RMCG

9 JULY 2023

Agricultural Report: 40768 Tasman Highway

Report for:	6ty^{o}
Property Location:	40768 Tasman Highway, Waverley
Prepared by:	Michael Tempest RMCG Level 2, 102-104 Cameron Street Launceston, TAS 7250
Version:	1.1

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SUMMARY	
Client:	6ty°
Property identification:	40768 Tasman Highway, Waverley 7250 Zoning: Rural CT 104384/2, PID 6934699 24.6ha
Proposal:	Rezoning of the subject title to enable a future subdivision.
Land capability	Published Land Capability (1:100,000) Class 4 (24.6ha) Assessed Land Capability (1:10,000) Class 4 (10.1ha), Class 5 (8ha), Class 5+6 (5.1ha) & Class 6 (1.4ha)
Assessment comments:	An initial desktop feasibility assessment was undertaken followed by a field inspection on the 6th of August 2021, to confirm or otherwise the desktop study findings of the agricultural assessment. An additional field inspection was conducted on the 17th May 2023. This report summarises the findings of the desktop and field assessments.
Conclusion:	Rezoning 40768 Tasman Hwy to 'Rural Living' will result in the loss of 24.6ha of Class 4 land (10.1ha), Class 5 land (8ha), Class 5+6 land (5.1ha), and Class 6 land (1.4ha) from the agricultural estate. On the title there are two existing dwellings, one small dam (unknown capacity), and approximately 23ha of pasture that is currently predominantly utilised for horse grazing. The land currently displays 'hobby' scale characteristics similar to adjacent and nearby 'Rural Living' zoned titles. Land with these sorts of characteristics is best farmed in conjunction with other land. However, in this instance, there is limited opportunities for this due to the existing surrounding constraints for the title to be farmed in conjunction with other land. The loss of this land to the wider agricultural estate is considered to be minimal. Rezoning this title to facilitate a future subdivision is unlikely to place any further constraints on adjacent land than already occurs. It is feasible to achieve appropriate separation distances between any future new dwellings and existing and potential primary industry use in the vicinity to minimise the risk of constraining agricultural use in the vicinity.
Assessment by:	 Michael Tempest, Senior Consultant

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1 Introduction

The subject land is located at 'Paisley', 40768 Tasman Hwy, Waverly (CT 104384/2). Current zoning of the title is 'Rural' under the *Tasmanian Planning Scheme – Launceston* (the Planning Scheme). The proponent seeks to alter the zoning from 'Rural' to 'Rural Living', to facilitate a future subdivision. This report considers the agricultural aspects of the proposal.

2 Method

All relevant information available at desktop level was considered to determine the site's ability to support agricultural use either individually or in conjunction with land in the vicinity. Publicly available data sets have been considered. These are available on LIST (www.maps.thelist.gov.au) and include:

- Enterprise suitability mapping
- Cadastral Parcels
- Hydrographic lines
- Contours (5m)
- Tasmanian Planning Scheme Code Overlay
- Tasmanian Planning Scheme Zones
- TASVEG 4.0
- Land Capability
- Underlying Geology
- Landslide Hazard Bands
- Threatened Flora Point
- Threatened Fauna Point
- Land Use Mapping 2021

Imagery including:

- Google Earth (2008-2023)
- State Aerial Photography (Available on LIST)
- ESRI Imagery (Available on LIST)

Other data sets and published information such as:

- Water Information Management System
- Tasmanian Irrigation Project Under Development
- Water Assessment Tool
- Grice, 1995, Soil and Land Degradation on Private Freehold Land
- Groundwater Information Access Portal

Land Capability has previously been assessed for the subject land through:

- Published Land Capability by Tas Government at a Scale of 1:100,000 (see Figure A1-5)

  - Pipers Report, 1991.
- Land Capability Assessment at a scale of 1:10,000 as detailed in Agricultural Report by M. Tempest and A. Ketelaar, RMCG, September 2021 (see Appendix 3 for RMCG's Land Capability Assessment Protocol).

The preferred new zoning (Rural Living) and the potential for the proposed residential use to constrain agricultural use in the vicinity has also been considered.

A site assessment was conducted on the 6th of August 2021 and 17th May 2023, to confirm or otherwise the desktop study findings.

3 Description

3.1 LANDSCAPE CONTEXT

The subject title (CT 104384/2) is located at 40768 Tasman Hwy, Waverly. The title is 24.6ha in area and has two existing dwellings and associated sheds which are located in the western corner of the title. The land has a moderate to gentle northerly aspect. The southern corner of the land sits at approximately 135m above sea level (ASL), while near the northern corner sits at approximately 105m ASL.

The Tasman Hwy is adjacent to the title's south western boundary, Boomer Rd is adjacent to the south eastern and eastern title boundaries, and Distillery Creek forms the northern title boundary. The dwellings are accessed from Tasman Hwy in the western corner of the title.

The average annual rainfall at the site, based on the Launceston (Kings Meadows) site 91072, is 695mm (BOM 2023) and prevailing wind direction is from the north west.

3.2 SOILS AND GEOLOGY

There is no published soil mapping available for the site or surrounding land. Underlying geology (1:25,000) is mapped for the site. On the flats associated with Distillery Creek (5ha), in the northern section of the title, the geology is mapped as Qa, which is described as alluvial gravel, sand, and clay. The central area of the title is mapped as Jdi (11.3ha), which is described as; inferred dolerite beneath soil or Cainozoic deposits. There are three areas mapped as Jd, described as dolerite and related rocks; in the north west, the eastern corner, and the southern corner extending into the central area of the title (total Jd area of 7ha). The most western corner (1.3ha), where the dwelling is located, is mapped as Tcdi, which is described as moderately consolidated dolerite conglomerate dominantly of cobble grade with subordinate pebble or boulder grade clasts, some sandstone and rare siltstone, common zeolite and calcite cement. See (Figure A1-5) for mapped underlying geology. The mapped underlying geology loosely conforms with the physical attributes identified during the site visits. This includes extensive dolerite outcrops identified within the mapped Jd areas, and evidence of dolerite occurring in some of the Jdi area.

3.3 VEGETATION

The property is predominantly managed for pasture. There are isolated trees located in the eastern corner and near the south of the title with patches of weeds also in the south as well as the north of the title. The trees are classed as paddock trees and due to their limited extent, do not form a native vegetation community. TASVEG 4.0 supports this assessment; mapping the majority of the title (24.3ha) as agricultural land (FAG) with 0.3ha of eastern riparian scrub (SRE), associated with Distillery Creek, mapped along the northern boundary. Riparian scrub is listed as a threatened native vegetation community under the State *Nature Conservation Act 2002* and the entire title is mapped as a 'priority vegetation area' under the Planning Scheme; the Natural Assets Code therefore applies to any proposed development on the land.

3.4 LAND CAPABILITY

Published Land Capability (1:100,000) maps the title as Class 4 land. When onsite in 2021, a Land Capability assessment was conducted at a scale of 1:10,000. From this assessment, it was determined that there is 10.1ha of Class 4 land, 8ha of Class 5 land, 5.1ha of Class 5+6 land, and 1.4ha of Class 6 land (see Figure A1-5).

Class 4 land is defined as; land well suited to grazing but which is limited to occasional cropping or a very restricted range. Class 5 land is defined as; land unsuited to cropping and with slight to moderate limitations to pastoral use. Class 6 land is described as: land marginally suitable to grazing due to severe limitations. Class 5+6 land is considered to have at least 60% Class 5 characteristic and up to 40% Class 6 characteristics.

Drainage was the key limitation that separated the Class 5 land from the Class 4 land. In the Class 5 areas, common and distinct mottling occurred between 25-35cm and surface ponding was present. For the Class 4 areas, common and distinct mottling occurred deeper in the profile and while surface ponding was also present, it correlated with the high traffic areas between horse paddocks. The characteristics of the Class 4 area were considered to be at the poorer end of the Class 4 capability limitations.

In the area assessed as Class 5+6, surface dolerite and dolerite outcrops were abundant in the pasture. The presence of the rocks significantly limits the agricultural potential of these areas. Occasional evidence of surface rock was also identified in the Class 4 and Class 5 areas, which may indicate stone at depth.

Full Land Capability class descriptions are available in Appendix 2 and the Land Capability assessment and soil profiles are in Appendix 3.

The land is not classed as Prime Agricultural Land under the Protection of Agricultural Land Policy 2009.

3.5 LAND USE ON SUBJECT TITLES AND EXISTING ASSOCIATED AGRICULTURAL ENTERPRISE

The title is utilised for grazing (predominantly horses/equine activities). When onsite there were approximately 15 horses on the title and 5 cows. No cropping occurs on the title. The existing scale of the enterprise would be described as 'hobby' scale (RMCG 2022).

3.6 EXISTING AND POTENTIAL IRRIGATION ON THE TITLE

The land is located in the Distillery Creek sub-Catchment of the North Esk River Catchment. Distillery Creek flows east to west along the northern boundary of the subject title. There is an existing unregistered catchment dam located in the approximate centre of the title. The size of this dam is unknown, but it is unlikely to be more than approximately 2ML and there are no water allocations for irrigation associated with the title in general. According to NRE's Water Assessment Tool, there is up to 150ML of Surety 5 winter take and 618ML of Surety 6 winter take available for irrigation from the most western point of Distillery Creek on the subject title. Surety 5 water is expected to be available eight years out of ten and Surety 6 approximately six to seven years out of ten. To utilise this water for summer, it would need to be stored. Given there is an existing small dam on the title and some potential for additional storage options, potential for an irrigation water resource of 10-20ML could be developed relatively easily on the title.

The title is located outside any existing or proposed Irrigation Scheme areas (Tasmanian Irrigation 2025).

Despite the availability of water for potential irrigation development and an existing small dam, it is considered unlikely that irrigation resources would be developed on the land for any kind of intensive agricultural use because of the Land Capability limitations (imperfect to poor drainage characteristics and the presence of surface rocks).

3.7 SURROUNDING LAND USE

The subject title is surrounded by eight adjacent titles which range in size from 1.4ha to 89.9ha. Five of the surrounding titles have existing dwellings; one to the east, two to the south east and one to the west. The three adjacent titles to the south east of Boomer Rd and the one to the east of Boomer Road are zoned 'Rural Living' under the Planning Scheme. Land to the north and west is zoned 'Rural' and land to the north west and south west is zoned 'Agriculture' (see Figure A1-3).

The three titles south east of Boomer Rd are zoned 'Rural Living B' which means that future subdivision down to 2ha lots is an Acceptable Solution under the Planning Scheme. The most western and central titles are approximately 3ha in area, so could not be further subdivided under the Acceptable Solutions of the TPS, however, the most eastern of the three titles is 16ha in area, which means this title could potentially be subdivided into 8 lots in the future. The western and eastern titles each have an existing dwelling.

The adjacent title to the east of Boomer Rd (CT 165377/47) is zoned 'Rural Living A' as part of a cluster of seven titles extending to the south, all of which have an existing dwelling. 'Rural Living A' allows titles under the Acceptable Solutions to be subdivided to 1ha. CT 165377/47 is 2.7ha in area, which means it could potentially be subdivided into two lots in the future. The remaining titles to the south are generally around 1ha in area with existing dwellings and so are unlikely to be subdivided further in the future.

To the north (north of Distillery Creek) is CT 41558/3. This title is 3.9ha in area and is partially covered in vegetation, associated with Distillery Creek, with the balance as pasture which, at the time of the site visit, was used for grazing by horses and equine activities. This title is under the same ownership as the adjacent title the north (CT 41558/4) where there is an existing dwelling. Both titles associated with this holding are zoned 'Rural' and would be described as having 'lifestyle' characteristics (RMCG 2022). Adjacent to the western corner of the subject title is CT 50728/1. This title is 1.4ha in area, has an existing dwelling, and is also zoned 'Rural'. This title would also be described as displaying 'lifestyle' characteristics.

To the north west is CT 106269/1, which is 40ha in area and zoned ‘Agriculture’. This title is under the same ownership as land further to the north and east and appears to be utilised for grazing at potentially a ‘commercial’ scale (RMCG 2022), however, the area of CT 106269/1 adjacent to the subject title is covered in vegetation and has surface dolerite present, which limits the agricultural potential of this area. CT 106269/1 is separated from the balance of the holding by Distillery Creek and the associated riparian vegetation on both banks. There appears to be a single creek crossing at the south western end of the title.

To the south west of the Tasman Hwy, is CT 116200/1. This title is 89.9ha in area and is zoned ‘Agriculture’. This title is utilised for dryland grazing and has an existing dwelling in the west of the title. This title is also associated with another title to the west (CT 64472/1) that is 2ha in area and has an existing vineyard (approximately 1.3ha in area). Based on the underlying geology of the vineyard and the majority of CT 116200/1 (Tcdl), there may be scope to increase the vineyard onto CT 116200/1. However, there is no water for irrigation associated with the holding, so in order to develop a ‘commercial’ scale vineyard, it is likely water would need to be secured from Distillery Creek, which would require an agreement and easement developed with an adjacent landholder who has riparian access to Distillery Creek. A pipeline under the Tasman Highway would also be required to convey the water to the property.

3.8 OTHER POTENTIAL ENTERPRISES

We normally consider the Enterprise Suitability Mapping (by DPIPWE and available on LIST) as an indicator of potentially suitable agricultural uses for the site. However, in this case, the suitability mapping has excluded all enterprises due to the underlying mapped land use (Rural Residential without Agriculture) under the Land Use Mapping layers available on LIST.

Based on the assessed Land Capability and general site characteristics, it may be feasible to conduct some broadacre activities on the title, however, the Land Capability indicators of imperfectly to poorly drained soils and areas of surface stone make it questionable as to whether the site would be developed for agricultural activities more intensive than its current use (pasture). For instance, grapes require moderately well drained to well drained soils for optimal production (DPIPWE 2014), and drainage on the subject title has been identified as a limiting factor.

It is unlikely that the site would be utilised for forestry plantations (P*inus radiata*) due to size, proximity of dwellings, and lack of other plantations nearby. It is also questionable as to whether the site would be attractive for utilisation of a high value horticultural enterprise that does not rely on the soil as a growth medium (such as berries on tables in polytunnels) because of the proximity of adjacent dwellings, adjacent Rural Living zoning and potential for future conflict.

3.9 EXISTING STRATEGIC PLANNING

Rezoning this title to ‘Rural Living’ is consistent with D.2.2.2 - Rural Residential Areas and D.2.2.4 - Key Planning Principles for Rural Areas in the *Northern Tasmania Regional Land Use Strategy*. The subject title was also identified in the *Eastern Approaches Long Term Conceptual Development Plan 2010* by Launceston Council as future Rural Residential Land.

4 Discussion

4.1 PRODUCTIVE CAPACITY OF THE SUBJECT LAND

Apart from approximately 1ha that is associated with the two dwellings in the western corner of the title, the land is utilised for grazing at a 'hobby' scale. On the day of the most recent site visit (17th May 2023) there were approximately 15 horses and 5 cows grazing on the property. The areas that have been assessed as Class 4, were being grazed more intensively than the area assessed as Class 5 and poorer. Supplementary feed is often required to ensure the horses are provided with adequate feed (pers. comms. G. Dawkins, 06/08/2021), as was the case during both site visits. It would be difficult to run a 'viable'[1] enterprise on a title of this size with the existing Land Capability limitations and constraints from adjacent residential use and zoning.

Land with these characteristics is best farmed in conjunction with other land to be able to realise the benefits of economies of scale. However, because of the existing dwellings on the subject title and characteristics of the adjacent land, there is little chance of this title being farmed in conjunction with adjacent land. It is unlikely to be farmed in conjunction with the land to the south west due to the Tasman Highway creating a barrier to connectivity. The only land that is well connected and has 'commercial' scale characteristics is CT 106269/1 to the north west. However, CT 106269/1 is not well connected to the rest of the larger holding due to Distillery Creek and the associated riparian vegetation. Although mapped as Class 4 land, it is likely to have greater limitations based on the onsite assessment of the adjacent subject title and 1:25,000 scale mapped Geology (LIST map). Google Earth historic imagery shows this title is not and has not been used intensively; it is comprised of semi improved pasture interspersed with gorse and paddock trees. The vegetation density increases in the east, north, and west, adjacent to Distillery Creek. The characteristics of this land indicate it is unlikely this holding would be seeking to expand its land area with similar land with the same limitations on a remote edge of the larger holding.

The Land Capability limitations associated with drainage and stone on the subject title indicate that it is unlikely that a high value horticultural activity, that requires the soil as a growth medium, would be developed on the site. It may be feasible to develop an intensive horticulture enterprise on the property, that does not rely on the soil as a growth medium, especially when considering the potential to acquire irrigation water. However, as the title is adjacent to the 'Rural Living' zone, as well as adjacent 'lifestyle' properties within the existing 'Rural Living' zone, there is risk of conflict between this type of intensive agricultural activity and residential amenity. Social licence to operate would be a significant risk factor when considering such a high value investment.

After considering these factors, the overall productive capacity of the subject title is considered to be low.

4.2 SIGNIFICANCE OF THIS LAND TO THE AGRICULTURAL ESTATE

24.6ha of Class 4, Class 5, Class 5+6, and Class 6 land with two existing dwellings, that is primarily utilised for horse grazing, and is adjacent to land titles with 'lifestyle' characteristics and within the Rural Living zone has little to no significance to the local or regional agricultural estate. If this land was rezoned to 'Rural Living' its loss would be insignificant.

[1] In our opinion a viable farm is one producing sufficient income to provide for a family and provide full time employment for one person. On this basis the long-term viability of farms producing less than $300,000 Gross Income is questionable.

4.3 POTENTIAL FOR CONSTRAINING ADJACENT AGRICULTURAL LAND USE

If the title is to be rezoned to 'Rural Living' to facilitate a future subdivision, then the impacts of future development on surrounding agricultural use needs to be considered.

Potential for conflict between any proposed new dwellings and adjacent primary industry uses needs to be considered. There are a range of activities associated with grazing and cropping and Learmonth *et. al.* (2007) detail the common range of issues associated with sensitive uses such as residential use in/adjacent to the Rural and Agriculture zone which can constrain primary industry activities (see Appendix 5). Common conflict issues associated with residential use in the 'Rural' or 'Agriculture' zone include spray drift from chemicals, which would include fungicide, herbicide, and insecticide, noise from equipment (including shooting for game control), irrigation spray drift, odours, and dust.

The Western Australia Department of Health (DOH 2012) has published guidelines relating specifically to minimising conflict between agricultural activities and residential areas through management of buffer areas. This study particularly focuses on spray drift and dust generation and recommends a minimum separation of 300m to reduce the impact of spray drift, dust, smoke, and ash. Through the establishment of an adequately designed, implemented, and maintained vegetative buffer, this minimum separation distance can be reduced to 40m. The *Tasmanian Planning Scheme - Launceston* requires a 200m setback between zoned 'Agriculture' or 'Rural' land and new sensitive uses proposed within the 'Rural Living' zone. The Planning Scheme also provides Performance Criteria to reduce this setback if it can be demonstrated the proposal will not impact on adjacent agricultural activity.

For this proposal, a 50m setback to the dryland grazing land to the south west is considered appropriate to mitigate the risk of constraining agricultural activities on the title. Included in this buffer is the Tasman Hwy. This is greater than the existing separation distance of the existing dwellings on the title which are approximately 40m from the adjacent title. A 25m setback to 'Agriculture' zone to the north west is considered appropriate to mitigate any existing agricultural use of the land which would be limited to grazing. Based on the surface rock and vegetation/weed cover of the area, and poor connectivity to land under the same ownership to the north, it is unlikely that this area will be cleared for more intensive agricultural use in future. There is also sufficient room on the proposed lots to allow for vegetation buffers to be established.

Adjacent 'Rural' land to the north is utilised at a 'hobby' scale and due to the size and presence of an existing dwelling to the north, it is unlikely that agricultural use will intensify. The presence of Distillery Creek and the associated riparian vegetation is considered an appropriate buffer between the proposed new lots on the subject title and the adjacent land to the north.

Under these circumstances the setbacks are considered adequate to mitigate the risk of future dwellings on the proposed lots constraining any existing or potential agricultural/primary industry activities on the surrounding land to the north, south west and north west.

5 Conclusion

Rezoning 40768 Tasman Hwy to ‘Rural Living’ will result in the loss of 24.6ha of Class 4 land (10.1ha), Class 5 land (8ha), Class 5+6 land (5.1ha), and Class 6 land (1.4ha) from the agricultural estate. On the title there are two existing dwellings, one small dam (unknown capacity), and approximately 23ha of pasture that is currently predominantly utilised for horse grazing. The land currently displays ‘hobby’ scale characteristics similar to adjacent and nearby ‘Rural Living’ zoned titles. Land with these sorts of characteristics is best farmed in conjunction with other land. However, in this instance, there is limited opportunities for this due to the existing surrounding constraints for the title to be farmed in conjunction with other land. The loss of this land to the wider agricultural estate is considered to be minimal. Rezoning this title to facilitate a future subdivision is unlikely to place any further constraints on adjacent land than already occurs.

It is feasible to achieve appropriate separation distances between any future new dwellings and existing and potential primary industry use in the vicinity to minimise the risk of constraining agricultural use in the vicinity.

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Appendix 1: Maps

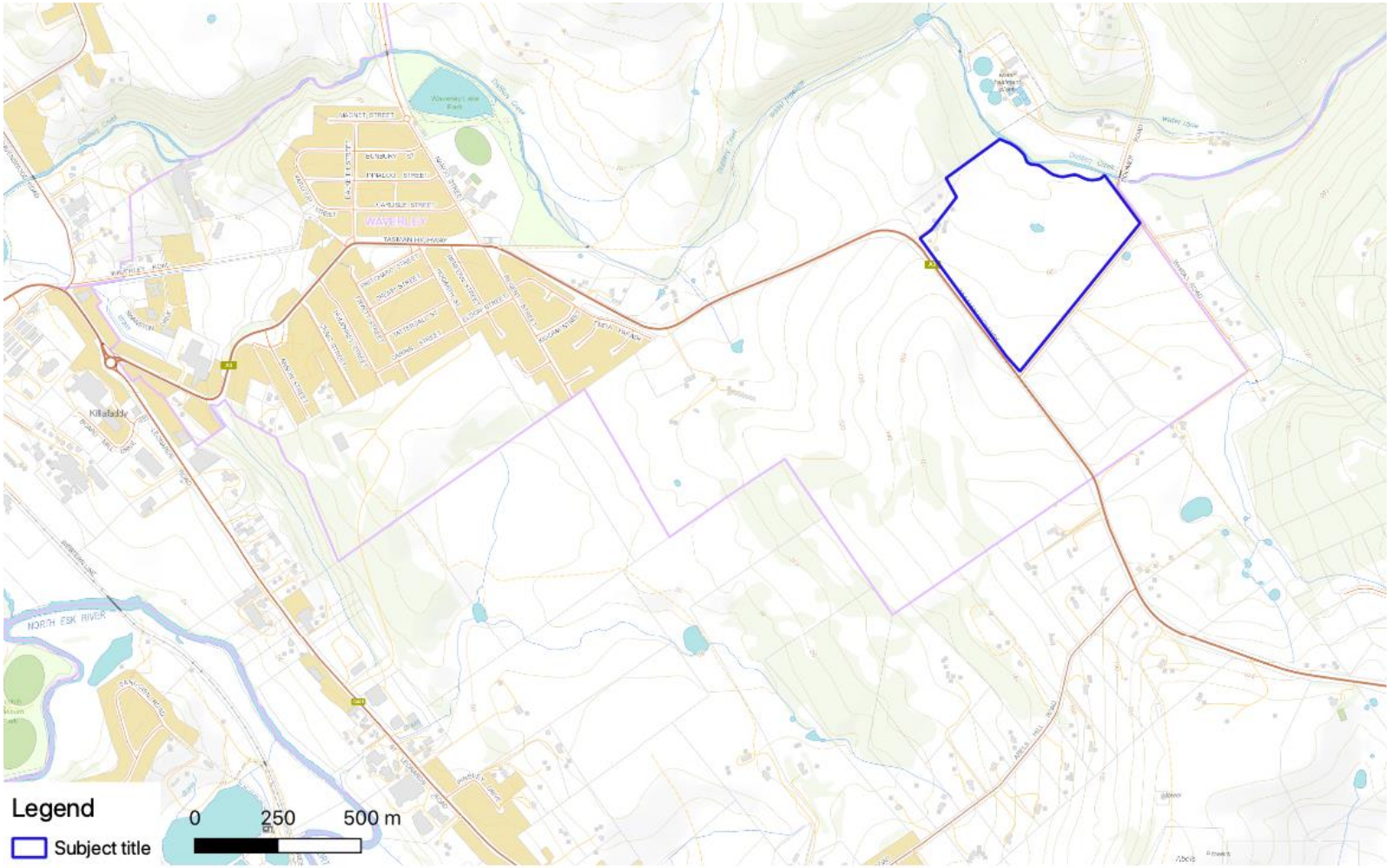

Figure A1-1: Location

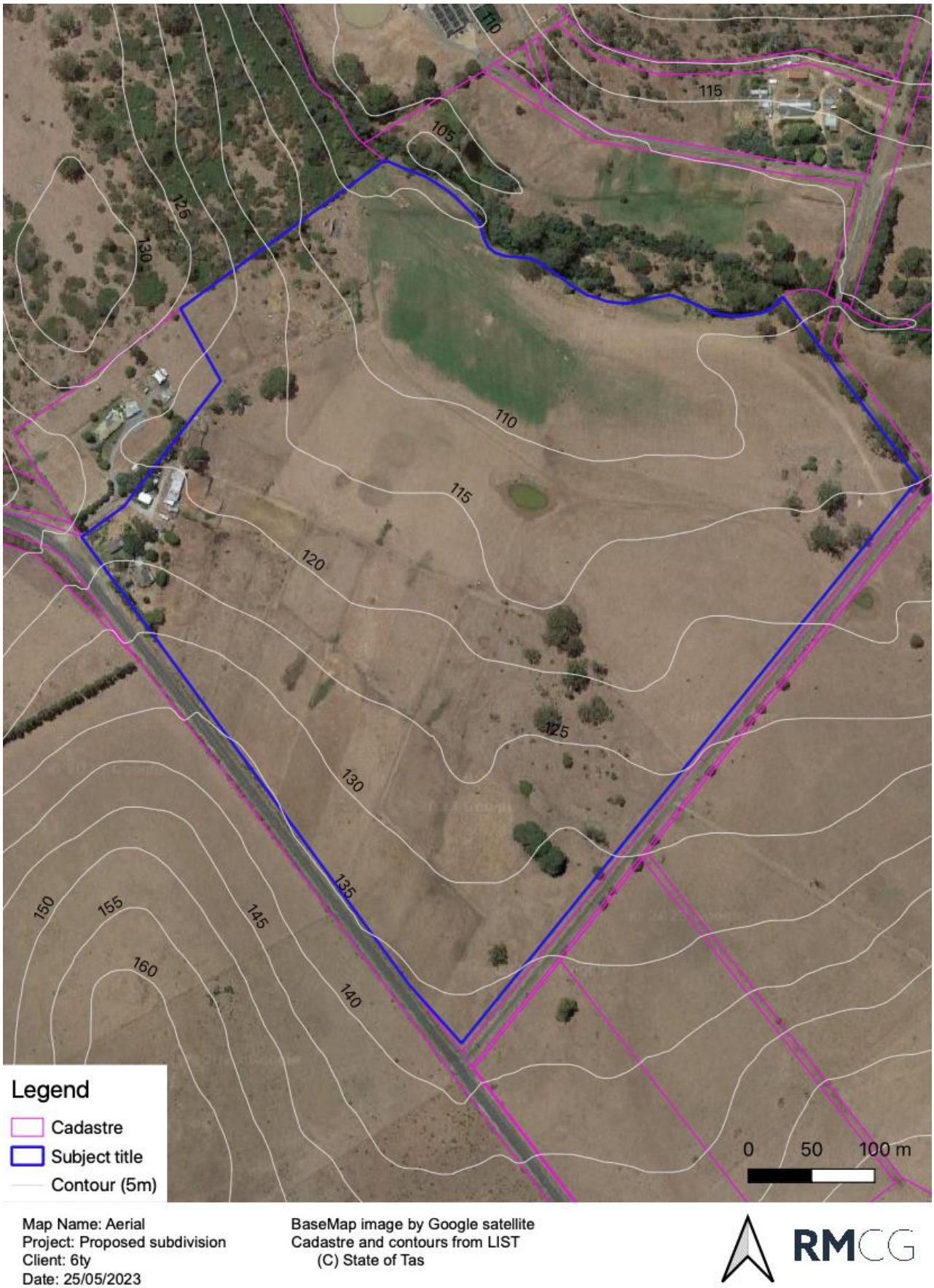

Figure A1-2: Aerial Image

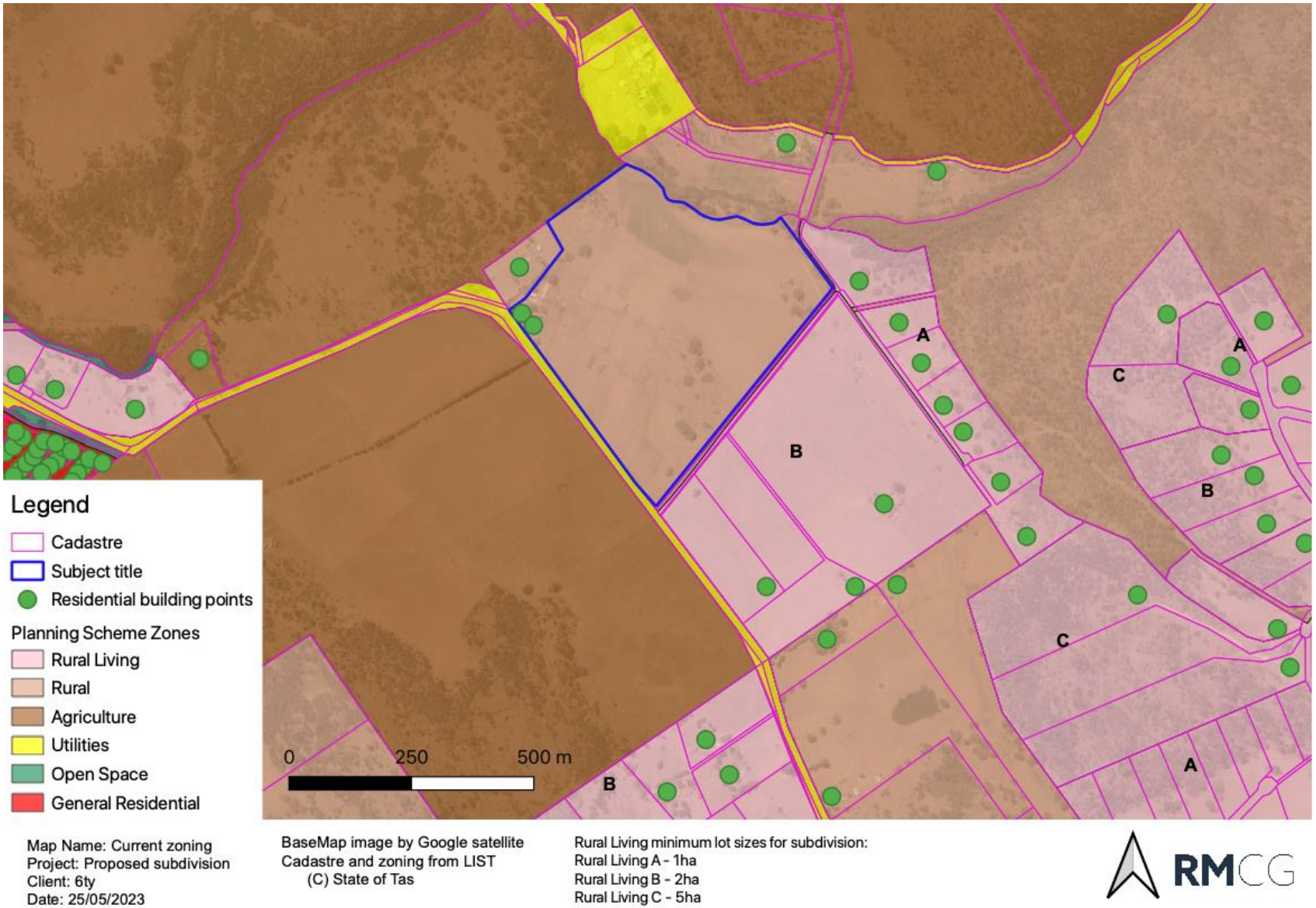

Figure A1-3: Existing zoning and surrounding dwellings

Figure A1-5: Land Capability

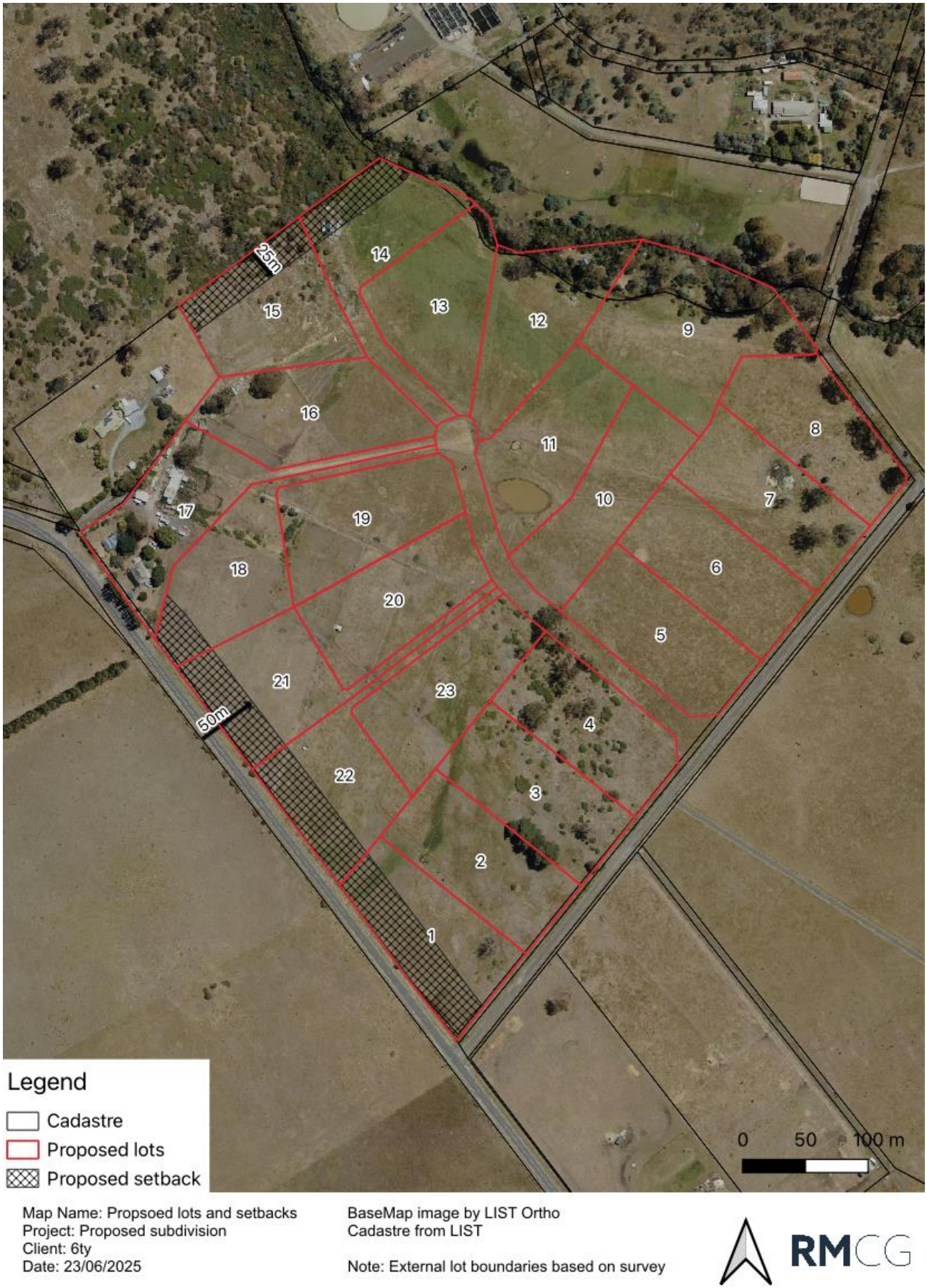

Figure A1-6: Proposed lot layout and setbacks

Appendix 2: Land Capability definitions from Grose (1999)

Prime agricultural land as described in the protection of agricultural land 2009:

CLASS 1: Land well suited to a wide range of intensive cropping and grazing activities. It occurs on flat land with deep, well drained soils, and in a climate that favours a wide variety of crops. While there are virtually no limitations to agricultural usage, reasonable management inputs need to be maintained to prevent degradation of the resource. Such inputs might include very minor soil conservation treatments, fertiliser inputs or occasional pasture phases. Class 1 land is highly productive and capable of being cropped eight to nine years out of ten in a rotation with pasture or equivalent without risk of damage to the soil resource or loss of production, during periods of average climatic conditions.
CLASS 2: Land suitable for a wide range of intensive cropping and grazing activities. Limitations to use are slight, and these can be readily overcome by management and minor conservation practices. However, the level of inputs is greater, and the variety and/or number of crops that can be grown is marginally more restricted, than for Class 1 land. This land is highly productive but there is an increased risk of damage to the soil resource or of yield loss. The land can be cropped five to eight years out of ten in a rotation with pasture or equivalent during 'normal' years, if reasonable management inputs are maintained.
CLASS 3: Land suitable for cropping and intensive grazing. Moderate levels of limitation restrict the choice of crops or reduce productivity in relation to Class 1 or Class 2 land. Soil conservation practices and sound management are needed to overcome the moderate limitations to cropping use. Land is moderately productive, requiring a higher level of inputs than Classes I and 2. Limitations either restrict the range of crops that can be grown or the risk of damage to the soil resource is such that cropping should be confined to three to five yens out of ten in a rotation with pasture or equivalent during normal years.

Non-prime agricultural land as described in the protection of agricultural land 2009:

CLASS 4: Land primarily suitable for grazing but which may be used for occasional cropping. Severe limitations restrict the length of cropping phase and/or severely restrict the range of crops that could be grown. Major conservation treatments and/or careful management is required to minimise degradation. Cropping rotations should be restricted to one to two years out of ten in a rotation with pasture or equivalent, during 'normal' years to avoid damage to the soil resource. In some areas longer cropping phases may be possible but the versatility of the land is very limited. (NB some parts of Tasmania are currently able to crop more frequently on Class 4 land than suggested above. This is due to the climate being drier than 'normal'. However, there is a high risk of crop or soil damage if 'normal' conditions return.).
CLASS 5: This land is unsuitable for cropping, although some areas on easier slopes may be cultivated for pasture establishment or renewal and occasional fodder crops may be possible. The land may have slight to moderate limitations for pastoral use. The effects of limitations on the grazing potential may be reduced by applying appropriate soil conservation measures and land management practices.
CLASS 6: Land marginally suitable for grazing because of severe limitations. This land has low productivity, high risk of erosion, low natural fertility or other limitations that severely restrict agricultural use. This land should be retained under its natural vegetation cover.
CLASS 7: Land with very severe to extreme limitations which make it unsuitable for agricultural use.

Appendix 3: Land Capability

ASSESSMENT PROTOCOL

This protocol outlines the standards and methodology that RMCG uses to assess Land Capability.

In general, we follow the guidelines outlined in the Land Capability Handbook (Grose 1999) and use the survey standards outlined in the Australian Soil and Land Survey Handbooks to describe (McDonald, et al. 1998), survey (Gunn, et al. 1988) and classify (Isbell 2002) soils and landscapes.

Commonly we are requested to assess Land Capability in relation to local government planning schemes. As such the level of intensity of the investigation is usually high and equivalent to a scale of 1:25 000 or better. The choice of scale or intensity of investigation depends on the purpose of the assessment. As the scale increases (becomes more detailed and the scale is a smaller number), the number of observations increases.

An observation can be as much as a detailed soil pit description or as little as measuring the gradient of an area using a clinometer or the published contours in a Geographical Information System and includes soil profile descriptions, auger hole descriptions, and observations confirming soil characteristics, land attributes or vegetation. The table below shows the relationship between scale, observations, minimum distances and areas that can be depicted on a map given the scale and suggested purpose of mapping.

Table A4-1: Assessment scale

SCALE	AREA (HA) PER OBSERVATION	MINIMUM WIDTH OF MAP UNIT ON GROUND	MINIMUM AREA OF MAP UNIT ON GROUND	RECOMMENDED USE
1:100 000	400ha	300m	20ha	Confirmation of published land capability mapping.
1:25 000	25ha	75m	1.25ha	Assessments of farms, fettering or alienation of Prime Agricultural Land.
1:10 000	4ha	30m	2,000m^2	Area assessments of less than 15ha.
1:5 000	1ha	15m	500m^2	Site specific assessments for houses and areas less than 4ha.
1:1 000	0.04ha	3m	20m^2	Not used. Shown for comparison purposes.

Based on 0.25 observations per square cm of map, minimum width of mapping units 3mm on map as per (Gunn, et al. 1988).

ASSESSMENT METHODOLOGY

With all assessments we examine a minimum of three observations per site or mapping unit and determine Land Capability on an average of these observations.

Land Capability is based on limitations to sustainable use of the land, including the risk of erosion, soil, wetness, climate and topography. The most limiting attribute determines the Land Capability class. This is not always a soil limitation and thus soil profile descriptions are not always required for each mapping unit. For example, land with slopes greater than 28%, areas that flood annually and areas greater than 600m in elevation override other soil related limitations.

The availability of irrigation water can affect the Land Capability in some areas. An assessment of the likelihood of irrigation water and quality is made where it is not currently available.

As a minimum all assessment reports include a map showing the subject land boundaries, observation locations, published contours and Land Capability.

DEFINITIONS

Land capability

A ranking of the ability of land to sustain a range of agricultural land uses without degradation of the land resource (Grose 1999).

PROTOCOL REFERENCES

Grose, C J. Land capability Handbook. Guidelines for the Classification of Agricultural Land in Tasmania. Second Edition. Tasmania: Department of Primary Industries, Water and Environment, 1999.

Gunn, R H, J A Beattie, R E Reid, and R H.M van de Graaff. Australian Soil and Land Survey Handbook: Guidelines for Conducting Surveys. Melbourne: Inkata Press, 1988.

Isbell, R F. The Australian soil classification. Revised Edition. Melbourne: CSIRO Publishing, 2002.

McDonald, R C, R F Isbell, J G Speight, J Walker, and M S Hopkins. Australian Soil and Land Survey Field Handbook. Second Edition. Canberra: Australian Collaborative Land Evaluation Program, CSIRO Land and Water, 1998.

ON SITE LAND CAPABILITY ASSESSMENT

Published Land Capability (LIST 1:100,000) maps the subject land as Class 4 (24.6ha).

A site inspection was undertaken on the 6th of August 2021 and a Land Capability assessment was undertaken at a scale of 1:10,000. Ten assessment pits were augered across the assessment area, one example pit is described below. This was accompanied by visual inspections across the title and slope calculations.

The results of the onsite Land Capability assessment determined that there is 10.1ha of Class 4 land, 8ha of Class 5 land, 5.1ha of Class 5+6 land, and 1.4ha of Class 6 land on the title.

For the augered assessment pits and adjacent land there were two key characteristics that determined the assessed Land Capability:

- Drainage (d) – All profiles showed imperfect to poor drainage characteristics through mottling (common & faint to common & distinct) from around 20cm to 60cm depth. In the areas identified as Class 5, there was also areas of surface ponding. In the Class 4 areas there was also surface ponding, however, this generally correlated with high traffic areas between the horse paddocks.
- Surface stone (r) – throughout the area assessed as Class 5+6 and Class 6 surface stone (dolerite) was prolific, both as individual stones and boulders, sheet rock and outcrops, the prevalence of stone in these areas significantly limits the agricultural potential. Occasional evidence of surface rock was also identified in the Class 4 and Class 5 areas, which may indicate stone at depth.

The characteristics of the Class 4 area are considered to be consistent with the poorer end of the Class 4 capability range.

Table A3-2: Land Capability Assessment Summary Table for Assessment Pits 2021

	SOIL	COMMENTS	COLOUR	TEXTURE	STRUCTURE (E)	COARSE FRAGMENT SIZE (G)		SOIL DRAINAGE (D)	SURFACE STONE (R)	SLOPE (E)	EROSION RISK		FLOOD RISK	LAND CAPABILITY
Pit No	Depth (cm)		Munsell			Type, mm	%	Mottle Severity	Presence	%	Water	Wind		
1	0-15		7.5YR 3/3 Dark brown	Clay Loam	Moderate				Present	0-5	Low	Low	Moderate	5d
	15-20		10.5YR 3/2 Very dark brown	Silty Clay Loam	Moderate	2-20	20-35							
	20-60		10.5YR 3/3 Dark brown	Medium Clay	Strong			Common & Distinct						
2	0-30	Gravel occurred from 15cm Surface ponding nearby Auger refusal at 40cm	7.5YR 2.5/2 Very dark brown	Clay Loam	Moderate	2-60	35-50		Present	0-5	Low	Low	Moderate	5dg
	30-40		7.5YR 3/3 Dark brown	Light Clay	Strong	2-60	35-50	Common & Distinct						
3	0-25	Surface ponding nearby	7.5YR 2.5/2 Very dark brown	Clay Loam	Moderate	2-60	2-20			0-5	Low	Low	Moderate	5d
	25-60		7.5YR 3/3 Dark brown	Light Clay	Strong									
4	0-20		7.5YR 2.5/2 Very dark brown	Clay loam	Strong					5-12	Low	Low	Low	4d
	20-60		7.5YR 3/3 Dark brown	Medium to Heavy clay	Massive			Common & Faint, increasing to Common & Distinct at 40cm						
5	0-5		7.5YR 2.5/2 Very dark brown	Clay loam	Strong				Present	5-12	Low	Low	Low	4d
	5-60		7.5YR 3/3 Dark brown	Medium to Heavy clay	Massive			Common & Faint from 25cm						
6	0-60	Surface ponding nearby	10YR 3/3 Dark brown	Medium Clay	Strong			Common & Distinct from 30cm		5-12	Low	Low	Low	5d
7	0-20		10YR 3/3 Dark brown	Clay Loam	Strong				Present	0-5	Low	Low	Low	5+6rd
	20-60		10YR 3/3 Dark brown	Medium Clay	Strong			Common & Distinct from 40cm	Present					
8	0-60		10YR 3/3 Dark brown	Medium Clay	Strong			Common & Distinct from 30cm	Present	5-12	Low	Low	Low	5rd

	SOIL	COMMENTS	COLOUR	TEXTURE	STRUCTURE (E)	COARSE FRAGMENT SIZE (G)		SOIL DRAINAGE (D)	SURFACE STONE (R)	SLOPE (E)	EROSION RISK		FLOOD RISK	LAND CAPABILITY
9	0-5	Auger Refusal at 5cm	7.5YR 2.5/2 Very dark brown	Clay loam	Strong				Present	0-5	Low	Low	Low	6r
10	0-30	Auger Refusal at 55cm	7.5YR 2.5/2 Very dark brown	Clay loam	Strong									4dr
	30-55		7.5YR 3/3 Dark brown	Medium to Heavy clay	Massive			Common & Faint	Present	0-5	Low	Low	Low	

Pit 2

Site: 40768 Tasman Hwy

Date: 6 August 2021

Pit: 1

Flood Risk: Moderate

Slope: 0-5%

Morphology: gentle easterly aspect

Surface condition: Pasture.

Table A3-3: Profile description

DEPTH (CM)		MUNSELL COLOUR		STRUCTURE	TEXTURE	GRAVEL	MOTTLE	COMMENTS
0	30	7.5YR	2.5/3	M	CL	35-50%	-	Gravel from 15cm
30	40	7.5YR	3/3	S	LC	35-50%	5	Auger refusal at 40cm

Duplex profile with moderately-structured soils with a Clay Loam at the surface and a Medium Clay at depth. Gravel was present throughout profile from 15cm. Auger refusal occurred at 40cm, which is likely due to sub-surface stone. Common & distinct mottling occurred from 30cm which is an indicator of poor drainage, surface ponding was also identified nearby. Poor drainage characteristics dictate a Land Capability Class of 5.

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Appendix 4: Photos

Figure A4-1: Example of surface stone within the area assessed as Land Capability Class 5+6 in the eastern corner of the title.

Figure A4- 2: Example of existing pasture.

Figure A4-3: Example of surface water ponding identified in Class 5 areas.

Figure A4- 4: Example of surface stone identified in Class 4 area.

Figure A4-5: View from eastern area of the title looking north west towards the two dwellings.

Figure A4-5: Example of surface stone present in the main Class 5+6 assessed area.

Figure A4-6: View from the subject title looking west at dryland grazing land on the western side of the Tasman Highway.

Figure A4-7: View from the subject title looking south at the dwelling located on CT 177465/2, which is zoned Rural Living.

Appendix 5: Potential conflict issues

Tables A5-1 and A5-2 describe the frequency and intensity of adjacent (and potential) activities (grazing and vines) to the proposed development area and the associated issues likely to constrain this use. These are a broad guide only and site specific, cultivar specific, and seasonal variations occur. Aside from these specific issues associated with grazing and vines, Learmonth et. al. (2007) also provide a comprehensive list of potential land use conflict issues (see Figure A5-1). Tables A5-1 and A5-2 provide the rationale behind the recommended minimum buffers contained in Table A8-1 (Appendix 8).

Table A5-1: Farming activity – grazing

MANAGEMENT ACTIVITY	ISSUES LIKELY TO CONSTRAIN THE ACTIVITY	COMMENT
Pasture sowing Herbicide spraying Cultivation Drilling	Spray drift, noise, dust	Ground based or aerial – often very early in the morning
Grazing	Livestock trespass, noise at certain time e.g., weaning calves	
Forage conservation, including mowing, raking, baling, carting bales	Noise, dust	
Fertiliser spreading	Noise, odour	
Insecticide spraying	Spray drift, noise	Ground based or aerial – often very early in the morning

Table A5-2: Farming activity – Vines (after establishment)

MANAGEMENT ACTIVITY	ISSUES LIKELY TO CONSTRAIN THE ACTIVITY	COMMENT
Fungicide spraying (Sep – Mar, max 10 passes)	Spray drift, noise	Ground based, likely to be very early in the morning
Herbicide spraying (Autumn and summer, 2-3 passes)	Spray drift, noise	Ground based, likely to be very early in the morning
Irrigation	Spray drift, noise	Potentially turbid and not potable
Frost fans	Noise	
Pruning, training (Jun – Sep)	Noise (tractor and traffic)	By hand or machinery
Harvesting (Mar – May)	Noise (tractor and traffic)	By hand or machinery

Table A5-3: Typical Land Use Conflict issues

Living and Working in Rural Areas. A handbook for managing land use conflict issues on the NSW North Coast. Learmonth, R., Whitehead, R., Boyd, B., and Fletcher, S. n.d.

Table 1. Typical rural land use conflict issues in the north coast region

Issue	Explanation
Absentee landholders	Neighbours may be relied upon to manage issues such as bush fires, straying stock, trespassers etc. while the absentee landholder is at work or away.
Access	Traditional or informal 'agreements' for access between farms and to parts of farms may break down with the arrival of new people.
Catchment management	Design, funding and implementation of land, water and vegetatin management plans are complicated with larger numbers of rural land-holders with differing perspectives and values.
Clearing	Neighbours may object to the clearing of trees, especially when it is done apparently without approvals or impacts on habitat areas or local amenity.
Cooperation	Lack of mutual co-operation through the inability or unwillingness on behalf individuals to contribute may curtail or limit traditional work sharing practices on-farm or in the rural community.
Dogs	Stray domestic dogs and wild dogs attacking livestock and wildlife and causing a nuisance.
Drainage	Blocking or changing drainage systems through a lack of maintenance or failure to cooperate and not respect the rights of others.
Dust	Generated by farm and extractive industry operations including cultivating, fallow (bare) ground, farm vehicles, livestock yards, feed milling, fertiliser spreading etc.
Dwellings	Urban or residential dwellings located too close to or affecting an existing rural pursuit or routine land use practice.
Electric fences	Electric shocks to children, horses and dogs. Public safety issues.
Fencing	Disagreement about maintenance, replacement, design and cost.
Fire	Risk of fire escaping and entering neighbouring property. Lack of knowledge of fire issues and the role of the Rural Fire Service.
Firearms	Disturbance, maiming and killing of livestock and pest animals, illegal use and risk to personal safety.
Flies	Spread from animal enclosures or manure and breeding areas.
Heritage management	Destruction and poor management of indigenous and non indigenous cultural artefacts, structures and sites.
Lights	Bright lights associated with night loading, security etc.
Litter	Injury and poisoning of livestock via wind blown and dumped waste. Damage to equipment and machinery. Amenity impacts.
Noise	From farm machinery, scare guns, low flying agricultural aircraft, livestock weaning and feeding, and irrigation pumps.
Odours	Odours arising from piggeries, feedlots, dairies, poultry, sprays, fertiliser, manure spreading, silage, burning carcases/crop residues.
Pesticides	Perceived and real health and environmental concerns over the use, storage and disposal of pesticides as well as spray drift.
Poisoning	Deliberate poisoning and destruction of trees/plants. Spray drift onto non-target plants. Pesticide or poison uptake by livestock and human health risks.
Pollution	Water resources contaminated by effluent, chemicals, pesticides, nutrients and air borne particulates.
Roads	Cost and standards of maintenance, slow/wide farm machinery, livestock droving and manure.
Smoke	From the burning of crop residues, scrub, pasture and windrows.
Soil erosion	Loss of soil and pollution of water ways from unsustainable practices or exposed soils. Lack of adequate groundcover or soil protection.
Straying livestock	Fence damage, spread of disease, damage to crops, gardens and bush/rainforest regeneration.
Theft/vandalism	Interference with crops, livestock, fodder, machinery and equipment.
Tree removal	Removal of native vegetation without appropriate approvals. Removal of icon trees and vegetation.
Trespass	Entering properties unlawfully and without agreement.
Visual/amenity	Loss of amenity as a result of reflective structures (igloos, hail netting), windbreaks plantings (loss of
Water	Competition for limited water supplies, compliance with water regulations, building of dams, changes to flows. Stock access to waterways. Riparian zone management.
Weeds	Lack of weed control particularly noxious weeds, by landholders.

Based on: Smith, RJ (2003) Rural Land Use Conflict: Review of Management Techniques – Final Report to Lismore Living Centres (PlanningNSW).

Appendix 6: Farm Business Scale Characteristics

Table A6-1 summarises a number of key characteristics associated with each scale. No single characteristics is considered definitive and there will be overlap and anomalies. Table 6-1 can be used to determine the scale of the existing farm business and/or the potential scale based on the characteristics.

Table A6-1: Farm Business Scale Characteristics

INDICATIVE CHARACTERISTICS	COMMERCIAL SCALE	SMALL SCALE PRODUCER	HOBBY SCALE	LIFESTYLE SCALE
Relevance for primary production	Dominant activity associated with the farm business is primary production. Likely to be viable. Capacity to produce sufficient profit for a family and full-time employment of one person.	Dominant activity associated with the farm business is primary production. Likely to be viable in time, potentially through cooperative arrangements, higher value products, downstream processing, complementary food, recreation, hospitality, tourism or value adding. If running livestock, then current carrying capacity is at least average DSE/ha for their area.	Land used for some primary production. Occupant/family needs to be supported by non-primary production income and/or off-farm income.	Little or no relevance for primary production.
Producer aspirations	Shows commercial intent in primary production. Have a marketing strategy. Business focused with production decisions made on economic principles.	Shows commercial intent in primary production. Have a marketing strategy. Business focused with production decisions made on economic principles. Work with other small scale producers to share marketing and resources.	Profitability is not a high priority in primary production decisions and viability cannot be demonstrated.	Profitability has very low relevance. Lifestyle is the dominant motivation for any primary production activity.
Labour (FTE) for the primary production	At least 1 FTE	Likely to be at least 0.5 FTE	Likely to be less than 0.5 FTE	
Indicative Gross Income from Primary Production	Greater than $300 000 from the farm business with additional income derived from value adding or off-farm generally comprising less than 50% of total household income.	Generally, between $40 000 and $300 000 from the farm business. Total household income is generally derived from several income streams of which primary production is one. Primary production income often comprises less than 50% of total household income.	Generally, between $10 000 - $40 000 from the farm business with additional household income comprising more than 50% of total household income.	<$10 000 from the farm business.
Land and Water resources (general characteristics)	Total land area for mixed farming is likely to be 200ha-500ha or more, depending on Land Capability, water resources and farm business activity mix. Land area for vineyards, orchards or berries is likely to be at least 10ha-20ha and likely more.	For livestock producers generally 40-80ha in one or two titles. Generally, 8-40 ha in area and a single title for other ventures. Water for irrigation likely, but it depends on the farm business activity.	Generally, 8-40 ha in area and a single title. Water for irrigation less likely, but possible, depending on location and cost of supply.	Generally, 1-8 ha in area. Land Capability variable. Water for irrigation highly unlikely. No capacity to contribute to a commercial

INDICATIVE CHARACTERISTICS	COMMERCIAL SCALE	SMALL SCALE PRODUCER	HOBBY SCALE	LIFESTYLE SCALE
	Land area generally comprising of a number of titles farmed together. Irrigation is generally necessary for smaller land areas to be viable and/or for higher value products.	The land and/or water resources associated with the farm business may have the capacity to contribute to a 'commercial scale' farm business depending on the degree of constraint.	The land and/or water resources associated with the title may have the capacity to contribute to a 'commercial scale' farm business depending on the degree of constraint.	scale farm business due to constraining factors.
Connectivity	Few constraints likely. Likely to be well connected to other unconstrained titles, Expansion and/or intensification feasible.	Some constraints likely. Residences on majority of adjacent titles. Low connectivity to unconstrained titles.	Some constraints likely. Residences on majority of adjacent titles. Low connectivity to unconstrained titles.	Moderate to significant constraints likely. Residences on majority of adjacent titles. Little or no connectivity to unconstrained titles.
Registrations	Are recognised by ATO as Primary Producer. Livestock producers will have a PIC and be registered for NLIS and LPA. All producers are likely to be registered for GST. Would be part of QA schemes, depending on products and markets.	Are recognised by ATO as a Primary Producer. Livestock producers will have a PIC and be registered for NLIS and LPA. All producers are likely to be registered for GST. Would be part of QA schemes, depending on products and markets.	May or may not be recognised by ATO as primary producer. Livestock producers will have a PIC and be registered for NLIS and LPA; may be registered for GST and may be part of any QA schemes.	Are not recognised by ATO as primary producer. May not have a PIC or be registered for NLIS; are not registered for GST and unlikely to be part of any QA schemes.
Role of a dwelling	Dwelling is subservient to the primary production.	Dwelling is convenient/preferred to facilitate improved productivity. Dwelling assists with security.	Dwelling is convenient/preferred for lifestyle reasons.	Dwelling is the dominant activity on the title.

Appendix 7: Characteristics of a 'Commercial' Scale Farm Business Activity

It is very difficult to provide an assessment of the commercial viability of a single farm business activity as generally more than one farm business activity contributes to a farming business. Table A7-1 is designed to describe the general characteristics of a commercial scale farm business activity in Tasmania. Table A7-1 can be used to characterise land and water resources to determine whether they have the capacity to contribute to a commercial scale farm business activity. For example, a farming business with less than 4ha of cherries is likely to need additional farming activities to be viable.

Table A7-1: Resource Requirements for Various Land Uses

RESOURCE	LIVESTOCK			BROAD ACRE CROPS		VEGETABLES		BERRIES	ORCHARD FRUITS & VINES	NURSERIES & CUT FLOWERS	FORESTRY PLANTATIONS
	SHEEP	CATTLE	DAIRY	CEREALS	OTHERS	PROCESSED	FRESH MARKET				
Land Capability	LC generally 3–6.	LC generally 3–5/6.	LC generally 3–5.	LC 1–4.	LC 1–4.	LC 1–4.	LC 1–4.	LC 1–4/5.	LC 1–4/5.	LC 1–4 or N/A	LC 4–6
Minimum paddock sizes	No minimum	No minimum	To suit grazing system.	10–15ha min	5–10ha min.	10ha min.	10ha min.	2–4ha.	2–5ha.	2–4ha min.	10–20ha min.
Size for a 'viable' business if conducted as single farm business activity (1)	Generally 3,000–10,000 dse -area depends on rainfall). (2)		Capacity for at least 350 milkers.(3)	Broadacre cropping will be a mix of crops in rotation with pasture and livestock. The area required for viability is highly variable.				4–10ha.	10–30ha.	5–10ha.	TBC
Irrigation water	Not essential	Not essential	Preferable 4–6ML/ha.	Not necessary.	Mostly necessary, 2–3 ML/ha.	Necessary, 2–6ML/ha.	Necessary, 2–6ML/ha.	Necessary, 1–3ML/ha.	Necessary, 2–3ML/ha.	Necessary, small quantity.	Not required.
Climate specifications	Lower rainfall preferred for wool.	No preferences.	High rainfall (or irrigation).	Susceptible to spring frosts. Difficult to harvest in humid coastal conditions.	Susceptible to spring frosts.	Susceptible to spring frosts.	Susceptible to spring frosts.	High rainfall (or irrigation).	Susceptible to spring frosts for vines. Susceptible to summer rains for cherries. Susceptible to disease in high humidity in March for vines.	Preferably low frost risk area.	Rainfall above 700–800 mm.

RESOURCE	LIVESTOCK			BROAD ACRE CROPS		VEGETABLES		BERRIES	ORCHARD FRUITS & VINES	NURSERIES & CUT FLOWERS	FORESTRY PLANTATIONS
	SHEEP	CATTLE	DAIRY	CEREALS	OTHERS	PROCESSED	FRESH MARKET				
Infrastructure	Yards & shearing shed.	Yards, crush, loading ramp.	Dairy shed, yards, crush, loading ramp.	Minimal.	Irrig facilities.	Irrig facilities.	Irrig facilities. Possibly a packing shed unless using a contract packer or growing on contract	Irrig facilities. Packing shed	Irrig facilities. Packing shed	Plastic/glass houses.	Firefighting dams. Access roads
Plant & equipment	Minimal.	Minimal; hay feeding plant.	General purpose tractor, hay/silage feeding.	Tractors & implements.	Tractors & implements.	Tractors & implements.	Tractors & implements.	Tractors & implements.	Tractors & implements.	Small plant.	Contract services.
Market contracts	Not required.	Not required.	Necessary.	Not required.	Generally required.	Necessary.	Highly preferred.	Desired.	Desired.	Contracts preferable.	Varies.
Labour	Medium.	Low.	High.	Low.	Low.	Low.	Variable/medium.	High at times.	High at times.	High at times.	Low.
Local services	Shearers.	Vet.	Vet, dairy shed technician.	Agronomist, contractors.	Agronomist, contractors.	Agronomist, contractors.	Agronomist, contractors.	Pickers.	Pickers.	Pickers.	Contractors.
Regional suitability	Dryer areas good for wool. All areas suitable; larger farm sizes needed for viability.	All areas suitable.	Economics dictate large area necessary. Needs high rainfall or large water resource for irrigation.	Generally large areas, so need larger paddocks and larger farms.	Generally large areas, so need larger paddocks and larger farms.	Medium sized paddocks & farms; area for crop rotations and irrigation.	Medium sized paddocks & farms; area for crop rotations and irrigation.	Specific site requirements; proximity to markets and transport/carriers.	Specific site requirements; potentially available in most municipalities.	Proximity to markets is important.	Low rainfall areas less preferred.

Table notes:

1. The Agricultural Land Mapping Project (ALMP) (Dept of Justice, 2017) defined minimum threshold titles sizes that could potentially sustain a standalone agricultural farm business activity. The ALMP have 333ha for a livestock farm business activity, 40ha for dairy, 133ha for cereals and other broadacre crops, 25ha for processed and fresh market vegetable, 10ha for berries, other fruits & vines and nurseries and cut flowers and no specified minimum area for plantation forestry.
2. Kynetec (March 2021) Farm Intel Information brochure uses 100ha as the minimum farm area for livestock
3. Kynetec (March 2021) Farm Intel Information brochure uses 75ha as the minimum farm area for dairy.

Appendix 8: Separation distances and buffers

Farm business activity scale (RMCG 2022 and included as Appendix 6) in combination with Table A8-1 can be used to provide guidance on appropriate separation distances when there are no additional mitigating factors. Appendix 5 provides guidance on constraints and potential conflict issues in relation to the relevant current and potential farming activities in proximity to a sensitive use.

Table A8-1: Separation distances

RESOURCE	LIVESTOCK			BROAD ACRE CROPS		VEGETABLES		BERRIES	ORCHARD FRUITS & VINES	NURSERIES & CUT FLOWERS	FORESTRY PLANTATIONS
	SHEEP	CATTLE	DAIRY	CEREALS	OTHERS	PROCESSED	FRESH MARKET				
Recommended min. buffer for individual dwellings (1)	50m to dryland and 100m to irrigated grazing area (3)	50m to dryland and 100m to irrigated grazing area.(3).	50m to dryland and, 100m to irrigated grazing, 300m to dairy shed and 250m to effluent storage or continuous application areas (2).	200m to crop.	200m to crop.	200m to crop.	200m to crop.	200m to crop.	200m to crop.	200m to crop.	100m from crop for aerial spraying.
Recommended min. buffer for residential areas (1)	50m to dryland and 100m to irrigated grazing area (3)	50m to dryland and 100m to irrigated grazing area.(3)	50m to dryland and, 100m to irrigated grazing, 300m to dairy shed and 250m to effluent storage or continuous application areas (2).	300m to crop.	300m to crop.	300m to crop.	300m to crop.	300m to crop.	300m to crop.	300m to crop.	Site specific (1).

Table notes:

4. From (Learmonth, Whitehead, Boyd & Fletcher, 2007). These are industry specific recommended setbacks which do not necessarily align with Planning Scheme Setback requirements. Council should ensure they are aware of attenuation setback requirements for specific activities.
5. The State Dairy Effluent Working Group, 1997 uses 50m to grazing area, 250m to dairy shed and 300m to effluent storage or continuous application areas. The State Planning Scheme uses 300m to diary shed and 250m to effluent lagoon
6. Learmonth, Whitehead, Boyd & Fletcher, 2007 uses 50m from grazing areas.

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