

Agricultural Report

Report for:

Tempus Village Management Pty Ltd.
C/- Mr Les Walden.
Level 10, 234 George St.
Sydney, NSW, 2000.

Property Location:

17.9ha of CT 102376/1 (151.5ha), Kelvedon, Swansea.

Prepared by:

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Date:

20th July 2020



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Summary

Client:	Tempus Village Management Pty Ltd C/- Mr Les Walden
Property identification:	17.9ha of CT 102376/1 (151.5ha), Kelvedon, Swansea in the Significant Agriculture Zone, (<i>Glamorgan-Spring Bay Interim Planning Scheme, 2015</i>).
Proposal:	Proposed rezoning of 17.9ha of CT 102376/1 (151.5ha) from Significant Agriculture to an alternate zoning to facilitate the development of an aged care facility.
Purpose:	To assess the agricultural aspects of the proposal in relation to the <i>Protection of Agricultural Land 2009</i> (PAL Policy).
Published Land Capability:	Published Land Capability at 1:100 000 shows the land associated with the 17.9ha as Class 5 based on modelled data. On site assessment by Hancl (2019) determined the Land Capability to be a mix of Class 5, 5a, 5g and 6.
Assessment comments:	A site visit was undertaken on 8 th October 2019 to confirm Hancl's Land Capability results and consider the agricultural aspects of the Tempus proposal. This report provides my opinion based on the desktop information, site visit, information received from the landholder and the proponents, and discussions with relevant experts and authorities.
Conclusion:	It is my assessment that the proposed Tempus block does not have viticulture or other horticulture potential which can be developed in an economically viable manner to be able to contribute to a commercial scale enterprise. The most productive and most appropriate agricultural use for this land is sheep grazing currently and in the foreseeable future. Land Capability is predominantly Class 5 with some Class 6 with the majority of the subject land limited by surface and subsurface stone. The land can support approximately 4DSE/ha and this is subject to seasonal variations. The loss of approximately 18ha of this land is considered insignificant for the Significant Agriculture zone, the current productivity of the farming operation and the region.

Any use or development on adjoining land including the Tempus block has the potential to (a) impact, or (b) ultimately constrain the existing vineyard activity. The degree that the vineyard activity will be fettered, will depend upon a range of potential mitigating factors. It has been noted that the rezoning, Master Planning and detailed planning for the Tempus proposal provides a number of mitigating factors, and that overall the combination of those factors plus appropriate mitigation measures that can be applied for the majority of the vineyard activities which have the potential to impact on residential amenity, will satisfy the relevant principles of the PAL Policy. A particular point of conflict between the vineyard activity and the proposed sensitive use may be the use of gas guns or noisy bird scaring devices if these were to be proposed in the future. However, the existing circumstances of the Gala vineyard would appear to constrain, if not prevent, the use of gas guns. There are alternatives that can be implemented, as they are in other vineyards.

The proposed rezoning does not create any new constraint because the area likely to be impacted by the Tempus proposal corresponds with that which will be impacted by development of the approved strata lots and associated dwellings within the Piermont complex. It can therefore be concluded that the proposed rezoning is consistent with the PAL Policy (including principles 1 and 5).

Assessment by:

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INTRODUCTION

The subject land is located approximately 2km south of Swansea on the east coast of Tasmania. The land is currently zoned Significant Agriculture (*Glamorgan-Spring Bay Interim Planning Scheme, 2015*).

The proposal seeks to rezone 17.9ha of CT 102376/1 (151.5ha), Kelvedon from Significant Agriculture to an alternate zoning to facilitate the development of an aged care facility.

AK Consultants were engaged in September 2019¹ to review initial agricultural assessment work undertaken by Hancl including a Land Capability assessment and consider the *Protection of Agricultural Land 2009* (PAL Policy) principles. The brief was subsequently modified to provide an agricultural assessment report within a limited time frame. The 'description' contained in this report is therefore brief and assumes a high level of background knowledge by the audience. This report summarises my findings and provides an independent assessment of whether the proposed development meets the principles of the PAL Policy.

A site visit was undertaken on 8th October 2019 to confirm Hancl's Land Capability results and consider the agricultural aspects of the Tempus proposal. This report provides my opinion based on the desktop information, site visit, information received from the landholder and the proponents, and discussions with relevant experts and authorities. The majority of the work was based on information obtained in late 2019. This report was subsequently finalised in July 2020.

¹ Initial brief provided by Neil Shephard on 26th September 2019, was subsequently modified on 30th October 2019. Reporting was put on hold in Nov 2019, with a request to finalise provided in July 2020, culminating in this Agricultural assessment and report.

ASSESSMENT REQUIREMENTS

The only relevant principles in the PAL Policy are principles 1, 5, 7, and 9. In essence these principles seek to protect the conversion of agricultural land to a non-agricultural use and seek to protect existing and potential agricultural use from constraint from land use conflict from non-agricultural use.

The agricultural assessment therefore needs to consider:

- a. What is the existing and/or potential agricultural use of the Tempus block (including potential for bringing irrigation water resources to the block).
- b. How does removal of this land from the original title and the farming operation affect the overall productivity of the land which is currently farmed as “Kelvedon”.
- c. How important is this land for agricultural use in a regional context.
- d. What is the existing and/or potential agricultural use of the land surrounding the Tempus block on all sides (including potential for bringing irrigation water resources to the surrounding land).
- e. What are the appropriate separation distances / buffers between the proposed sensitive use on the Tempus block and existing and potential agricultural use to minimise the risk of constraining the agricultural use.

DESCRIPTION

CHARACTERISTICS OF LAND – SIZE, ASPECT, ALTITUDE, LAND CAPABILITY

The subject land is 17.9ha in area. It is dominated by a central dolerite ridgeline which forms the northern foothills of the coastal hill slopes extending to the south on the Kelvedon property. The subject land has a NW – N – NE aspect with altitude ranging from approximately 25m to 60m above sea level. Underlying geology is Jurassic dolerite (LIST). Published Land Capability at 1:100,000 shows the land associated with the 17.9ha as Class 5 based on modelled data. On site assessment by Hancl (2019) determined the Land Capability to be a mix of Class 5, 5a, 5g, and 6. The LIST defines Class 5 land as; land unsuited to cropping and with slight to moderate limitations to pastoral use and Class 6 as; land marginally suited to grazing due to severe limitations. The subclass limitation 'a' refers to wind erosion risk and subclass 'g' refers to coarse fragments. More detailed Land Capability Class descriptions are in Appendix 2.

The subject land is part of a larger Kelvedon title (CT 177646/1 owned by J. Cotton. It is farmed in conjunction with the rest of Kelvedon approximately 5,300ha. Kelvedon is comprised of (Hancl 2019):

- 2,829ha of non-agricultural land,
- 1,923ha of run country 4 DSE/ha,
- 511ha of dryland improved and semi-improved pasture 10 DSE/ha,
- 28ha of irrigable land (cropping in rotation with pasture),
- 9ha of irrigated vineyard.

EXISTING USE AND VEGETATION

The entire title is mapped as agricultural land (FAG) by TASVEG 3.0. Google imagery shows there are scattered patches of native vegetation which Hancl (2019) describes as *woodland consisting mainly of white gums, peppermint gums, black wattle, gorse, and prickly box*. The site visit confirmed the woodlands as being mainly associated with the Class 6 land. There are no threatened flora or fauna records, associated with the subject land, although there is an eastern barred bandicoot record within 25m of the north eastern boundary. Eastern barred bandicoots are 'vulnerable' under the National Schedules of the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC 1999). Natural values are used as an indicator of potential limitations for agricultural use and have not been assessed on the title.

The existing use of the Tempus land is dryland grazing (4DSE/ha based on Hancl's assessment).

EXISTING AND POTENTIAL IRRIGATION WATER RESOURCES

The land is within the Swan Irrigation District, however, the pipeline does not extend this far and there are no Scheme Irrigation Water Rights associated with the land (Tasmanian Irrigation 2017 cited in Hancl 2019).

According to DPIPWE's Water Information System of Tasmania (WIST) there are no water licences or allocations associated with the subject land. The nearest irrigation activity occurs approximately 20m from the south eastern boundary of the Tempus land, on CT 177474/1 which forms part of Kelvedon. Gala Estate vineyard has established approximately 16ha of vineyards on this approximately 30ha title. The water resource for the irrigation is approximately 670m to the west of the western Tempus land boundary. There is a water licence and irrigation allocation associated with a recently constructed dam (#9446) registered as a proposed 94ML dam in the DPIPWE dam registry (LIST). The dam is an instream dam on Smilers Spring Creek. An allocation for 135ML Surety 5 winter take on water licence 8893 in the name of Greenhill AG² is located at the dam wall.

The site visit and Google imagery confirmed this is a newly constructed dam immediately below an existing unregistered dam. The water is pumped from this dam over the saddle immediately south of the Tempus land, to the Gala Estate vineyard. There is an easement in place for the infrastructure. It is common in low rainfall areas to allow 2ML/ha of vineyards for irrigation, 2ML/ha for frost protection and at least two year supply for drought proofing. Hence for the 16ha vineyard there is an adequate water supply. In addition, local knowledge indicates the 16ha is relatively frost free (pers. comms. 8/10/19, J. Cotton).

According to DPIPWE's Water Assessment Tool (WAT)³ there is additional 644ML of high reliability water and 183ML of moderate reliability water available as a winter take for irrigation from an offtake on Stony Creek. Stony Creek is approximately 440m to the north of the unregistered dam. The upstream catchment size for Stony Creek is 1,880ha compared to 584ha for Smilers Spring Creek. Winter takes for irrigation are more reliable if sourced from a larger catchment particularly during periods of drought. To utilise this water for summer, a licence would need to be applied for and a storage would need to be constructed. Based on the 10m contours there appears to be a feasible dam site (approximately 750ML) on Smilers Spring Creek in proximity to the unregistered dam, although further research would need to be undertaken to confirm the feasibility of this site.

Although there are no existing water resources associated with the Tempus land there is potential to bring irrigation water to the Tempus land.

OTHER PRIMARY INDUSTRY ACTIVITY

There is a Mineral Occurrence (Deposit ID 8101) (LIST) immediately adjacent to the north western boundary of the Tempus land, on CT 240461/1 which is part of Kelvedon. This relates to a bluestone quarry which is no longer operational (pers. comms. 8/10/19 J. Cotton). There are no other mining leases or quarries in proximity. The Tempus land is potentially suitable for quarrying, however given the adjacent quarry is no longer operational the likelihood of this is low.

SURROUNDING TITLES AND USE

Surrounding land to the south and west are also zoned 'Significant Agriculture'. There are three adjacent titles approximately 1.7ha, 30ha, and 656ha. Adjacent to the northern boundary is Mount Pleasant Road and adjacent to the eastern boundary is the Tasman Highway. The Mount Pleasant

² Greenhill is associated with Gala Estate.

³ With further verification from Bryce Graham (DPIPWE) 16/10/19.

Road reserve traverses the Tempus land. Land to the north and east is zoned 'Rural Resource' and there is single adjacent title (CT 167109/1500) which is 92ha.

Land immediately adjacent to a portion of the southern and eastern boundaries of the Tempus land (i.e., the 30ha CT 177474/1) has the existing, recently established Gala Estate vineyard. To the west and south west is the large (656ha CT 177646/1) Kelvedon title. This land is on a stony exposed ridgeline and has similar characteristics to the Tempus block. It is limited to grazing with a carrying capacity of 4DSE/ha. Land on the western border is also stony and has the same limitations for agriculture. Land further to the west has access to irrigation water from the potential large dam site and is irrigable. This irrigable land is approximately 130m from the western boundary of the Tempus block. Adjacent to the north western boundary of the Tempus land, is the 1.6ha title CT 240461/1 which is occupied by the rehabilitating quarry. It is farmed as part of Kelvedon.

The northern portion of the Tempus eastern boundary fronts on to the highway. To the east of the highway is the 92ha CT 167109/1500 which extends to the north and borders the Tempus block on the northern side of Mount Pleasant Road. Vegetation is comprised of native grassland complex (GCL) to the east and *Eucalyptus pulchella* forest and woodland (DPU) to the north. Under the *Glamorgan Spring Bay Interim Planning Scheme 2015* this land is subject to the Biodiversity Code. In addition, land within 100m of the Tasman Highway is subject to the Scenic Landscape Corridor. Both these codes provide some limitations for agriculture if Development Applications or other approval processes are required. This is relevant for agriculturally related infrastructure such as pipelines. Land to the north is not utilised for agriculture and has very little potential to be utilised for any form of primary industry activity. Land to the east appears to be mainly woodland with minimal agricultural use. It has very low potential for more intense agriculture, due to the nature of the existing non-agricultural developments on Piermont including approval for staged strata title subdivision for 191 dwelling lots (refer Staged Development Scheme as registered on CT 163570/1).

The nearest existing dwellings are 130m north of the northern boundary and 430m east of the eastern boundary. Both are on land associated with Piermont Retreat restaurant and accommodation.

Hence in summary, land immediately adjacent to the south eastern corner and land 130m west of the western boundary has potential for intensive use. All other land in proximity is either low intensity grazing or has no primary industry potential.

DISCUSSION

This discussion is structured around the matters which need to be considered under the PAL Policy.

a. What is the existing and/or potential agricultural use of the Tempus block (including potential for bringing irrigation water resources to the block).

The existing use is dryland grazing (4DSE/ha based on HancI's assessment).

In addition to the existing 94ML dam there appears to be a feasible dam site (approximately 750ML) to the west on Smilers Spring Creek. Other than Smilers Spring Creek flows, water could be pumped into this potential dam from Stony Creek immediately to the north. The Department's Water Licence information shows there is a 500ML, surety 5 winter take allocation from Stony which could be used to fill a larger dam.

Gala Estate vineyard currently provides irrigation water from the dam on Smilers Spring Creek to the 16ha vineyard adjacent to the Tasman Highway.

Although portions of the Tempus block have similar characteristics to portions of the newly established Gala Estate vineyard, these areas are small and fragmented. In total on the Tempus block there is likely to be less than 5ha, with the largest single area being less than 1ha of land that could be developed for horticulture. While the Tempus block is closer to the potential irrigation source than the Gala Estate vineyard, it would not be feasible to develop it for horticultural activities that would contribute to a commercial scale operation due to the Land Capability limitations and the lack of economies of scale caused by the fragmentation of suitable land.

LIST enterprise suitability indicates portions of the Tempus block is suitable and highly suitable for table grapes and suitable for sparkling wine grapes, however, HancI's Land Capability assessment and the site visit on the 9th October confirmed the suitable areas are small in extent and fragmented in distribution.

The Tempus block is limited for agricultural use currently and in the future by Land Capability. At best the 17.9ha can support dryland grazing at 4DSE/ha. This is a very low stocking rate compared to say 55DSE/ha for irrigated improved pasture⁴ and in times of low rainfall the stocking rate will be further reduced. Improving the productivity of this land through alternative enterprises or irrigation development is not considered to be economically viable.

b. How does removal of this land from the original title and the farming operation affect the overall productivity of the land which is currently farmed as "Kelvedon".

'Kelvedon' is a very large holding comprised of many titles, however, the majority of the land is very limited for agricultural use due to Land Capability. There is scope, however, for further intensification on the more arable land, where an economical irrigation water resource can be developed. This is evident to the south on CT 108120/2 (307ha) and on the recently established

⁴ MLA pasture management case study 'Landfall' available on line <https://www.mla.com.au/Extension-training-and-tools/Producer-case-studies/Tackling-productivity-by-managing-pastures-more-effectively>

Gala Estate vineyard. The Gala Estate vineyard development is of a scale to be a potentially viable⁵ standalone enterprise, however, our understanding is that this is an extension of the Gala Estate plantings at Cranbrook. The site has been selected primarily for minimal frost exposure and tourism exposure. It is my understanding that Gala Estate's intention is to capitalise on the location by establishing a cellar door to the west of the plantings on the hillslope (pers. comms. 8/10/19 J Cotton).

The boundary between the Tempus block and the Gala Estate vineyard was selected on land suitable for the Gala Estate vineyard plantings and cellar door, prior to the Tempus development proposal being considered. If any of the immediately adjacent Tempus block was suitable it would have been included in the Gala Estate subdivision.

Kelvedon also has vineyard plantings and these are further south. There are sufficient land and water resources associated with the 'Kelvedon' vineyard plantings to expand these plantings further (pers. comms. 8/10/19 J Cotton). The Gala Estate vineyard and the development of the associated irrigation water resources are an attractive diversification for Gala Estate. Kelvedon has not developed these in this location because they have more economically advantageous development options (pers. comms. 8/10/19 J Cotton) in proximity to their current plantings. There is scope to increase the water storage above the Gala Estate dam on Smilers Spring Creek and install pivot circles in proximity to the dam. This area on 'Kelvedon' is attractive for irrigated lucerne, brassicas, and fodder crops. The major issue in developing the water resource in this location is that the irrigable land is inundated by the water storage; hence a balance needs to be struck between water storage size and retention of irrigable land. An irrigation water allocation has been lodged and approved by the Department with offtakes from Smilers Spring Creek and Stony River, as the first step in developing this part of the farm for irrigation.

Generally, economies of scale dictate that if there is a larger irrigation water resource, then retaining all arable land in proximity to the water resource is an economic imperative. If/when the irrigation water resource and pivot circles are developed, none of the Tempus block would be included in that development as the Land Capability on the Tempus block does not lend itself to irrigated agriculture.

Kelvedon is approximately 5,300ha, of which 1,923ha is run country supporting 4DSE/ha (Hanc 2019). The Tempus block is 0.9% of the run country on Kelvedon. The loss of this land and the associated productive capacity is insignificant at the property scale.

c. How important is this land for agricultural use in a regional context?

The land is zoned 'Significant Agriculture', ostensibly because originally the Swan Scheme was going to extend this far south. However, it is appropriate to consider any land or irrigation water which has the potential to contribute to a commercially viable holding to be included in the 'Significant Agriculture' zone.

⁵ In our opinion a viable farm is one producing sufficient income to provide for a family and provide full time employment for one person. In our experience, a farm with a turnover of less than \$200,000 is often not independently viable.

Whilst the Tempus block does contribute to a commercially viable agricultural operation it represents 0.9% of the area used for the merino fine wool operation. The loss of this land and the associated productive capacity is insignificant in the regional context.

d. What is the existing and/or potential agricultural use of the land surrounding the Tempus block on all sides (including potential for bringing irrigation water resources to the surrounding land).

Land immediately adjacent to the south eastern corner and land 130m west of the western boundary has potential for intensive use. All other land in proximity is either low intensity grazing or has no primary industry potential.

e. What are the appropriate separation distances / buffers between the proposed sensitive use on the Tempus block and existing and potential agricultural use to minimise the risk of constraining the agricultural use.

A minimum of 200m is normally recommended to minimise the risk of a sensitive use constraining existing and potential agricultural use. However, there are circumstances where this distance is considered to be insufficient (e.g. frost fans or bird scaring devices or shooting for crop protection). There are also circumstances where this separation distance can be reduced due to mitigating factors such as vegetative buffers, prevailing wind, or landscape features.

Under the *Glamorgan Spring Bay Interim Planning Scheme 2015* the acceptable solutions for setbacks from 'Significant Agriculture' & 'Rural Resource' are 200m & 100m respectively. (P27.4.2 A3). If it can be demonstrated that there is no impact on agriculture, then the performance criteria minimum setbacks of 80m & 40m respectively can be applied.

Agriculture only occurs adjacent to the western and southern boundaries of the Tempus block including the southern portion of the eastern boundary of the Tempus block.

On the western side where there is potential for irrigated cropping, the separation distance between the potential cropping activity and the sensitive use will be greater than 200m. The closest buildings on the Tempus block to the western boundary will be the nursing home, which will be double glazed and temperature controlled with little opportunity for direct exposure to the external environment. There are also staff accommodation units on the western boundary. These are on the north-western aspect of the ridgeline. Agriculture immediately adjacent to the western boundary and the southwestern boundary of the Tempus block is limited by Land Capability to low intensity grazing. With a proposed 2.4m high cyclone fence (Lewis 2019) on these boundaries and the current proposed setback of 80m from the boundary, the risk of common constraining issues between sensitive use and sheep grazing operations, such as dog attacks, is minimal.

The main potential for land use conflict is between the vineyard plantings and the dwellings in the south-eastern corner of the Tempus village. The operations of the vineyard are already constrained by existing and approved (but yet to be developed) sensitive uses on Piermont and by the Tasman Highway and these limit some activities. A list of activities as identified by Adam Greenhill in consultation with John Lewis (30/09/19), which have the potential to impact on residential amenity have been identified (Lewis 2019) and mitigation measures considered (see Appendix 3, Table 1).

Historical land use conflict issues in relation to vineyards have been discussed with Shane Wells (Glamorgan Spring Bay Municipality Planner until Sept 2019, 14/10/19) and Natalie Rogers (Glamorgan Spring Bay Municipality Environmental Health Officer, 14/10/19). Vineyard management practices and suitable mitigation measures have been discussed with Fred Peacock (vineyard expert, 11/10/19) and Jack Cotton (vineyard expert, 16/10/19). Appendix 4 provides a summary of these discussions and the context for my opinion. Current constraining factors have influenced my opinion.

The proposed setback boundaries on the Tempus block are considered sufficient for mitigating the risk of the sensitive use on the Tempus block constraining any agricultural activity in proximity for all adjacent existing and potential agricultural uses. While the vineyard does not presently rely upon bird scaring devices such as gas-guns, there is potential for these to be introduced in the future and for conflict to arise between the use of such devices and sensitive use upon the Tempus block.

The use of bird scaring devices is considered in further detail as existing development in the area creates a fetter on this activity (see Appendix 4 for more detailed discussion), particularly with the approved Piermont strata title subdivisions with yet to be constructed residences. If the gas gun or other noisy bird scaring devices are not permitted, due to their impact on nearby residential amenity, then all potential conflict issues can be adequately addressed to minimise the risk of the Tempus village constraining adjacent agricultural use.

Gas guns are unlikely to be effective in the long-term and additional re-enforcement such as shooting is required to ensure their ongoing effectiveness. Shooting is not permitted within 250m of the Tasman Highway, hence the long-term effectiveness of gas-guns is questionable. An appropriate strategy for Gala Estate vineyard would be to commence with gas-guns and noisy bird scaring devices in the short-term, but to convert to alternative more effective bird controlling methods which could be a mix of netting and other electronic devices. If the Tempus village development were to be approved it is highly likely the Gala Estate vineyard will have already converted to alternative bird scaring devices using methods that will not conflict with the residential amenity of the Tempus sensitive uses by the time the infrastructure is constructed.

CONCLUSIONS

It is my assessment that the proposed Tempus block does not have viticulture or other horticulture potential which can be developed in an economically viable manner to be able to contribute to a commercial scale enterprise. The most productive and most appropriate agricultural use for this land is sheep grazing currently and in the foreseeable future. Land Capability is predominantly Class 5 with some Class 6, with the majority of the subject land limited by surface and subsurface stone. The land can support approximately 4DSE/ha in an average year. The loss of approximately 18ha of this land is considered insignificant for the Significant Agriculture zone, the current productivity of the farming operation, and the region.

Any use or development on adjoining land including the Tempus block has the potential to (a) impact, or (b) ultimately constrain the existing vineyard activity. The degree that the vineyard activity will be fettered, will depend upon a range of potential mitigating factors. It has been noted that the rezoning, Master Planning and detailed planning for the Tempus proposal provides a number of mitigating factors, and that overall the combination of those factors plus appropriate mitigation measures that can be applied for the majority of the vineyard activities, which have the potential to impact on residential amenity, will satisfy the relevant principles of the PAL Policy. A particular point of conflict between the vineyard activity and the proposed sensitive use may be the use of gas guns or noisy bird scaring devices if these were to be proposed in the future. However, the existing circumstances of the Gala vineyard would appear to constrain, if not prevent, the use of gas guns. There are alternatives that can be implemented, as they are in other vineyards.

The proposed rezoning does not create any new constraint because the area likely to be impacted by the Tempus proposal corresponds with that which will be impacted by development of the approved strata lots and associated dwellings within the Piermont complex. It can therefore be concluded that the proposed rezoning is consistent with the PAL Policy (including principles 1 and 5).

REFERENCES

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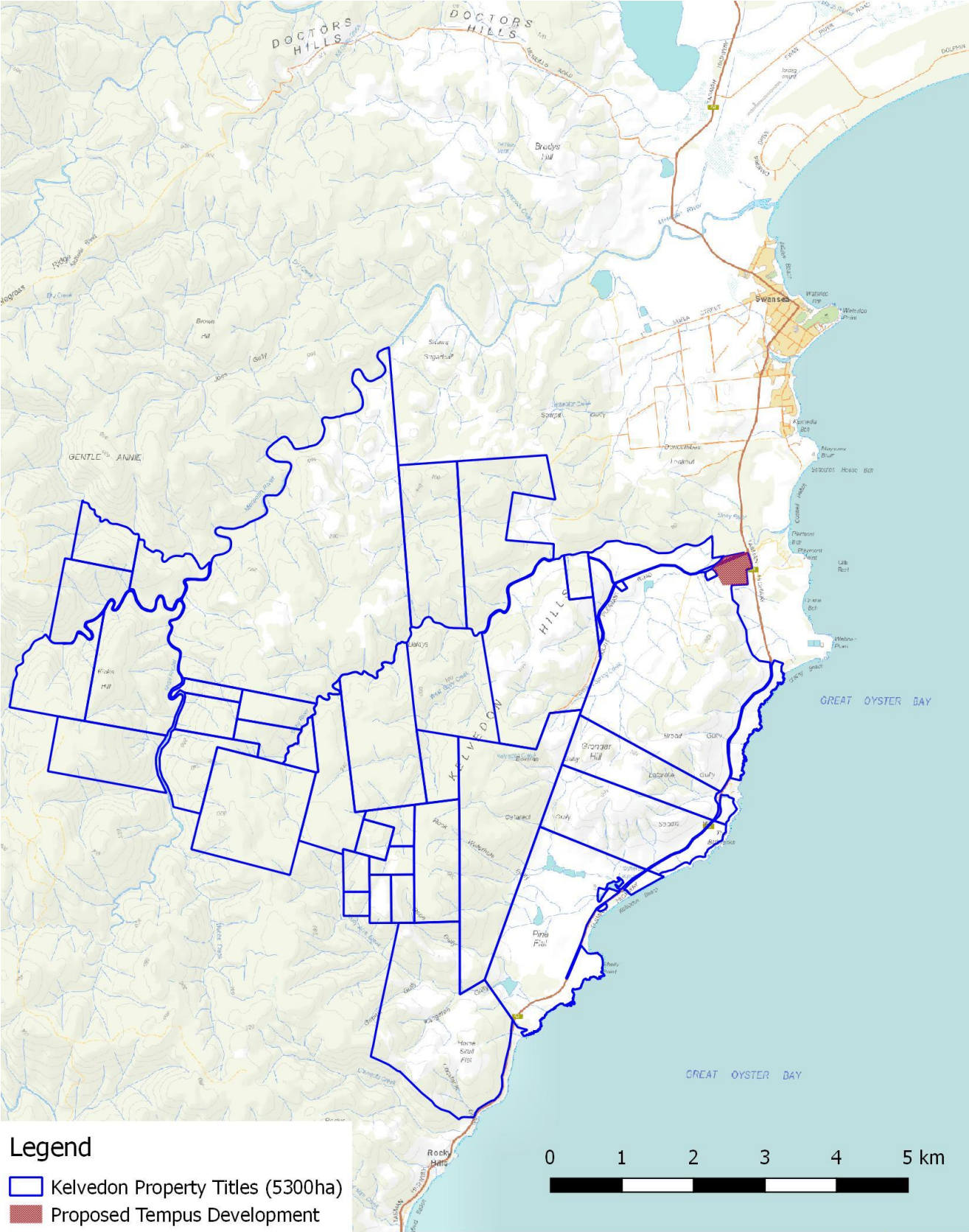


Figure 1. Location (including all Kelvedon titles)
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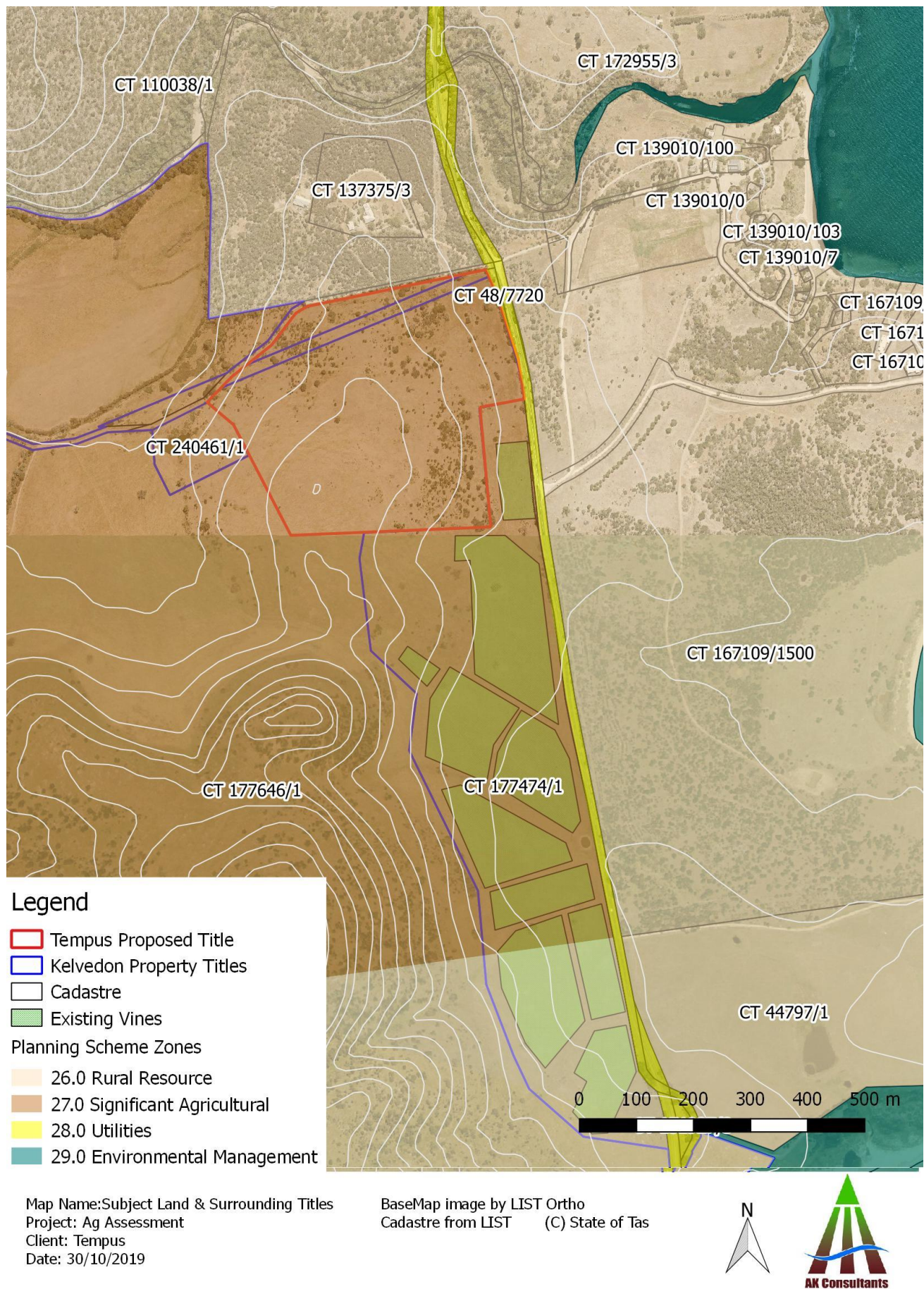
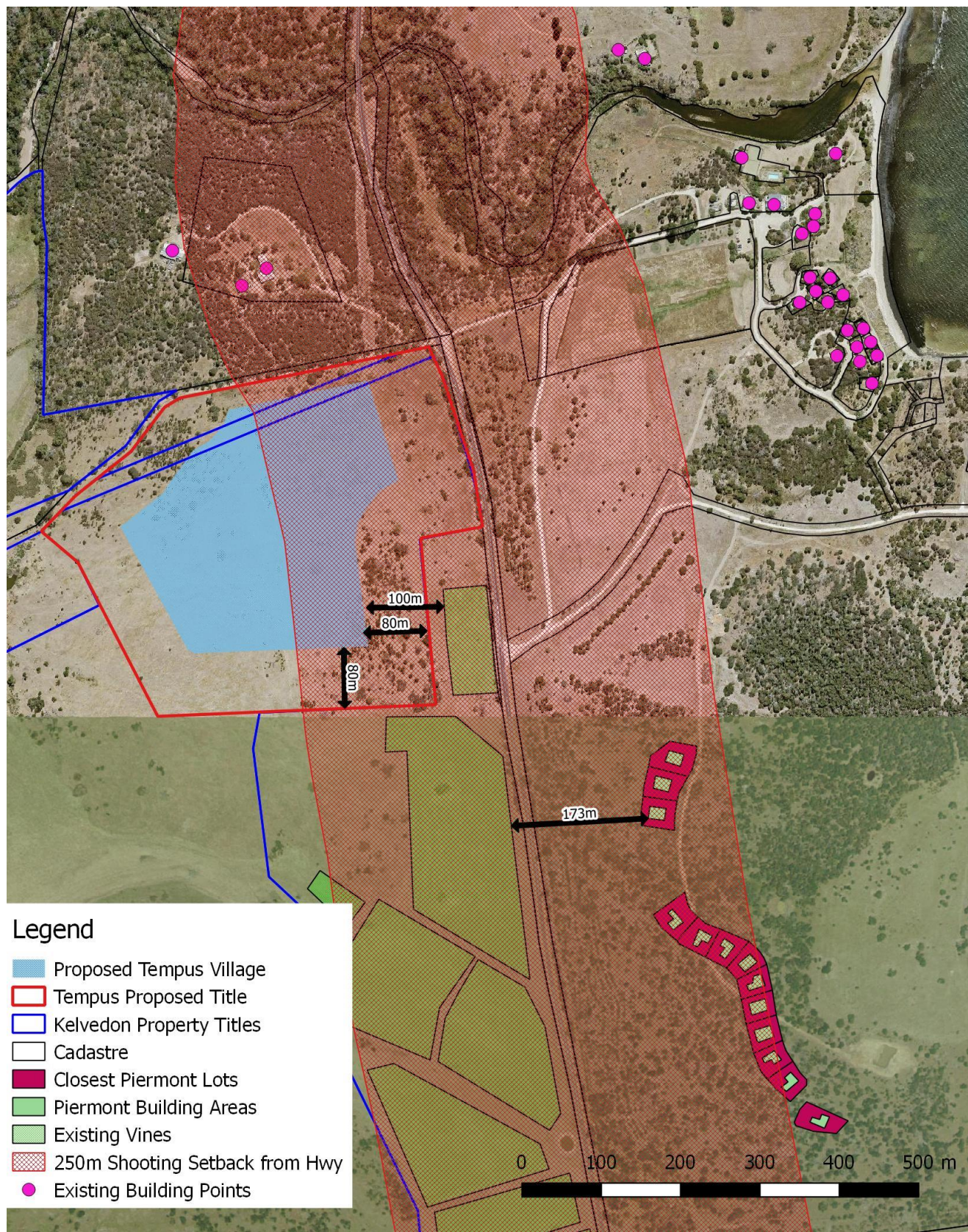


Figure 2. Subject land (17.9 ha), surrounding titles, and zoning.



Map Name: Existing Constraints
 Project: Ag Assessment
 Client: Tempus
 Date: 30/10/2019

BaseMap image by LIST Ortho
 Cadastre from LIST
 Building Points from LIST
 (C) State of Tas



Figure 2. Existing constraints, Tempus proposal, approved Piermont developments (transcribed from Staged Development Scheme.
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APPENDIX 2. LAND CAPABILITY DEFINITIONS FROM GROSE (1999)⁶

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 1 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 years 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.

⁶ Highlighted colour of Class corresponds with LIST Land Capability Class colours.

APPENDIX 3. AGRICULTURAL IMPACT ASSESSMENT

The main potential for land use conflict is between the vineyard plantings and the dwellings in the south-eastern corner of the Tempus village. A list of activities as identified by Adam Greenhill in consultation with John Lewis (30/09/19) which have the potential to impact on residential amenity have been documented (Lewis 2019) and mitigation measures considered (Table 1). Further information on these matters is provided in Appendix 4 - Summary of vineyard management practices and impacts on residential amenity.

Table 1. Agricultural Impact Assessment

Issue ⁷	Reference and further information	Proposed Mitigation
Interference by the residents with the grapes & vines	Tempus residents and visitors may be curious and enjoy the rural experience of walking amongst the vines.	2.4m cyclone mesh fence along interfacing boundaries with no through access. Dense multi species vegetated buffer at least 40m width, with internal fencing to restrict access.
Potential for the residents to introduce phylloxera aphids into the vines	Phylloxera aphids are present in some areas on the mainland. These aphids inject venom which causes a disease. It could be introduced through plant material or shoes or vehicles (pers. comms 11/10/19 Peacock). More recent vineyard plantings use tolerant rootstock to manage this threat in areas where the plantings are at risk from Phylloxera (pers. comms 21/10/19 Peacock).	2.4m cyclone mesh fencing along interfacing boundaries with no through access. Dense multi species vegetated buffer at least 40m width, with internal fencing to restrict access. It is difficult to provide adequate mitigation from this risk, and this risk will increase in future with the proposed cellar door which will attract interstate and/or international visitors. Likewise the existing and proposed Piermont residences present an existing risk.
Potential for complaints concerning:	Often a perceived threat to health (mental and physical) generates fear. Generally there is a misconception amongst urban people around 'peaceful' rural settings and expectations can be unrealistic. Other than noise there may also be visual effects and odours (pers. comms 11/10/19 Peacock). A retirement village by nature is	The closest existing Piermont residence is 510m distant. The proposed and approved Piermont strata titles which are approved for residential development are approximately 170m. The vineyard plantings are within 250m of the Tasman highway. There is already potential for land use conflict. It is in the interest of Gala Estate Vineyard to find alternatives management methods which do not

⁷ Taken from IIA (Lewis 2019). Whilst it is assumed these are the issues as stated by Greenhill and they have been taken verbatim from Lewis 2019, the proposed mitigation measures presented in the Lewis 2019 have been reviewed and adapted by this author.

	a high risk for land-use conflict due to the sensitive nature of the occupants and permanent nature of their presence (pers. comms 14/10/19 Wells).	conflict with existing and previously approved sensitive use.
- Noise & lights during night harvesting	The vineyard is set up for mechanical harvesting and this occurs at night for quality control reasons. Introducing alternative harvesting is not feasible (pers. comms 11/10/19 Peacock).	Separation distance of 100m (80m on Tempus block and 20m on vineyard block). Dense multi species vegetated buffer at least 40m width, with internal fencing to restrict access. 13m elevation between Tempus residences and vineyard block.
- Noise from shooting & gas-guns to scare-off birds	This issue is explored in the next section of this Appendix - Summary of vineyard management practices and impacts on residential amenity in relation to gas guns.	The closest existing Piermont residence is 510m distant. The proposed and approved Piermont strata titles are approximately 170m. It is understood that these are approved for residential development. The vineyard is already constrained by the highway for the use of firearms and by the Stage Development Scheme on Piermont for the use of gas-guns. The use of gas-guns will only be effective for a short period as it will not be possible to provide supplementary shooting.
- Overspray	When spraying the operator 'must not allow an agricultural chemical product to move off target to the extent that it may adversely affect any people, their land, water, plants or stock (DPIPWE, Code of Practice for Ground Spraying Feb 2001), however, practically this is often difficult to manage due complex variables relating to calculating spray drift risk and changing conditions on site during the operation. Introducing sensitive uses in close proximity increases the risk of 'adversely affecting'.	The prevailing wind is from the NW, however, the area is subject to an afternoon sea-breeze from the east, north east. Separation distance of 100m (80m on Tempus block and 20m on vineyard block). Dense multi species vegetated buffer at least 40m width, with internal fencing to restrict access. 13m elevation between Tempus residences and vineyard block.

APPENDIX 4. SUMMARY OF VINEYARD MANAGEMENT PRACTICES AND IMPACTS ON RESIDENTIAL AMENITY

This summary is based on information obtained from Shane Wells (Glamorgan Spring Bay Municipality planner until Sept 2019, 14/10/19) and Natalie Rogers (Glamorgan Spring Bay Municipality Environmental Health Officer, 14/10/19). Vineyard management practices and suitable mitigation measures have been discussed with Fred Peacock (vineyard expert, 11/10/19) and Jack Cotton (vineyard expert, 16/10/19). This summary is designed to inform the discussion around whether the use of gas-guns or other noisy bird scaring devices are appropriate for the recently established Gala Estate Vineyard near Kelvedon, irrespective of whether the Tempus development proceeds.

GAS-GUNS – WHY ARE THEY USED?

On the East Coast of Tasmania gas-guns are used by growers in rural areas, due to their simplicity, low maintenance and comparatively low cost, to protect crops from pests, predominantly birds. They tend to be more effective on the larger native birds such as currawongs, ravens and parrots, but are also effective on starlings. They are less effective on silvereyes. The effectiveness of gas-guns as scaring devices reduces over time depending on the species. Some species such as ravens become tolerant of them quite rapidly. Regardless of the species additional re-enforcement such as shooting is required to ensure their ongoing effectiveness.

For sizable vineyards (e.g. larger than 10ha) bird scaring devices are cheaper and more practical for management purposes. Gala is likely to be subject to the larger native birds, due to its rural setting (pers. comms 11/10/19 Peacock). However, they are also likely to be subject to damage from starling flocks at dawn and dusk as has been the case for Kelvedon vineyard immediately south (pers. comms 16/10/19 Cotton).

GAS-GUNS – HOW ARE THEY USED?

Gas-guns are commonly used in combination with other methods such as netting; with netting being used in the higher risk areas. Usually more than one gas-gun is required. They are mounted on a tripod and rotate after firing. They emit a loud blast at predetermined intervals. They are generally automated to target specific, at risk periods for particular species; for example half an hour at dawn and dusk for starlings or all day long for ravens.

GAS-GUNS – HOW ARE THEY REGULATED?⁸

The blast from the scare gun or other bird scaring devices can create an environmental noise nuisance under EMPCA 1994. In particular:

1. Noise emitted from a bird scaring device has to the potential to result in environmental harm within the meaning of EMPCA.

⁸ Note this is the author's opinion and not a legal opinion. Further clarification and legal input is required to clarify.

2. Environmental harm is defined to mean any adverse effect on the environment and includes an environmental nuisance.
3. Environmental nuisance is defined to mean the emission of a pollutant (here noise) which unreasonably interferes with a person's enjoyment of the environment.
4. S.53 of EMPCA creates an offence relating to causing an environmental nuisance. Noise emitted from a bird scaring device located on Significant Agricultural zoned land and used in connection with a vineyard operation is, however, exempt from the application of this provision by virtue of s.53(4) of EMPCA and s.4 of the Primary Industry Activities Protection Act 1995.
5. The causing of environmental harm (including nuisance), short of constituting an offence, may result in actions being restrained by the planning authority through the issue of an Environment Protection Notice.
6. Whether or not the use of bird scaring devices, and the noise impact experienced upon the adjacent Tempus site, constitutes environmental harm (i.e. the unreasonable interference with a person's enjoyment of the environment) depends upon whether the impact is considered to be reasonable or not. Factors likely to contribute to such a determination include:
 - (a) The time of emission
 - (b) The noise level experienced at adjacent sensitive receivers
 - (c) The number or frequency of emissions

South Australian guidelines (Audible bird scaring devices, Environmental noise guidelines dated October 2007, EPA(SA): http://www.epa.sa.gov.au/data_and_publications/search-documents?q=audible+bird+scaring&published=&category=&doctype=4) may provide some assistance in determining when emissions from a bird scaring device/gas gun amount to an unreasonable interference in so far as they set the following parameters for judging reasonableness:

- Where no more than 6 blasts are used each hour the maximum noise level for any shot is 100dB(LinPeak)
- In an area which is focused upon horticultural production the Maximum Accumulated Peak Level is 118dB
- For the interface between zones (i.e. adjoining a zone where residential amenity receives priority) the Maximum ALP is 115dB
- Stricter limits apply to noise emissions prior to 7am and after 8pm

The guidelines provide the following rule of thumb:

- a typical gas gun located more than 300 m from a residence in a horticultural zone (or similar), restricted in operation to six shots per hour for 10 hours of the day should achieve the performance-based objective.
- a typical gas gun located more than 500 m from a residence in a residential, country township, or rural living zone (or similar) restricted in operation to six shots per hour for 10 hours of the day should achieve the performance-based objective.

Topography and weather conditions have an effect.

According to the North Burnett Regional Council (no date) 300m separation distance is appropriate between gas guns and sensitive use. However, even with this separation distance, there are examples of complaints (pers. comms. 14/10/19 Wells; 16/10/19 Cotton). It is not

unusual for the noise impact to extend beyond 1km if wind conditions are favourable Cotton 16/10/19).

If the South Australian guidelines are adopted as a measure for reasonableness, and a restriction created by the proposed amendment for the location of a gas gun within 500m of the nearest point at which a dwelling may be located (on the basis that the proposed Tempus rezoning and Peirmont development are construed as “rural living” type areas) the area of the Gala vineyard impacted as a consequence of the Tempus rezoning (i.e. 500m radius from the nearest edge designated for residential development within the Tempus site) would be generally in accordance with the area impacted by the nearest approved dwelling lot within the Piermont complex (i.e. 500m from the approved location of this dwelling).

It is also noted that the proposed rezoning prescribes a permitted setback for development associated with a sensitive use (i.e. a dwelling) within the zone of 200m which can only be reduced in reliance upon the performance criteria where it is demonstrated that there is no unreasonable fettering of existing or likely agricultural use on adjoining land. The power to approve such development is consistent with that which currently exists under the Significant Agriculture zone where development of a dwelling is subject to the same constraints.

CONCLUSION

Considered in isolation the proposed rezoning has the potential to constrain or restrain the vineyard operations on the adjoining land (Gala Estate) by limiting the area in which bird scaring devices may be deployed and the manner in which they operate. Such a restraint may be considered reasonable so as not to offend Principle 1 of the PAL given the available alternatives to crop protection and the likelihood that bird scaring devices will not prove effective as a deterrent in the longer term due to the inability to discharge firearms within the relevant proximity to the highway. However, the proposed rezoning does not create any new constraint because the area likely to be impacted by the Tempus proposal corresponds with that which will be impacted by development of the approved strata lots and associated dwellings within the Piermont complex. It can therefore be concluded that the proposed rezoning is consistent with the PAL Policy (including principles 1 and 5).