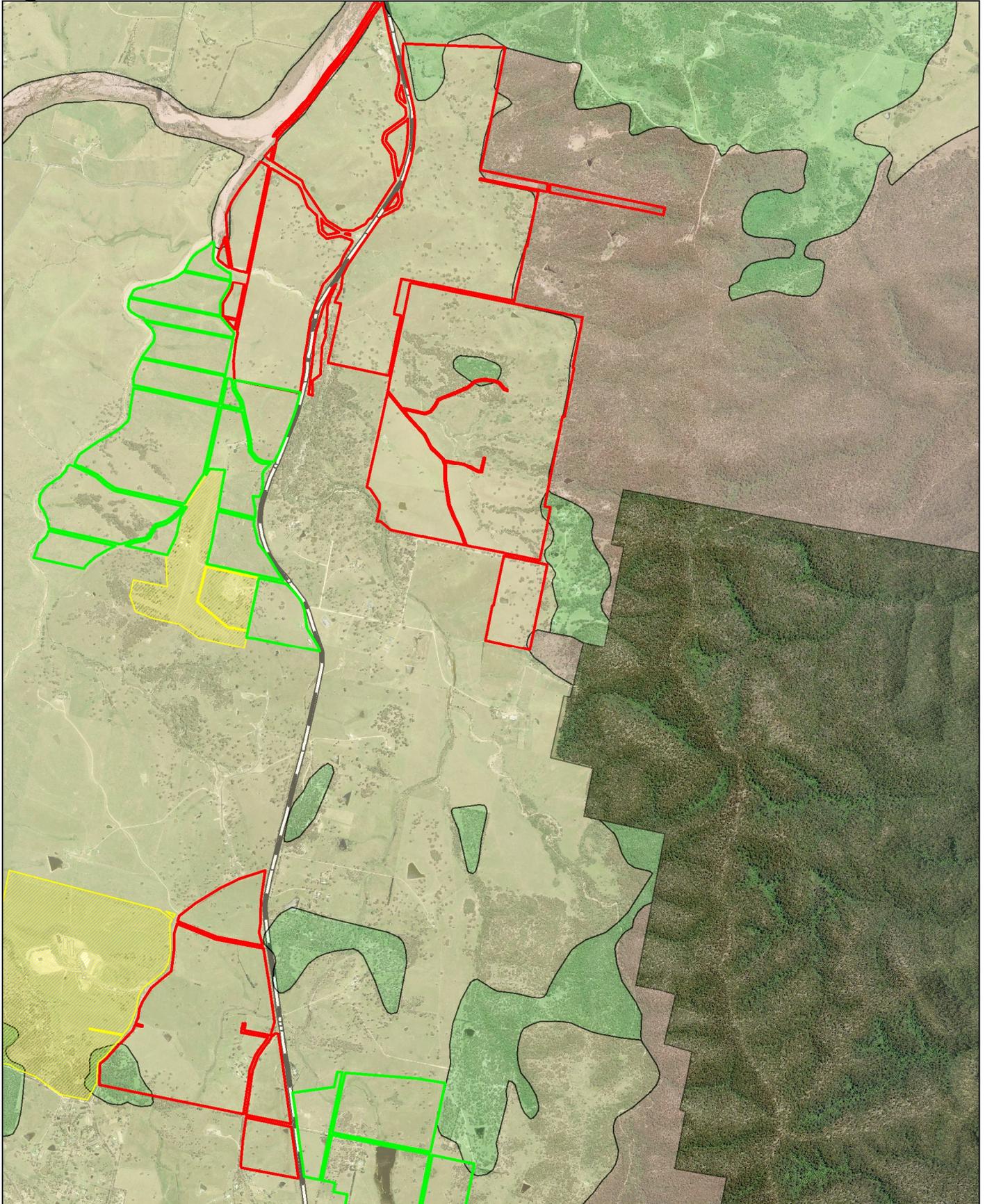
Datum, Projection:
GDA 1994, MGA Zone 55

Data sources:
Land capability: OEH Spatial Data Online
Roads: Geoscience Australia

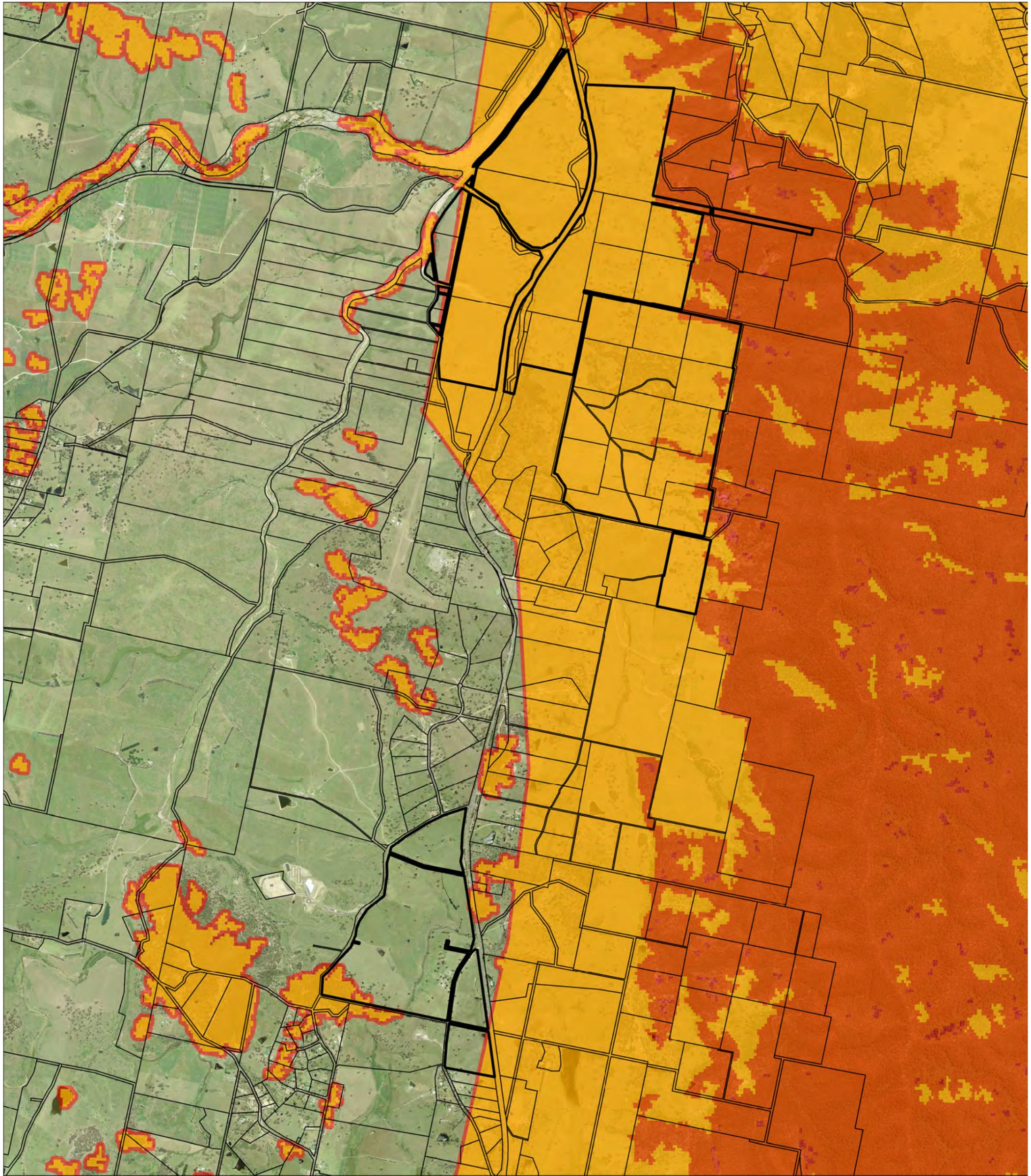
Mapping date: 12 May 2017



Agricultural classification

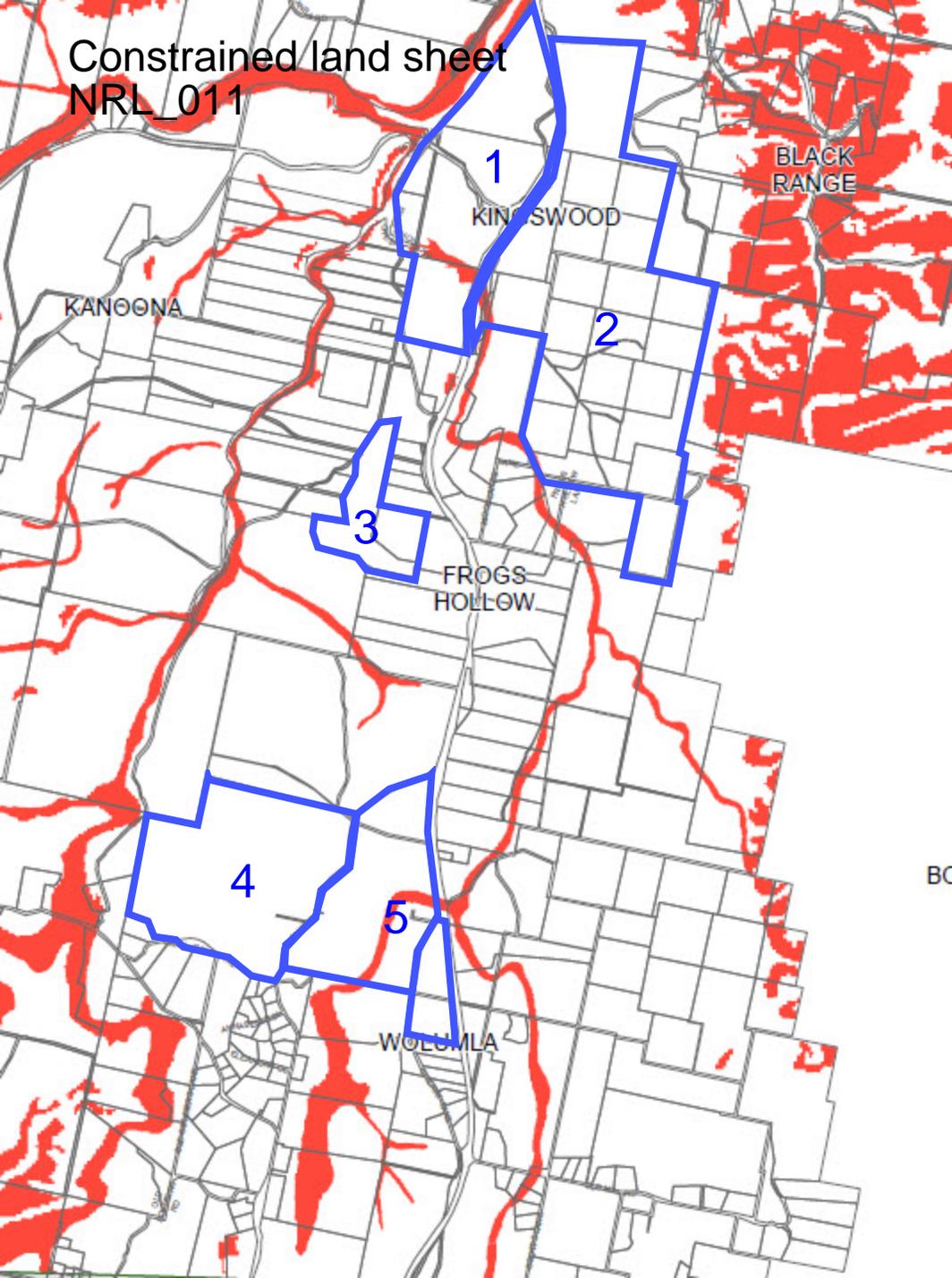


Bushfire prone land



Attachment B – Bega Valley LEP 2013 mapping

Constrained land sheet NRL_011



BLACK
RANGE

1
KINGSWOOD

2

3

FROGS
HOLLOW

4

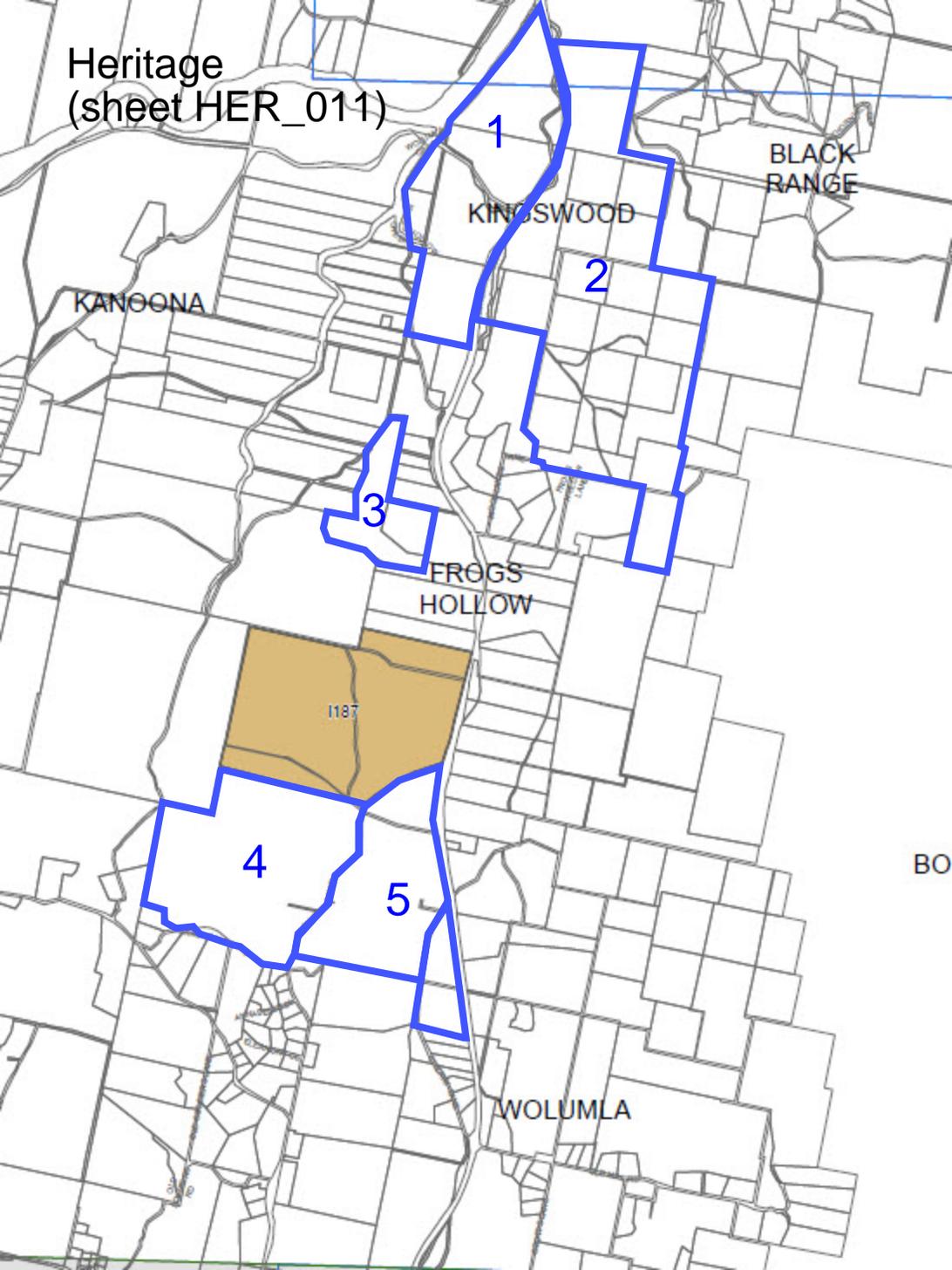
5

WOLCUMLA

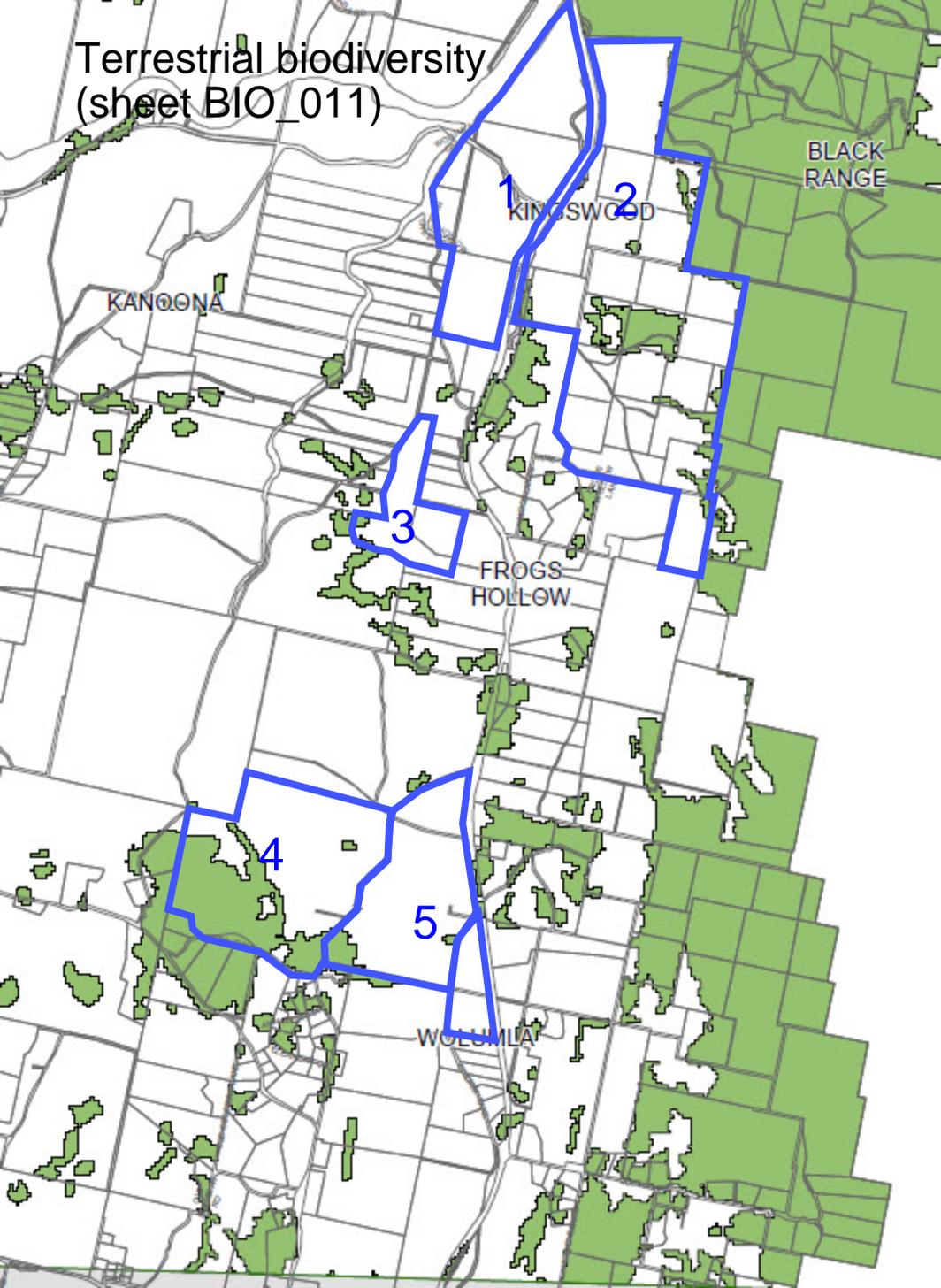
KANOOONA

BO

Heritage
(sheet HER_011)



Terrestrial biodiversity (sheet BIO_011)



Riparian lands and watercourses (sheet WCL_011)

