Macedon Ranges Shire Council

ATTACHMENTS

Council Meeting
Under Separate Cover

Wednesday 27 July 2022

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Dalton Street Reserve, Gisborne

Environmental Management Plan

Community Consultation Draft

June 2022

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Dalton Street Reserve Flora Fauna Assessment	
Submitted by	Ranges Environmental Consulting
Date	6 May 2022
Authors	Greg James and Karl Just
Contact	Greg James info@rangesconsulting.com.au
Submitted to	Simon Purves / Krista Patterson-Majoor Macedon Ranges Council

Acknowledgements

Macedon Ranges Shire Council and Ranges Environmental Consulting acknowledges the Wurundjeri Woi-wurrung peoples as the Traditional Owners of the land on which the Dalton Street reserve Network Environment Management Plan is located. We recognise the first people's relationship to this land and offer our respect to their elders past, present and emerging.

Macedon Ranges Shire Council and Ranges Environmental Consulting would also like to thank community members who have participated in workshops and written submissions which has helped to inform the development of this plan.

VISION FOR THIS PLAN

Incremental improvements for Dalton Street Reserve over the next 10 years including:

- Enhancement of the sites natural values including bushland, wetland and open space areas
- Improved biodiversity protection through conservation management, weed control and pest animal management
- Collaborative relationships between Council, Community and Stakeholders where knowledge and resources are shared
- Build community capacity including support for a 'Friends' group that actively participates in the management of the reserve network
- Ongoing management of the functionality of the reserve and user facilities

Macedon Ranges Shire Council (MRSC) has identified a series of objectives that underpin this overarching vision including:

Ecological Protection:

- Maintain and improve the integrity of native vegetation including canopy trees, midstorey, ground flora and natural biota
- Allow for natural regeneration to ensure ecological succession of all indigenous plant species
- Provide for fauna habitat through retaining logs, protective cover, nest boxes and enhancing habitat connectivity
- Protect significant flora species including rare species in the catchment region and threatened flora listed under biodiversity regulations

Minimise Threats to Ecological Condition:

- Annually control and reduce the impacts of weed cover within areas of ecological significance
- Undertake early intervention to monitor and control the emergence of new high threat weeds
- Control any high impacts from pest animals through site-based intervention and cooperation with adjoining land managers
- Control inappropriate and unauthorised use of the reserves (e.g. earthworks, stockpiling and landscaping) through community education and prevention strategies

Ongoing Monitoring and Evaluation:

- Use the baseline data presented in this plan to monitor and evaluate changes/improvements in ecological condition overtime
- Review current management practices and ensure actions are effective and cost efficient
- Enhance efficiency and effectiveness through best practice innovation in partnership with other land managers and the community
- Engage with the local community and seek feedback and input regarding any changes within the reserve

Build Community Capacity:

- Encourage community participation and provide support for a potential 'friends' group to take stewardship of the reserve network
- Support community led reserve management initiatives with grant funding where available
- Continue facilitation of workshops, information sessions and publications that provide support and education to local residents

Improve user facilities:

- Make improvements to the functionality of the reserve including signage and pedestrian access
- Maintain the safety of public spaces and adjoining residential properties including through not limited to road safety, fire prevention and hazardous tree inspections

1 Introduction

Macedon Ranges Council engaged the services of *Ranges Environmental Consulting* to undertake an Environmental Management Plan for the Dalton Street Reserve Network in Gisborne.

This report details vegetation types, flora, fauna and landscape values within the reserve network to inform future management of the site to accommodate recreational use, conservation values, community engagement and participation and management of bushfire risk.

1.1 Study Area

Dalton Street Reserve Network (the Study Area) is 5.3 hectares of combined Council and Melbourne Water managed land which includes 6 separate parcels adjoining either Dalton Street or Green Gully Close. Appendix 1 provides a series of maps that detail management zones, vegetation quality, significant flora and weed species.

According to the Macedon Ranges Shire Planning Scheme, there are no Environmental or Land Management Overlays that apply to the Study Area. The southern portion of the reserve network is within a Designated Bushfire Prone Area (BPA) due to its connectivity to farmlands and woodlands.

The Dalton Street reserve network is a relatively new configuration of bushlands and parklands that was retained or revegetated in association with a residential estate constructed around 15 years ago. Comparative aerial photography (Figures 1 and 2) shows that although the south eastern portion of the estate retained native vegetation remnants, there has been extensive revegetation within the constructed drainage reserves and areas surrounding the constructed wetlands to the north of the estate.

Cultural Context

Wurundjeri Woi-Wurrung Cultural Heritage Council are the Registered Aboriginal Party for part of the area covered by Macedon Ranges Shire Council including Gisborne and its immediate surrounds.

Regionally Gisborne has significant cultural value and the ethnographic record for the area is substantial. The cultural values of Gisborne have been well documented in the Wurundjeri Cultural Values of Gisborne Report by McConachie (2019) and the report for Gisborne Futures by Janson and James (2018)

The Wurundjeri cultural values report made the following recommendations relevant to this EMP:

- Improve habitat protection for migrating species
- Maintain and improve water quality as it flows into Jacksons Creek.
- Examine the potential to recognise culturally valued species in the area
- Investigate options to amend the local planning scheme regarding cultural views, species, and other values.

- On-going involvement in landscape management in urban design, naming, as part of the effort to appropriately emphasise the Wurundjeri cultural footprint.
- Education opportunities for local community engagement and information sharing.
- Have a policy around the choice and appropriate use of Woi-wurrung language names
- Continuing commitment to this work with an ongoing budgeting for appropriate engagement with Wurundjeri Woi-wurrung Corporation.
- Plan for Climate Change impacts such as water usage, increased heavy rainfall events, extended dry periods, etc.

Catchment and Bioregional Context

The study area is within the Port Phillip and Westernport Catchment Management Region and the Victorian Volcanic Plains Bioregion. The reserve network is within the Jacksons Creek Catchment and the Wombat-Pyrete Biolink. To the west of the reserve network is the Gisborne Golf Course which features some large areas of woodland/forest vegetation and wetlands.

Two sections of the Marram Bulok Creek run through the northern portion of the reserve. One runs through to the Golf Course storage lakes and the other runs into stormwater filtration ponds and drainage lines within the reserve network.

Figure 1. Present day Dalton Street Precinct and Reserve Network

Figure 2. Dalton Street Precinct in 2010, under construction

1.2 Project Brief

Macedon Ranges Shire Council (MRSC) plans to develop a long-term management strategy got the Dalton Street Reserve network. To develop this vision, MRSC has engaged *Ranges Environmental Consulting* and the local community to contribute to this vision. Based on the project brief set out by MRSC and the tender response, the development of this Environmental Management Plan includes:

Field Assessment Results

1 Identification of areas of low/moderate/high biological significance including:
   - assessment of site ecological condition consistent with the Macedon Environmental Works Plan
   - Identification and mapping of vegetation types, Ecological Vegetation Classes (EVCs) and Bioregional Conservation Significance

2 Identify the presence of native flora and fauna, weeds and vertebrate pests including:
   - Identification of weed type and cover within the study area (type and category)
   - Mapping of high-threat weeds across the study area using GPS and GIS technology
   - Identifying the presence of pest animals (scats, diggings, direct observation etc.) and mapping areas of rabbit burrows if present
   - A comprehensive list indigenous plant species occurring in the study area and conservation significance (state, regional or local significance) including:
     - Discussion of potential occurrence of rare or threatened species based on habitat suitability and a local VBA database search to identify previously recorded threatened flora
     - Identify areas of fauna habitat including habitat types for fauna types (mammals, birds, frogs, reptiles, and invertebrates)
     - The presence of habitat features including through not limited to tree hollows, logs, rocks, water bodies and habitat connectivity

Management Plan

1 Establish an overarching vision for the reserve network based on assessment results and consultation with Council and Stakeholders

2 Outline management issues including though not limited to:

- Weed cover/abundance
- Conservation management including protection of significant flora, fauna habitat and ecosystems
- Disturbance from human activity
- Pest Animal Management
- Recreational uses vs conservation objectives
- Other management issues identified by the local community

3 Recommendations for management of the reserve network including:

- Designated management and land use zones
- identification of suitable opportunities for landscaping with indigenous plants and areas more suited to natural regeneration and/or supplementary revegetation among remnant vegetation
- Targeted weed control and pest animal management objectives
- Control measures for managing soil disturbance
- Management treatments that delineate conservation objectives with recreation objectives
- Maps and plans outlining management objectives and zones

1.3 Background

Four key documents underpin the objectives of this plan:

- The Macedon Ranges Biodiversity Strategy (MRSC 2018)
- The Weed and Pest Animal Strategy 2014-2024 (MRSC 2014)
- Melbourne Water's Healthy Waterways Strategy (State Government of Victoria 2018)
- The Macedon Ranges Strategic Environmental Works Plan (GWS Ecological Consulting 2021)

In particular, the Macedon Ranges Strategic Environmental Works Plan included Dalton Street Reserve as one of 40 priority waterway reserves. The report was primarily focused on waterway regions and riparian corridors, therefore the terrestrial areas to the south were not prioritised. The results of the *Prioritisation Framework* for this report gave the following rating for Dalton Street Reserve:

Criteria	Max Score	Rating	Description
Community Value	4	3	The reserve is in a high-profile location and affiliated with a community group
Site Condition	4	3	Reserves with a similar quality to those classed as Very High, but these sites generally do not support threatened species (or otherwise score lower in another criteria).
Landscape Priority	3	1	Medium value for investment: reserve investment will build on previous Melbourne Water funding or support a priority waterway with no prior Melbourne Water-funded works. Work in these reserves either addresses one of two regional strategic goals OR the reserve has had previous investment, suggesting some community or ecological value of interest

Appendix 5 of this report provides more information on relevant documents and the policy context that underpins this Environmental Management Plan

2 Assessment Methods

Site investigations for this study was undertaken by Greg James and Karl Just during November and December of 2021. Tasks undertaken to gather and interpret ecological values within the reserve included vegetation quality assessments, flora surveys, incidental fauna and habitat surveys, identification of high threat weeds, fire risk analysis and potential management treatments.

2.1 Vegetation Assessment

Areas of native vegetation were assessed to provide an indication of the ecological values and condition within the reserve by incorporating the criteria below:

Ecological Vegetation Classes

An Ecological Vegetation Class (EVC) is a native vegetation type classified based on its floristic, life form, environmental and ecological characteristics (DELWP 2017a). The benchmark for an EVC describes its vegetation/ habitat attributes in its mature natural state, which reflects pre-settlement conditions.

Modelled pre-1750 EVCs produced by DELWP and accessible via Nature Kit Online, indicate that 2 EVCs formerly occurred in the study area and surrounding lands including:

- Plains Grassy Woodland (EVC 55)
- Grassy Forest (EVC 128)

EVCs were identified based on observable attributes in the field with reference to EVC modelling and descriptions in Oates and Taranto 2001. Remnant vegetation within the study area was deemed to be most attributable to Grassy Forest.

Flora Survey

The flora survey was undertaken in late spring which is generally an optimum time for detection of most though not all flora species. Various summer-flowering grasses, and early spring flowering lilies and orchids may have been overlooked during the survey. It is likely that more indigenous species would be detected in follow-up surveys over different seasons. Limitations aside, the assessment of flora diversity, weed type/cover and vegetation quality assessments provided a clear representation of site condition at any given time of year.

To supplement the limitations of the brief flora survey, a database query from the Victorian Biodiversity Atlas (VBA) and the Atlas of Living Australia (AKA iNaturalist) for past flora records within 5-kilometres of the study area was obtained to gain an understanding of other flora species that may occur within the reserve. An assessment of vegetation/habitat types within the survey area and the results of the VBA database and iNaturalist queries was also used to determine the likelihood of occurrence of threatened flora in the reserve. Threatened flora conservation status is consistent with the *Flora and Fauna Guarantee Act – Threatened List* (DELWP 2021).

Indigenous Groundstorey Vegetation Quality Mapping

This method provides categorization according to the percentage of indigenous versus exotic species present, in one of 5 categories (refer to Table 1). The method assesses all plants below knee height (including young eucalypt saplings and shrub species), but the main emphasis is on grasses and herbaceous species, including lilies and orchids.

Groundstorey vegetation cover mapping provides a useful guide for classifying the condition of bushland patches from intact to degraded areas and this provides a useful guide for determining management priorities areas within bushland reserves.

Table 1.Indigenous Groundstorey Vegetation Cover Categories

Colour	Indigenous Vegetation Quality
Red	**<20% indigenous groundstorey vegetation cover** Areas where remnant groundstorey vegetation has been severely degraded as a result of weed invasion or soil disturbance (i.e. bare ground with little native biota) to the extent of being potentially irreversible. This area may include open space grassland managed for recreation, or within areas where native canopy and midstorey still persist.
Orange	**20-40% indigenous groundstorey vegetation cover** Areas where remnant groundstorey vegetation has been substantially degraded as a result of weed invasion or soil disturbance. Depending on the groundstorey flora and weeds present, its condition may be reversable, or if management investment were to be undertaken, it is likely to be resource and labor dependent for over 10 years.
Yellow	**40-60% indigenous groundstorey vegetation cover** Areas where remnant vegetation is partially degraded although a fair representation of remnant groundstorey vegetation is evident. These areas can potentially be well rehabilitated providing there is ongoing management commitment over several years
Green	**60-80% indigenous groundstorey vegetation cover** Areas of remnant vegetation with light to moderate infestations of weeds. The native plant community is usually intact in terms of structure, species composition and diversity, however, introduced weeds have the potential to substantially spread and contribute to ecological decline. Seasonal weed management over a few years is likely to reverse this decline.
Teal	**80-100% indigenous groundstorey vegetation cover** Areas of remnant vegetation largely free of introduced plants and where native plant communities are substantially intact in terms of structure, species composition and diversity. These areas should be the highest management priority and typically require the least management recourses to maintain and improve ecological condition.

2.2 Fauna Habitat Assessment

An incidental fauna survey was undertaken during site surveys in addition to assessments of fauna habitat types and suitability for common and threatened species. The survey listed all species observed or heard.

A database query from the Victorian Biodiversity Atlas (VBA) and Atlas of Living Australia (ALA) for past fauna records within 5-kilometre of the study area was obtained to supplement the limitations of the incidental fauna survey. Observations of habitat types and the results of the VBA and ALA database queries was used to determine the likelihood of occurrence of threatened fauna in Dalton Street Reserve. Threatened fauna conservation status is consistent with the *Flora and Fauna Guarantee Act – Threatened List* (DELWP 2021).

2.3 Map Production and Spatial Data

Site features, management zones, rare flora populations and weed populations were mapped onsite using QGIS 3.20 / Qfield 2.0 with a GPS receiver (within 2-3 metres accuracy) and a GPS enabled tablet.

Populations of weeds were mapped during ecological condition assessments and flora surveys. Although the mapping of weeds does not provide a comprehensive account of all weed populations throughout the study area, mapping was targeted towards high threat/invasive weeds including:

- A focus on environmental woody and climbing weeds and declared noxious weeds within the Port Phillip and Western Port CMA region
- Point locations for high threat weed species that occur as small isolated populations

Most commonly occuring weeds (e.g. Sweet Vernal-grass, Flatweed and Panic Veldt-grass) were not mapped as these species are ubiquitous throughout bushland areas and the management requirements are well understood.

Weed mapping provided in this report is intended to assist with targeted weed control including early intervention of weed populations regardless of vegetation quality and areas where high threat weeds pose a threat to high priority conservation areas.

Map production utilised QGIS 3.20 and incorporated the results of spatial data collection and base layers. All spatial data collected for this project is provided to Macedon Ranges Council in GIS format and excel.

3 Ecological Survey Results

The purpose of the assessment was to interpret the ecological values and condition within the reserve network with consideration of conservation management and where appropriate, vegetation management for park recreation and for areas on the interface of residential lots.

3.1 Vegetation Types

Vegetation types within the reserve system fall into 3 broad categories as outlined below:

Remnant Vegetation

Remnant vegetation consists of native flora (trees, shrubs grasses and herbs etc.) that represents a natural ecosystem to varying degrees. This vegetation has persisted in spite of European colonisation and associated disturbance factors such as agriculture, land clearing, fire suppression and introduction of pest plants and animals. Some of these areas include supplementary revegetation to improve ecological condition where disturbance or missing ecological components were evident.

Revegetation

Several areas within the reserve network have established through revegetation of formerly cleared areas over the past 10-15 years. Revegetation attempts to recreate a natural ecosystem or at least utilise local indigenous plants that are adapted to the site conditions. These site conditions may have been modified over time, including changes to the soil profile or hydrology, therefore some plants used in revegetation may not have occurred at the site prior to clearing.

Sites within the reserve network comprise of terrestrial revegetation including some areas that maintain a natural landform, and aquatic vegetation to supplement constructed drainage systems or stormwater infiltration wetlands.

Open Space / Landscaping

These sites are mostly treeless grassed areas that accommodate park users. These areas may also include garden beds for ornamental purposes. Although these areas may contain some local native plant species, the primary purpose of these areas is for recreation and amenity.

As shown on Appendix 1 - Map 1 (Part A), there are 14 separate zones have been identified and categorised by vegetation type (either remnant vegetation, revegetation or managed parkland or a combination of these) as outlined below:

Zone 1 - Remnant Vegetation and Supplementary Revegetation

Zone 2-3 - Creation of Ephemeral Wetlands

Zone 4 - Remnant Trees with landscaping

Zone 6-8 and 14 – Revegetation Areas

Zone 9-13 - Remnant Vegetation

3.2 Ecological Vegetation Classes

The site is in the Victorian Volcanic Plains (VVP) bioregion. Grassy Forest (EVC 128) was identified as the dominant EVC in the study area. Table 2 provides descriptions of this EVC

Table 2.Ecological Vegetation Classes in Dalton Street Reserve

EVC 128	Bioregional Conservation Status	Location and Description
Grassy Forest	**Endangered** **Criteria:** **E1:** Contracted to less than 10% of former range within the relevant bioregion or Less than 10% pre-European extent remains. **E2:** Combination of depletion, degradation, current threats and rarity is comparable overall to E1: - 10 to 30% pre-European extent remains and severely degraded over a majority of this area, or - naturally restricted EVC reduced to 30% or less of former range and moderately degraded over a majority of this area, or - rare EVC cleared and/and/or moderately degraded over a majority of former area	**Present Distribution:** From the Coldstream area south to the Lysterfield-Pakenham area. Also in Toolern Vale to Gisborne area Grassy Forest occurs in moderate rainfall areas on relatively infertile soils. The ground layer predominantly contains 'dry' species reflecting the infertility of the soils. Messmate (Eucalyptus obliqua) and Narrow-leaf Peppermint (Eucalyptus radiata) dominate the overstorey, with associated species sometimes including Candlebark (Eucalyptus rubida), Bundy (Eucalyptus goniocalyx), Red Stringybark (Eucalyptus macrorhyncha) or Mealy Stringybark (Eucalyptus cephalocarpa). Swamp Gum (Eucalyptus ovata) and Manna Gum (Eucalyptus viminalis subsp. viminalis) occur around gullies or seepage areas. The shrubs/small trees Black Sheoak (Allocasuarina littoralis), Black Wattle (Acacia mearnsii) and Blackwood (Acacia melanoxylon) can be conspicuous.

The vegetation within the reserve has been divided into three different groups, which are discussed using the EVC classifications below. Grassy Forest is the EVC within remnant vegetation. Three other EVCs are observed within areas of revegetation.

Intact and modified forest – Grassy Forest (EVC 128)

It is likely that the entire reserve would once have been dominated by EVC Grassy Forest, however this vegetation would have been removed for the construction of the drainage-lines and stormwater wetlands. Grassy Forest is typically found in areas that are transitional between lowland and upland habitats. Within Dalton Street Reserve, the quality of remnant Grassy Forest is found to be highly variable, with the most intact remnants occurring in the southern portion (zones 11, 12 and 13). The canopy is typically dominated by Messmate Stringybark (*Eucalyptus obliqua*) with occasional Narrow-leaf Peppermint (*Eucalyptus radiata*). The middle shrub layer varies from open and sparse to locally dense patches, with prominent understorey shrubs including Blackwood (*Acacia melanoxylon*), Silver Wattle (*Acacia dealbata*) and Sifton Bush (*Cassinia sifton*). The ground layer is dominated by Red-anther Wallaby-grass (*Rytidosperma pallidum*), Veined Spear-grass (*Austrostipa rudis ssp. rudis*) and Weeping-grass (*Microlaena stipoides*), with occasional Mat-grass (*Hemarthria uncinata*) and Kangaroo Grass (*Themeda triandra*). Ground flora species are mostly concentrated in the more intact remnants in the south, and include a range of forbs, lilies and orchids including Blue Pincushion (*Brunonia australis*), Tall Sundew (*Drosera auriculata*), Chocolate Lily (*Arthropodium strictum*), Bulbine Lily (*Bulbine bulbosa*), Milkmaids (*Burchardia umbellata*), Sun-orchid (*Thelymitra* spp.), Nodding Greenhood (*Pterostylis nutans*) and Tiger Orchid (*Diuris sulphurea*).

The open, regularly mown areas in the south of the reserve would also have belonged to EVC Grassy Forest but have been heavily modified by suppression of the shrub and ground layer. These areas still contain a good cover of native grasses (primarily Wallaby-grasses and Veined Spear-grass) with scattered forbs and sub-shrubs such as Creeping Bossiaea (*Bossiaea prostrata*).

The low number of Large Trees throughout these remnants represent less than 10% of the optimum benchmark. The sparse occurrence of Large Trees and dominance of canopy trees in the intermediate age class suggests that the current site condition represents 40 to 50 year regrowth following timber harvesting.

Large Trees are defined as trees with a diameter measured at breast height (DBH) that is equal to or greater than the large tree benchmark specified in the relevant EVC. The large tree benchmark for EVC 61: Box Ironbark Forest is 70cm DBH when measured at breast height (1.3m above the ground).

Partly artificial drainage-lines – Swampy Riparian Woodland (EVC 83)

Two prominent drainage-lines run parallel to Green Gully Close to the east and west (zones 6 and 8). These drainage-lines would most likely have originally been small gullies within Grassy Forest vegetation that were later channelled to carry runoff of water from the surrounding housing estate. Aerial photography circa 2007-2010 show that during the construction of the housing estate, these areas were cleared down to bare soil. They were later revegetated with a range of trees, shrubs and understorey species, including Swamp Gum (*Eucalyptus ovata*), Messmate Stringybark (*Eucalyptus obliqua*), Woolly Tea-tree (*Leptospermum lanigerum*), Blackwood (*Acacia melanoxylon*), Silver Wattle (*Acacia dealbata*), Spiny-headed Mat-rush (*Lomandra longifolia*), Fen Sedge (*Carex gaudichaudiana*) and Poong'ort (*Carex tereticaulis*). Some natural regeneration of grasses, such as Veined Spear Grass (*Austrostipa rudis* ssp. *rudis*), has occurred around the verges of the drainage-lines. Although mostly planted, zones 6 and 8 best fits within Swampy Riparian Woodland (EVC 83).

Stormwater wetlands – Aquatic Herbland (EVC 653), Tall Marsh (EVC 821) and Wet Verge Sedgeland (EVC 932)

Two stormwater wetlands were constructed and planted in the northern section of the reserve during the establishment of the housing estate (zones 2 and 3). The planting of aquatics (ephemeral and instream flora) within both wetlands has been highly successful and they now support a range of aquatic and fringing vegetation that fits into three separate wetland EVCs. This includes submerged and emergent herbfields occurring in the shallow and deeper water (EVC Aquatic Herbland), dominated by Blunt Pondweed (*Potamogeton ochreatus*), River Buttercup (*Ranunculus inundatus*) and Slender Knotweed (*Persicaria decipiens*), Tall Sedgelands occurring on the water's edge (EVC Tall Marsh), dominated by River Club-sedge (*Schoenoplectus tabernaemontani*) and Narrow-leaf Cumbungi (*Typha domingensis*) and Sedgeland and Rushland on the damp to shallowly inundated verges (EVC Wet Verge Sedgeland) dominated by Rushes (*Juncus* spp.) and Fen Sedge (*Carex gaudichaudiana*).

3.3 Flora Species

During the November 2021 spring survey, a total 175 vascular flora species were recorded. An additional 4 species not recorded during this time were observed in the same survey area by Geordie Scott Walker during March 2021 (as documented in The Macedon Ranges Strategic Environmental Works – GSW Ecological Consulting). These species may have been overlooked due to the seasonal conditions and brevity of the November survey, or in the case of high threat weeds (e.g. Montpellier Broom *Genista monspessulana*) may have been eliminated by Council staff or contractors in the six months between surveys.

A total of 179 flora species were recorded during the combined surveys including 109 indigenous species. Of these, 17 are presumed to have originated from plantings that were undertaken at the time of the establishment of the surrounding housing estate and 92 are considered to be naturally occuring within the remnant stands of Grassy Forest and associated gullies and drainage lines. The remaining flora species include 62 plants of exotic origin and 8 are non-indigenous Victorian native species. Most of the exotic and non-indigenous natives are known environmental weeds that are a high threat to conservation objectives within Dalton Street Reserve.

Appendix 2 provides a list of all flora species observed.

Significant Flora

A total of 14 significant plant species were recorded within the reserve, including 3 which are listed as threatened under the Flora and Fauna Guarantee Act 1988. The remaining significant findings include 3 species considered to be of regional significance within the Port Phillip and Westernport region and 8 species which are considered to be of local significance to the Gisborne area. These species are presented and discussed in Table 3 below. At least 7 of these species are likely to have been planted, however they should still be regarded with significance due to their successful establishment.

Table 3. Summary of Significant Flora at Dalton Street Reserve

Key to symbols:

CE – listed as Critically Endangered under the Flora and Fauna Guarantee Act 1988.

E - listed as Endangered under the Flora and Fauna Guarantee Act 1988.

V - listed as Vulnerable under the Flora and Fauna Guarantee Act 1988.

Regional – considered to be of regional significance.

Local – considered to be of local significance.

Scientific name	Common name	Status	Comments
Acacia rostriformis	Bacchus Marsh Wattle	V	Seven mature plants were recorded, including in Zone 10, 11 and 13. Bacchus Marsh Wattle is endemic to a small area between Bacchus and Gisborne.
Asperula subsimplex	Water Woodruff	Regional	Several large patches of Water Woodruff were recorded in shallow water around the edge of the stormwater wetland in the northern section of the reserve (Zone 2). It is assumed that this species was planted. The only other local record for the species is at the Gisborne Racecourse Swamp.
Calocephalus lacteus	Milky Beauty-heads	Local	One plant was recorded near the edge of Dalton Street (zone 11) that is assumed to have been planted. The only other local record for the species is at the Gisborne Racecourse Swamp.
Diuris sulphurea	Tiger Orchid	Regional	Approximately 55 specimens of Tiger Orchid were recorded within the reserve, all in the most intact remnants in the southern portion of the reserve network (zones 11 and 13). Tiger Orchid is pollinated by native bees and has a symbiotic relationship with mycorrhizal fungus.
Gnaphalium indutum	Tiny Cudweed	Local	Several plants were recorded on the track edge in zone 12. Tiny Cudweed only grows to a few centimetres in height.
Leptorhynchos squamatus subsp. squamatus	Scaly Buttons	Local	Several plants were recorded in grassy vegetation in the northern section of the reserve (zone 1). This once common species has been severely depleted due to land clearance and agricultural practices.
Myriophyllum simulans	Amphibious Water-milfoil	Local	One patch was observed in the shallow drainage line in the north-western section of the reserve that may possibly be planted.
Pterostylis nutans	Nodding Greenhood	Local	One colony of approximately 20 individuals was recorded in the southern section of the reserve (zone 13). This species primarily reproduces by spreading via tuber production.

Scientific name	Common name	Status	Comments
Ranunculus glabrifolius	Shining Buttercup	Local	One patch of Shining Buttercup was recorded in the drainage line east of Green Gully Close. It was either planted or has naturally colonised.
Ranunculus inundatus	River Buttercup	Local	River Buttercup was observed in the stormwater wetland in the northern section of the reserve (zone 2). This species was most likely planted but has established well.
Schoenus tesquorum	Soft Bog-sedge	Regional	Soft Bog-sedge was observed in the stormwater wetland in the northern section of the reserve (zone 2). This species is uncommon in the local area and is generally restricted to wetland habitats.
Sebaea ovata	Yellow Sebaea	Local	Several plants of Yellow Sebaea were recorded adjacent to the walking track in the southern section of the reserve (zone 13).
Senecio campylocarpus	Floodplain Fireweed	E	Two plants were recorded in Zone 1 and 6. Floodplain Fireweed is not uncommon in the region where it is found in a range of riparian and wetland habitats.
Xerochrysum palustre	Swamp Everlasting	CE	Several rhizomatous patches were recorded in both of the stormwater wetlands and in the drainage line in the northern section of the reserve (zones 1, 2 and 3). It is assumed that this species has been planted, however the fact that it has successfully established is of significance. The only other local record for the Swamp Everlasting is at the Gisborne Racecourse Swamp and the species is highly endangered across its Victorian range.

Figure 3. Nodding Greenhood (Pterostylis nutans).
Photo: Karl Just

Figure 4. Yellow Sebaea (Sebaea ovata).
Photo: Greg James

Figure 5. Tiger Orchid (Diuris sulphurea).
Photo: Greg James

Figure 6. Swamp Everlasting (Xerochrysum palustre).
Photo: David Pitts

3.4 Vegetation Condition Assessment

As shown in Map 1 Part B, the reserve system was subject to an *Indigenous Groundstorey Quality Assessment* based on the criteria of table 1 (page 12).

Table 4 below outlines the results of percentage indigenous cover are outlined for three categories: remnant areas, revegetation areas and open space. **Note:** areas of open space that were subject to the quality assessment were limited to sites where it adjoins high quality remnants or a notable cover of native grass was observed. Zone 4 is highly modified and landscaped and therefore not included as a part of this assessment.

Table 4. Percentage indigenous groundstorey per vegetation type

Remnant (2.37 ha)			Revegetation (1.80 ha)			Open Space (0.2 ha)		
% Cover	Area (m2)	% of total area	% Cover	Area (m2)	% of total area	% Cover	Area (m2)	% of total area
<20%	3,838	16.2%	<20%	1074	6.0%	<20%	290	14.6%
20-40%	5,514	23.2%	20-40%	3268	18.1%	20-40%	899	45.2%
40-60%	5,312	22.4%	40-60%	4765	26.4%	40-60%	800	40.2%
60-80%	3,224	13.6%	60-80%	6423	35.6%	60-80%	0	0.0%
80-100%	5,852	24.7%	80-100%	2500	13.9%	80-100%	0	0.0%

The results and management implications of each vegetation type are discussed below.

Remnant Vegetation

Although areas of remnant vegetation consistently feature a mature canopy cover, the understorey cover and diversity varies markedly across the reserve network. The best quality areas (80-100% cover) include the eastern section of zone 1 and portions of zone 11 and 13 which accounts for approximately 25% of all remnants. However the majority of remnants consist of a depleted ground cover of less than 60% in comparison to weed cover. The poorest areas are almost completely dominated by introduced grasses such as Sweet Vernal and Squirrel-tail Fescue including substantial portions of Zone 1 to the west and the southern and eastern portions of zone 13, despite a core area of high quality understorey within this zone.

Revegetation Areas

On average, revegetation areas have a higher portion of native ground cover to weed cover ratio compared to remnant areas. However, this is not surprising given that revegetation areas are typically planted with a dense cover of robust graminoids and lower shrubs which are fast growing. They are also often easier to manage with targeted weed control compared to remnant vegetation, where the diversity of ground flora poses challenges in avoiding off-target herbicide damage when controlling exotic grasses and herbs.

Open Space

Unsurprisingly, no substantial areas of mown open space were found to support greater than 60% cover of native grass or herbs. However, two main areas contained significant proportions of native grass (typically Wallaby Grass, Spear Grass and Weeping Grass). These include areas at the end of Green Gully Close either side of the walking tracks and the small clearing in the south on the interface of zone 13.

3.5 Fauna Assessment

The site fauna assessment included incidental fauna surveys and observations of various habitat types including:

- Canopy cover and hollow bearing trees
- Understorey and groundstorey vegetation and protective cover
- Leaf litter and logs
- Water bodies including swamps, ephemeral margins and open water
- Habitat connectivity beyond the study area

Incidental Fauna Survey

During the 2021 spring survey, a total 37 fauna species were recorded, including 28 bird, four mammal, two butterfly and three frog species. All are indigenous except for two of the birds (Common Blackbird and Common Myna) and one mammal (Red Fox).

One of the species recorded, the Olive Whistler (Pachycephala olivacea) is considered to be of regional significance. This species has not previously been recorded in Gisborne but has been recorded more extensively in the wetter forests south of Trentham and around Mount Macedon.

The variety of birds recorded within the reserve during a single day of survey is relatively diverse. It also includes a range of small-bodied insectivores which are indicators of relatively intact habitats. The habitat links between the reserve and the extensive bushland of the Pyrete Ranges to the south-west, although highly fragmented, would also likely contribute to the increasing the diversity of birds frequenting the reserve.

Table 5. Fauna Survey Results

Taxon	Scientific name	Common name
Bird	*Acanthiza nana*	Yellow Thornbill
	Acanthiza pusilla	Brown Thornbill
	Acanthorhynchus tenuirostris	Eastern Spinebill
	Alisterus scapularis	Australian King-Parrot
	Anthochaera carunculata	Red Wattlebird
	Cacatua galerita	Sulphur-crested Cockatoo
	Cacatua tenuirostris	Long-billed Corella
	Chalcites lucidus	Shining Bronze-Cuckoo
	Colluricincla harmonica	Grey Shrike-thrush
	Cormobates leucophaea	White-throated Treecreeper
	Corvus mellori	Little Raven
	Cracticus tibicen	Australian Magpie
Bird	*Grallina cyanoleuca*	Magpie-lark
	Lichenostomus chrysops	Yellow-faced Honeyeater
	Malurus cyaneus	Superb Fairy-wren
	Pachycephala olivacea	Olive Whistler
	Pachycephala pectoralis	Golden Whistler
	Pardalotus punctatus	Spotted Pardalote
	Pardalotus striatus	Striated Pardalote
	Phylidonyris novaehollandiae	New Holland Honeyeater
	Platycercus elegans	Crimson Rosella
	Rhipidura albiscapa	Grey Fantail
	Strepera graculina	Pied Currawong
	**Sturnus tristis*	Common Myna
	Todiramphus sanctus	Sacred Kingfisher
	Trichoglossus haematodus	Rainbow Lorikeet

Taxon	Scientific name	Common name
	**Turdus merula*	Common Blackbird
	Vanellus miles	Masked Lapwing
Butterfly	*Heteronympha merope*	Common Brown
	Zizina labradus	Common Grass Blue
Frog	*Crinia signifera*	Common Froglet
	Limnodynastes dumerilii	Banjo Frog
	Litoria ewingii	Southern Brown Tree-frog
Mammal	*Macropus giganteus*	Eastern Grey Kangaroo
	Pseudocheirus peregrinus	Common Ringtail Possum
	Trichosurus vulpecula	Common Brush-tail Possum
	**Vulpes*	Red Fox

Habitat Types

The reserve supports several distinct habitat types, including:

- larger patches of bushland in zones 11, 12 and 13 that would be utilised by bird species that require less disturbed and fragmented bushland,
- gully lines with dense cover that provide sheltered and fertile habitats for birds and mammals,
- open, regularly mown areas that would be frequented by birds and other fauna that prefer less dense habitats,
- stormwater wetlands, supporting dense aquatic vegetation, that serve as habitat for a range of frogs and aquatic insects such as the larvae of dragonflies and damselflies.

Most of the tree canopy within the reserve is relatively young, however, there are scattered old trees and stags that contain small to medium-sized hollows, serving as sheltering and nesting areas for a birds and mammals. A small range of micro-bats are also likely nesting in bark crevices in some of the larger trees. When in flower, the Messmate and Narrow-leaf Peppermint trees would provide food for a wide variety of birds, mammals and insects, and visitation of fauna to the reserve would likely increase during this time.

Other important habitat features throughout the reserve include scattered logs, which provide habitat and cover from predators, however the density is relatively low. The leaf litter and ground-flora layer within the bushland areas is also an essential habitat component for many ground-dwelling invertebrates.

Landscape Context

Although the reserve and surrounding housing estate has been heavily fragmented, there is still significant canopy connectivity extending throughout the local area including the road reserve corridor of Melton Road and adjoining private lands. The Gisborne Golf Club occurs to the immediate west of the reserve and contains a mosaic of open, mown areas and patches of trees. To the north-east there are important habitat and canopy linkages through the current pine plantation and cemetery to Daly Nature Reserve and beyond to Bunjil Creek.

This series of fragmented but continuous habitat links connect to some extensive forested areas, including to the Pyrete Ranges 1.6 km to the south-west and Rosslynne Reservoir 2.4 to the north west. This greatly increases the fauna values of the reserve, as many fauna species would move between the reserve and these larger patches of bushland across the different seasons of the year. Maintaining these habitat links will be essential to prevent habitat isolation within the reserve, which would over time would lead to a decrease in fauna diversity.

3.6 Summary of Conservation Significance

Conservation significance within the reserve was assessed utilising standard measures including:

- Bioregional conservation significance of the EVCs present
- Database records of potentially occurring rare and threatened flora and fauna species
- Relevant biodiversity policy and legislation

3.6.1 Environment Protection and Biodiversity Conservation Act (1999)

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is Commonwealth legislation that identifies and protects 'Matters of National environmental significance' including places of National or World Heritage, Wetlands of international importance, listed ecological communities and the Commonwealth marine environment. A database query within 5km of the subject site using the EPBC 'Protected Matters Search Tool' identified potential *Matters of National environmental significance.* Table 6 outlines potentially occurring Threatened Ecological Communities included in this databased query.

Table 6. EPBC listed Ecological Communities potentially occuring in the local area

Listed Threatened Ecological Communities	Threatened Category	Text
Natural Temperate Grassland of the Victorian Volcanic Plain	Critically Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area
Grassy Eucalypt Woodland of the Victorian Volcanic Plain	Critically Endangered	Community known to occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	Critically Endangered	Community likely to occur within area

Vegetation type/structure/species composition and landform within the study area is inconsistent with these listed ecological communities.

Several EPBC listed flora and fauna species have been recorded within 5km and these species are considered in section 3.6.3.

3.6.2 Flora and Fauna Guarantee Act

The *Flora and Fauna Guarantee Act 1988* is the primary Victorian biodiversity legislation governing management of land and water bodies by public authorities. The FFG Act identifies and protects threatened native plants, animals and ecological communities in Victoria and identifies threatening processes that impact on biodiversity.

The study area is not part of a mapped FFG listed ecological community. The one FFG listed ecological communities in the local area is Western Basalt Plains (River Red Gum) Grassy Woodland. Vegetation type/structure/species composition and landform within the study area is inconsistent with these listed ecological communities.

In addition to the Commonwealth *Environment Protection* and *Biodiversity Conservation Act 1999* (EPBC Act) and FFG listed ecological communities, the FFG Threatened List lists provide a comprehensive account of threatened flora and fauna species in Victoria. The potential occurrence of listed species within the study area is discussed below.

3.6.3 Potentially Occurring Rare and Threatened Flora Species

The Victorian Biodiversity Atlas (VBA) is a state-wide database managed by DELWP that documents locations of flora and fauna survey records throughout Victoria. The VBA was queried within 5km of the study area to assist with consideration of potentially occurring threatened species.

Threatened Flora Species

The results the VBA database search within a 5 km radius of the study area returned 53 records for 12 Victorian threatened flora species. The results of this query and the authors likelihood of occurrence assessment is provided in table 7.

Table 7.Threatened flora within 5km of the study area

Conservation Status		
FFG Act 1988	**EPBC Act**	**Victorian Biodiversity Atlas (VBA) Records**
cr: Critically Endangered **vu: Vulnerable** **en: Endangered**	EX: Extinct CR: Critically Endangered VU: Vulnerable EN: Endangered	**Last Record:** within 5km of the study area **No. Rec:** per species within 5km of the study area

Scientific Name	Common Name	Last Record	No. recs	FFG	EPBC	Likelihood of Occurrence
Acacia rostriformis	Bacchus Marsh Wattle	2013	9	vu		Present
Calochilus imberbis	Naked Beard-orchid	1953	5	cr		Low
Coronidium gunnianum	Pale Swamp Everlasting	1996	4	cr		Low
Dianella amoena	Matted Flax-lily	2013	12	cr	EN	Low
Dipodium pardalinum	Spotted Hyacinth-orchid	2017	22	en		Moderate

Scientific Name	Common Name	Last Record	No. recs	FFG	EPBC	Likelihood of Occurrence
Diuris X palachila	Broad-lip Diuris	1900	1	en		Low
Microseris scapigera s.s.	Plains Yam-daisy	1996	1	cr		Low
Pterostylis chlorogramma	Green-striped Greenhood	1990	1	en	VU	Low
Pterostylis rubescens	Inland Red-tip Greenhood	2000	1	en		Low
Senecio psilocarpus	Swamp Fireweed	2016	3		VU	Moderate
Stylidium armeria subsp. pilosifolium	Hairy-leaf Triggerplant	2008	1	cr		Low
Xerochrysum palustre	Swamp Everlasting	2011	5	L	VU	Present

Of the 12 threatened flora species known to occur within 5km, two occur within the study area: Bacchus Marsh Wattle and Swamp Everlasting, although the latter has been established through plantings. A further 2 species (Swamp Fireweed and Spotted Hyacinth-orchid) have a moderate chance of occuring within the study area due to the confirmation of recent records and the suitable habitat present within the study area. Swamp Fireweed is a short lived annual and Spotted Hyacinth-orchid is dormant for most of the year. The timing of the flora survey was prior to the typical flowering period for both species.

The remaining 8 flora species are considered to have low likelihood of occurrence on the site due to a combination of sub-optimal habitat, minimal recent records or the known distribution in the region.

The Atlas of Living Australia also includes records of 3 additional species of threatened flora within 5km of the Study Area: Dwarf Silver Wattle *Acacia nanodealbata*, Small Golden Moths *Diuris basaltica* and Eastern Spider-orchid *Caladenia orientalis.* Based on the habitat requirements of these species and their known distribution throughout the Macedon Ranges and the broader region, these species are considered to have a low likelihood of occurrence within the reserve.

3.6.4 Potentially Occurring Threatened Fauna Species

Table 8 shows the results of the VBA database search for threatened fauna within a 5km radius of the study are and the authors likelihood of occurrence assessment.

Table 8.Threatened fauna within 5km of the study area

Conservation Status							
FFG Act 1988		**EPBC Act**	**Victorian Biodiversity Atlas (VBA) Records**				
cr: Critically Endangered vu: Vulnerable en: Endangered		EX: Extinct CR: Critically Endangered VU: Vulnerable EN: Endangered	**Last Record:** within 5km of the study area **No. Rec:** per site within 5km of the study area				
Taxon	**Scientific Name**	**Common Name**	**Last Rec**	**No. rec**	**FFG**	**EPBC**	**Likelihood of Occurrence**
Amphibian	Litoria raniformis	Growling Grass Frog	1988	5	L	VU	Low
Birds	Aythya australis	Hardhead	2018	1	vu		Low-Moderate
	Lewinia pectoralis	Lewin's Rail	2017	2	vu		Low-Moderate
Mammals	Petauroides volans	Southern Greater Glider	1990	2	vu	VU	Low
	Ornithorhynchus anatinus	Platypus	2017	2	vu		Low
	Phascogale tapoatafa	Brush-tailed Phascogale	2016	3	vu		Moderate
Invertebrates	Jalmenus icilius	Amethyst Hairstreak Butterfly	1915	22	en		Low - Moderate
	Synemon plana	Golden Sun Moth	1919	2	vu	CR	Low

The results in the table above returned 35 records of 8 listed fauna species which is typically low numbers and diversity of records for threatened fauna, although this may be due in part to under sampling. Although more detailed fauna studies in the local area may provide a more informed assessment, it is predicted that no threatened fauna species would make significant use of the site given the fragmented habitat within and surrounding the study area. However, there are a range of habitat types more readily available for species of common fauna. Nonetheless, some discussion on threatened taxa and its potential use of the reserve system is provided below.

Threatened Bird Species

Threatened bird species appearing in the database query is limited to the Hardhead and Lewin's Rail.

Hardheads are found in freshwater swamps and wetlands and occasionally in sheltered estuaries. They are rarely seen on land and tend to roost on low branches and stumps near the water. They prefer deep, fresh open water and densely vegetated wetlands for breeding (Birdlife Australia Online). The two wetlands within zone 1 of the reserve are shallow with limited areas of open water, which suggests that habitat for the Hardhead is unsuitable.

Lewin's Rail mostly inhabits wetland areas with dense vegetation, including wetlands, farm dams, swamps, saline lakes and river flats where they usually forage around the water's edge in shallow water and close to cover for a variety of aquatic plants and invertebrates (swifft.net.au). The two wetlands in zone 1 provide highly suitable habitat for this species, although the access to this habitat is limited by the fragmented biolinks and the surrounding built form.

The recent records of Hardhead and Lewin's Rail were found around Jacksons Creek to the north (between 1.2 and 2km from the study area) where availability of habitat is more contiguous.

Growling Grass Frog

Wetland and swampy vegetation within the study area provides suitable habitat for the Growling Grass Frog, though unfortunately no records within 5km have been confirmed for the past 33 years.

This species has disappeared from much of its former range across Victoria (DEC 2005). It is likely that the fungal disease chytridiomycosis has been a major factor in the decline of the Growling Grass Frog given its pattern of range contraction (Hamer et al. 2010) and susceptibility to infection (Heard et al. 2012). Other significant threats to the species survival are likely to include habitat loss and degradation, alterations in hydrology, predation of tadpoles and eggs by introduced fish, drought and chemical pollution (DEC 2005).

Invertebrate Species

While not listed in the VBA as a locally occuring species in the past 100 years, the presence of Golden Sun Moth and Amethyst Hairstreak Butterfly within the Gisborne area should not be discounted. A series of candidate sites within Macedon Ranges Shire Council were surveyed during December of 2020 as documented by Bainbridge 2021.

Golden Sun Moths were identified in Kyneton (Bald Hill Reserve), King Street in Lancefield on mown roadside reserves and at Malmsbury Cemetery in mown lawns and adjacent grazed pasture. Amethyst Hairstreak Butterfly observations were made at a previously recorded locations along a rail reserve in Riddells Creek with new observations extending the butterfly's known distribution along this rail corridor. These recent records are among only a few historical records submitted within the Macedon Ranges Shire Council.

Golden Sun moth typically favours open areas with short, sparse grassy cover, containing a high proportion of Wallaby Grasses (*Rytidosperma spp.*), Spear grasses (*Austrostipa spp.*), the presumed food plants of the caterpillars, and with few overstorey trees or shrubs (Bainbridge 2021). There is limited suitable habitat available for Golden Sun Moth within the study area.

Braby 2000 lists *Acacia mearnsii* among several Acacias used as foodplants by the Amethyst Hairstreak caterpillars and Bainbridge 2021 noted that adults spend most time on *Acacia melanoxylon* and caterpillars were recorded from this species at Riddell's Creek. There are suitable food sources for the Amethyst Hairstreak within the study area. The degree of likelihood of presence of this species in the reserve is unclear given it distribution within the Macedon Ranges region is poorly understood.

Threatened Mammal Species

The 3 threatened mammal species recorded within 5km include the Brush-tailed Phascogale, the Southern Greater Glider and the Platypus.

The Brush-tailed Phascogale has suffered population decline throughout most of its range and populations are now fragmented due to land clearing, predation band competition with exotic predators such as the Fox and feral Cat. However, they are known to be active in the Macedon region and the Pyrete Ranges through to Bendigo. This species requires access to tree hollows and continuous habitat corridors within their foraging range. The limited hollows and biolinks within the surrounding the study area suggests that the study area is not core habitation or breeding territory for the Brush-tail Phascogale. However, there is some potential they could occasionally make use of the reserve, particularly the males who roam widely during the breeding season.

The Southern Greater Glider is forest dependent and prefers older age classes of trees in moist forest types. They use hollow-bearing trees for shelter and nesting, with each family group using multiple den trees within its home range. (Greater Glider DELWP online). Habitat within the study area is unsuitable for this species.

The Platypus is mostly found where the banks are suitable for building stable burrows and where the water is shallow enough for them to dive down and feed on biota on the riverbed. There is no suitable habitat for this species within the reserve system.

4 Conservation Management Objectives

This section describes the various management zones and objectives within the Dalton Street Reserve Network including conservation management, weed control, pest animal management, revegetation, and ecological thinning. The recommendations applied to each management zone and more broadly are the result of input from community members, background knowledge of MRSC operational staff and the observations by ecological consultants.

4.1 Management Zones and Conservation Objectives

As shown on Map 1, there are and 14 separate zones have been identified and categorised by vegetation type which forms 5 broad management areas:

- Remnant Vegetation and Revegetation (Zone 1)
- Ephemeral Wetlands (Zone 2-3)
- Revegetation (Zone 6-8 and 14)
- Remnant Trees with landscaping (Zone 4)
- Remnant Vegetation (Zone 9-13)

These broad management areas and their management objectives are outlined below.

Zone 1 - Remnant Vegetation and Revegetation

Description

Zone 1 features a combination of revegetation and remnant vegetation. Stands of Messmate Stringybark dominate the eastern portion of the zone with a remnant understorey although some revegetation is featured alongside Dalton Street. Within the remnants there is a sparse ground storey cover and dense mid-storey dominated by Blackwood (Acacia melanoxylon) and Drooping Cassinia (Cassinia Sifton). Areas closer to the 2 ephemeral wetlands (Zone 2 and 3) show evidence of revegetation featuring Narrow-leaf Peppermint (Eucalyptus radiata), Manna Gum (Eucalyptus viminalis) and Swamp Gum(Eucalyptus ovata). The west section of Zone 1 includes some mown firebreaks on the interface of residential lots (30 and 32 Dalton Street) among some remnants and revegetation areas.

Map 2 illustrates the locations of significant flora within zone 1 and map 3 shows locations of high threat weeds. Of the 7 species of significant flora, 5 are predicted to have been planted including Water Woodruff (Asperula subsimplex), Milky Beauty-heads (Calocephalus lacteus), Amphibious Water-milfoil (Myriophyllum simulans), River Buttercup (Ranunculus inundatus) and Swamp Everlasting (Xerochrysum palustre).

Management Objectives

1 Control and eliminate emerging infestations of Blackberry which are notable within drainage lines and stormwater outflows

2 Aim to eliminate all exotic mature and emerging woody weeds including though not limited to:

- Cherry Plum (Prunus cerasifera). One small specimen occurs in the north of the zone
- Grey Sallow (Salix cinerea). Small plants occur along the drainage-line in the north-west of the zone

3 Control and eliminate Agapanthus (Agapanthus praecox subsp. orientalis), Yellow Flag Iris (Iris pseudacorus) and any other emerging garden escapes

4 Control and manage introduced wattles such as White Sallow-wattle (Acacia floribunda), Sallow Wattle (Acacia longifolia subsp. longifolia) and Ovens Wattle (Acacia pravissima).

5 Weed management in areas of remnant vegetation or among areas of significant flora should generally take priority over revegetation areas.

Zone 2 and 3 Ephemeral Wetlands

Description

These zones have similar composition and management requirements and are therefore addressed together.

The wetlands are constructed and feature planted aquatics that are known to be successful colonisers of shallow water bodies and ephemeral margins, including through not limited to River Club-sedge (*Schoenoplectus tabernaemontani*), Blunt Pondweed (*Potamogeton ochreatus*), River Buttercup (*Ranunculus inundatus*) and Slender Knotweed (*Persicaria decipiens*) and Fen Sedge (*Carex gaudichaudiana*). These zones also feature 2 species of significant flora: Water Woodruff (Asperula subsimplex) and Swamp Everlasting (Xerochrysum palustre), both of which are predicted to have been planted.

Emerging specimens of Grey Willow occur on the margins of zone 3 which is a high priority for control. Although the wetlands and margins do not currently support any other high threat weed species, there are several species throughout the reserve that are known to colonise wetland edges.

Management Objectives

1 Control and eliminate all specimens of Grey Willow, particularly given they are small and manageable at this current time

2 Closely monitor for any emerging high threat weeds on the wetland margins including through not limited to Common Blackberry (Rubus anglocandicans), Kikuyu (Cenchrus clandestinus), Clustered Dock (Rumex conglomeratus) and Creeping Buttercup (Ranunculus repens).

3 Overtime, monitor populations of Water Woodruff, Swamp Everlasting and other key wetland species and undertake supplementary planting if necessary

Figure 7. The eastern end of Site 1 features remnant trees and groundstorey among disturbed areas that have been colonised by *Cassinia sifton*

Figure 8. Ephemeral wetland (Site 2) featuring in-stream aquatic vegetation with limited areas of open water

Figure 9. Drainage channel with revegetation in the western portion of Site 1

Figure 10. Northern section of drainage channel features in-stream indigenous plants such as *Alisma plantago-aquatica* but also invasive weeds such as **Iris psuedoacorus*

Zone 4 - Remnant Trees with Landscaping

This area supports mature specimens of Messmate Stringybark among a highly managed ground storey. The roadside edge features Messmates of various age classes among a mulched ground storey with sparsely planted local indigenous natives. Beyond the road edge is a series of mown areas and established garden beds beneath the mature canopy. This area gives the impression that it is private land rather than a public reserve.

The managed garden beds mostly comprises of local indigenous species (Common Tussock-grass, Silvertop Wallaby-grass, Veined Spear-grass and Black-anther Flax-lily, Wattle Mat-rush and Shiny Everlasting). However a suite of non-local Victorian and Australian natives also occur including a range of Correas, Callistemons, Grevilleas, Daisies, Tasman Flax-lily and Dodonea.

Management Objectives

At this stage, the management directions for this area are uncertain. It currently functions as a small area of green space with some ornamental plantings among remnant canopy and ground storey and does provide an attractive outlook that also provides a micro-habitat for some common fauna species. However, the problematic elements are:

1 Some in appropriate plantings assumed to have been planted by local residents (i.e. plants which Council would not typically use for revegetation or local-native landscaping). These plantings also potentially compromise local indigenous flora

2 The zone does not give the impression of publicly available space

3 Further inappropriate plantings could arise in the future, particularly if it is perceived and managed as an extension to someone's private garden.

Figure 11. Remnant roadside trees and revegetation within zone 4

Figure 12. Mown and landscaped areas account for the majority of zone 4

Figure 13. Dianellas within garden beds, which appear to be planted

Figure 14. Shiny Everlasting (possibly planted) *Xerochrysum viscosum* only occurs in Zone 4

Zone 5 – Remnant vegetation

Description

This is a small area of disturbed remnant vegetation that includes informal access from Dalton Street and into the Gisborne Golf Course (through a gap in the existing cyclone fence). This zone is dominated by mature Messmates. The midstorey is sparse (limited to a few Blackwood specimens), however there is a fair representation of ground storey species including through not limited to Wattle Mat-rush (Lomandra filiformis), Black-anther Flax-lily (Dianella revoluta), Cotton Fireweed (Senecio quadridentatus), Silvertop Wallaby-grass (Rytidosperma pallidum), Veined Spear-grass (Austrostipa rudis subsp. rudis) and a species of Sun Orchid Thelymitra spp. There is a significant cover of introduced grasses (~40-50% cover), particularly Sweet Vernal-grass.

During a community consultation meeting in early February 2022, local residents had reported ongoing construction activity and vehicle movement over the previous 12 months and this contributed to disturbance and creation of bare earth.

Management Objectives

1 Prevent unauthorised access by construction vehicles through the use of a barrier (fence or bollards)

2 Reduce cover of introduced grasses through targeted spot-spraying and seasonal slashing prior to late spring and summer seed production

3 Encourage ongoing natural regeneration of indigenous species

4 Consider supplementary revegetation with indigenous species, particularly at the Dalton Street end to prevent inappropriate vehicle access

Figure 15. Portion of Zone 5 that mostly features leaf litter or bare ground

Figure 16. Other areas of zone 5 have good cover of native ground flora including Veined Spear Grass, Cotton Fireweed and Silvertop Wallaby-grass

Zone 6, 8 and 14 Revegetation Areas

Description

These zones have similar composition and management requirements and are therefore addressed together. Zone 6, 8 and 14 have arisen out of revegetation efforts undertaken 10-15 years ago as a part of constructed drainage channels associated with the development estate. These areas typically feature a young canopy of Swamp Gum (Eucalyptus ovata), Messmate Stringybark (Eucalyptus obliqua), a dense mid-storey including Woolly Tea-tree (*Leptospermum lanigerum*), Blackwood (*Acacia melanoxylon*), Silver Wattle (*Acacia dealbata*). The groundstorey in revegetation areas typically consist of robust graminoids such as Spiny-headed Mat-rush (*Lomandra longifolia*), Fen Sedge (*Carex gaudichaudiana*) and Poong'ort (*Carex tereticaulis).*

Zone 14 and the southern portion of Zone 8 has been the most successful portion of revegetation. Both of these areas are regularly swampy and are traversable through constructed boardwalks. The vegetation is a dense layer of Woolly Tea-tree and robust graminoids on its margins. Although the revegetation design is simple (in terms of structure and diversity) it demonstrates high effectiveness in maintaining an ecological integrity with minimal weed incursions.

Although the remaining revegetation areas have established successfully and are generally well managed, the ground storey is not as densely planted and unsurprisingly, a range of introduced grasses and herbs have established within the drainage corridor including through not limited to Sweet Vernal-grass, Kikuyu (Cenchrus clandestinus), Tall Fescue (Festuca arundinacea) and Yorkshire Fog (Holcus lanatus). Some high threat woody weeds including Blackberry, Cherry Plum (Prunus cerasifera), Sallow Wattle (Acacia longifolia subsp. longifolia) and emerging specimens of Gorse (Ulex europaeus) were also observed. A small infestation of the declared 'noxious' Chilean Needle-grass (Nassella neesiana) occurs in the central portion of zone 8 and on the margins of revegetation zones within mown open space. Notable invasive garden escapes include Agapanthus, Laurestinus (Viburnum tinus) and Florida Swamp Lily (Crinum americannum).

Map 2 illustrates the locations of significant flora within zones 6 and 8. These include 4 species that are likely to have persisted from marginal remnants prior to construction of the drainage system including Bulbine Lily (Bulbine bulbosa), Blue Pincushion (Brunonia australis), Slender Rice-flower (Pimelea linifolia subsp. linifolia), and Floodplain Fireweed (Senecio campylocarpus). An additional significant flora species, Shining Buttercup (Ranunculus glabrifolius) is presumed to have been planted.

Management Objectives

1 Aim for control and elimination of infestations of listed 'noxious' species. Chilean Needle-grass, Blackberry and Gorse should be the highest priority

2 Aim to minimise if not eliminate all exotic woody weeds and garden escapes spreading into the drainage reserve

3 Consider opportunities for supplementary planting of ground storey species. This should only be undertaken following substantial control of grassy and herbaceous weeds.

4 Monitor and protect remnant flora populations on the margins of revegetation zones

Figure 17. Southern section of zone 8 with dense planting of Woolly Tea-tree to the left of screen

Figure 18. Boardwalk section within zone 14

Zone 7 Revegetation

This zone is a small, mulched area featuring a large remnant Messmate and a planted understorey of tussock grasses (mostly Poa sp.). Apart from the habitat provided by the large Messmate, this section currently has low ecological value and at the time of assessment, a high cover of exotic grasses and herbs were evident, indicating a need for maintenance. Although not a high priority, this area could be managed as a 'feature' in an otherwise open grassy landscape. Increased revegetation with a diversity of mid-storey, small shrubs, grasses and herbs will enhance the amenity and ecological values of this zone, without being resource intensive (give its size).

Figure 19. Zone 7 featuring a large Messmate with an unmaintained, planted understorey

Figure 20. Further north of zone 7, towards the drainage reserve (zone 6)

Zone 9-13 Remnant Vegetation

Intact remnant vegetation accounts for 1.36 hectares within the Dalton Street Reserve Network. Unfortunately, remnant vegetation is fragmented into 5 separate patches ranging from 0.04 hectares to 0.59 hectares.

Zone 9

Zone 9 is a small and possibly overlooked remnant adjacent to a revegetated channel (zone 6). It supports mature Messmate canopy with a surprising diversity of flora at ground storey level, including Button Everlasting (Coronidium scorpioides), Blue Pincushion (Brunonia australis), Slender Rice-flower (Pimelea linifolia subsp. linifolia), Milkmaids (Burchardia umbellata,) Onion-orchid (Microtis unifolia) and the FFG listed Bacchus Marsh Wattle (Acacia rostriformis). There is also ample recruitment of young Eucalypt and wattle species. Despite a high diversity of understorey flora, its integrity is under threat due to a suite of high threat weeds including Blue Periwinkle (Vinca major) English Ivy (Hedera helix) and Agapanthus.

At the time of assessment, a large stockpile of dead materials were observed and it was not clear if this was an action undertaken by Council or local residents. Given zone 9 is a small remnant backing onto residential lands, it is important to facilitate awareness of this important remnant and encourage its protection. It should not be an area for stockpiling or burning-off or any other use that is detrimental to its conservation values.

Zone 10

Zone 10 is another small remnant off Dalton Street, however it is quite conspicuous in the landscape. There are a number of medium and large old trees (>60cm diameter) which are not typical to remnants within the reserve system along with ample recruitment of young eucalypts and wattles.

The edge of the road features a landscaped batter featuring planted indigenous and non-indigenous natives. The remnant vegetation starts above the retaining wall and includes Veined Spear-grass (Austrostipa rudis subsp. rudis), Silvertop Wallaby-grass (Rytidosperma pallidum), Wattle Mat-rush (Lomandra filiformis) and Cotton Fireweed (Senecio quadridentatus). There is however a fair cover of introduced grasses and some prominent invasive wattles including Sallow Wattle (Acacia longifolia) and (Cootamundra Wattle Acacia baileyana). A small infestation Blackberry is also present.

Figure 21. Milkmaids within Zone 9

Figure 22. Slender Rice-flower within Zone 9

Figure 23. Eucalypt regeneration within zone 9

Figure 24. Stockpile of dead branches in zone 9

Figure 25. Mass eucalypt regeneration – Zone 10

Figure 26. Interface between landscaping and remnant vegetation – Zone 10

Zone 11

Although the vegetation quality mapping does not necessarily reflect this, Zone 11 (along with Zone 13) is the highest quality and most diverse patch within the Dalton Street Reserve Network. Among significant stands of Messmate of various age classes and an understorey of Blackwood and Cherry Ballart (Exocarpos cupressiformis) lies a suite of wildflowers including Tiger Orchid (Diuris sulphurea) Tall Bluebell (Wahlenbergia stricta subsp. stricta), Blue Pincushion (Brunonia australis), Grey Parrot-pea (Dillwynia cinerascens) among other common grasses (mostly Spear Grasses and Wallaby Grass). Other significant flora includes several small populations of the FFG listed Bacchus Marsh Wattle (Acacia rostriformis) and Centella (Centella cordifolia).

Despite this diversity, there are still significant patches of invasive grasses (e.g. Sweet Vernal and Quaking Grass). However, other high threat weeds are minimal and limited to small occurrences of Blackberry, Bluebell Creeper (Billardiera heterophylla) and White Sallow-wattle (Acacia floribunda) on the road verge.

A mown native grass cover persists beyond the tree line on the western margins of this zone, which suggests that this could be a potential 'no mow' zone. However there may be limits to expanding this area given the narrow band of open space that currently accommodates 2 picnic tables.

Figure 27. Tiger Orchid within Zone 11

Figure 28. Site 11 from the southern aspect

Figure 29. Mass Eucalypt recruitment within zone 11

Figure 30. Interface of Zone 11 and open space where some mown areas have high cover of native grasses

Zone 12

This zone mostly consists of Messmates of small to medium size classes with minimal mid-storey. Although the ground flora supports common grasses and sedges, it is notably bare throughout most of the zone and has a high cover of leaf litter. Where plant cover is less bare, introduced grasses account for approximately 50% cover. Lack of ground cover compared to other local remnants is notable and the factors that have led to these conditions is not clear.

Figure 31. Edge of zone 12 facing south along Dalton Street

Figure 32. Zone 12 features a sparse ground storey

Zone 13

Like Zone 11, Zone 13 is another high quality remnant. Among typical common grass species (e.g. Silver-top Wallaby Grass and Kangaroo Grass) is a suite of groundstorey herbs, orchids and sub-shrubs. Zone 3 supports the most substantial populations of significant flora including Tiger Orchid, Blue Pincushion, Bacchus Marsh Wattle, Nodding Greenhood (Pterostylis nutans), Tiny Cudweed (Gnaphalium indutum), Running Postman (Kennedia prostrata), Sun orchid (Thelymitra spp.) and Yellow Sebaea (Sebaea ovata) in the wetter southern margins.

Despite the high quality ground flora throughout most of Zone 13 there are several small infestations of Chilean Needle-Grass and a couple of infestations of Bluebell Creeper. There are also large patches of typical pastures grasses (e.g. Sweet Vernal and Yorkshire Fog), particularly on the southern margins.

Figure 33. Typical vegetation structure within zone 13

Figure 34. Northern margins of zone 13 showing ample Eucalypt recruitment

Management Objectives for Remnant Vegetation

1 Management of remnant vegetation should generally take priority over revegetation areas

2 The areas of highest quality and diversity should be the starting point for conservation management through targets weed control

3 Aim to eliminate localised infestations of Chilean Needle-grass, before the species incrementally spreads and becomes intractable

4 Aim to eliminate all high threat woody weeds within remnant areas. The relatively small infestations of such weeds suggests that elimination is possible within the next 2-3 years.

5 Aim to eliminate Blackberry, Agapanthus and Bluebell Creeper. The relatively small infestations of such weeds suggests that elimination is possible within the next 2-3 years.

6 Seasonally manage ubiquitous grassy weeds such as Quaking Grass, Yorkshire Fog and Sweet Vernal by undertaking targeted weed control and strategic slashing to prevent seed set

7 Facilitate natural regeneration with the assistance of supplementary planting where appropriate

4.2 Weed Control Objectives

The previous section identifies locations of high threat weeds in specific management zones, while this section provides a broader overview of weed populations and priorities across the reserve network.

Of the 62 exotic and 8 non-indigenous native species recorded within the reserve, the most abundant species are introduced grasses such as Large Quaking-grass (**Briza maxima*), Sweet Vernal-grass (**Anthoxanthum odoratum*) and Squirrel-tail Fescue (**Vulpia bromoides*). Control of these species can be challenging due to the high density of infestations and persistent seed banks, and is typically only implemented in smaller patches, in sites with the most intact and diverse indigenous ground layer. Management across the entire reserve should largely focus on controlling high threat woody weeds and Common Blackberry (**Rubus anglocandicans*), as these have the potential to displace and out-compete large areas of native vegetation.

Fourteen of the recorded species have been identified as being of high priority for control. These species are presented and discussed in Table 9.

Table 9.Summary of Significant Weeds

Scientific name	Common name	Comments
Acacia floribunda	White Sallow-wattle	Several mature plants were recorded in zones 1 and 11. Remove small plants by hand and cut-paint mature plants.
Acacia longifolia subsp. longifolia	Sallow Wattle	Several mature plants were recorded in zones 1 and 6. Remove small plants by hand and cut-paint mature plants.
Acacia pravissima	Ovens Wattle	One mature plant recorded in zone 1. Remove small plants by hand and cut-paint mature plants.
Acacia baileyana	Cootamundra Wattle	Several mature plants recorded in zone 10. Remove small plants by hand and cut-paint mature plants.

Scientific name	Common name	Comments
Agapanthus praecox subsp. orientalis	Agapanthus	Recorded in zone 1 and 6, an escapee of adjacent gardens. Plants are best dug out with the aid of a digging tool.
Billardiera heterophylla	Bluebell Creeper	Several scattered plants were recorded in zones 11 and 13. Plants can be removed by hand.
Hakea salicifolia subsp. salicifolia	Willow-leaf Hakea	Recorded in zones 6 and 10. Remove small plants by hand and cut-paint mature plants.
Hedera hibernica	Atlantic Ivy	Recorded in zone 6. Small plants can be removed by hand whilst larger plants can be treated with herbicide by scrapping back part of the stem.
Nassella neesiana	Chilean Needle-grass	Recorded in zone 13 and in regularly mown areas near paths in the south of the reserve. Best treated by spot-spraying. Care should be undertaken when mowing grass around November-December to ensure that seed heads are not present to prevent catching seeds and spreading to other areas.
Prunus cerasifera	Cherry Plum	One small plant recorded in the north of the reserve (zone 1). Remove small plants by hand and cut-paint mature plants.
Salix cinerea	Grey Sallow	Small plants recorded around the stormwater wetland in the north of the reserve (zone 3) and along the drainage-line in the far north-west (zone 1). Best treated by cut-paint.
Ulex europaeus	Gorse	One small plant recorded along the drainage line east of Green Gully Close (zone 8). Best treated by cut-paint.
Viburnum tinus	Laurestinus	One small plant recorded in zone 12. Remove small plants by hand and cut-paint mature plants.
Vinca major	Blue Periwinkle	Recorded in zone 9, nearby to several significant plant species. Blue Periwinkle can be very difficult to control. The foliage can be killed by using Glyphosate in combination with a surfactant, however shoots will typically re-shoot from rhizomes. It may take several applications to eradicate the patch. Plants can also be suppressed by regular mowing or slashing.

Statutory Obligations

The Catchment and Land Protection Act 1994 (CaLP Act) legally requires landholders to manage declared noxious weeds on their land. There are four categories of noxious weeds under the CaLP Act and management obligations associated with each category. Public authorities must take all reasonable steps to:

- Eradicate State classified 'prohibited weeds'
- Eradicate Regionally classified 'prohibited weeds'
- Prevent the growth and spread of classified 'regionally controlled' weeds
- Prevent the trade of classified 'restricted' weeds and their propagules, either as plants, seeds or contaminants in other materials

Of the weeds identified during the site assessment, 5 are declared noxious weeds in the Port Philip and Western Port CMA Region. These are Spear Thistle **Cirsium vulgare,* Blackberry, Chilean Needle-grass, Gorse and Montpellier Broom. Each of these are classified as 'regionally controlled' and as such there are legal obligations for land managers to prevent the growth and spread of these weeds.

With the exception of Spear Thistle, the remaining 4 noxious species are declared Weeds of National Significance (WONS) (National Weed Strategy, Thorp et. al 2000). Listed WONS species cause broad-scale detrimental impacts to Australia's natural and productive landscapes.

4.3 Control of Pest Animals

Rabbits and Foxes have been identified as the primary pest animal threats to vegetation and fauna habitats in the local area.

It appears that the impacts of rabbits on native vegetation are currently limited. In recent years, the local release of the Calicivirus RHDV1 K5 variant by the Invasive Animals Co-operative Research Centre and DELWP has helped reduce rabbit populations in the local area following eventual genetic resistance of rabbit populations to Calicivirus RHDV1 and the Myxoma virus over several decades. However ongoing genetic resistance and/or favourable seasonal variations can facilitate rapid population increase and Council and other public land managers must be vigilant with intervention programs.

Management Response: Rabbits

Rabbit activity should be monitored by Council Staff on a bi-annual basis and appropriate actions should be undertaken including (where necessary) the assistance of qualified professionals.

In recent years, Council has organised the collapsing of burrows which has proved one of the simpler and cost effective measures for discouraging rabbit populations.

Poison baits such as pindone or 1080 are an effective control method, especially when used during mid to late summer during the non-breeding season when natural feed is scarce and rabbits are less territorial. However, pest control experts and fauna specialists have advised Council not to lay Poison baits in Dalton Street Reserve, as this carries a significant risk of consumption by dogs, kangaroos, wallabies and other smaller mammals. Therefore, poison baits should only be considered in conjunction with caged bait stations.

Warren fumigation is a potential option where significant warrens are identified which is usually more effective following a successful baiting program. However, fumigation may not be desirable in close proximity to public use areas.

Management Response: Foxes

Reducing fox activity generally relies on multiple methods ranging from den destruction, baiting and trapping. Buried baits or dedicated bait stations are less likely to be consumed by native birds or mammals. As a minimum, regular monitoring, location and destruction of dens should be undertaken.

Rabbits are a main food source for Foxes so an integrated rabbit control program will assist in discouraging fox activity within the reserve network.

Limitations and Opportunities

Although the above pest control techniques can be effective in the short-term, rabbit and fox control is most effective when part of an integrated strategy across multiple landholdings. No single method of fox and rabbit control is reliable in the long-term and areas subject to eradication can often result in re-invasion of the area within 2 months from nearby untreated sites. If Council decides to invest in a substantial rabbit and fox control program, they will need to coordinate their efforts with other local land managers including Melbourne Water, the Gisborne Golf Course and farm managers to the south and south west of the estate.

With the acknowledgement that pest animal control is most effective when undertaken across multiple adjoining land tenures, education and incentives are potentially highly effective strategies that can lead to greater outcomes for pest animal management. To this end, MRSC will continue to provide education and awareness initiatives for pest animal control including:

- Facilitation of Rabbit Control Workshops that have been undertaken annually for the past several years
- Rabbit Control Courses run by the *Victorian Rabbit Action Network* Leadership which have been conducted in the Macedon area.

4.4 Introduction of nest boxes into the reserves

There are few large old trees throughout the reserve and a lack of suitable tree hollows available for fauna species. To alleviate the limited habitat for hollow dependant birds and mammals, an opportunity for a nest box installation and monitoring program has been identified.

The use of nest boxes by native fauna has been demonstrated in many semi-urban parks and bushlands across Victoria, and in some cases, has completely altered the fauna composition within reserves. A dedicated nest box installation and maintenance program may attract a diversity of hollow-dependent species. These could include hollow dependant birds (such as Eastern Rosellas, Rainbow Lorikeets, Musk Lorikeets, King Parrots and Galahs) and arboreal mammals (Common Brush-tailed and Eastern Ring-tailed Possums, Sugar Gliders and micro bats).

It is recommended that a nest box installation program is part of the future conservation management of the Dalton Street Reserve network. If Council has the resources to commit to this initiative considerations will include:

- The location, density and diversity of nest box sizes to attract a range of species
- A management program for undesirable species that may utilise the nest boxes e.g. Indian Mynas are an aggressive exotic bird species that have been shown to outcompete native birds for the nest boxes
- Monitoring the nest boxes for the presence of native fauna which will also provide important data on the fauna presence within the reserve system

4.5 Revegetation

Although revegetation has been utilised extensively throughout the reserve network, there are further opportunities to enhance the ecological and amenity values of the reserve through various forms or planting. While weed and pest animal management should be the priorities for the reserve system (at least in the short-term), revegetation, through planting of tubestock, provides great opportunities for community participation while improving biodiversity outcomes.

Revegetation Categories

Broadly speaking, there are 4 categories of revegetation and planting that can potentially be implemented within the reserve network as outlined below:

Terrestrial Revegetation

These areas are suitable to a broad range of plant species depending on the local conditions. This type of revegetation has been the dominant treatment for zone 1, 6-8 and 14. In most cases these are plants within the drainage corridor i.e. plants suited to moist environments. Terrestrial revegetation within the reserve network can be undertaken to supplement existing revegetation with a greater diversity of plant species and lifeforms, or to establish new areas.

Wetland or Marsh Revegetation

This revegetation type has been implemented within zone 2 and 3 and within the edges of drainage lines within site 6 and 8. Plants used for this vegetation type include species that require permanent water and species that only tolerate waterlogging and seasonally dry periods.

At this stage there is no need for revegetation on the fringes of the 2 wetlands given that plant life has fully colonised these areas. However there is an opportunity for greater diversity of planting within ephemeral drainage lines in within sites 1, 6 and 8.

Supplementary planting within remnant areas

Revegetation in the form of supplementary planting is sometimes undertaken to fill ecological gaps in remnant vegetation areas. This is usually undertaken concurrently with the facilitating the natural regeneration of plant species (through weed control, pest animal management and other preventative actions). Supplementary planting may be for the purpose of increasing plant diversity (i.e. species enrichment planting) with species that are typical of the relevant EVC. It may also be for the purpose of re-instating missing plant lifeforms such as increasing shrub cover for fauna habitat or through planting of canopy species where natural recruitment is lacking.

Remnant areas in the reserve would benefit from supplementary planting given that most remnants lack diversity and cover in the groundlayer, most likely caused by previous stock grazing and possibly compounded during the development and construction of the estate. Planting within remnant areas should include a high density of local daisy species (Asteraceae family), small peas (Fabaceae family) and lilies (Dianella, Bulbine Lily

etc). However, if such planting were to be undertaken, rabbit proof enclosures should be installed around these vulnerable species to protect them from grazing.

Any supplementary planting should be undertaken with caution in terms of location, quantity and species selection. The key priority for remnants within Dalton Street Reserve is to preserve the existing vegetation and encourage its natural regeneration through management of threatening processes.

Landscaping

Landscaping using indigenous plants has been applied to some areas alongside Dalton Street. The aim has been to introduce our native flora to more 'managed' or 'formal' settings that provides visual amenity and, in some cases, may attract native birds to the area. These areas are typically much smaller than broad-scale revegetation areas and may receive more maintenance per square metre of land. While broadscale revegetation is typically the domain of larger and more resilient plant species, smaller-scale landscaping can often use smaller species (e.g. forbs, wildflowers and lilies) that would not typically fare well in larger revegetation areas.

Species selection

Appendix 3 provides a broad list of locally occurring indigenous plant species that are suitable for use in revegetation within Dalton Street Reserve. A total of 66 plants are included in this list including 36 plants already present within the reserve and 30 that are known to occur in the local area. It should also be noted that many species that naturally occur within the reserve or in nearby similar vegetation types are not particularly successful in revegetation and therefore are not included on this list.

While the list in Appendix 3 provides a resource of plant species potentially suitable for community planting days or revegetation contractors, it should be stressed that revegetation activities often require detailed planning and species selection for a given location, which is best implemented or led by an ecologist. Although each species is allocated for one or more of the 4 categories described, suitability of use is subject to site exposure, aspect, soil type, access to ground water and the objectives of revegetation.

4.6 Support for Local Environment Groups

A willingness to form an 'Environment Group' or 'Friends Group' dedicated to protecting and enhancing Dalton Street Reserve has been expressed by several local community members. Such an organisation has the potential to play a key role in protecting local flora, fauna and ecological communities through community planting days and weed management. The MRSC Environment team would provide support by attending and presenting at meetings.

There are several community driven environmental groups operating locally within the Gisborne Area such as Friends of Daly Nature Reserve, Friends of Mount Gisborne Bushland Reserve, Friends of Gisborne Botanic Gardens, Gisborne Landcare, Federation of Environment and Horticulture in the Macedon Ranges, Jacksons Creek EcoNetwork and Friends of Jacksons Creek. MRSC is committed to providing ongoing assistance and resources for Landcare and environment groups and would encourage and support any initiative to form an environment group dedicated to Dalton Street Reserve.

Funding opportunities are available to Landcare and Environment groups in the Macedon Ranges including:

- **Landcare and environment friends group support funding**: to cover the costs of administration, insurance, venue hire, printing and mail
- **Community Weed Partnership Program**: to enable weed control on Council managed land, which complements Council's annual weed program
- **Landcare Network Partnership Program:** Intended to support projects and activities that help build the capacity of the networks, groups and land managers to enhance biodiversity and further sustainable land management outcomes in the shire

5 Community Consultation

Community consultation was extended to local residents in the Dalton Street Estate Precinct. There are 2 stages of community consultation:

- **Stage 1A:** Written notification to residents and stakeholders of the development of the EMP and inviting written input into the Draft Plan prior to a community meeting
- **Stage 1B:** Conducting an onsite community consultation meeting during 9 February (approximately 20 residents attended)
- **Stage 2:** Inviting feedback on the release of the Draft Plan.

5.1 Community Submissions

The Stage 1 consultation process resulted in 6 written submissions received by Council and many verbal contributions offered during the community consultation meeting. Several objectives were identified in relation to biodiversity protection, conservation management and pest plant and animal management, including the willingness to form a 'friends group' to help facilitate these objectives. Section 4 outlines these objectives and potential management solutions.

Aside from the biodiversity protection objectives outlined in Section 4, the most common concerns raised by community members were:

- Tree hazards in the vicinity of residential areas
- Control and/or management of domestic cats
- Control and/or management of dogs utilising the parks and reserves
- The need for increased signage
- Inappropriate landscaping within Zone 4
- Inappropriate use and access of Zone 5 (also referred to as reserve no. 1)
- Fire prevention
- Road Safety

Each of these issues and potential solutions are discussed below.

5.1.1 Tree hazards to neighbouring property

Some residents with properties backing onto the creek reserves have expressed concern that some of the planted canopy and sub-canopy is overabundant and its trunks and branches are encroaching into private property. Community concerns are based on safety as well as amenity. Recent incidents were recalled by residents of reserve trees falling onto neighbouring property and causing damage. Similar concerns include the current density of young trees and their potential impact and overcrowding upon maturity.

These concerns seem to be most pertinent within the narrow drainage channels that back onto residential properties (zones 6 and 8).

Management Response:

Field assessments undertaken during November to February 2021/22 have noted mass regeneration and overabundance of canopy and sub-canopy trees. In these instances, there is a case for 'ecological thinning' where canopy and sub-canopy species are regenerating or suckering on mass and overhanging into neighbouring property. As these young trees mature, they will become increasingly difficult to manage as they draw greater resources from the riparian corridor at the expenses of native understorey while increasing risk to neighbouring assets. Where these issues are identified, it is predicted that targeted selective thinning of 20-50% of the upper strata would not compromise the intent of revegetation and would provide enough retained parent trees to facilitate ongoing natural regeneration.

In addition to strategic thinning of overabundant canopy, Council will continue its tree audit program in high use areas (a 3 year cycle by a qualified Arborist). A new 3-year cycle is to commence in July 2022. Following the initial audit, timely pruning or removal will then follow if a legitimate safety concern is identified.

Figure 35. Mass Eucalypt regeneration – Site 6

Figure 36. Mass Eucalypt regeneration – Site 8

5.1.2 Control and/or management of domestic cats

The impacts of domestic cat predation on native animals are well known throughout Australia and is difficult to control where residential areas coexist with bushland areas. Only community education and enforcement of Cat Curfews can have a tangible effect on minimising cat predations.

Management Response:

On 1 July 2020, Macedon Ranges Council took a critical step towards minimising cat predation through the mandating of the *Dog and Cat Control Order 2019*. The order includes:

- Requirements of owners to keep cats contained to their property between sunset and sunrise
- Prohibition of cats from these sensitive environmental areas: Mount Gisborne Reserve, Malmsbury Common, Gisborne Marshlands, Woodend Grassland and Hanging Rock Reserve.

Dalton Street and surrounds are not part of the 'prohibited areas' and may be considered unreasonable to apply this principle to the local area given the long established residential lots. However, the night time cat curfew is a positive step which is best applied through education and enforcement strategies.

5.1.3 Control and/or management of dogs utilising the parks and reserves

Dogs and their use of the reserve network are contentious among some residents and concerns include their droppings, impact on wildlife and anecdotes of dogs being off-lead. *Dog and Cat Control Order 2019* has designated off-lead areas and designated prohibited areas in the Shire. The Dalton Street Reserve network does not fall into either category, which means dogs must be kept on a lead when walking through the Dalton Street reserves.

Council dog policies include permit and registration requirements and obligations of pet owners to manage their dogs in public places including collection of all droppings and having effective control of the animal (including the prevention of attacks on humans and other fauna).

Similar to domestic cats, only community education, compliance and enforcement can have a tangible effect on minimising the impacts of dogs within sensitive environmental areas.

Management Response:

Although dog owners should be aware of the responsibilities of dogs in public places, these policies are not adopted by all owners. There is an absence of any signage around the reserve network that reminds dog owners of their obligations to manage their pets. Strategically placed signage will help to encourage dog owners to abide by Council's policies and protect the environmental surroundings. Signage can be simple but effective and could include the following content:

- This is a Conservation Area: Please ensure that your dog is on-lead at all times
- Please ensure that all dog droppings are removed prior to leaving the park
- Please ensure that you have effective control of your dog to prevent attacks on native fauna

5.1.4 Increase in signage

Signage has been suggested for inclusion in this EMP to encourage appropriate use of the reserve by owners and their dogs, however, more general signage should also be considered to promote the conservation values of the reserve, particularly in areas that have experienced past disturbance due to inappropriate use or access.

A simple way to help protect the reserve system from inappropriate use is signage that discourages such use and draws attention to the reserve conservation values. Signage should be placed near the main entrances and could include the following content:

This Park protects our natural and cultural heritage

To help protect this reserve, we ask that you please:

- Do not litter or dispose of garden waste
- Do not damage trees or vegetation
- Do not collect firewood
- Keep to designated tracks

In addition to provision of general signage, this plan considers the renaming of the reserve network (see section 5.1.9) which should be included on all signage.

5.1.5 Inappropriate landscaping within Zone 4

The landscaped nature of Zone 4 has been highlighted in section 4.1. It is presented in a way that appears to be private land especially given the adjoining properties are not fenced. It is predicted that many local residents are unaware that this land is public land particularly given its garden-like presentation. The initiative raised by one resident was to prevent 'annexure by landscaping'.... By the adjoining residents. However, if prevention is the desired goal, it must be approached in an appropriate manner. As it stands, the landscaped nature of this zone is attractive and does utilise mostly indigenous plants (which may be a combination of remnant and planted species). Other plants are less preferable and not consistent with the landscaping and revegetation approach applied throughout the remainder of the reserve. Nevertheless, there are no environmental weeds that appear to have been planted (although a few have naturalised).

Management Response:

Initial steps to resolve these issues should include:

- Some form or signage or delineation to indicate the zone is public space, not private
- Liaison with local residents and education on the use of appropriate planting
- A definite management approach for the future based on the opinion of the local community and MRSC.

5.1.6 The use and access of Zone 5

Zone 5 (also referred to as reserve no. 1) links to the Public Golf Course, however, the Golf Course is cordoned off by a high chain-mesh fence. Some residents have requested that a formal access gate be installed so that the Golf Course and Café can be accessed by foot. However, advice from the Gold Course provided to MRSC is that they do not wish to allow public access through reserve no. 1 given the potential safety issues associated with pedestrians entering the driving range.

Another issue raised is the disturbance to this zone in recent years. One resident wrote that this zone "became the rear access-way to a back gate installed into an adjoining property a couple of years ago, the resulting vehicle traffic from residents, landscapers, tradies and visitor parking has cleared and trampled much of the pre-existing grasses and shrubs, creating an unsightly vacant-lot appearance, which in turn, has encouraged dumping of tree pruning's, mulch piles and stockpiling of materials".

Management Response:

The prevention of unauthorised access by vehicles can be negated by installation of a fence or series of bollards between Dalton Street and this section of the reserve. The Dalton Street end of the reserve is only 10 metres wide so the installation of a barrier would not require substantial resources.

The installation of a vehicle barrier will provide benefits to the native flora and its natural regeneration that has been hampered following ongoing compaction and disturbance associated with vehicle movement and stockpiling.

5.1.7 Fire Risk and Prevention

In the last 50 years, landscape scale fires within 5km of the study area have included:

- The 1983 Ash Wednesday Fires between 2.5-4 km to the west, northwest and southwest
- The 1992 Bushfire within Lerderderg State Park within 2.6 km to the south west
- 2014 Sunbury-Riddells Creek Fire approximately 4.2 km to the east

Risk Analysis

A bushfire risk analysis at a more local scale (within 2km of the study area) indicates a substantially lower fire threat with no significant fire events in recent history. This is in part due its location within largely residential areas close the main Gisborne township and a golf course directly to the west of the estate. This relatively low risk is reflected in the States Bushfire Risk mapping. Three categories apply to the mapping criteria as outlined below:

Bushfire Hazard Level Low (BHL Low)

These are areas where the extent, configuration and/or management of vegetation results in low potential for bushfire spread. These areas are not typically part of Designated Bushfire Prone Areas (BPA).

The BPA only applies to the southern portion of the study area, within zones 11-14.

Bushfire Hazard Level One (BHL 1)

These are areas of moderate bushfire hazard with head fire intensity modelled to be between 4,000kW/m and 30,000kW/m. As a minimum, this level of hazard informs areas declared as Bushfire Prone Areas.

The application of the BPA within the southern portion of the study area is likely due to the continuous band of roadside vegetation either side of Melton Road which provides a fuel link between the Gisborne Cemetery land and large areas of forest to the southwest that connects to Lerderderg State Park. The road reserve vegetation is also contiguous with partially forested and undeveloped land directly to the south of the study area.

Bushfire Hazard Level Two (BHL 2)

The most significant bushfire hazard where head fire intensity is modelled to be 30,000kW/m or more. This level of hazard informs areas declared as Bushfire Prone Areas where the Bushfire Management Overlay (BMO) should apply.

The BMO does not apply to the study area. The nearest areas under the BMO are 1.4 km to the west of the study area.

Management Response:

Although the study area is considered to be a low-moderate risk overall, there are a range of fuel management activities that can be undertaken within the reserve network to minimise fire risk either through ember attack or ignitions caused within the reserve. These include:

- Maintenance of current firebreaks in the northern portion of the reserve on the interface of residential properties (12-14 Dalton Street and 30-32 Dalton Street)
- Regular mowing of open grassy areas, particularly during the declared fire danger period
- Maintenance of the existing drainage corridors to ensure that overhanging branches do not impose on residential properties
- Maintenance of grasses on the road verge to minimise the change of ignitions from vehicles and machinery and,
- If necessary, the issuing of Fire Prevention Notices on private properties (this is most likely to apply to the larger vegetated properties adjoining the southern portion of the reserves).

5.1.8 Road Safety

Road safety issues raised by community members relate to overhanging tree branches or dense shrubby vegetation that impacts on driver visibility of the road. Some of the bends in Dalton Street require consideration of maintenance issues to allow for an adequate line of site.

This issue is currently most pertinent in the southern section of the estate between 52 and 72 Dalton Street. Some mature Eucalypts with overhanging branches have the potential to be a visual obstruction and numerous young eucalypts recruits have also colonised near the road edge which could be an increasing road management issue in the near future.

Figure 37. Example of vegetation encroaching on the road envelope

Management Response:

- Undertake annual reviews of vegetation on the road reserve including overhanging branches or any vegetation that has an existing or potential visual obstruction to road users. Remove or prune vegetation as necessary
- Consider advice from a qualified traffic engineer on the minimum maintenance standards for the relevant road category

5.1.9 Naming of the Reserve

Community responses included re-naming the reserve network to *Marrum Bulok Nature Reserve* or *Marrum Bulok Conservation Reserve*. The naming recognises the 'Wurundjeri Cultural Values of Gisborne' as set out in the Macedon Ranges Reconciliation Action Plan. Among a range of recommendations, this plan proposes:

- On-going involvement in landscape management in urban design, naming, as part of appropriately emphasis on the .Wurundjeri cultural footprint'
- An indigenous naming of new conservation areas within Wurundjeri Woi wurrung country.

Management Response

Investigate officially naming the reserve network after the Marrum Bulok Creek and, if supported by Wurundjeri, agencies and community, seek to undertake name change with the Register of Geographic Names

6 Conclusion

The ecological assessment of Dalton Street Reserve has revealed a high diversity of native vegetation and habitat types in a high profile location that is enjoyed by local residents. Specifically the recent surveys identified:

- Intact remnants of Grassy Forest EVC 128 that supports a high diversity of native flora including canopy trees, midstorey, grasses, forbs, lilies and orchids
- Revegetation areas within drainage lines that feature a diversity of plant lifeforms
- Constructed wetlands and marshlands colonised by instream and ephemeral aquatic plants which provide biodiversity and function in terms of storm water infiltration
- A total of 14 significant plant species including 3 listed as threatened under the Flora and Fauna Guarantee Act, 3 species of regional significance within the Port Phillip and Westernport region and 8 species which are considered to be of local significance to the Gisborne area.
- A diversity of habitat types for fauna species including a range of birds species, arboreal mammals, micro-bats and frogs
- 34 native fauna species identified during a one-off incidental survey including the Olive Whistler (Pachycephala olivacea) is considered to be of regional significance

A range of threats to these ecological values including environmental weeds, pest animals and inappropriate uses have been identified and a range of management solutions have been prescribed to counter these threats. These are the core management actions in this plan in terms of protecting local biodiversity.

Management actions to address ecological threats are expected to be undertaken annually for a 10 year period and then reviewed thereafter, although some one-off or short-term management actions outlined herein will also assist in reducing impacts to biodiversity.

In addition to management actions that aim to protect and enhance biodiversity, this plan also seeks to enhance user facilities and the functionality of the reserve, while also upholding Councils obligations to undertake fire prevention and tree hazards management.

Appendix 4 provides a list of priority management decisions that should be undertaken in the next six months, and a seasonal management guideline is also included for annual works.

Management actions such as fire prevention and tree safety audits are expected be relatively consistent in terms of management resources across the 10 year period. However, the demands of weed and pest control may vary each year depending on seasonal conditions and the type of weeds and pests that occupy the reserve at any given time (although current impacts from pest animals appear to be minimal). If weed and pest control is undertaken on a regular basis and to a high standard, it is most likely that labour and recourses will be reduced as native vegetation regenerates and thrives due to decreased competition. As threatening processes decrease overtime, more resources could be invested in other activities such as revegetation and nest-box installation.

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Online References

Birdlife Australia http://www.birdlife.org.au/

DELWP *Nature Kit Online* http://maps.biodiversity.vic.gov.au/viewer/?viewer=NatureKit

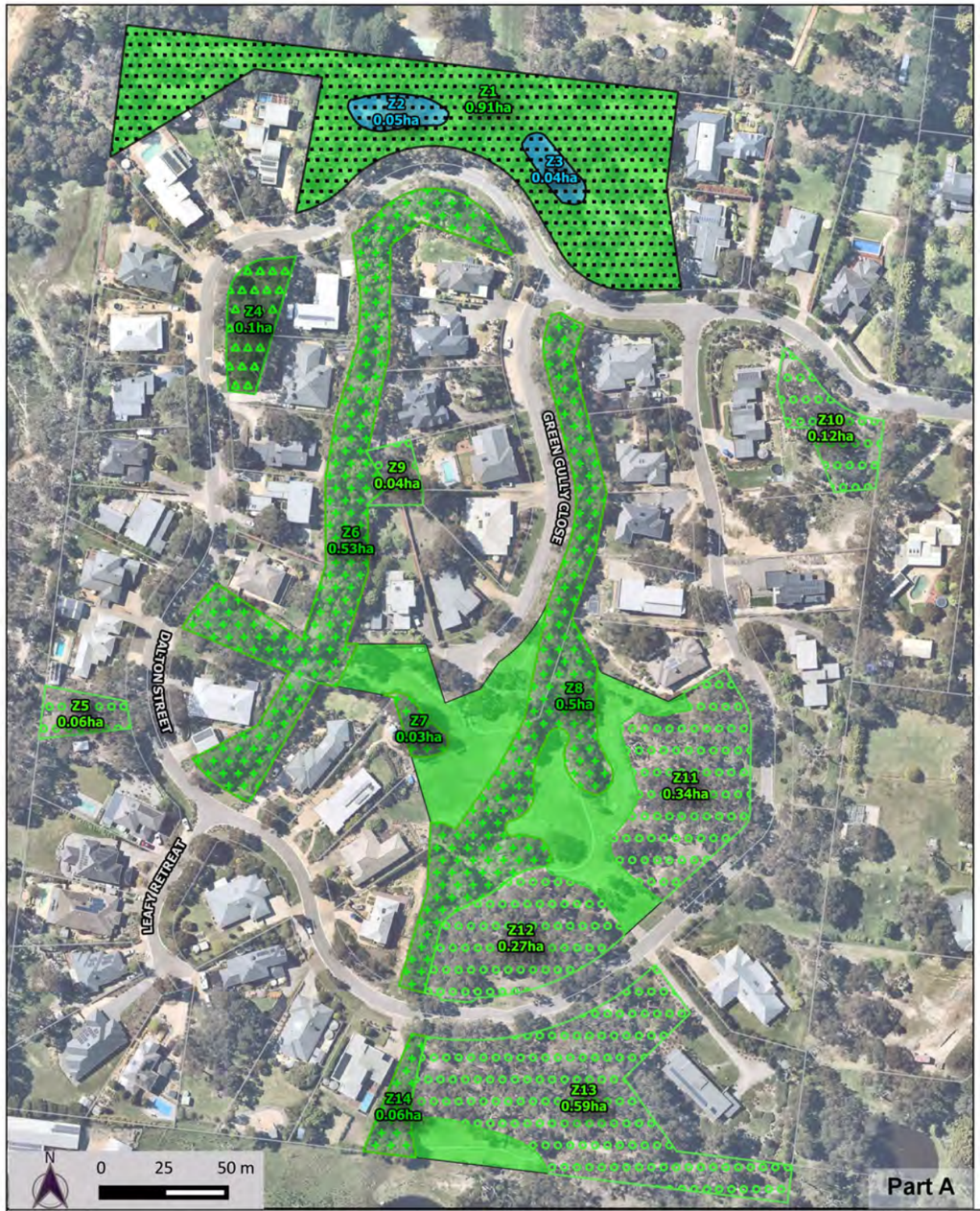
The Department of Environment and Energy - EPBC Protected Matters Search Tool
http://www.environment.gov.au/epbc/pmst/

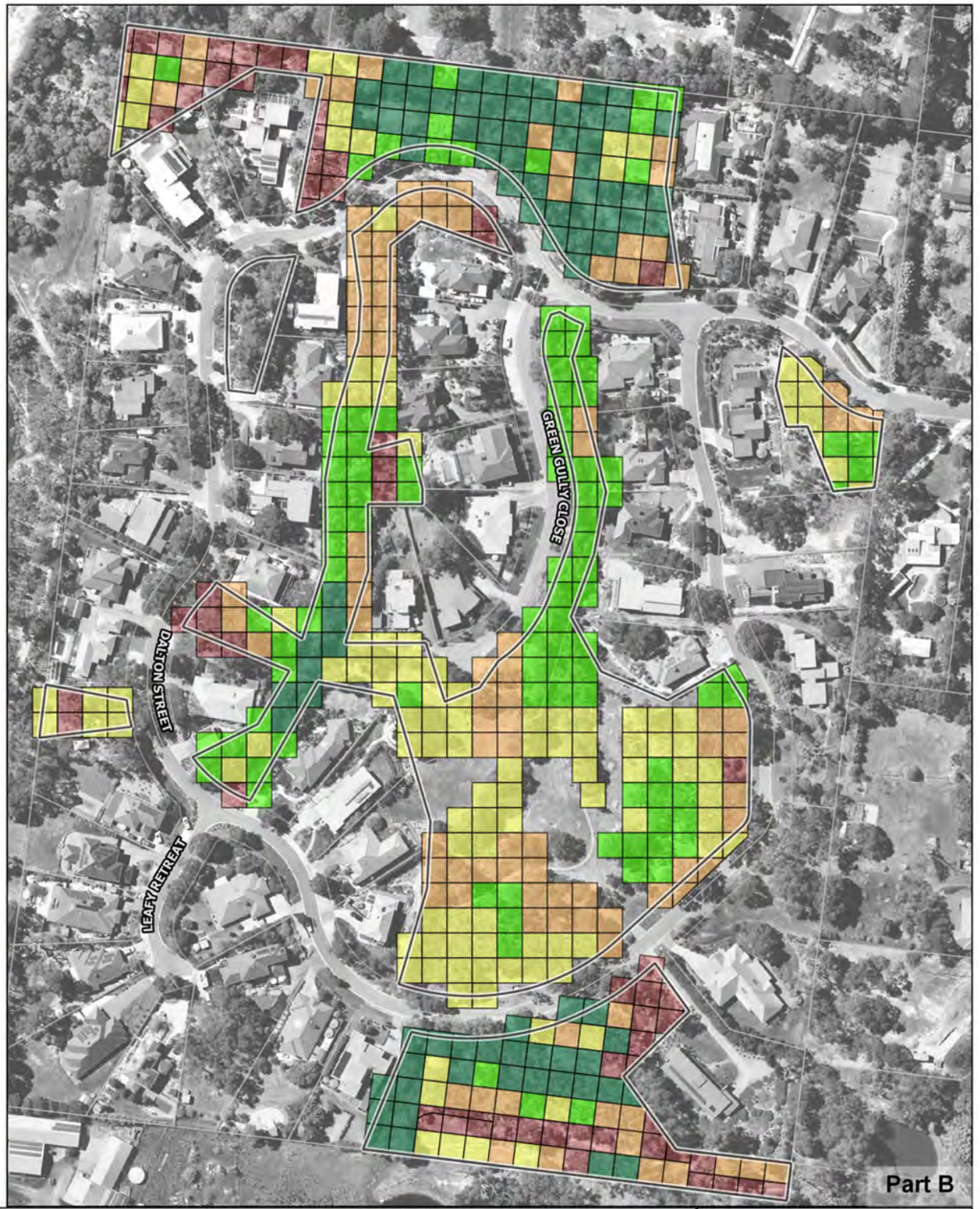
Statewide Integrated Flora and Fauna Teams (SWIFT) https://www.swifft.net.au/

Appendix 1. Maps

The following maps were produced with QGIS software which utilised the results of field data collection and existing spatial layers available from government and non-government databases including:

- Aerial photography available through Google Earth (AusMap) and Metromap
- VicMap layers (parcel, roads, waterways and locality boundaries)
- Macedon Ranges Council spatial data including management tenures





Map 1 - Vegetation Types and Quality

Dalton Street Reserve

Date: 01 May 2022

Created by: Greg James

- Remnant Vegetation and Revegetation (Zone 1)
- Ephemeral Wetlands (Zone 2-3)
- Revegetation (Zone 6-8 and 14)
- Remnant Trees with landscaping (Zone 4)
- Remnant Vegetation (Zone 9-13)
- Open Space
- Reserve Boundary
- <20% native ground cover
- 20-40% native ground cover
- 40-60% native ground cover
- 60-80% native ground cover
- 80-100% native ground cover

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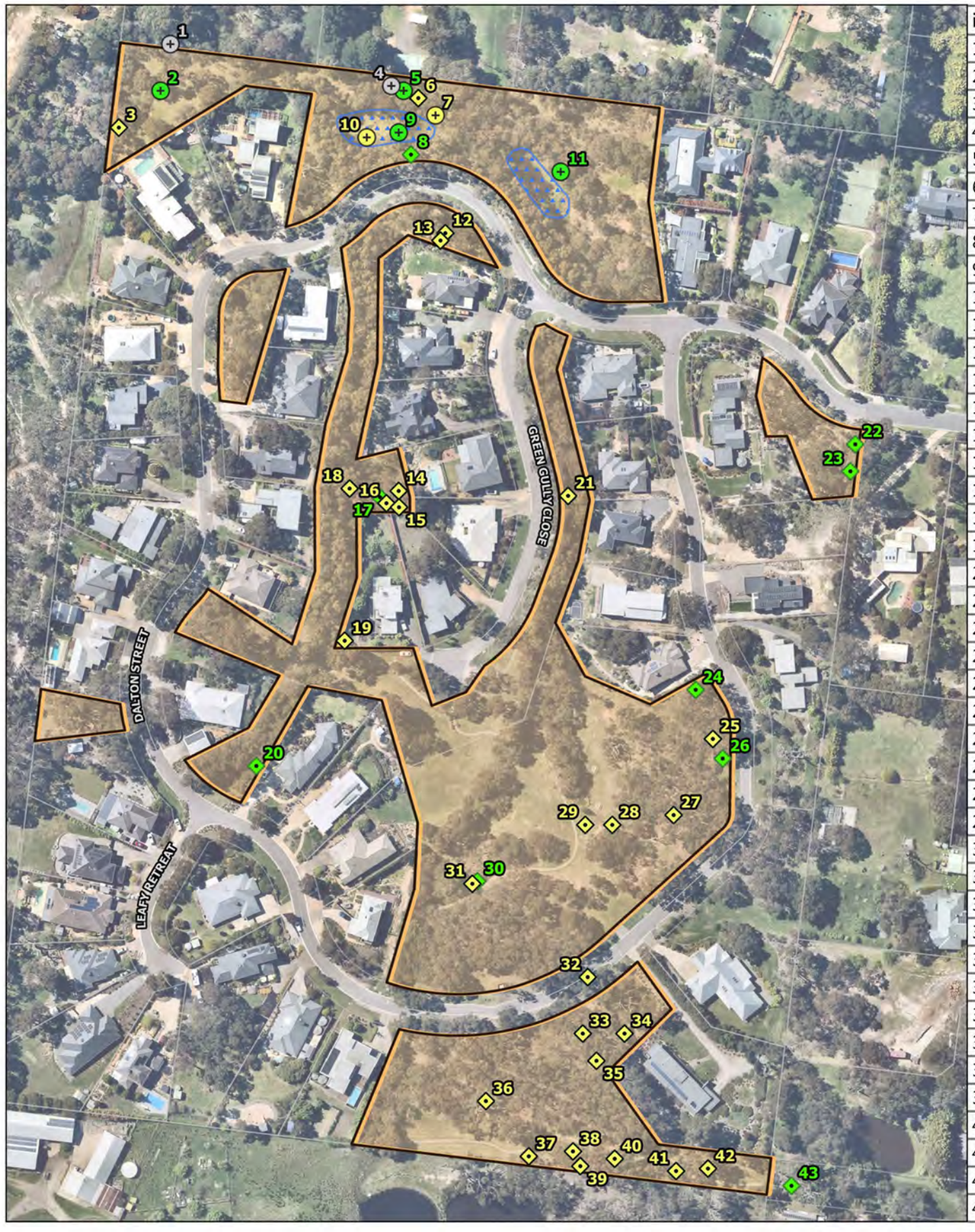

id	Scientific Name
1	Myriophyllum simulans
2	Xerochrysum palustre
3	Leptorhynchos squamatus subsp. squamatus
4	Ranunculus inundatus
5	Xerochrysum palustre
6	Schoenus tesquorum
7	Asperula subsimplex
8	Senecio campylocarpus
9	Xerochrysum palustre
10	Asperula subsimplex
11	Xerochrysum palustre
12	Brunonia australis
13	Pimelea linifolia subsp. linifolia
14	Coronidium scorpioides
15	Pimelea linifolia subsp. linifolia
16	Brunonia australis
17	Acacia rostriformis
18	Bulbine bulbosa
19	Centella cordifolia
20	Senecio campylocarpus
21	Ranunculus glabrifolius
22	Acacia rostriformis
23	Acacia rostriformis
24	Acacia rostriformis
25	Centella cordifolia
26	Acacia rostriformis
27	Diuris sulphurea
28	Diuris sulphurea
29	Bossiaea prostrata
30	Acacia rostriformis
31	Gnaphalium indutum
32	Kennedia prostrata
33	Pterostylis nutans
34	Diuris sulphurea
35	Thelymitra spp.
36	Thelymitra spp.
37	Diuris sulphurea
38	Thelymitra spp.
39	Diuris sulphurea
40	Diuris sulphurea
41	Diuris sulphurea
42	Sebaea ovata
43	Acacia rostriformis

Map 2 - Location of Significant Flora

Dalton Street Reserve

Study Area

Ephemeral Wetlands

Significant Flora

FFG Listed (Remnant)

FFG Listed (Probably Planted)

Regionally Significant (probably planted)

Locally Significant

Locally Significant (probably planted)

Date: 03 April 2022
Flora Survey by Karl Just
Map Created by: Greg James
Map Program: QGIS 3.14

Scale (A3) 1:1,750

0 25 50 m

N

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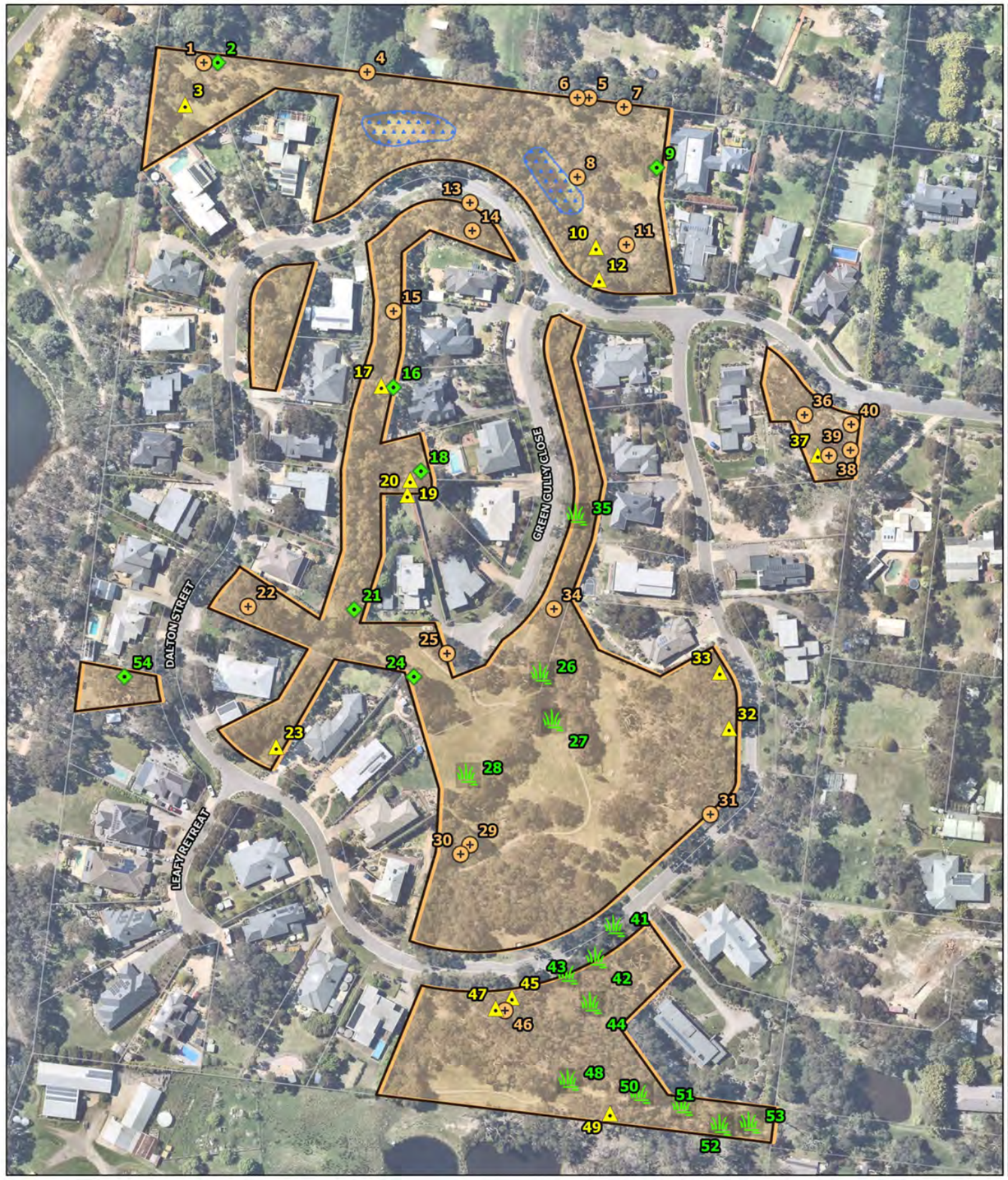

id	Species	Common Name
1	*Salix cinerea	Grey Sallow
2	*Iris pseudacorus	Yellow Flag Iris
3	*Rubus anglocandicans	Common Blackberry
4	*Viburnum tinus	Laurestinus
5	+Acacia prominens	Gosford Wattle
6	#Acacia pravissima	Ovens Wattle
7	#Acacia longifolia	Sallow Wattle
8	*Salix cinerea	Grey Sallow
9	*Agapanthus praecox ssp. orientalis	Agapanthus
10	*Rubus anglocandicans	Common Blackberry
11	+Acacia floribunda	White Sallow-wattle
12	*Rubus anglocandicans	Common Blackberry
13	+Hakea salicifolia	Willow-leaf Hakea
14	*Westringia glabra	Violet Westringia
15	#Pittosporum tenuifolium	Kohukohu
16	*Agapanthus praecox ssp. orientalis	Agapanthus
17	*Rubus anglocandicans	Common Blackberry
18	*Agapanthus praecox ssp. orientalis	Atlantic Ivy
19	*Hedera helix	English Ivy
20	*Vinca major	Blue Periwinkle
21	*Crinum americanum	Florida Swamp Lily
22	#Acacia longifolia	Sallow Wattle
23	*Rubus anglocandicans	Common Blackberry
24	*Viola odorata	Common Violet
25	*Prunus cerasifera	Cherry-plum
26	*Nassella neesiana (C)	Chilean Needle-grass
27	*Nassella neesiana (C)	Chilean Needle-grass
28	*Nassella neesiana (C)	Chilean Needle-grass
29	*Viburnum tinus	Laurestinus
30	#Acacia howittii	Sticky Wattle
31	+Acacia floribunda	White Sallow-wattle
32	*Rubus anglocandicans	Common Blackberry
33	*Billardieria heterophylla	Bluebell Creeper
34	*Ulex europaeus (C)	Gorse
35	*Nassella neesiana (C)	Chilean Needle-grass
36	+Acacia baileyana	Cootamundra Wattle
37	*Rubus anglocandicans	Common Blackberry
38	#Acacia longifolia	Cootamundra Wattle
39	#Acacia longifolia	Sallow Wattle
40	+Acacia baileyana	Cootamundra Wattle
41	*Nassella neesiana (C)	Chilean Needle-grass
42	*Nassella neesiana (C)	Chilean Needle-grass
43	*Nassella neesiana (C)	Chilean Needle-grass
44	*Nassella neesiana (C)	Chilean Needle-grass
45	*Billardieria heterophylla	Bluebell creeper
46	#Acacia howittii	Sticky Wattle
47	*Billardieria heterophylla	Bluebell Creeper
48	*Nassella neesiana (C)	Chilean Needle-grass
49	*Billardieria heterophylla	Bluebell Creeper
50	*Nassella neesiana (C)	Chilean Needle-grass
51	*Nassella neesiana (C)	Chilean Needle-grass
52	*Nassella neesiana (C)	Chilean Needle-grass
53	*Nassella neesiana (C)	Chilean Needle-grass
54	*Agapanthus praecox ssp. orientalis	Agapanthus

Map 3 - Location of Significant Weeds

Dalton Street Reserve

Study Area

Ephemeral Wetlands

Grassy Weed

Herbaceous Weed

Scrambler/Climber

Woody Weed

(C) Listed as 'regionally controlled' under the Catchment and Land Protection (CaLP) Act

Victorian species outside its natural range
+ Australian Native
* Exotic

Date: 03 April 2022
Surveyed by Karl Just
Created by: Greg James
Map Program: QGIS 3.14

Scale (A3) 1:1,750

0 25 50 m

N

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Appendix 2. Flora Observations

Flora observations by Karl Just during 21 November 2021 unless otherwise noted

Weed Status	Notes
* **Introduced species**	P – indigenous but most likely to have been planted
# **Victorian species occurring outside their natural range**	^ - Additional species identified by GSW Ecological Consulting – March 2021
C – Listed as regionally controlled under the CaLP Act	

Origin	Scientific Name	Common Name	FFG Status
P	Acacia acinacea	Gold-dust Wattle	
*	Acacia baileyana	Cootamundra Wattle	
	Acacia dealbata subsp. dealbata	Silver Wattle	
#	Acacia floribunda	White Sallow-wattle	
#	Acacia longifolia subsp. longifolia	Sallow Wattle	
P	Acacia mearnsii	Black Wattle	
	Acacia melanoxylon	Blackwood	
	Acacia paradoxa	Hedge Wattle	
#	Acacia pravissima	Ovens Wattle	
#	Acacia prominens	Gosford Wattle	
P	Acacia provincialis	Wirilda	
	Acacia rostriformis	Bacchus Marsh Wattle	Vulnerable
	Acaena agnipila	Hairy Sheep's Burr	
	Acaena novae-zelandiae	Bidgee-widgee	
*	Acetosella vulgaris	Sheep Sorrel	
	Acrotriche serrulata	Honey-pots	
*	Agapanthus praecox subsp. orientalis	Agapanthus	
*	Aira elegantissima	Delicate Hair-grass	
	Alisma plantago-aquatica	Water Plantain	
*	Anthoxanthum odoratum	Sweet Vernal-grass	
*	Aphanes arvensis	Parsley Piert	
*	Arctotheca calendula	Cape Weed	
	Arthropodium strictum s.s.	Chocolate Lily	
P	Asperula subsimplex	Water Woodruff	
	Astroloma humifusum	Cranberry Heath	
	Austrostipa rudis subsp. rudis	Veined Spear-grass	
*	Bellis perennis	English Daisy	
*	Billardiera heterophylla	Bluebell Creeper	
	Bossiaea prostrata	Creeping Bossiaea	
*	Briza maxima	Large Quaking-grass	
*	Briza minor	Lesser Quaking-grass	
	Brunonia australis	Blue Pincushion	
	Bulbine bulbosa	Bulbine Lily	

Origin	Scientific Name	Common Name	FFG Status
	Burchardia umbellata	Milkmaids	
P	Bursaria spinosa subsp. spinosa	Sweet Bursaria	
	Callistemon sieberi ^	River Bottlebrush	
*	Callitriche stagnalis	Common Water-starwort	
P	Calocephalus lacteus	Milky Beauty-heads	
P	Carex gaudichaudiana	Fen Sedge	
P	Carex tereticaulis	Poong'ort	
	Cassinia sifton	Drooping Cassinia	
*	Cenchrus clandestinus	Kikuyu	
*	Centaurium erythraea	Common Centaury	
	Centella cordifolia	Centella	
*	Cerastium glomeratum s.s.	Sticky Mouse-ear Chickweed	
*	Cirsium vulgare ©	Spear Thistle	
	Coronidium scorpioides s.s.	Button Everlasting	
#	Cotula australis	Common Cotula	
	Crassula decumbens var. decumbens	Spreading Crassula	
	Crassula helmsii	Swamp Crassula	
	Crassula sieberiana s.l.	Sieber Crassula	
*	Cyperus eragrostis	Drain Flat-sedge	
	Dianella revoluta var. revoluta s.l.	Black-anther Flax-lily	
	Dichondra repens	Kidney-weed	
	Dillwynia cinerascens s.s.	Grey Parrot-pea	
	Diuris sulphurea	Tiger Orchid	
	Drosera aberrans	Scented Sundew	
	Drosera auriculata	Tall Sundew	
	Drosera peltata subsp. peltata spp. agg.	Pale Sundew	
*	Ehrharta erecta	Panic Veldt-grass	
	Eleocharis sphacelata	Tall Spike-sedge	
	Epilobium billardiereanum subsp. cinereum	Grey Willow-herb	
	Eragrostis brownii	Common Love-grass	
*	Erigeron bonariensis	Flaxleaf Fleabane	
#	Eucalyptus globulus	Southern Blue-gum	
	Eucalyptus obliqua	Messmate Stringybark	
	Eucalyptus ovata subsp. ovata	Swamp Gum	
	Eucalyptus radiata subsp. radiata	Narrow-leaf Peppermint	
	Eucalyptus viminalis subsp. viminalis	Manna Gum	
	Euchiton involucratus s.s.	Star Cudweed	
	Euchiton japonicus s.s.	Creeping Cudweed	
*	Euphorbia peplus	Petty Spurge	
	Exocarpos cupressiformis	Cherry Ballart	
*	Festuca arundinacea	Tall Fescue	
*	Galium aparine	Cleavers	

Origin	Scientific Name	Common Name	FFG Status
*	Gamochaeta purpurea s.s.	Spiked Cudweed	
*	Genista monspessulana ^ ©	Montpellier Broom	
	Glyceria australis	Australian Sweet-grass	
	Gnaphalium indutum	Tiny Cudweed	
	Gonocarpus tetragynus	Common Raspwort	
*	Hakea salicifolia subsp. salicifolia	Willow-leaf Hakea	
	Hardenbergia violacea	Purple Coral-pea	
*	Hedera hibernica	Atlantic Ivy	
*	Helminthotheca echioides	Ox-tongue	
P	Hemarthria uncinata var. uncinata	Mat Grass	
*	Holcus lanatus	Yorkshire Fog	
	Hydrocotyle laxiflora	Stinking Pennywort	
	Hydrocotyle sibthorpioides	Shining Pennywort	
	Hypericum gramineum	Small St John's Wort	
*	Hypochaeris glabra	Smooth Cat's-ear	
*	Hypochaeris radicata	Flatweed	
*	Iris pseudacorus	Yellow Flag Iris	
*	Isolepis levynsiana	Tiny Flat-sedge	
	Isolepis platycarpa	Broad-fruit Club-sedge	
	Juncus amabilis	Hollow Rush	
*	Juncus articulatus subsp. articulatus	Jointed Rush	
#	Juncus bufonius	Toad Rush	
	Juncus pallidus	Pale Rush	
	Juncus planifolius	Broad-leaf Rush	
	Kennedia prostrata	Running Postman	
	Laphangium luteoalbum	Jersey Cudweed	
	Leptorhynchos squamatus subsp. squamatus	Scaly Buttons	
	Leptospermum lanigerum	Woolly Tea-tree	
	Lissanthe strigosa subsp. subulata ^	Peach Heath	
P	Lobelia pedunculata s.s.	Matted Pratia	
	Lomandra filiformis subsp. coriacea	Wattle Mat-rush	
	Lomandra filiformis subsp. filiformis	Wattle Mat-rush	
	Lomandra longifolia subsp. exilis	Cluster-headed Mat-rush	
P	Lomandra longifolia subsp. longifolia	Spiny-headed Mat-rush	
*	Lotus corniculatus var. corniculatus	Bird's-foot Trefoil	
	Luzula meridionalis var. flaccida	Common Woodrush	
*	Lysimachia arvensis	Pimpernel	
#	Melaleuca armillaris subsp. armillaris	Giant Honey-myrtle	
	Microlaena stipoides var. stipoides	Weeping Grass	
	Microtis unifolia	Common Onion-orchid	
*	Myosotis sylvatica	Wood Forget-me-not	
P	Myriophyllum simulans	Amphibious Water-milfoil	

Origin	Scientific Name	Common Name	FFG Status
*	Nassella neesiana ©	Chilean Needle-grass	
	Opercularia varia	Variable Stinkweed	
	Oxalis exilis	Shade Wood-sorrel	
	Oxalis perennans	Grassland Wood-sorrel	
	Persicaria decipiens	Slender Knotweed	
	Pimelea linifolia subsp. linifolia	Slender Rice-flower	
*	Plantago coronopus subsp. coronopus	Buck's-horn Plantain	
*	Plantago lanceolata	Ribwort	
	Poa labillardierei var. labillardierei	Common Tussock-grass	
	Poa sieberiana var. sieberiana	Grey Tussock-grass	
	Poranthera microphylla s.s.	Small Poranthera	
	Potamogeton ochreatus	Blunt Pondweed	
*	Prunella vulgaris	Self-heal	
*	Prunus cerasifera	Cherry Plum	
	Pterostylis nutans	Nodding Greenhood	
P	Ranunculus glabrifolius	Shining Buttercup	
P	Ranunculus inundatus	River Buttercup	
*	Rubus anglocandicans ©	Common Blackberry	
*	Raphanus raphanistrum	Wild Radish	
*	Rumex conglomeratus	Clustered Dock	
	Rytidosperma geniculatum	Kneed Wallaby-grass	
	Rytidosperma pallidum	Silvertop Wallaby-grass	
	Rytidosperma racemosum var. racemosum ^	Slender Wallaby-grass	
*	Salix cinerea	Grey Sallow	
	Schoenoplectus tabernaemontani	River Club-sedge	
	Schoenus apogon	Common Bog-sedge	
	Schoenus tesquorum	Soft Bog-sedge	
	Sebaea ovata	Yellow Sebaea	
	Senecio campylocarpus	Floodplain Fireweed	Endangered
	Senecio glomeratus subsp. glomeratus	Annual Fireweed	
	Senecio minimus	Shrubby Fireweed	
	Senecio phelleus	Stony Fireweed	
	Senecio quadridentatus	Cotton Fireweed	
*	Solanum nigrum s.s.	Black Nightshade	
	Solenogyne dominii	Smooth Solenogyne	
*	Sonchus asper subsp. asper	Rough Sow-thistle	
*	Sonchus oleraceus	Common Sow-thistle	
*	Stellaria media	Chickweed	
*	Symphyotrichum subulatum	Aster-weed	
	Thelymitra arenaria	Forest Sun-orchid	
	Thelymitra pauciflora s.l.	Slender Sun-orchid	
	Thelymitra spp.	Sun Orchid	
	Themeda triandra	Kangaroo Grass	

Origin	Scientific Name	Common Name	FFG Status
*	Trifolium dubium	Suckling Clover	
*	Trifolium glomeratum	Cluster Clover	
*	Trifolium subterraneum	Subterranean Clover	
	Triglochin striata	Streaked Arrowgrass	
	Typha domingensis	Narrow-leaf Cumbungi	
*	Ulex europaeus ©	Gorse	
*	Verbena bonariensis	Purple-top Verbena	
*	Veronica arvensis	Wall Speedwell	
	Veronica gracilis	Slender Speedwell	
*	Viburnum tinus	Laurestinus	
*	Vinca major	Blue Periwinkle	
	Viola hederacea sensu Entwisle (1996)	Ivy-leaf Violet	
*	Viola odorata	Common Violet	
*	Vulpia bromoides	Squirrel-tail Fescue	
*	Vulpia myuros f. myuros	Rat's-tail Fescue	
	Wahlenbergia gracilis	Sprawling Bluebell	
	Wahlenbergia stricta subsp. stricta	Tall Bluebell	
*	Westringia glabra	Coastal Rosemary	
P	Xerochrysum palustre	Swamp Everlasting	Critically Endangered

Appendix 3. Recommended plants for revegetation and landscaping

The following list is a general list of species that could be used within Dalton Street Reserve. The appropriateness of each species within a given location needs to be considered based on site conditions and the objectives of revegetation.

			Recommended Uses				
Scientific Name	Common Name	Lifeform	Terrestrial Revegetation	Wetland or Marshland	Supplementary Planting	Landscaping	Present in reserve
Acacia acinacea	Gold-dust Wattle	Medium shrub	✓		✓	✓	✓
Acacia dealbata	Silver Wattle	Understorey tree	✓				✓
Acacia genistifolia	Spreading Wattle	Medium shrub	✓		✓	✓	
Acacia mearnsii	Black Wattle	Understorey tree	✓				✓
Acacia melanoxylon	Blackwood	Understorey tree	✓				✓
Acacia pycnantha	Golden Wattle	Medium shrub	✓		✓	✓	
Acacia rostriformis	Bacchus Marsh Wattle	Medium shrub	✓		✓	✓	✓
Acacia stricta	Hop Wattle	Medium shrub	✓		✓	✓	
Acacia verticillata	Prickly Moses	Medium shrub	✓				
Acaena novae-zelandiae	Bidgee-widgee	Medium herb	✓				✓
Alisma plantago-aquatica	Water Plantain	Large herb		✓			✓
Anthosachne scabra	Common Wheat-grass	Medium Graminoid	✓		✓	✓	
Austrostipa rudis subsp. rudis	Veined Spear-grass	Large Graminoid	✓		✓	✓	✓
Banksia marginata	Silver Banksia	Medium shrub				✓	
Billardiera scandens	Common Apple-berry	Scrambler or climber	✓				
Bursaria spinosa	Sweet Bursaria	Medium shrub	✓		✓		✓
Bulbine bulbosa	Bulbine Lily	Lily					✓
Carex appressa	Tall Sedge	Large Sedge/Rush		✓			✓
Carex breviculmis	Common Grass-sedge	Medium Sedge/Rush		✓			✓
Carex gaudichaudiana	Fen Sedge	Medium Sedge/Rush		✓			✓
Carex tereticaulis	Poong'ort	Large Sedge/Rush		✓			✓
Cassinia aculeata subsp. aculeata	Common Cassinia	Medium shrub	✓				
Centella cordifolia	Centella	Medium herb	✓	✓		✓	
Clematis microphylla	Small-leaved Clematis	Scrambler or climber	✓		✓	✓	
Coronidium gunnianum	Pale Swamp Everlasting	Small herb			✓	✓	
Coronidium scorpioides	Button Everlasting	Medium herb			✓	✓	✓

			Recommended Uses				
Scientific Name	Common Name	Lifeform	Terrestrial Revegetation	Wetland or Marshland	Supplementary Planting	Landscaping	Present in reserve
Correa reflexa	Common Correa	Medium shrub	✓			✓	
Craspedia paludicola	Swamp Billy-buttons	Large herb			✓	✓	
Daviesia leptophylla	Narrow-leaf Bitter-pea	Medium shrub			✓	✓	
Daviesia ulicifolia	Gorse Bitter-pea	Medium shrub			✓	✓	
Dianella admixta	Black-anther Flax-lily	Medium Graminoid (lily)	✓		✓	✓	✓
Dianella amoena	Matted Flax-lily	Medium Graminoid (lily)	✓		✓	✓	
Dillwynia cinerascens	Grey Parrot-pea	Small shrub			✓	✓	✓
Dillwynia glaberrima	Smooth Parrot-pea	Small shrub			✓	✓	
Eleocharis acuta	Common Spike-sedge	Large Sedge/Rush		✓			
Eleocharis sphacelata	Tall Spike-sedge	Large Sedge/Rush		✓			✓
Eucalyptus dives	Broad-leaf Peppermint	Canopy Tree	✓				
Eucalyptus goniocalyx	Bundy	Canopy Tree	✓				
Eucalyptus obliqua	Messmate Stringybark	Canopy Tree	✓				✓
Eucalyptus ovata subsp. ovata	Swamp Gum	Canopy Tree	✓				✓
Eucalyptus radiata subsp. radiata	Narrow-leaf Peppermint	Canopy Tree	✓				✓
Eucalyptus viminalis subsp. viminalis	Manna Gum	Canopy Tree	✓				✓
Hardenbergia violacea	Purple Coral-pea	Scrambler or climber	✓			✓	✓
Hibbertia fasciculata var. prostrata	Bundled Guinea-flower	Small shrub			✓	✓	
Juncus amabilis	Hollow Rush	Medium Sedge/Rush		✓			✓
Juncus holoschoenus	Joint-leaf Rush	Medium Sedge/Rush		✓			
Juncus pallidus	Pale Rush	Large Sedge/Rush		✓			✓
Juncus planifolius	Broad-leaf Rush	Medium Sedge/Rush		✓			✓
Kennedia prostrata	Running Postman	Scrambler or climber				✓	✓
Lomandra longifolia subsp. exilis	Cluster-headed Mat-rush	Large Graminoid (lily)	✓			✓	✓
Lomandra longifolia subsp. longifolia	Spiny-headed Mat-rush	Large Graminoid (lily)	✓			✓	✓
Olearia myrsinoides	Silky Daisy-bush	Small shrub	✓			✓	
Ozothamnus obcordatus	Grey Everlasting	Medium shrub	✓			✓	
Platylobium formosum	Handsome Flat-pea	Prostrate shrub			✓	✓	
Poa labillardierei var. labillardierei	Common Tussock-grass	Medium Graminoid	✓			✓	✓

			Recommended Uses				
Scientific Name	Common Name	Lifeform	Terrestrial Revegetation	Wetland or Marshland	Supplementary Planting	Landscaping	Present in reserve
Poa morrisii	Soft Tussock-grass	Medium Graminoid	✓			✓	
Poa sieberiana var. sieberiana	Grey Tussock-grass	Medium Graminoid	✓			✓	✓
Potamogeton ochreatus	Blunt Pondweed	Large Herb		✓			✓
Rytidosperma caespitosum	Common Wallaby-grass	Medium Graminoid	✓			✓	✓
Rytidosperma duttonianum	Brown-back Wallaby-grass	Medium Graminoid	✓			✓	
Rytidosperma geniculatum	Kneed Wallaby-grass	Medium Graminoid	✓			✓	✓
Stylidium armeria subsp. armeria	Common Triggerplant	Small graminoid				✓	
Stylidium graminifolium	Grass Triggerplant	Small graminoid				✓	
Themeda triandra	Kangaroo Grass	Medium Graminoid	✓			✓	✓
Wahlenbergia stricta	Tall Bluebell	Large herb			✓	✓	✓
Xerochrysum palustre	Swamp Everlasting	Medium herb		✓			✓

Appendix 4. Management Timelines

The table below outlines the management decisions that must be undertaken in the next 6 months which will determine future directions for Dalton Street Reserve.

Table 10. Short Term management Decisions

Management Decisions (First 6 Months)	
1	Decide on the appropriate management of Zone 5 in consultation with the local community
2	Protect Zone 4 from vehicle access by installing appropriate barriers
3	Consider further strategies to protect conservation areas (e.g. signage and fencing)
4	Review road safety standards and undertake vegetation management on the road verge as necessary
5	Seek expressions of interest for the formation of a local environment protection group dedicated to Dalton Street Reserve
6	Consider the feasibility, timing, cost and resourcing of nest box installation
7	Determine a new reserve name in consultation with Wurundjeri, land management agencies and community

The table below provides an annual timeline for management actions outlined in this plan to be applied for the next 10 years prior to a 10 year review.

Table 11. Annual Management Actions

Management Actions	
Item 1 - Weed Control	
1A	**Reduce cover of mature woody weeds**
Timing: Autumn and Spring	**Frequency:** Bi-annually
Incrementally remove of mature woody weeds including though not limited to:	
– White Sallow-wattle (Acacia floribunda)	– Montpellier Broom (Genista monspessulana)
– Sallow Wattle (Acacia longifolia)	– Cherry Plum (Prunus cerasifera)
– Cootamundra Wattle (Acacia baileyana)	– Gorse (Ulex europaeus)
– Gorse (Ulex europaeus)	– Willow-leaf Hakea (Hakea salicifolia)
1B	**Eliminate New and Emerging Woody Weeds**
Timing: Autumn and Spring	**Frequency:** Bi-annually
Monitor and remove any emergent woody weeds (saplings and seedling)	
Remove by hand, cut and paint or use of selective herbicide as appropriate	

Management Actions	
1C Target Winter Growing / Spring Flowering Grasses and Herbs	
Timing: Early spring to start of summer **Frequency:** Twice per season	
Target Species including though not limited to:	
– Chilean Needle-grass (Nassella neesiana)	– Squirrel-tail Fescue (Vulpia bromoides)
– Sweet Vernal (Anthoxanthum odoratum)	– Ribwort (Plantago lanceolata)
– Panic Veldt-grass (Ehrharta erecta)	– Flatweed (Hypochaeris radicata)
– Yorkshire Fog (Holcus lanatus)	– Large Quaking-grass (Briza maxima)
Carry out slashing of exotic grasses on track edges and within conservation zones where off-target damage can be avoided.	
Undertake slashing during early spring to intercept seed production of winter growing grasses	
Spot-spray or hand weed in sensitive areas where high cover of native ground flora is present	
1D Target Summer Growing Grasses and Herbs	
Timing: Late spring-Summer **Frequency:** Twice per season	
Target Species including though not limited to:	
– Kikuyu (Cenchrus clandestinus)	– Paspalum (Paspalum dilatatum)
– Spear Thistle (Cirsium vulgare)	– Couch (Cynodon dactylon)
Carry out slashing of exotic grasses on track edges and within conservation zones where off-target damage is avoided.	
Spray grasses during the warmer season (during active growth) from late spring to summer	
Target Spear thistle and other similar species prior to flower formation	
1E Control Blackberry	
Timing: Late spring-Summer **Frequency:** Twice per season	
Cut and paint small infestations	
Consider slashing larger infestations in early summer to allow follow-up herbicide treatment of regrowth	
Apply broad-leaf herbicide to mature specimens during early-midsummer prior to fruiting	
1F Control Bluebell Creeper	
Timing: Autumn to Spring **Frequency:** As required	
Monitor Annually for new infestations and promptly remove where found	
For mature plants, locate the main stems and cut and paint and take all cuttings to the nearest transfer station	
Plants should be removed prior to the September-February seed production period	

Management Actions
1G Control Ivy (Applies to English, Atlantic and Cape Ivy)
Timing: Anytime **Frequency:** As required
Remove climbing infestations and cut and paint stems
If spraying with herbicide, a combination of surfactants, penetrants, broad-leaf herbicides and Glyphosate is required for effectiveness. Also requires re-treatment every 2-3 months for maximum effectiveness.
1H Control of Blue Periwinkle
Timing: Anytime **Frequency:** As required
Check regularly for new infestations as this weed is very difficult to control once established
Usually difficult to remove by hand. When spraying with herbicide, a combination of surfactants, penetrants, broad-leaf herbicides and Glyphosate is required for effectiveness. Also requires re-treatment every 2-3 months for maximum effectiveness.
Item 2 - Rabbit Control
Timing: Annually
Carryout Warren Destruction / Fumigation
Item 3 - Fox Control
Timing: Annually
Monitor Fox numbers and identify any dens on the property.
If dens are evident, undertake den fumigation or removal
Item 4 – Monitoring and Evaluation
Timing: Every two years
Assess the overall cover of weeds and pest animal impacts to measure changes/improvements in ecological condition as a result of annual works. Use the baseline data provided in this report to evaluate progress and adjust resources or approaches if any areas show an ecological decline in comparison to the baseline data.
Item 5 - Tree Safety Audits
Timing: Dependant on storm events **Frequency:** Annually as a minimum
Assess the safety and stability of all trees close to roads, footpaths and residential properties
Item 6 - Fire Prevention
Timing: In the lead up to and During fire danger period **Frequency:** Annually as a minimum
Maintain all established fire breaks
Review vegetation on the road margins and consider requirements for mowing/slashing to reduce potential ignitions
If necessary, issue Fire Prevention Notices on private properties

Appendix 5. Policy Context

This section provides a summary of all relevant strategies, legislation and policies relevant to the development of this Environmental Management Plan

Local Policies and Strategies

Level	Item	Description
Macedon Ranges Strategic Documents	Macedon Ranges Biodiversity Strategy 2018	This Strategy considers the natural values of biodiversity in the Macedon Ranges Shire, the threats to these values, and actions Council can take to protect and enhance biodiversity (both directly and by working with others). **Link:** Biodiversity Strategy 2018 - Macedon Ranges Shire Council (mrsc.vic.gov.au)
	Macedon Ranges Environment Strategy 2018-2022	The Strategy outlines visions, strategic directions and objectives of 4 key areas: Biodiversity, Land and Water Management, Climate Change and Recourse Efficiency. **Link:** Environment Strategy - Macedon Ranges Shire Council (mrsc.vic.gov.au)
	Macedon Ranges Weed and Pest Animal Strategy 2014 - 2024	The Strategy outlines actions and strategic directions with the vision of shire wide management of weeds and pest animals to improve native vegetation quality, biodiversity, productive farmland, landscape values and waterway habitats **Link:** Weed and Pest Animal Strategy 2014–24 - Macedon Ranges Shire Council (mrsc.vic.gov.au)
	The Macedon Ranges Strategic Environmental Works Plan 2021	This document supports Council's and Melbourne Water Corporations planning and delivery of waterway reserve works with each reserve assessed according to a prioritisation framework. The results of the assessment, which combine landscape priority and current site condition can then be applied by Council to ensure efficient resource allocation and works delivery.
Melbourne Water Strategic Documents	Melbourne Water's Healthy Waterways Strategy	This Strategy is the overarching planning document for the management of rivers, wetlands and estuaries in the Port Phillip and Westernport region aiming to ensure their value to the community is protected and improved, taking a 50-year outlook. **Link:** Healthy Waterways Strategy | Melbourne Water

State Level Regulations

As summarised below, regulations at state level include the Victorian Planning Provisions under the Macedon Ranges Planning Scheme and other Victorian Acts

Level	Regulations	Description
Victorian Planning Provisions	Clause 52.17 – Native Vegetation of the Macedon Ranges Planning Scheme	A permit is generally required for the removal of native vegetation on land owned or managed by Council. Application for a permit must meet information requirements of the Guidelines for the removal, destruction or lopping of native vegetation 2017 Link: Macedon Ranges - Planning Schemes
Roadside Exemptions	Specified in clause 52.17-7 The Roadside Vegetation Management for Bushfire Risk Mitigation Purposes (DSE 2012) provides decision guidelines for fuel reduction works on roadsides	The specified exemption overrides permit requirements if the vegetation removal is for: minimising the risk to life and property from bushfire on a roadside of a public road managed by the relevant responsible road authority and carried out by or on behalf of that authority, in accordance with the written agreement of the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the Conservation, Forests and Lands Act 1987).
State Legislation	Country Fire Authority Act 1958	Under the CFA Act, Councils have a responsibility to prevent fires and contain roadside fires. The CFA Roadside Fire Management Guidelines (CFA 2001) lists four fire management objectives in relation to bushfire management on roadsides: – prevent fires on roadsides – contain roadside fires – manage safety of road users – provide control lines. Country Fire Authority Act 1958 (legislation.vic.gov.au)
State Legislation	The Flora and Fauna Guarantee ACT 1988 (FFG Act)	The FFG Act was established to ensure the continued survival of all Victorian species of flora and fauna and all Victorian communities of plants and animals. Unless a permit exemption applies, the Department of Environment, Land, Water and Planning (DELWP) is the referral authority for matters under the FFG Act. There are 3 threatened plants species within Dalton Street Reserve that are protected under the FFG Act: Bacchus Marsh Wattle Swamp Everlasting and Floodplain Fireweed **Link:** Flora and Fauna Guarantee Act Threatened List (environment.vic.gov.au)

Level	Regulations	Description
State Legislation	The Catchment and Land Protection (CaLP) Act 1994	The CaLP Act requires all land holders including the Crown, public authorities and licensees of Crown lands, must, take all reasonable steps to: – eradicate regionally prohibited weeds – prevent the growth and spread of regionally controlled weeds – prevent the spread of, and as far as possible, eradicate established pest animals. Regionally controlled (noxious) weeds that are identified within the study area and require on going control in accordance with the CaLP Act include Spear Thistle (Cirsium vulgare), Montpellier Broom (Genista monspessulana), Blackberry (Rubus anglocandicans) and Gorse (Ulex europaeus) **Link:** Invasive species laws and the Catchment and Land Protection Act 1994 | Legislation, policy and permits | Protecting Victoria | Biosecurity | Agriculture Victoria

Macedon Ranges Shire Council

Events & Festivals Grant Program 2022/2023

Guidelines

Contents

Overview

Macedon Ranges Shire Council is proud to support the Events and Festivals Grant Program in recognition of the significant social and economic benefits to the shire.

The program is for groups and organisations seeking funding and/or in-kind support for events and festivals staged within the shire. The program has three different tiers to enable all events and festivals to apply depending on size, focus and complexity.

1.1 Program objectives

The objectives of the program support events and festivals that align with the priorities of the 2021-2031 Council Plan specifically:

- Healthy environment, healthy people, and
- Business and tourism.

Preference will be given to applicants that:

- Foster community development and contribute to health and wellbeing.
- Align with the vision and strategic directions of the Macedon Ranges Visitor Economy Strategy 2019-2029.
- Showcase the key branding pillars of the region.
  - Arts, culture and makers.
  - Nature and the outdoors.
  - Historic villages and rural landscapes
  - Food, wine and ferments
- Provide economic benefit to Macedon Ranges Shire through:
  - Visitation.
  - Overnight stays.
  - Increased visitor yield.
- Occur in locations and/or times of lower visitation.
- Demonstrate plans to become self-sustaining and less reliant on financial support from Council.
- Demonstrate plan to deliver events that are accessible and inclusive for participants.
- Demonstrate plans to minimise impact to environment and surrounding community.
- Can deliver a successful, safe and compliant event or festival.

1.2 Timeline

Applications open	28 March 2022 at 9am
Applications close	4 May 2022 at 5pm
Applications assessed by panel	May / June 2022
Recommendations to Council	July 2022
Grant recipients announced	July 2022
Event takes place	1 July 2022 – 31 December 2023
Grants acquitted	Within 8 weeks of event completion

Eligibility

2.1 Eligible applicants

Events and festivals within the Macedon Ranges Shire and open to the public are eligible for funding.

Applications will generally be considered from:

- Creative, cultural, and sporting organisations.
- Private sector organisations.
- Not for profit organisations, including sporting, cultural and community that:
  - Are an incorporated body, cooperative or association.
  - Have an Australian Business Number (ABN) or can provide written advice from the Australian Taxation Office that no withholding tax is required from the grant payment.

  Please note: If your group is not incorporated, you can still apply for a grant if you have an auspicing body.

2.2 What will be funded

- Assistance with the costs associated with securing, hosting, staging and marketing events and festivals.
- Innovative strategies to increase visitation to existing events, including event development and tourism marketing.

2.3 What won't be funded

- Events staged outside of Macedon Ranges Shire.
- Private events that are not broadly accessible to the local community.
- Events and festivals on private land that have not determined potential restrictions and permit requirements with Council's Planning Department.
- Events that are not submitted by the application closure date.
- Applicants that have failed to acquit previous funding agreements.
- Applications that are incomplete or fail to meet criteria.
- Capital expenditure (the purchase of land, buildings, vehicles or building on privately owned land).
- Rental or lease of office space (event venue costs may be considered at the discretion of Macedon Ranges Shire Council).
- Events that are not held between 1 July 2021 and 31 December 2022 (except for multi-year agreements where subsequent event dates fall outside this date range).
- Projects or activities which:
  - Are religious or political.
  - Are discriminatory, sexist or disrespectful.
  - Ask for donations (fundraising).
  - Are the responsibility of other agencies (e.g. charities, government bodies).
  - Do not support responsible serving of alcohol.
- Recreational excursions, e.g. camps, holidays, tours.
- Catering.
- Debts.

- Competitions, gifts and prizes.
- Ongoing operational costs (core business) such as
  - Salaries (except for contract work)
  - Rent
  - Annual general meetings
  - Insurance
  - Utility costs

Council support

3.1 Event classification

The level of support available from Council is determined by the scale, focus and economic impact of the event. Events are classified into one of three tiers using the classification criteria below.

Tier	Classification
Tier 1 Signature Event	**New, emerging or established events and festivals of significant scale that:** • Are exclusive to Macedon Ranges Shire Council. • Have the capacity to attract intrastate and interstate visitation. • Are of state or regional significance. • Align with existing Macedon Ranges tourism branding and strengths. • Have the capacity to drive overnight stays and/or increase visitor yield in the region. • Are or have the capacity to become a signature event for the Shire. • Appeal to identified target markets for the region.
Tier 2 Regionally Significant Event	**New, emerging or established events and festivals of medium to large scale events that:** • Have the capacity to attract intrastate visitation. • Are of regional significance. • Have a broader reach and attract high community attendance. • Attract visitors outside the township where it's being held.
Tier 3 Community Event	**Events and festivals of a small scale that:** • Reinforce civic pride and community connectedness. • Are of significance to the local community.

3.2 Funding

Funding is available as one-year or triennial agreements. Grant amounts are determined by the scope and capacity of the event.

Funding Agreement	Grant amounts
One-year	• **Tier 1** – Up-to $10,000 • **Tier 2** – up-to $6,000 • **Tier 3** – Up-to $2,000
Triennial	Available to Tier 1 and 2 events that demonstrate strategies to increase visitation through event development and tourism marketing. Only one triennial agreement will be awarded to each of the tiers. Funding is available on a sliding scale reduced in increments over a three-year period. • **Tier 1** – **Year 1** up-to $15,000 **|Year 2** up-to $12,000 **| Year 3** up-to $10,000 • **Tier 2** – **Year 1** up-to $10,000 **|Year 2** up-to $08,000 **| Year 3** up-to $06,000 • **Tier 3** – Triennial funding not available

3.3 In-kind support

In-kind support is available to all tiers of the grant program. In-kind support allows for events and festivals to gain access to the following services that would normally come at a cost.

- Waiver of activity on a road permit fees.
- Assistance with the development of an event plan (this could include assistance with the development of a risk management plan or marketing plan).
- Bin hire (maximum three recycling stations which include: general waste, recycling, glass and FOGO).
- Additional cleaning of public toilets.

Where in-kind support is sought, an Events and Festivals Grant Program application must be submitted. Requests for retrospective in-kind support will not be considered.

3.4 In-kind venue hire

In-kind venue hire is available to all tiers of the grant program. It allows events and festivals to gain access to council managed facilities and reserves that would normally come at a cost. In-kind venue hire does not include associated staffing costs, cleaning or additional equipment hire required for venue operations; these costs can however be applied for though the funding support tiers.

Applicants applying for in-kind venue hire must include supporting documentation from the appropriate council department proving venue availability and hire fees.

Where in-kind venue hire is sought, an Events and Festivals Grant Program application must be submitted. Requests for retrospective in-kind support for venue hire will not be considered.

The following venues are excluded from in-kind venue hire due their unique operational requirements:

- Hanging Rock Reserve.
- Kyneton Town Hall.

Application

4.1 Application process

The application process consists of two parts:

1. Contact Nicole Pietruschka, Event and Festival Officer to determine eligibility to the program.

   Nicole Pietruschka
   M: 0436 848 350
   eventsandfilming@mrsc.vic.gov.au

2. Submission of an application.

4.2 Submission requirements

To be considered for funding applicants are required to submit detailed information on the event, and address all assessment criteria.

- Details of the event, including description, purpose, date and location.
- Description of how the funding will be used.
- Attendance data:
  - For existing events, previous attendances, up to 3 years, including local, intrastate, interstate attendance.
  - For new events, projected attendance, including local, intrastate, interstate attendance.
- Economic impact details from independent studies (where available).
- Marketing Plans that include:
  - Specific details relating to tourism marketing that will be undertaken.
  - Description of target markets.
  - All proposed marketing activity and timelines.
- Details regarding how the event aligns with and supports the:
  - Macedon Ranges tourism brand pillars.
  - Strategic Plans of Macedon Ranges Shire Council 2019-2029.
  - 2017-2027 Council Plan.
- Details of financial management including:
  - Detailed revenue and expenditure budget demonstrating financial support beyond the Macedon Ranges Shire Council including, but not limited to State Government, regional and local tourism organisations and sporting, cultural, industry and community organisations.
  - Plans demonstrating future financial sustainability, independent of Council funding.
  - Quotes for goods and services the funding will be used for.

- Plans to minimise impact to environment and surrounding community.
- Demonstrated management capacity and plans to achieve a successful and safe event.

4.3 Assessment Criteria

Community and Stakeholder Engagement

To assess how the event engages with, and is supported by: community, local business, traditional owner groups and other relevant stakeholders.

- **Engagement:** Identification of how event is supported by community and relevant stakeholders.
- **Involvement:** Demonstration of opportunities for community and relevant stakeholders to participate.
- **Community outcomes:** Demonstration of how the event delivers positive community outcomes in the shire.

Delivery

To assess the applicant's level of event planning and consideration to deliver a successful event. (Please see section 14. Supporting Documentation.)

- **Management:** Demonstrated ability to deliver a successful and safe event within timeframe.
- **Financial management:** Demonstration of sound financial management.
- **Marketing and communications:** Demonstrated plan for promoting event.
- **Accessible and inclusive:** Demonstration of measures taken to provide an accessible and inclusive environment.
- **Environmental sustainability:** Demonstration of measures put in place to minimise environmental impact.

Economic Benefits **(Tier 1 and 2 events only)**

To assess the events capacity to support the local economy, and fill gaps in the events calendar.

- **Attendance:** Anticipated number of attendees, including local and visitors from outside the shire.
- **Length of stay:** Demonstration of how the event will encourage overnight stays in the shire.
- **Events calendar:** Justification of how the event will add value to the events calendar.

Destination Awareness **(Tier 1 and 2 events only)**

To assess the event's effectiveness in growing brand awareness of the Macedon Ranges.

- **Brand alignment:** Demonstration of how the event aligns with the tourism brand pillars of the Macedon Ranges.
- **Target market:** Demonstration of how event will attract the target market (lifestyle leaders) and visitors from outside the shire.
- **Destination awareness:** Demonstrate how event will promote the Macedon Ranges as a tourism destination and encourage repeat visitation.

4.4 Assessment process

Eligible applications will be assessed against the criteria as well as supporting documentation submitted in their application. Applications that do not address criteria adequately will not be considered.

Once the panel has completed assessment the following process will be undertaken.

1. The panel will provide assessment recommendations to Council.
2. Recommendations will be considered for adoption by Councillors at Ordinary Council Meeting: 27 July 2022.
3. Adopted recommendations will be made publically available on the Council website. Successful applicants will receive a letter of offer advising a grant is offered; on acceptance of the offer, a funding agreement will be provided.

4.5 Assessment Matrix

The Assessment matrix provides advice on how applications are scored against the criteria:

1. Evaluate the project against the criteria and score.
2. Add all values for total score.

Tier 1 and 2 events

- **Score between 89-126** — Recommended for funding.

  Please note Tier 1 events must score within this range to be recommended for funding at this level.
- **Score between 50-89** — Possibly recommended for funding.
- **Score below 50** — Not recommended for funding.

Tier 3 events

Tier 3 events are not scored on 'economic benefit' or 'destination awareness' and thresholds for funding have been adjusted accordingly.

- **Score between 55-72** Recommended for funding.
- **Score between 30-55** Possibly recommended for funding.
- **Score below 30** Not recommended for funding.

Scoring Matrix

Criteria	Scoring Values	EXAMPLE EVENT
Community and Stakeholder Engagement	**0 , 3 , 6 , 9**	**Score**
Support	**0** No demonstrated support by community or stakeholders. **3** Minimal support demonstrated. **6** Support demonstrated with evidence provided. **9** Extensive support demonstrated with evidence provided.	6
Involvement	**0** No opportunities for community/stakeholder participation. **3** Minimal opportunities for community/stakeholder participation. **6** Various levels of involvement for community/stakeholder identified. **9** Various levels of involvement identified and working relationships already established with community/stakeholders.	6
Community Outcomes	**0** No positive outcomes for community identified. **3** Incidental positive outcomes identified. **6** Targeted outcomes demonstrated. **9** Targeted outcomes demonstrated across a broad spectrum of the community.	7
Delivery	**0 , 3 , 6 , 9**	**Score**
Management	**0** No considered planning undertaken. **3** Limited planning undertaken. **6** Draft event plans provided. **9** Final event plans provided and demonstrated capacity to deliver event.	9
Financial Management	**0** Council financial support only (this application), and limited costing provided. **3** Additional financial support identified, and outline budget provided. **6** Additional financial support secured and full budget provided. **9** Financially viable with multiple sources of income secured and full budget provided.	6
Accessible & Inclusive	**0** No measures demonstrated to deliver accessible and inclusive event. **3** Limited measures demonstrated to deliver accessible and inclusive event. **6** High level planning demonstrating accessible and inclusive event delivery. **9** Proactive / goes above ordinary expectations to deliver an accessible and inclusive event.	6
Marketing and Communications	**0** No marketing plan provided. **3** Marketing plan provided, but with limited detail. **6** Detailed marketing plan but limited messaging and content. **9** Detailed marketing plan provided, including well developed messaging and content.	9
Environment sustainability	**0** No demonstration of plans to reduce environmental impact and educate participants. **3** Minimal demonstration of plans to reduce environmental impact and educate participants. **6** Plans provided to reduce environmental impact and educate participants, which demonstrates how the event will achieve goals. **9** Environmentally focused event with innovative plans around reducing impact and environmental education.	6
Applicable to tier 1 and 2 events only		

Economic Benefits	0 , 3 , 6 , 9	Score
Attendance	**0** Less than 50 participants. **3** 500 participants. **6** 2000 participants. **9** 5000 participants or more.	7
Length of stay	**0** Single day event. **3** Multi-day event. **6** Single or Multi-day event with activities that encourage overnight visitation. **9** Multi-day event that demonstrates innovative strategies to achieve overnight visitation.	3
Events Calendar	**0** Event occurs in peak season and is not unique. **3** Event occurs in peak season but is unique in its offering. **6** Event occurs in quiet season, but is not unique. **9** Event occurs in quiet season, and is unique in its offering.	6
Applicable to tier 1 and 2 events only		
Destination awareness	**0 , 3 , 6 , 9**	**Score**
Brand alignment	**0** Does not align with tourism brand pillars. **3** Weak alignment with tourism brand pillars. **6** Strong alignment with tourism brand pillars. **9** Strong alignment with tourism brand pillars and demonstrates how this is a strength of the region.	7
Target Market	**0** Appeals predominantly to local catchment (50km radius) only. **3** Potential to attract visitation from outside the shire but not a focus of the event. **6** Focus of the event is to attract tourists to the area, but does not necessarily appeal to the target market. **9** Focus of the event is to attract tourists to the area. This is strongly demonstrated through marketing and event activities that appeal to target market.	6
Destination Awareness	**0** No demonstration of how event will promote region. **3** Minimal promotion of region outside the immediate event. **6** Showcases the Macedon Ranges as a great place to visit. **9** Strongly demonstrates how event showcases the Macedon Ranges as a place to visit and explore, actively promoting other experiences.	5
TOTAL SCORE		**89**

4.6 Agreements

Successful applicants will be required to enter into a funding agreement with Macedon Ranges Shire Council to receive their grant. The funding agreement will include:

- Funding obligations and conditions.
- Acknowledgement conditions to recognise funding partners.
- Purpose for which the funding must be used.
- Reporting requirements that must be met by the funding recipient.

5. Conflict of Interest

All applicants will be required to declare any interests of which they are aware, which could reasonably raise an expectation of a conflict of interest or material interference with an application. These include financial or other interests that:

- Have been held
- Are currently held, or
- Will accrue.

Examples of financial or other interest include being a principal or key employee of a material professional adviser supplying services; and/or interests in contracts, trusts or other business arrangements.

Conflicts of interest can be actual, potential or perceived, and should be declared to ensure that any risks are managed. Detailed guidance can be found on the Victorian Public Sector Commission website in its Conflict of Interest Policy Framework – www.vpsc.vic.gov.au and in its eLearning guide on Conflicts of Interest.

6. Evaluation and Reporting

Successful applicants will be required to undertake a post-event evaluation; Council will provide this template with the funding agreement. Tier 1 and 2 events will also be required to conduct a visitor satisfaction survey provided by Council.

Post event evaluations and completed survey results will be required within eight weeks of the conclusion of the event.

Depending on the level of funding, events may be required to provide progress reports including financial summaries.

Triennial applications are subject to annual evaluation and review, successful grant recipients are expected to be financially self-sufficient by the end of year three.

7. Funding

Advance payments will be made in stages as long as:

- The funding agreement has been signed by both parties.
- Grant recipients provide reports as required, or otherwise demonstrate that the event is progressing as expected.
- Other terms and conditions of funding continue to be met.
- A valid tax invoice is received by Macedon Ranges Shire Council.

8. Privacy

Any personal information about applicants or a third party in an application will be collected by Macedon Ranges Shire Council. This information may be provided to Victorian Government bodies for the purpose of assessing your application. If you intend to include personal information about third parties in your application, please ensure they are aware of the contents of the privacy statement. Any personal information about you or a third party in your correspondence will be collected, held, managed, used, disclosed or transferred in accordance with the provisions of the Privacy and Data Protection Act 2014 and other applicable laws.

Macedon Ranges Shire Council is committed to protecting the privacy of personal information. You can find Macedon Ranges Shire Council Privacy Policy online at www.mrsc.vic.gov.au. Enquiries about access to information about you held by Macedon Ranges Shire Council should be directed to the Customer Service department of Macedon Ranges Shire Council.

9. Code of Conduct for Child Safe Standards

If your event provides services or facilities specifically for children you will be required to meet Child Safe Standards.

The standards require organisations to have a code of conduct that establishes clear expectations for appropriate behaviour with children.

For information about the Child Safe Standards contact the Department of Health and Human Services.

10. Important Information

Applicants must not assume they will be successful, or enter into commitments based on that assumption before receiving formal notification of the outcome of their funding application.

Applicants should not assume that initial success guarantees future success. All applicants are encouraged to plan for contingencies and consider other funding sources and options should their application be unsuccessful.

11. Links

Victoria Visitor Economy Strategy
https://djpr.vic.gov.au/__data/assets/pdf_file/0006/1340979/Visitor_Economy_Strategy.pdf

Macedon Ranges Visitor Economy Strategy
https://www.mrsc.vic.gov.au/files/assets/public/live-amp-work/business-amp-economy/strategies-amp-plans-business/macedon-ranges-visitor-economy-strategy-2019-2029.pdf

Macedon Ranges Events Strategy
https://www.mrsc.vic.gov.au/files/assets/public/live-amp-work/business-amp-economy/strategies-amp-plans-business/strategy-final-macedon-ranges-events-strategy-2021-25-2021-04-29.pdf

Events in Victoria (COVIDSafe Settings)
https://www.coronavirus.vic.gov.au/public-events-in-Victoria

Grant skills and resources webinars
https://www.mrsc.vic.gov.au/About-Council/Find-A-Grant/Grants-Skills

Event planning resources and webinars
https://www.mrsc.vic.gov.au/See-Do/Events/Running-An-Event/Event-planning-resources-and-webinars

12. Contact Information

Nicole Pietruschka
Events & Festivals Officer
eventsandfilming@mrsc.vic.gov.au
M: 0436 848 350

13. Council contacts for Events & Festivals

Macedon Ranges Shire Council officers can assist event and festival organisers with a range of services all year round. Fees may apply to some aspects of support.

All officers can be contacted by calling 5422 0333.

COUNCIL DEPARTMENT AND CONTACT	ASSISTANCE AVAILABLE
Community & Economic Development **Arts & Events** Nicole Pietruschka Events and Filming Officer	• Event Notification Process • Events & Festivals Grant Program • Liaising with Daylesford Macedon Ranges Tourism regarding promotional opportunities • Event Planning • Filming
Christine McKimm Tourism and Marketing Officer	• Promoting tourism focussed events or festivals on the official tourism website and facebook page for the Macedon Ranges www.visitmacedonranges.com • Promote event or festival at the Macedon Ranges Visitor Information Centres ie: in the monthly events calendar and on the events board
Terry Moore Cultural Development Officer	• Audio visual and technical equipment hire or advice (small not for profit events and festivals only) • Potential for inclusion in a monthly poster run to promote community events and festivals
Adrian Shand Arts and culture venue hire Technical Supervisor	• Book a Council hall (not parks, reserves and gardens)
Hanging Rock Shane Caruana Hanging Rock Team Leader	• Hanging Rock event enquiries and liaison

COUNCIL DEPARTMENT AND CONTACT	ASSISTANCE AVAILABLE
Open space and recreation Amy Turner Recreation Liasion Officer	• Book a Council managed park, reserve, garden and/or sports ovals.
Building Municipal Building Surveyor	• Permits or advice for Temporary structures such as seating stands, marquees and stages. • An Occupancy Permit for a Place of Public Entertainment (also known as a POPE)
Planning Steve Polak Planning & Building Liaison Officer	• Place of Assembly Permits (may apply to events and festivals on private land) • Information on Liquor Licence applications
Engineering and Resource Recovery Harry Rehal Traffic and Road Safety Officer	• Activity on a Road Permit • Assess Traffic Management Plans to ensure they comply with legislation
Operations Michele Wills Administration Officer	• For information on bins and rubbish requirements. • Hire of signage for the implementation of traffic management plans • Council maintained parks and gardens (mowing schedules, maintenance schedules) • Tree inspections for public parks and reserves
Leonie Brownbill Facilities Services Officer	• Requesting additional cleaning of public toilets
Legal and Corporate Governance Rachel Urankar Risk and Insurance Officer	• Advice on risk management • Public liability insurance
Communications Elon McCormick Online Communications Officer	• Local promotion of community events and festivals
Regulatory Compliance Michael Dyt Coordinator Health	• Food Traders permit, temporary or mobile food stall registration • Council's smoke free policy
Emergency Management Coordinator	• Advice on Emergency Management Plans • Advice on potential emergency related risks of events and festivals
Althea Jalbert Local Laws Coordinator	• Community signage (community events and festivals only) • Advice on ways to reduce impact of noise generated by the event and festival • Parking arrangements • Raffle Tickets • Firework

14. Supporting Documentation

To assess the applicant's ability to deliver a successful and safe event the panel will examine event documentation. Please see section **4.3 Criteria for Assessment** under 'Delivery'.

Below are some example of documentation that can be provided to demonstrate ability to deliver the event.

Management

- Council 'Proposed Event Notification Form'.
- Public Liability Insurance.
- Evidence of the status of approvals, permissions, notifications, permits etc
- Event Management Plan
  - Event details.
  - Aims & outcomes.
  - Contacts.
  - Key tasks.
  - Production schedule/timelines/run sheets.
  - Consultation & notification plans.
  - Budget.
  - Venue & site plans.
  - Traffic, transport & parking plans.
  - Event program.
  - Permits, permissions, licence.
- Emergency Management Plan.
  - Emergency management structure & communication plan.
  - Evacuation procedure.
  - First aid medical plan.
  - Crowd control & security.
  - Weather monitoring & response.
  - Gas Safety Plan.
  - Event contingency or postponement plan.
  - Emergency contact lists.
- Risk Management Plan.
  - Faulty electrical equipment (stalls, hall, food, vendors).
  - Slips, trips and falls.
  - Manual Handling.
  - Separation of pedestrians and vehicles
  - Unattended bags.
  - Lost children.

- Loud music/noise.
- Inclement weather.

- COVIDSafe Event Plan

Financial Management

- Detailed revenue and expenditure budget.
- Financial sustainability independent from Council Support.
  - Provide a long-term strategic plan.
  - Increase revenue by charging an entry fee, raising ticket prices or introducing a participation fee for stallholder/suppliers.
  - Seek further sponsorship/grants.

Marketing & Communications

- Marketing & Communications Plan:
  - Council's Tourism Unit manages the official tourism website for the Macedon Ranges www.visitmacedonranges.com.
  - Online events calendar on Council's website www.mrsc.vic.gov.au.
  - Community newsletters to find out about advertising and editorial opportunities.
  - School newsletters will accept public notices.
  - Promote in Council's regular e-newsletters (Business, Youth, Arts & Culture, Environment, and Recreation).
  - Local newspapers offer a community guide or calendar feature where local events and festivals can be listed each week.
  - Social media and online campaigns.
  - Community signage boards.
  - Display information at the Macedon Ranges Visitor Information Centres and list your event or festival in the monthly events and festivals calendar.
  - Daylesford and Macedon Ranges Explore http://dmrexplore.com.au is an online e-travel guide where events and festival can be promoted.
  - List your event and festival at Australia Tourism Data Warehouse www.atdw-online.com.au (this was previously Events Victoria).
  - Daylesford Macedon Tourism (DMT) http://dmrtourism.com.au/.

Accessible and inclusive

- Event planning
  - Ease of access to the event.
  - Ease of movement around the event.
  - Signage.
  - Toilets and other facilities.
  - Promoting improved access to patrons.

Environment

- Waste Management – Recycle, Reduce and Re-use Strategy.
  - Minimise single use plastic (plastic bags, bottles, cups, plastic straws etc.)
  - Set up recycle and compost stations.
  - Set up wash stations
  - Promote your commitment to environmental sustainability.
  - Provide re-useable cutlery and crockery.
  - Choose biodegradable tableware and decorations.
  - Use digital media such as social media to promote event or festival.
- Green travel options
  - Encourage public transport, car-pooling and shuttle buses.

Farm Plan

PLN/2021/447

78 Mallalys Road
Bolinda VIC 3432

For

Roy Costa Planning and Development

164 Eight Street, Mildura

Victoria 3500

Business name	Green Edge Environmental P/L
ABN	18 654 533 712
Postal address	C/O Springton Post Office Springton, SA, 5235
Point of contact	Chris Alderton
Email and Mobile	chris@geenvironmental.com.au 0438 345 109

Rev	Purpose	Author	Reviewer	Issue Date
A	Draft report for client review	C. Alderton	L. Alderton	24/02/2022
0	Final for submission	C. Alderton	C. Alderton	25/02/2022

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TABLES

APPENDICES

1.0 Introduction

Green Edge Environmental Pty Ltd has been engaged by Roy Costa Planning and Development, to update the farm management plan developed in 2018 by Plan-it Rural Pty Ltd.

The update to the original farm plan was requested by Macedon Ranges Shire Council on 1 November 2021 in a request for further information, which stated:

> 2. Please provide an updated Farm Management Plan as the submitted Farm Management Plan outdated in relation to the timelines for actions. Plan talks about dwelling and associated infrastructure to be developed in 2018 which is not correct
>
> 3. Farm Management is also required to be amended to provide more details in relation to horse husbandry use and number of cattle and grazing details
>
> 5. The submitted site plan is not consistent with the appendix 1 of the Farm Plan in relation to the design of the dwelling and the paddocks layout. Please provide an updated and correct information with each document comprising consistent layout for the overall proposal.

The climatic details are provided in Table 1 for the Wallan (Kilmore Gap AWS) and general property details are provided in Table 2.

Table 1: Weather station records for BOM site 088162

Statistic Element	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Annual
Mean maximum temperature	25.3	24.7	21.6	17.2	12.9	10	9.1	10.6	13.3	16.3	19.7	22.4	16.9
Highest temperature	43.2	42.7	36.7	30.7	23.3	19.6	16.4	18.1	24.3	31.1	38.1	40.7	43.2
Lowest maximum temperature	10.9	10.3	10.6	7.7	6.2	4.6	2.7	4.4	2.1	5.8	6.2	9.8	2.1
Highest minimum temperature	27.1	25.2	23.3	18.2	14.4	11.4	9.4	11.4	15.1	18.4	22.9	23.7	27.1
Mean rainfall (mm)	51.2	46.1	46.3	55.8	59.8	70.2	60.2	62.2	60.2	52.5	68.2	45.8	690.4
Highest rainfall (mm)	140.6	174.8	118.2	170.8	157.2	141.2	92.6	125.6	171.4	130.4	165.8	119	1088.2
Lowest rainfall (mm)	0.2	2.4	6.6	8.4	13.2	17.8	16.6	20.6	14.4	7	28.8	1.8	443.2

Table 2: Property details

Property aspect	Response
Size (ha)	22.58Ha
Catchment	Port Philip and Westernport
Water courses	Bolinda Creek
Water supply	Potable water connected
Services	Electricity and mains water
Planning Zone	Farming Zone
Planning overlays	Environmental significance overlay Area of Aboriginal Significance
Bioregion	Victorian Volcanic Plain
Ecological Vegetation Class (EVC)	Riparian Woodland and Plans Grassy Woodland
Land Degradation Hazard Region	Southern Plans and Hills
Soil Type	Sodosol
Geology	Unit - Newer Volcanic Group - basalt flows (Neo): generic History - Miocene to Holocene (lava flow [process] - eruption centre [environment]; water [process] - fluvial [environment]) Lithology - alkali basalt (major [proportion]); tholeiitic basalt (major [proportion]); tuff (minor [proportion]); scoria (minor [proportion]); alluvium (minor [proportion])
Annual rainfall	600-700mm

2.0 Property summary

2.1 Description of intent

Justin and Hayley Binney have purchased a property at 78 Mullalys Road, Bolinda to develop their rural farming business. Their ambition is to establish a mixed farming enterprise based primarily on the breeding of Thoroughbred racehorses. The property has been designed and run according to best practice principles and will also incorporate a dwelling and rural shedding (Appendix A).

Justin and Hayley have shown commitment to their farming and land management education, by teaming up with Plan-It Rural to support them with property design and environmental management advice, including ongoing support to ensure they meet the requirements of their 173 agreement.

To ensure that the capacity of the property is increased to meet these ambitions, the Binney's are planning a comprehensive agricultural development of the site, including a dwelling, gardens, shedding, rotational grazing, soil improvement and extensive revegetation program. The property has not received investment in these assets for many years with pastures and fencing on the site generally run down (Appendix F).

Through the property runs Bolinda Creek, plus a large dam. This will be fenced from stock and revegetated as a priority (Appendix D). Substantial locally indigenous plantings will be used throughout the property. This will be strategically placed with a biolinked approach to both enhance the biodiversity value of the property as well as to provide screening and privacy to the residence and shelter to stock. Conversations with Melbourne Water to ascertain the eligibility of the property to participate in the Stream Frontage Program have commenced.

This is all to be achieved with good environmental conscience, striving for best practice in soil conservation, biodiversity and vegetation management. There is also an awareness of the property's place in the broader landscape, both from an environmental and community/social perspective.

2.2 Property description

The property is approximately 2.6kms south of Monegeetta, 6.8kms east of Riddells Creek and 9.6kms south of Romsey. It is close to both the Calder and Hume Freeways, and to the Gisborne railway station, so has excellent transport links for a farming-based business. Easy freeway access will facilitate livestock transport.

This lot forms part of a rural neighbourhood with similar sized adjoining lots. It is situated with views of the surrounding landscape quintessential to the area which will be capitalised upon through the design and orientation of the residence.

The nominated building site for the property is sensitive to the biodiversity assets on the property, which will be improved as a part of the farm development. The property is very steep in places leading down to the creek line and includes a steep section between the house and shed. This steep country will be managed through the use of land class fencing to ensure grazing pressure can be managed appropriately and prevent any incidence of erosion. The area between the house and shed will be excluded from grazing and comprehensively revegetated using indigenous flora of local provenance.

2.2.1 Zoning and overlays

The property is located in the Farming Zone and is largely unaffected by planning overlays other than a small section that fall within the Environmental Significance Overlay on the top northeast corner. As aforementioned, the creek corridor is an area of Aboriginal Cultural Significance (Appendix C).

2.2.2 Historic use of the land

The property is largely cleared and currently consisting of predominantly *Phalaris* based pastures with some native species also present. The property was previously used for cattle and sheep grazing and has largely been run down with little infrastructure of value remaining. Existing fencing will be largely removed and upgraded, including improvement of boundary fencing which has already commenced. No improvement in pastures or addition of lime or fertiliser appears to have taken place for some time. Good ground cover has been maintained with a lighter stocking rate (Appendix F).

2.2.3 Ecological Vegetation Classes

The Ecological Vegetation Classes (EVC) on the property are degraded, but based on 1750 maps the property is considered predominantly Plains Grassy Woodland with a corridor following the creekline of Riparian Woodland (641). These EVC's will be used to guide the revegetation of the property (Appendix B).

2.2.4 Geology

The geology is Miocene to Holocene. The soil is Sodosol, as such, care must be taken when exposing the B horizon of the soil, as it is likely to be sodic and therefore, highly dispersible and readily subject to erosion. It does has potential if carefully managed and is suited to the use proposed in this Whole Farm Plan. The soil type and the steepness of the block in places mean that mismanagement could lead to erosion issues, as already seen on the Bolinda Creek. Land class fencing and grazing management will ensure ground cover is maintained at all times and erosion risk mitigated. The creek will be fully fenced and stock permanently excluded.

2.2.5 Weeds

At the time of inspection, Willow (*Salix spp.*), blackberry (*Rubus fruticosus aggregate*), were identified on the property. As both are Weeds of National Significance, their removal forms a key part of the action plan for the property. As the majority of the infestation is on Bolinda Creek, it is recommended that a control program is developed in close consultation with Melbourne Water to ensure that further erosion damage is not caused in the process of managing these weeds. There are thistle species are in small numbers, notably variegated thistle (*Silybum marianum*) and will be readily managed with good grazing management and either chipping or spot spraying.

2.2.6 Native fauna

Native fauna species expected on the property are kangaroos, wedge tailed eagles, echidnas, a variety of possums and a wide array of birds. The Plains Grassy Woodland EVC can offer habitat to Grey Crowned Babbler, Bush Stone Curlew, Long nosed Bandicoot, Squirrel Glider and Brush Tailed Phascogale. Riparian Woodland may be home to Squirrel Glider, Barking Owl and White-bellied Sea-Eagle.

2.2.7 Description of neighbouring landholdings

This allotment forms part of a rural neighbourhood with similar sized adjoining lots, some larger allotments through the adjacent landscape, all with similar farming activities from home. Lifestyle farming, commercial livestock farming (beef and sheep) and equine production and/or training are the most common local agricultural pursuits.

- Northwest – Residence approximately 500m from proposed development site
- West – Residence approximately 500m from the proposed development site
- South – Residence approximately 625m from proposed development site
- Southeast - Residence approximately 675m from proposed development site
- East– Residence approximately 1000m from proposed development site

2.2.8 Other observations (Appendix F)

- Improvements: Boundary and internal fencing
- Dams (1)
- Pest Plants: Willow (*Salix spp*.)
- Rabbits (*Oryctolagus cuniculus*) - Light infestation throughout property. More significant evidence on creek. Will be managed by regular shooting and trapping.
- Hare (*Lepus capesis*) - Seen occasionally in the area. Will be managed by regular shooting.
- Fox (*Vulpes vulpes*) - Seen occasionally throughout property. Managed by regular shooting.

3.0 Action plan

3.1 Key issues

3.1.1 Pest plant management

- The significant weeds on the property are Willow (*Salix spp.*), Blackberry (*Rubus fruticosus aggregate*), Variegated thistle (*Silybum marianum*)
- In regard to the thistle species, the infestation is light. Plants will be mechanically removed via hand chipping and the property monitored for any regrowth.
- The management of Willow and Blackberry needs to be carefully managed due to its adjacency to the creek. This is a specialist job and it is recommended that the landholders work with an experienced contractor to mechanically remove the plants with as little disturbance to the creek bank as possible. The landholders will then be able to manage the follow up, with ongoing monitoring and removal of young plants.
- For annual weeds such as cape weed, an ongoing rotational grazing management program will be implemented, including enhancing the rotational grazing capacity of the property, cross grazing and gradual pasture improvement and soil fertility improvement. Soil testing will be conducted to facilitate this work.

3.1.2 Pest animal management

- There was significant evidence of rabbits on the creek. Ongoing management plan including ripping of rabbit burrows, shooting and trapping is required. Again, care must be taken when undertaking ripping given the sodic nature of the soils and the risk of causing erosion issues. Calicivirus has recently impacted the rabbits in the area.

3.1.3 Erosion management

- Bolinda Creek has evidence of active erosion on some banks. To prevent this erosion being exacerbated by stock, the creek will be fenced out, stock permanently excluded and the area revegetated (see Appendix One)
- As previously mentioned, any mechanical removal of woody weeds on the creek will be done in consultation with specialist advice to ensure the creek banks remain stable.
- Rotational grazing program to maintain ground cover at all times – not grazed below 10 cms
- Estimated stocking rates for the property is 15 Dry Sheep Equivalent (DSE) per hectare. Less the revegetation area and development areas (approx. 8Ha), grazing hectares are estimated at 13.95Ha. This allows 209.25 DSE carrying capacity. Allowing for the variation of cattle types and applicable DSE, an average of 10 DSE will be taken, giving a maximum stocking rate of 20 dry cows / steers grazing the property. This plan indicates a mix of stock is proposed by the landholder, therefore stock numbers should be assessed so the stocking rate does not exceed the 209.25 DSE outlined in this plan. Note: This does not include horses managed in stables or yardings, but does include grazing horses, which should be accounted at 10-15 DSE depending of work/pregnancy status. Grazing pressure shall be adjusted according to seasonal conditions and 10 cm ground cover should be maintained at all times

- Fencing according to land classes to facilitate grazing management and soil conservation
- Increase revegetation in key locations to increase shelter protection to stock, reduce wind and water erosion and top soil loss
- Minimum tillage techniques are employed wherever possible in pasture renovation programs.

3.2 Key projects

The initial priority will be to get the house and shed established. After this time, the improvement of the balance of the property will be staged over the next 10 years. The key projects are listed below:

3.2.1 Business development – horse husbandry

- The breeding of thoroughbred horses will commence once the Planning Permit is approved, the owners currently have three on agistment at another property
- Six brood mares will be housed at the property and taken to stud as required
- Dalziel bloodstock will assist in choosing stud stallions
- Maintain existing training relationships with well known trainers
- Yearlings will be sold or retained based on stud requirements
- Stables to be developed in the longer term

3.2.2 Ongoing fencing improvements

- Boundary fences will be refurbished as required to ensure stock containment.
- The rotational paddocks will be established in stages over subsequent the 12 – 24 months.

3.2.3 Comprehensive revegetation for stock shelter, erosion and salinity management, and biodiversity

- A biolinked approach has been taken to the revegetation plan. This will protect the creek line and dam, rehabilitate erosion present on the creek and provide screening around the residence and shed.
- Shelter belts will be at least 10m wide with 3 planted rows of mixed indigenous trees and shrubs suited to the respective EVC's, to create stock shelter and to reduce wind speeds and associated soil erosion across the property.

3.2.4 Pasture management

- Ongoing pasture management to maintain constant groundcover (no less than 10 cms) through appropriate stocking rates for the property and confinement of stock to a sacrifice area on a flat section of the property when the soils and pastures are fragile, such as during extended dry or wet periods. Destocking through sale or agistment of stock should also be considered as a management option to preserve ground cover on the property as seasonal conditions require.
- Pasture restoration and soil health - Priority will be given to animal health and production outcomes.

3.2.5 Water security

- The existing dam will be fenced off and revegetated as a wetland area. Water will be provided to stock via a reticulated water supply with no stock access to the dam except in emergency situations and occasional crash grazing. The dam

water will be pumped to a header tank near the house and gravity fed to the paddock troughs.

3.2.1 Revegetation

- The area set aside for revegetation is approximately 4.02Ha. It is split into two main areas across the property plus shelter belts and is strategically placed to enhance biolinkages, buffer existing vegetation and provide stock shelter.
- Revegetation will be conducted according to the industry standard of 500 plants per hectare with species selected according to the Ecological Vegetation Classes (Riparian Woodland, Plains Grassy Woodland).
- Due to the degraded nature of the revegetation areas from a native vegetation perspective, species selection for the first 10 years will concentrate on upper and mid storey species. Once established, ground cover and lower storey herbs can be considered.
- 10 year survival targets are 80% of the initial 500 plants per hectare (20% large trees, 80% large, medium and small shrubs).
- Plantings will be monitored and dead plants replaced if the mortality falls below the survival targets outlined in the previous point.
- Species are to be selected from Appendix Eight.
- All tubestock are to be staked and guarded on planting and protected from stock by permanent, electrified fencing.
- Tubestock are to be sourced from local nurseries respecting species provenance – such as Western Plains Flora.
- Planting is to be conducted in August each year to provide adequate soil moisture for establishment. Watering can be conducted to improve survival rates if seasonal conditions are dry.
- Ground preparation must be conducted through spraying out or close grazing and deep ripping where appropriate. Steep or rocky country is not to be ripped. Care is to be taken if ripping in the creek corridor to avoid exacerbating erosion in that zone.
- Shelter belt plantings are to be a minimum on 10m wide with at least three rows of plants (although straight lines are not recommended for natural plantings).

4.0 Land management program

The land management program is described below. Stock husbandry is not included in the timeline but is completed on an ongoing basis as necessary.

Land management plan year	Objective	Work program
Work to date	Develop business	• Implement shed complete • Earthworks – Roads and tracks complete. • Boundary fencing complete
2022	Property establishment	• Finalise Planning approval • Infrastructure - Commence work on horse shelters and foaling area and dwelling • Soil testing – Sampled according to land classes. Baseline. • Weed control – Commence mechanical removal of Willow and Blackberry. Hand chipping of thistles. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing.
2023	Property establishment Infrastructure establishment Weed and erosion rehabilitation	• Infrastructure - Finalise work on dwelling, horse shelters, infrastructure and dwelling • Fencing – Commence work on internal fencing – focus on creek line and dam. • Weed control – Continue mechanical removal of Willow and Blackberry. Hand chipping of thistles. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Install header tanks, solar dam pump and troughs for stock water. • Soil Amendments - Spread lime over the entire property in accordance with soil test results. • Reporting – Progress report on action plan implementation required for submission to Council.

2024	Maintenance	• Infrastructure – Complete any further work on infrastructure as required. • Fencing – Continue work on internal fencing with a focus on revegetation areas and shelterbelts. • Weed control – Continue mechanical removal of Willow and Blackberry. Monitor for re-emergence of weeds in treated areas. Remove as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Soil Amendments – Consider fertiliser choices according to soil test results. • Revegetation – Commence work on creek and dam plantings (Late Winter / early Spring).
2025	Maintenance	• Infrastructure – Completed. Maintenance. • Fencing – Continue work on internal fencing – finalise rotational grazing fencing. • Weed control – Continue mechanical removal of Willow and Blackberry. Monitor for re-emergence of weeds in treated areas. Remove as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Complete. Commence work on dam revegetation (Late Winter/early Spring). • Soil Amendments – Fertilise according to soil test results. • Revegetation – Continue work on creek and dam plantings (Late Winter / early Spring). • Reporting – Progress report on action plan implementation required for submission to Council.
2026	Maintenance	• Infrastructure –Maintenance as required. • Fencing – Finalise work on internal fencing. • Weed control –Monitor for re-emergence of weeds. Remove

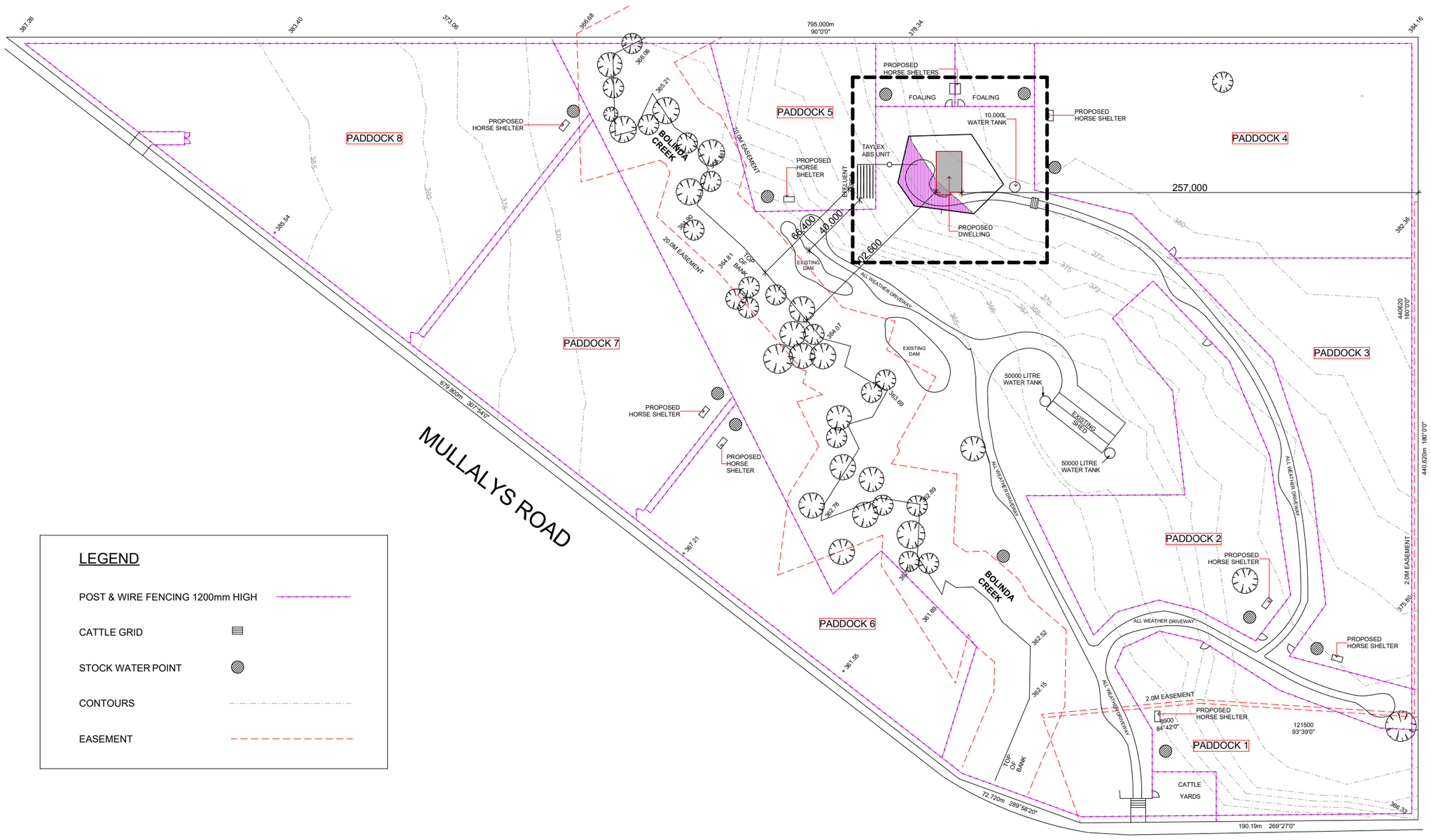
		as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Complete. Continue work on dam revegetation. (Late Winter / early Spring) • Soil Amendments – Fertilise back paddock. • Revegetation – Continue work on creek and
2027	Maintenance	• Infrastructure –Maintenance as required. • Fencing – Maintenance as required. • Weed control – Monitor for re-emergence of weeds. Remove as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Maintenance as required. • Soil Amendments – Monitor pasture response and make decisions about pasture renovation or soil management options. Conduct soil testing to inform decisions for next year. • Revegetation – Finalise work on creek and dam plantings (Late Winter / early Spring). • Reporting – Progress report on action plan implementation required for submission to Council.
2028	Maintenance	• Infrastructure –Maintenance as required. • Fencing – Maintenance as required. • Weed control – Monitor for re-emergence of weeds. Remove as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Maintenance as required. • Soil Amendments – Commence pasture renovation or soil management program as indicated by pasture response to

		initial soil amendment program and soil test results. • Revegetation – Commence work on shelterbelt plantings. Creek line and dam plantings complete. Monitor and replace dead plants as necessary. (Late Winter/early Spring)
2029	Maintenance	• Infrastructure –Maintenance as required. • Fencing – Maintenance as required. • Weed control – Monitor for re-emergence of weeds. Remove as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Maintenance as required. • Soil Amendments – Continue pasture renovation or soil management as indicated by pasture response to initial soil amendment program and soil test results. • Revegetation – Commence work on shelterbelt plantings. Creek line and dam plantings complete. Monitor and replace dead plants as necessary. (Late Winter/early Spring)
2030	Maintenance	• Infrastructure –Maintenance as required. • Fencing – Maintenance as required. • Weed control – Monitor for re-emergence of weeds. Remove as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Maintenance as required. • Soil Amendments – Continue pasture renovation or soil management as indicated by pasture response to initial soil amendment program and soil test results. • Revegetation – Commence work on shelterbelt plantings. Creek line and dam plantings

		complete. Monitor and replace dead plants as necessary. (Late Winter/early Spring)
2031	Maintenance	• Infrastructure –Maintenance as required. • Fencing – Maintenance as required. • Weed control – Monitor for re-emergence of weeds. Remove as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Maintenance as required. • Soil Amendments – Continue pasture renovation or soil management as indicated by pasture response to initial soil amendment program and soil test results. • Revegetation – Commence work on shelterbelt plantings. Creek line and dam plantings complete. Monitor and replace dead plants as necessary. (Late Winter/early Spring)
2032	Maintenance	• Infrastructure –Maintenance as required. • Fencing – Maintenance as required. • Weed control – Monitor for re-emergence of weeds. Remove as required. • Pest animal control – Monitor and take action as necessary. • Groundcover – Monitor / rotate grazing. • Water – Maintenance as required. • Soil Amendments – Continue pasture renovation or soil management as indicated by pasture response to initial soil amendment program and soil test results. • Revegetation – Commence work on shelterbelt plantings. Creek line and dam plantings complete. Monitor and replace dead plants as necessary. (Late Winter/early Spring) • Reporting – Progress report on action plan implementation

		required for submission to Council.

Appendix A: Farm plan



LEGEND

- POST & WIRE FENCING 1200mm HIGH
- CATTLE GRID
- STOCK WATER POINT
- CONTOURS
- EASEMENT

MULLALYS ROAD

REV.	DATE	REV. DETAILS

AREAS

GSD ARCHITECTS

Member Australian Institute of Architects

111 Maddox Avenue Mildura VIC 3500
P (03) 50 232 696 | F (03) 50 232 824
gsd@gsdarchitects.com.au | www.gsdarchitects.com.au
ABN: 62 185 263 626 ACN: 007 266 004

CLIENT
ROY COSTA & ASSOCIATES

PROJECT
PROPOSED DWELLING

LOT 1 MULLALYS ROAD
BOLINDA VIC 3432

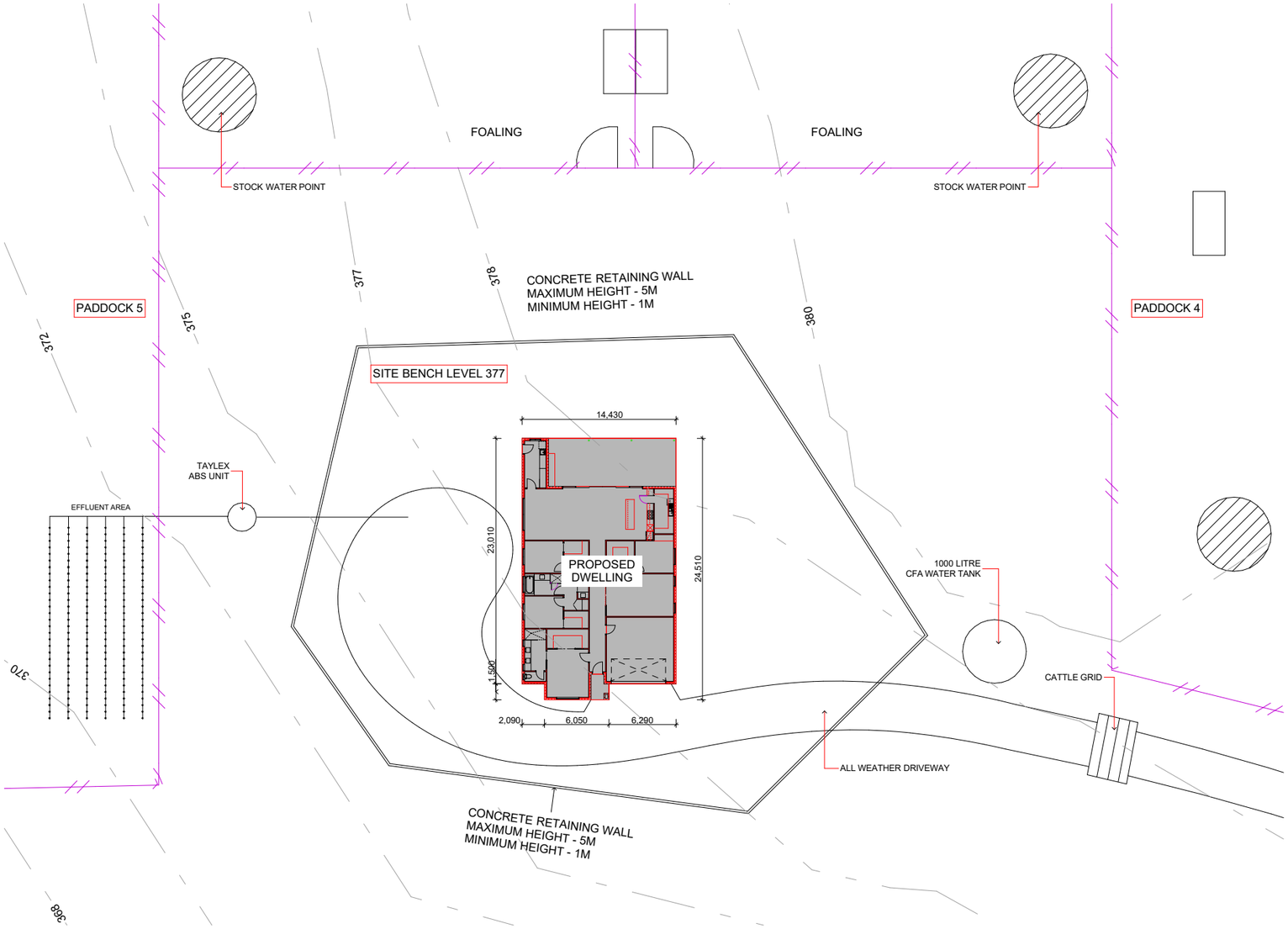
DRAWING
OVERALL SITE PLAN

SCALE 1:1000 | DRAWN M.O | CHECKED G.S.

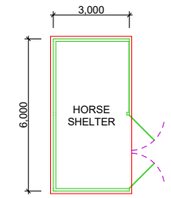
FOR APPROVAL

PROJECT No. 21-039 | DRG No. 01 | REVISION

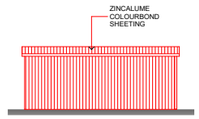
ORIGINAL SHEET SIZE A1 | PRINT DATE 11/05/2021



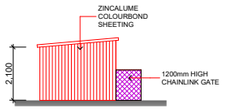
PART SITE PLAN 1:200



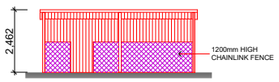
TYPICAL HORSE SHELTER 1:100



BACK ELEVATION 1:100



SIDE ELEVATION 1:100



FRONT ELEVATION 1:100

- THIS DRAWING AND DESIGN IS SUBJECT TO COPYRIGHT AND MAY NOT BE REPRODUCED WITHOUT PRIOR WRITTEN CONSENT
- ALL BUILDING WORK IS TO COMPLY WITH THE CURRENT BUILDING CODE OF AUSTRALIA AND LOCAL BUILDING AUTHORITY
- DO NOT SCALE FROM DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED
- ALL WORKS ARE TO BE CARRIED OUT IN A TRADESMAN-LIKE MANNER
- BUILDER TO VERIFY ALL SITE DIMENSIONS PRIOR TO COMMENCEMENT OF ANY WORKS
- IT IS THE BUILDERS RESPONSIBILITY TO NOTIFY GSD ARCHITECTS OF ANY DISCREPANCIES WHICH MAY HINDER CONSTRUCTION
- PLANS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATION AND/OR ATTACHED DOCUMENTATION
- ALL GLAZING IS TO COMPLY WITH AS. 1288-2006

REV.	DATE	REV. DETAILS

AREAS

GSD ARCHITECTS

Member Australian Institute of Architects

111 Mailler Avenue Mildura VIC 3500
PH (03) 50 232 616 | F 0350 232 624
gsd@gsdarch.com.au | www.gsdarch.com.au
ABN: 62 88 263 026 ACN: 007 265 024

CLIENT
ROY COSTA & ASSOCIATES

PROJECT
PROPOSED DWELLING

LOT 1 MULLALYS ROAD
BOLINDA VIC 3432

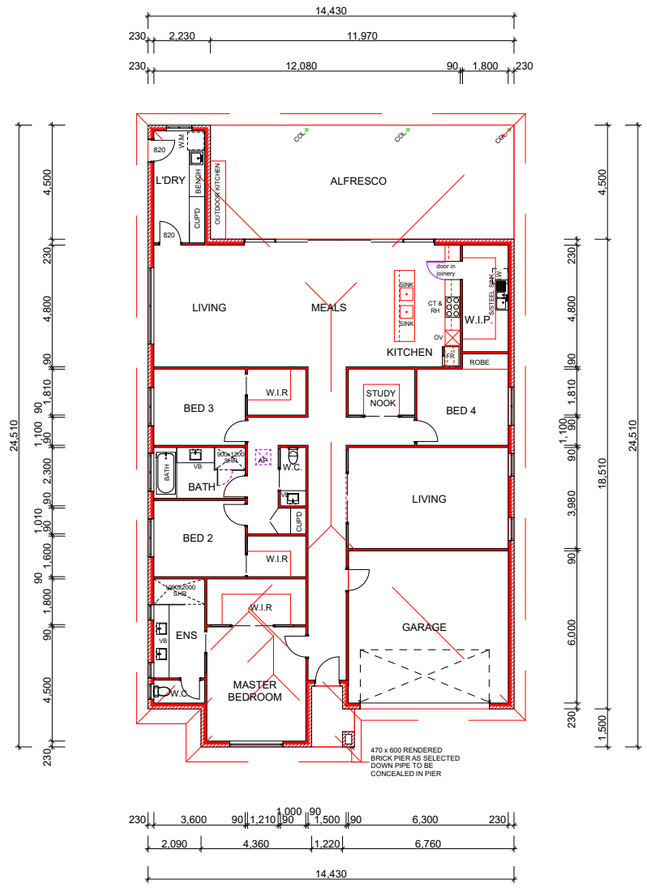
DRAWING
PART SITE PLAN

SCALE 1:200, 1:100
DRAWN M.O
CHECKED G.S.

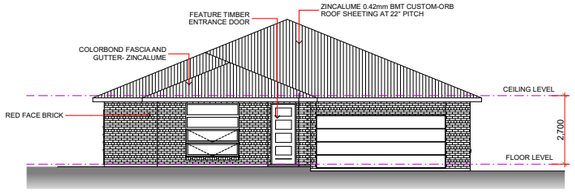
FOR APPROVAL

PROJECT No. 21-039
DRG. No. 02
REVISION

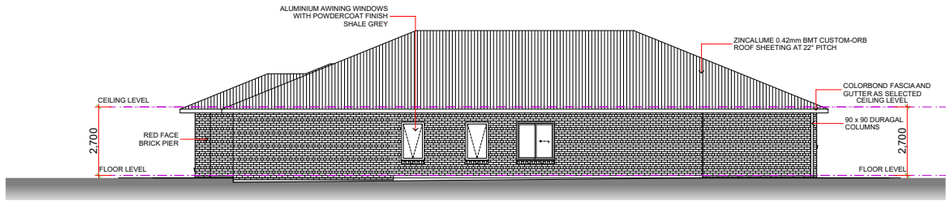
ORIGINAL SHEET SIZE A1
PRINT DATE 11/05/2021



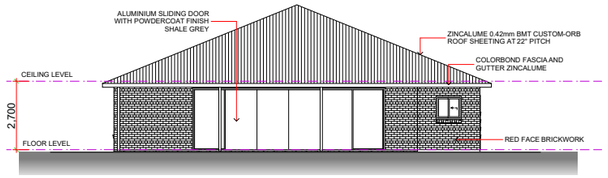
FLOOR PLAN 1:100



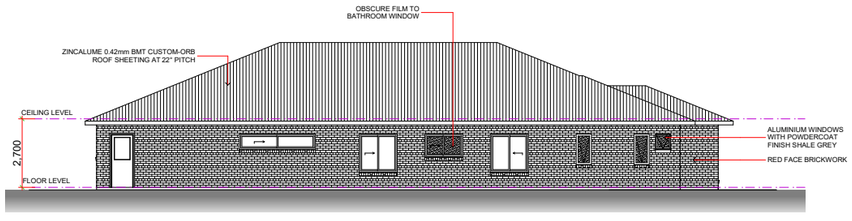
SOUTH ELEVATION 1:100



EAST ELEVATION 1:100



NORTH ELEVATION 1:100



WEST ELEVATION 1:100

REV.	DATE	REV. DETAILS

AREAS

GSD ARCHITECTS
Member Australian Institute of Architects
11 Meldrer Avenue Mildura VIC 3500
P (03) 50 232 616 | F 0350 232 624
gsd@gsdarch.com.au | www.gsdarch.com.au
ABN 62 89 263 026 ACN 207 265 024

CLIENT
ROY COSTA & ASSOCIATES

PROJECT
PROPOSED DWELLING

LOT 1 MULLALYS ROAD
BOLINDA VIC 3432

DRAWING
PROPOSED DWELLING

0 1 2 3 4

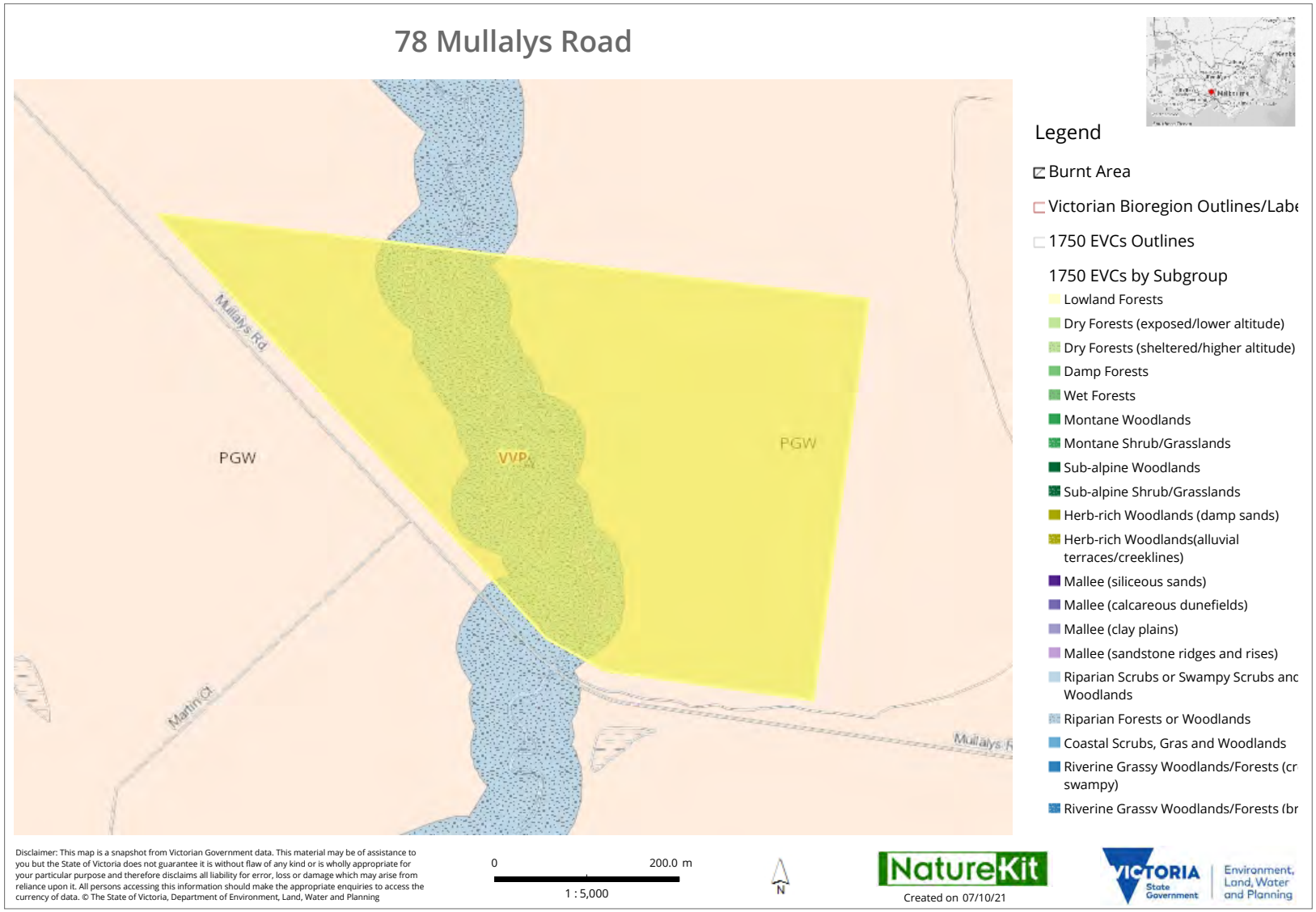
DRAWN M.O
SCALE 1:100
CHECKED G.S.

FOR APPROVAL

PROJECT No.	DRG. No.	REVISION
21-039	03	

ORIGINAL SHEET SIZE A1 PRINT DATE 11/05/2021

Appendix B: 1750 EVC


78 Mullalys Road
Mullalys Rd
PGW
VVP
PGW
Martin Ct
Mullalys R
Legend
Burnt Area
Victorian Bioregion Outlines/Labe
1750 EVCs Outlines
1750 EVCs by Subgroup
Lowland Forests
Dry Forests (exposed/lower altitude)
Dry Forests (sheltered/higher altitude)
Damp Forests
Wet Forests
Montane Woodlands
Montane Shrub/Grasslands
Sub-alpine Woodlands
Sub-alpine Shrub/Grasslands
Herb-rich Woodlands (damp sands)
Herb-rich Woodlands(alluvial terraces/creeklines)
Mallee (siliceous sands)
Mallee (calcareous dunefields)
Mallee (clay plains)
Mallee (sandstone ridges and rises)
Riparian Scrubs or Swampy Scrubs and Woodlands
Riparian Forests or Woodlands
Coastal Scrubs, Gras and Woodlands
Riverine Grassy Woodlands/Forests (cr swampy)
Riverine Grassy Woodlands/Forests (br
Disclaimer: This map is a snapshot from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee it is without flaw of any kind or is wholly appropriate for your particular purpose and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make the appropriate enquiries to access the currency of data. © The State of Victoria, Department of Environment, Land, Water and Planning
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NatureKit
Created on 07/10/21
VICTORIA State Government
Environment, Land, Water and Planning

Appendix C: Property report

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

From www.planning.vic.gov.au at 07 October 2021 06:59 AM

PROPERTY DETAILS

Address:	**78 MULLALYS ROAD BOLINDA 3432**
Lot and Plan Number:	**Lot 1 TP833680**
Standard Parcel Identifier (SPI):	**1\TP833680**
Local Government Area (Council):	**MACEDON RANGES** www.mrsc.vic.gov.au
Council Property Number:	**1198401**
Planning Scheme:	**Macedon Ranges** Planning Scheme - Macedon Ranges
Directory Reference:	**Vicroads 60 D8**

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Urban Water Corporation:	**Western Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**POWERCOR**

STATE ELECTORATES

Legislative Council:	**NORTHERN VICTORIA**
Legislative Assembly:	**MACEDON**

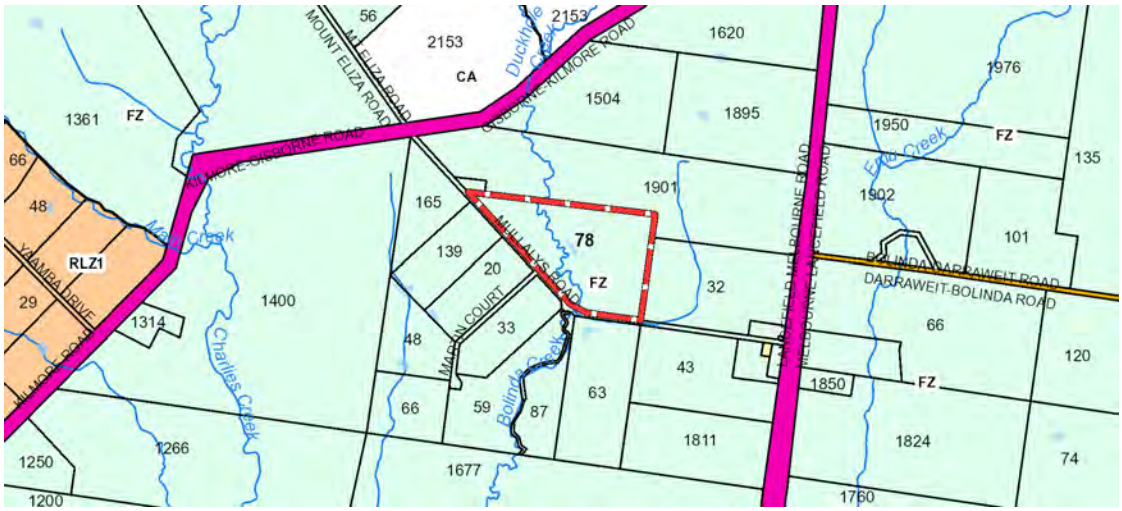
OTHER

Registered Aboriginal Party:	**Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation**

View location in VicPlan

Planning Zones

FARMING ZONE (FZ)
SCHEDULE TO THE FARMING ZONE (FZ)



Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

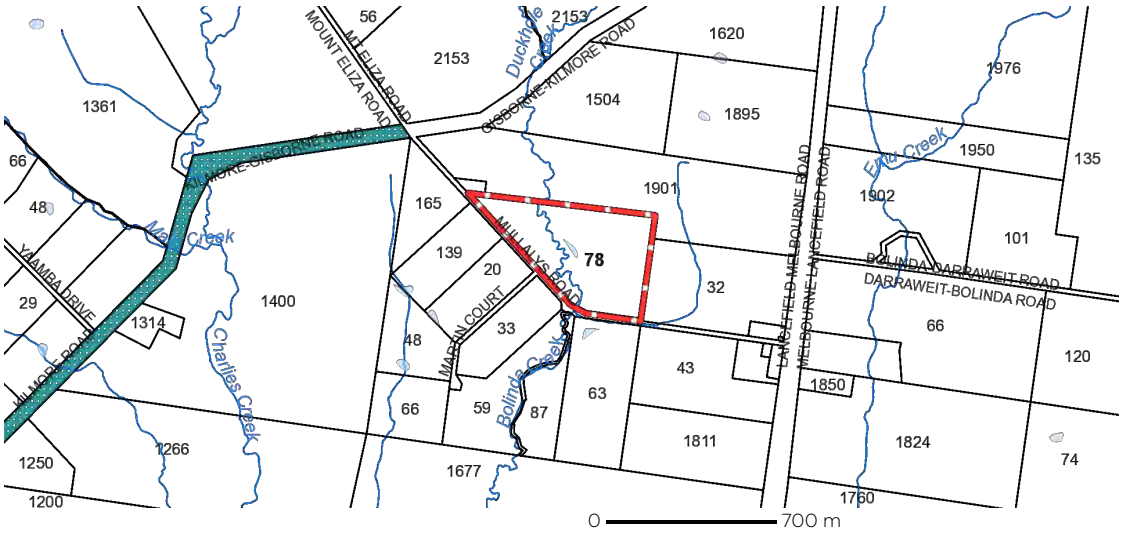
PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Planning Overlay

None affecting this land - there are overlays in the vicinity

VEGETATION PROTECTION OVERLAY (VPO)



Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Areas of Aboriginal Cultural Heritage Sensitivity

All or part of this property is an 'area of cultural heritage sensitivity'.

'Areas of cultural heritage sensitivity' are defined under the Aboriginal Heritage Regulations 2018, and include registered Aboriginal cultural heritage places and land form types that are generally regarded as more likely to contain Aboriginal cultural heritage.

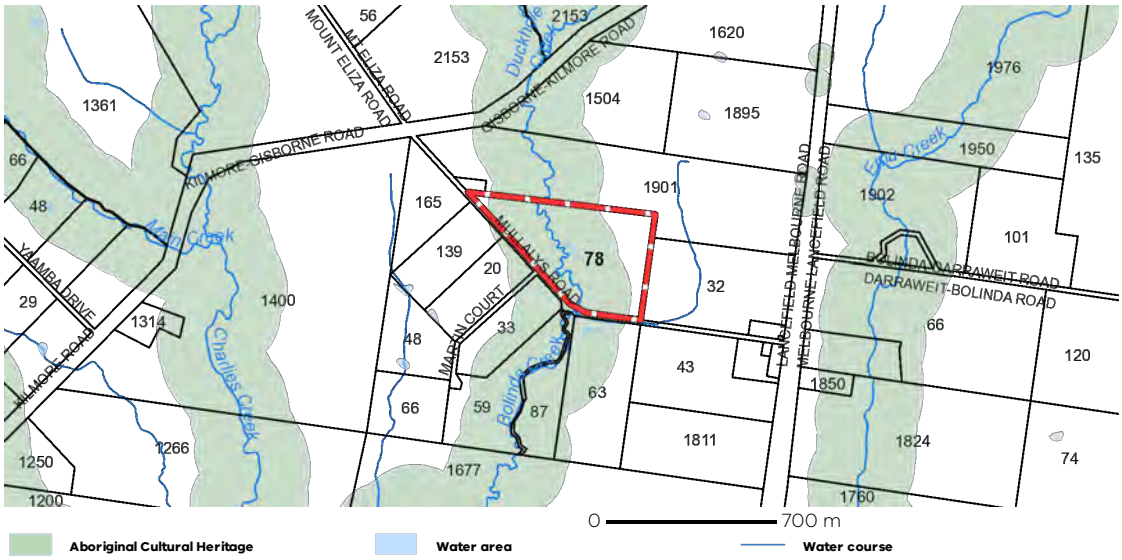
Under the Aboriginal Heritage Regulations 2018, 'areas of cultural heritage sensitivity' are one part of a two part trigger which require a 'cultural heritage management plan' be prepared where a listed 'high impact activity' is proposed.

If a significant land use change is proposed (for example, a subdivision into 3 or more lots), a cultural heritage management plan may be triggered. One or two dwellings, works ancillary to a dwelling, services to a dwelling, alteration of buildings and minor works are examples of works exempt from this requirement.

Under the Aboriginal Heritage Act 2006, where a cultural heritage management plan is required, planning permits, licences and work authorities cannot be issued unless the cultural heritage management plan has been approved for the activity.

For further information about whether a Cultural Heritage Management Plan is required go to
http://www.aav.nrms.net.au/aavQuestion1.aspx

More information, including links to both the Aboriginal Heritage Act 2006 and the Aboriginal Heritage Regulations 2018, can also be found here - https://www.aboriginalvictoria.vic.gov.au/aboriginal-heritage-legislation



PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Further Planning Information

Planning scheme data last updated on 5 October 2021.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.
This report provides information about the zone and overlay provisions that apply to the selected land.
Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting https://www.planning.vic.gov.au

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the ***Planning and Environment Act 1987.***
It does not include information about exhibited planning scheme amendments, or zonings that may abut the land.
To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit https://mapshare.maps.vic.gov.au/vicplan

For other information about planning in Victoria visit https://www.planning.vic.gov.au

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Designated Bushfire Prone Areas

This property is in a designated bushfire prone area.
Special bushfire construction requirements apply. Planning provisions may apply.

Designated bushfire prone areas as determined by the Minister for Planning are in effect from 8 September 2011 and amended from time to time.

The Building Regulations 2018 through application of the Building Code of Australia, apply bushfire protection standards for building works in designated bushfire prone areas.

Designated bushfire prone areas maps can be viewed on VicPlan at https://mapshare.maps.vic.gov.au/vicplan or at the relevant local council.

Note: prior to 8 September 2011, the whole of Victoria was designated as bushfire prone area for the purposes of the building control system.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website https://www.vba.vic.gov.au

Copies of the Building Act and Building Regulations are available from http://www.legislation.vic.gov.au

For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au

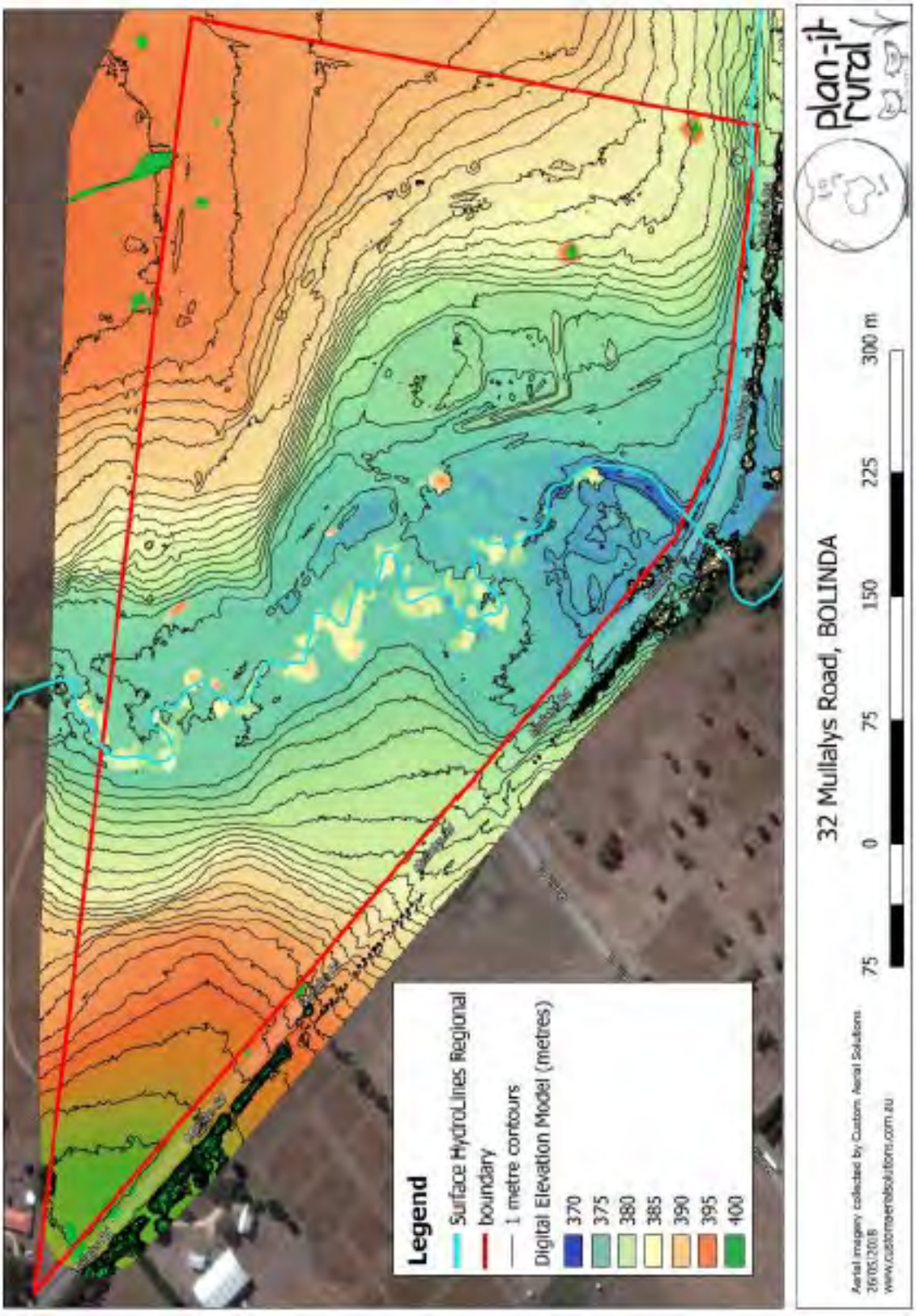
Native Vegetation

Native plants that are indigenous to the region and important for biodiversity might be present on this property. This could include trees, shrubs, herbs, grasses or aquatic plants. There are a range of regulations that may apply including need to obtain a planning permit under Clause 52.17 of the local planning scheme. For more information see Native Vegetation (Clause 52.17) with local variations in Native Vegetation (Clause 52.17) Schedule

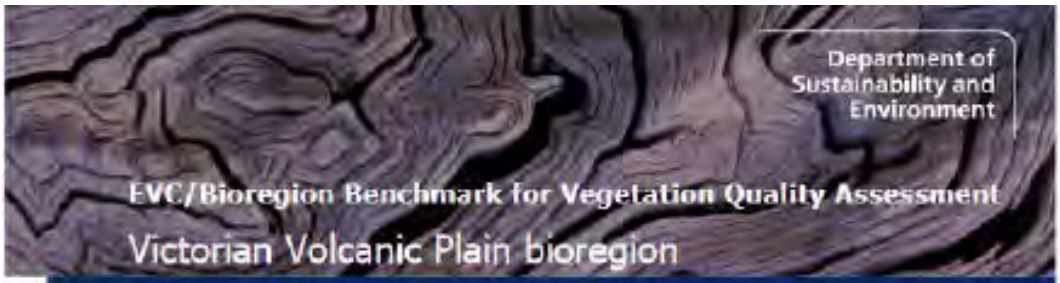
To help identify native vegetation on his property and the application of Clause 52.17 please visit the Native Vegetation Information Management system https://nvim.delwp.vic.gov.au/ and Native vegetation (environment.vic.gov.au) or please contact your relevant council.

You can find out more about the natural values on your property through NatureKit NatureKit (environment.vic.gov.au)

Appendix D: Topographic map


Legend
Surface HydroLines Regional
boundary
1 metre contours
Digital Elevation Model (metres)
370
375
380
385
390
395
400
32 Mullalys Road, BOLINDA
75
0
75
150
225
300 m
Aerial imagery collected by Custom Aerial Solutions
26/05/2018
www.customaerialsolutions.com.au
plan-it rural

Appendix E: Revegetation species



EVC/Bioregion Benchmark for Vegetation Quality Assessment

Victorian Volcanic Plain bioregion

EVC 55_61: Plains Grassy Woodland

Description:
An open, eucalypt woodland to 15 m tall. Occupies poorly drained, fertile soils on flat or gently undulating plains at low elevations. The understorey consists of a few sparse shrubs over a species-rich grassy and herbaceous ground layer. This variant occupies areas receiving approximately 500 – 700 mm annual rainfall.

Large trees:

Species	DBH(cm)	#/ha
Eucalyptus spp.	80 cm	8 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
10%	*Eucalyptus camaldulensis*	River Red Gum

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Understorey Tree or Large Shrub	1	5%	T
Medium Shrub	3	10%	MS
Small Shrub	2	1%	SS
Prostrate Shrub	1	1%	PS
Large Herb	3	5%	LH
Medium Herb	8	15%	MH
Small or Prostrate Herb	3	5%	SH
Large Tufted Graminoid	2	5%	LTG
Medium to Small Tufted Graminoid	12	45%	MTG
Medium to Tiny Non-tufted Graminoid	2	5%	MNG
Bryophytes/Lichens	na	10%	BL
Soil Crust	na	10%	S/C

LF Code	Species typical of at least part of EVC range	Common Name
MS	*Acacia pycnantha*	Golden Wattle
MS	*Acacia paradoxa*	Hedge Wattle
SS	*Pimelea humilis*	Common Rice-flower
PS	*Acrotriche humifusum*	Cranberry Heath
PS	*Bossiaea prostrata*	Creeping Bossiaea
NH	*Oxalis perennans*	Grassland Wood-sorrel
NH	*Goodenia pinnatifida*	Common Raspwort
NH	*Acaena echinata*	Sheep's Burr
SH	*Dichondra repens*	Kidney-weed
SH	*Hydrocotyle laxiflora*	Stinking Pennywort
LTG	*Austrostipa mollis*	Supple Spear-grass
LTG	*Austrostipa bigeniculata*	Kneed Spear-grass
MTG	*Themeda triandra*	Kangaroo Grass
MTG	*Elymus scaber var. scaber*	Common Wheat-grass
MTG	*Austrodanthonia setacea*	Bristly Wallaby-grass
MTG	*Austrodanthonia racemosa var. racemosa*	Stiped Wallaby-grass
MNG	*Microlaena stipoides var. stipoides*	Weeping Grass

Recruitment:
Continuous

Organic Litter:
10 % cover

Logs:
10 m/0.1 ha.

Victoria
The Place To Be

Ecological Vegetation Class bioregion benchmark

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Victorian Volcanic Plain bioregion

EVC 641: Riparian Woodland

Description:
Occurs beside permanent streams, typically on narrow alluvial deposits. Woodland to 15 m tall generally dominated by *Eucalyptus camaldulensis* over a tussock grass-dominated understorey. Tall shrubs may be present and amphibious herbs may occur in occasional ponds and beside creeks. While flooding may be common, sites are rarely inundated for lengthy periods.

Large trees:

Species	DBH(cm)	#/ha
Eucalyptus spp.	80 cm	15 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
10%	*Eucalyptus camaldulensis*	River Red-gum

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Understorey Tree or Large Shrub	2	10%	T
Medium Shrub	2	10%	MS
Small Shrub	1	5%	SS
Large Herb	4	15%	LH
Medium Herb	5	10%	MH
Small or Prostrate Herb	1	5%	SH
Large Tufted Graminoid	3	10%	LTG
Large Non-tufted Graminoid	1	5%	LNG
Medium to Small Tufted Graminoid	4	20%	MTG
Medium to Tiny Non-tufted Graminoid	2	5%	MNG
Scrambler or Climber	1	5%	SC
Bryophytes/Lichens	ne	10%	BL

LF Code	Species typical of at least part of EVC range	Common Name
T	*Acacia melanoxylon*	Blackwood
MS	*Bursaria spinosa* ssp. *spinosa*	Sweet Bursaria
MS	*Viminaria juncea*	Golden Spray
SS	*Rubus parvifolius*	Small-leaf Bramble
LH	*Wahlenbergia gracilis* s.s.	Sprawling Bluebell
LH	*Senecio quadridentatus*	Cotton Fireweed
LH	*Myriophyllum crispatum*	Upright Water-milfoil
MH	*Rumex brownii*	Slender Dock
MH	*Oxalis perennans*	Grassland Wood-sorrel
MH	*Mentha australis*	River Mint
MH	*Acaena novae-zelandiae*	Bidgee-widgee
SH	*Dichondra repens*	Kidneyweed
LTG	*Poa labillardieri*	Common Tussock-grass
LTG	*Carex appressa*	Tall Sedge
LNG	*Phragmites australis*	Common Reed
MTG	*Lachnagrostis filiformis* var. *filiformis*	Common Blown-grass
MTG	*Triglochin procerum* s.l.	Water-ribbons
MNG	*Eleocharis acuta*	Common Spike-sedge
SC	*Calystegia sepium*	Large Bindweed

Victoria
The Place To Be

Ecological Vegetation Class bioregion benchmark

Appendix F: Site photos

Photo 1 – Landscape view of the property

Photo 2 –Typical view across the property

Photo 3 –View down to the creek

Photo 4 – Blackberries on the property

Photo 5 – Variegated thistle on the property

Photo 6 – Rabbit burrows on the property

Photo 7 – Erosion along the creek bank

Photo 8 – Undercutting along the creek bank

Photo 9 – Willows on creek bank

Photo 10 – New internal fencing

Photo 11 – Cattle previously on the property

Photo 12 – Spike rushes along creek bank

ECO VISION Australia
ABN 96 203 943 465
Land Management Consultants

649 CENTRE ROAD, EAST BENTLEIGH VIC 3165
PO BOX 39, BONNIE DOON VIC 3720
Phone: 0424 865 765

E-MAIL: admin@ecov.com.au

LAND CAPABILITY ASSESSMENT REPORT

32 Mullalys Road (Lot 1 TP833680)
Bolinda VIC

Prepared for: GREENEDGE ENVIRONMENTAL
On behalf of Roy Costa & Associates
C/O 78 Mullalys Lane (Lot 1 TP833680)
Bolinda VIC

Site: 78 Mullalys Lane (Lot 1 TP833680)
Bolinda VIC 3438

Prepared by: R H Krainz – Eco Vision Australia

Reference No. 14BO22 LCA

Date: February 28, 2022

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11. Executive Summary

The purpose of this report is to provide a Land Capability Assessment (LCA) for Greenedge Environmental on behalf of Roy Costa and Associates who are proposing to construct a four bedroom – six person occupancy dwelling at 78 Mullalys Road (Lot 1 TP833680), Bolinda. The site is cleared pasture with a watercourse running through the property. The site is not in a potable catchment which results in a minimum 30 metre setback when installing a secondary wastewater treatment system.

It is proposed that a secondary wastewater treatment system either septic with sand filter or package treatment plant such as the Taylex ABS system be installed on the site with Subsurface Irrigation (SSI) to service both the proposed dwelling and the additional one bedroom contained within the office building. The hydraulic load is based on a maximum five bedroom capacity – 6 person.

The size of the irregularly allotment is approximately 22.4ha. The site contains gentle slopes throughout. Bolinda Creek located centrally on the allotment flows through the property. Maximum elevations are approximately 380m with Bolinda Creek being at approximate elevation of 365m.

The 22.4ha site contains a site cut for the proposed dwelling, a site cut for the proposed shed, new fencing and a mix of exotic and native vegetation located along Bolinda Creek. A dam is located east of Bolinda Creek.

The methods used for this report include soil tests and site survey undertaken by Eco Vision Australia (November 22nd, 2017, including updated plans – December 2021). A desktop study was undertaken and included obtaining relevant planning reports and climate data. Soil samples were taken and further analysed. These methods provided the information to write the LCA.

The overall land capability generally rates between very good to fair. The matrix indicators that rate as poor utilising the land capability matrix is the soil permeability category of light clay, The Emerson Aggregate and Sodicity. These factors have contributed to a more conservative Design Irrigation Rate (DIR) for wastewater.

The soil type in the proposed LAA consists of massively structured dark grey clay loam to a maximum depth of 400mm overlying moderately structured light grey clay with some red mottles to a maximum depth of 800mm. Between 800mm to a maximum depth of 1500mm the soil grades into a moderately structured dark grey light medium clay with increasing red colouration. No groundwater was encountered. The proposed Design Irrigation Rate (DIR) is based on the light clay at lower profile depths due to poor subsurface drainage at lower profile depths.

The site allows for the installation of a secondary wastewater treatment system (either a sand filter or Aerated Wastewater Treatment System such as a Taylex ABS system) with the LAA for treated wastewater being sized at 368m² using the water balance as the most limiting factor.

2. Introduction

Eco Vision Australia has been engaged to undertake a Land Capability Assessment (LCA) for a site at 78 Mullalys Road (Lot 1 TP833680), Bolinda. The field investigation and report have been undertaken and prepared by suitably experienced staff. Eco Vision Australia has appropriate professional indemnity insurance for this type of work. Our professional indemnity insurance certificate is available on request.

The report will accompany an application submitted to the Macedon Ranges Shire Council for a new four bedroom – six person occupancy dwelling to be constructed on the property. This document provides information about the site and soil conditions. It also provides a detailed LCA and includes a conceptual design for a suitable onsite wastewater management system, including recommendations for monitoring and management requirements.

The site is approximately 22.4ha in size and irregular in shape. Boundary dimensions are 795 metres along the northern boundary, 440 metres along the eastern boundary, 190 metres along the southern boundary and 750m along the south western boundary. Site slope are predominately gentle to moderate towards Bolinda Creek roughly centrally located on the property. The maximum elevation of the site is approximately 390 metres above sea level.

Soil Testing and site survey was undertaken by Eco Vision Australia in November 2017 with updated site plans (December 2021).

Rainfall data was obtained from Romsey Climate Station 087130 and temperature data obtained from Macedon Forestry Climate Station – 087175.

There is sufficient land available for sustainable onsite effluent management that maintains appropriate buffers to protect sensitive receptors for to residentially develop the site.

We have considered a number of options for both the treatment system and land application area (LAA). Above all, effluent should be treated to secondary level and Land Application by sub surface irrigation sized at 368m².

3. Description of the Development

Table 1 Site Description

Site Address:	78 Mullalys Road (Lot 1 TP833680) Bolinda VIC
Owner/Developer:	Roy Costa and Associates
Postal Address:	C/O 78 Mullalys Road (Lot 1 TP833680) Bolinda VIC 3438
Contact:	Green Edge Environmental – 0438 345 109
Council Area:	Macedon Ranges Shire
Zoning:	Planning Zone – Farming Zone – (FZ), Planning Overlays – Environment Significance Overlay – Schedule 2 (ESO2) impacts only in the far north-east corner.
Allotment Size:	22.4ha
Domestic Water Supply:	Tank
Anticipated Wastewater Load per allotment:	4 Bedroom residence @ 6 person per residence maximum occupancy domestic design wastewater load is 150L/person/day therefore domestic wastewater design load = 900L/day. This design load is sourced from Code of Practice Onsite Wastewater Management 891.4 (Jul 16). (Table 4 – Minimum daily wastewater flow rates and organic loading with full water reduction facilities)
Availability of Sewer:	The area is unsewered and unlikely to be sewered in the short to medium term future

4. Site Key Features

Robert Krainz undertook a desktop review and site inspection on the 22nd of November 2017 with additional updated plans provided in December 2021. A range of site features were assessed in terms of the degree of limitation they present for a range of onsite wastewater management systems. Reference is made to the rating scale described in Table 1 of EPA (2003a). As a guide, remedial measures should be considered whenever ratings of 3, 4, or 5 occur and this might involve land improvement works, soil amelioration or simply adoption of higher-level technologies to ensure environmental protection. Table 3 summarises the key features in relation to effluent management at the site. The site experiences negligible stormwater run-on. There is no evidence of a water table in the proposed LAA.

The soil type in the proposed LAA consists of massively structured dark grey clay loam to a maximum depth of 400mm overlying moderately structured light grey clay with some red mottles to a maximum depth of 800mm. Between 800mm to a maximum depth of 1500mm the soil grades into a moderately structured dark grey light medium clay with increasing red colouration. No groundwater was encountered. The proposed Design Irrigation Rate (DIR) is based on the light clay at lower profile depths due to poor subsurface drainage at lower profile depths.

The site is within the locality of Bolinda, which is part of the Planning Zone – Farming Zone – (FZ), Planning Overlays – Environment Significance Overlay – Schedule 2 (ESO2) impacts only in the far north-east corner.

Appendix I provides a site locality plan (Property Report) and indicates the location of the site of the proposed development.

Appendix ii provides a Proposed Development Plan.

Appendix iii provides photographs of the existing site conditions

Appendix iv provides Bureau of Meteorology Climate Report for Bureau of Meteorology Climate Report for Macedon Forestry – 087036) and Monthly Rainfall Statistics for (Romsey – 087130)

Appendix v provides Test Site Location Plan

Appendix vi Water and Nitrogen Balance

Appendix vii provides Borelog descriptions

Table 2 Site Features

Feature	
Climate	The site has a temperate climate with maximum temperatures and minimum rainfall in summer (Macedon Forestry, Climate Station-No. 087036). The site experiences an average annual rainfall of 718mm (Romsey Climate Station- No. 087130).
Exposure	The site at 78 Mullalys Road (Lot 1 TP833680) Bolinda is predominately cleared pasture in gently undulating terrain. The property contains a number site cuts for the proposed dwelling and shed. Vegetation is mainly concentrated along Bolinda Creek. The proposed LAA is grassed with high sun and wind exposure.
Vegetation	The proposed LAA is cleared and grassed.
Landform	The landform element on the allotment is consistent with a gentle rolling hills landform element.
Slope	The slope within the proposed LAA is gentle.
Fill	No fill was observed on the allotment.
Rocks and Rock Outcrops	No rocks were encountered within the proposed LAA although a small number of surface rocks were observed on the property. Low lying basaltic rock could be encountered and this needs to be considered when installing the wastewater treatment plant.
Erosion Potential	The erosion hazard is moderate.
Surface Water	Not applicable.
Flood Potential	Areas available for application of treated effluent lie above the 1:100 year flood level.
Stormwater run-on and upslope seepage	The proposed effluent management area is expected to receive minor stormwater run-on which can be diverted via surface spoon drainage or sub surface drainage. There is no evidence of groundwater seepage, soaks, or springs.
Groundwater	There are no signs of shallow groundwater tables.
Site Drainage and Subsurface Drainage	The site could experience variable stormwater run-on and run-off. However, there are minor visible signs of surface dampness. Surface dampness due to recent rainfall and seasonal conditions.
Recommended Buffer Distances	All buffer distances recommended in Table 5 of EPA Code of Practice; 891.4 July 2016 will be achievable in the proposed treatment envelopes.
Available Land Application Area	Considering all site constraints and the buffers mentioned above, the site has ample land that is suitable and available for land application of effluent treated to secondary levels. There will be ample protection for surface and groundwater.

5. Soil Assessment and Constraints

The sites soils have been assessed for their suitability for onsite wastewater management by a combination of soil survey and review of desktop published material.

Soils of a similar type and geology (Quaternary volcanics) have been mapped and are consistent with those contained within the Monegeetta Land System as noted in a report *A Study of the Land in Catchments to the North of Melbourne*. The soil type contained within 78 Mullalys Road (Lot 1 TP833680) Bolinda are consistent with those formed on Basalt. The on-site soils are generally Black clay loam to clays with uniform texture consistent with Black Brown Dermosols.

The Australian Soil Classification for the site is Black Brown Dermosols. Dermosol soils generally exhibit a gradual textural change between the A and B horizon with the on-site soils being consistent with this scenario. The landform element as described as gently undulating plains with volcanic cones with the on-site soils being most consistent with land unit 5 (drainage line) of the Monegeetta Land System.

Soil Percolation testing was not undertaken, however results from sites with a very similar soil texture and structure indicate a median percolation rate of approximately 4 mm per hour (Ksat – 0.10) within the B horizon. Soil percolation rates within the upper horizons are generally 5mm per hour (Ksat – 0.12) and slowing through the lower soil horizons.

The soil type in the proposed LAA consists of massively structured dark grey clay loam to a maximum depth of 400mm overlying moderately structured light grey clay with some red mottles to a maximum depth of 800mm. Between 800mm to a maximum depth of 1500mm the soil grades into a moderately structured dark grey light medium clay with increasing red colouration. No groundwater was encountered. The proposed Design Irrigation Rate (DIR) is based on the light clay at lower profile depths due to poor subsurface drainage at lower profile depths.

2 test holes were dug in two locations on the site as a potential LAA for the treated wastewater in November 2017 as shown in the diagram below and Appendix vi, using a 100mm Hand held auger.

On-Site Black Brown Dermosols at 78 Mullalys Road (Lot 1 TP833680) Bolinda

Table 3 Soil Features:

Soil Feature		
Soil Depth	Soil depth up to 1500mm encountered.	
Depth to watertable	Groundwater not encountered.	
Coarse Fragments (%)	No coarse fragments were observed through the soil profile.	
Soil Permeability and Design loading Rates	Soil permeability was not directly measured but can be inferred with reference to Tables L1 to N1 in AS/NZS 1547:2012, that describe conservative design loading rates (DI-R5) and Design Irrigation Rates (DIRs) for various effluent application systems according to soil type. Critical soil properties are texture and structure, but depth, colour and degree of mottling are also used to infer drainage conditions. We note that the indicative loading rates below assume secondary treated effluent is being applied. Reduced loading rates would apply to primary treatment systems (septic tanks), although these are not recommended here.	
	Topsoils	Subsoils
Description	**Clay Loam (massively structured)**	**Light Clay (moderately structured)**
Soil Category (AS/ NZ1547:2012)	**4c**	**5b**
Design Irrigation Rate (DIR mm/week)	**24.5 (3.5mm/day)**	**14 (3mm/day)**
pH	The pH of 1:5 soil/water suspensions was not measured. The present soil conditions do not appear to be restricting plant growth.	
Electrical Conductivity	Electrical conductivity was not measured.	

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6. Land Capability Assessment Matrix

The Land Capability Assessment has been developed for the whole site but using the soils in the vicinity of the building envelope.

Table 4 Land Capability Assessment Matrix

LAND FEATURES	Land capability class rating					Site rating
	Very good (1)	Good (2)	Fair (3)	Poor (4)	Very poor (5)	
GENERAL CHARACTERISTICS						
Site drainage	No visible signs of dampness	Moist soil, but no standing water in soil pit		Visible signs of dampness, such as moisture-tolerant plants	Water ponding on surface	**2**
Runoff	None	Low	Moderate	High – need for diversionary structures	Very high – diversion not practical	**3**
Flood Levels	Never		<1 in 100	>1 in 100 and <1 in 20	<1 in 20	**1**
Proximity to Watercourses	>60 metres				<60	**1**
Slope (%)	0-2	2-8	8-12	12-20	>20	**2**
Landslip	No actual or potential failure		Low potential for failure	High potential for failure	Present or past failure	**3**
Groundwater (seasonal watertable depth (m)	>5	5-2.5	2.5-2.0	2.0-1.5	<1.5	**1**
Rock outcrop (1% of land surface containing rock >200mm)	0	<10%	10-20%	20-50%	>50%	**2**
Erosion potential	No erosion potential	Minor	Moderate	High	Severe erosion potential	**2**
Exposure	High sun and wind exposure		Moderate	Low sun and wind exposure		**1**
Landform	Hill crests, convex side slopes and plains		Concave sideslopes and footslopes		Floodplains & incised channels	**1**
Vegetation Type	Turf or pasture				Dense forest with little understorey	**1**
Average Rainfall (mm/yr)	<450	450-650	650-750	750-1000	>1000	**3**
Pan evaporation (mm/yr)	<1500	1250-1500	1000-1250	---	<1000	**2**
Fill	No fill		Fill present			**1**

SOIL PROFILE CHARACTERISTICS						
Soil permeability category[1]	2 and 3	4		5	1 and 6	**4**
Profile depth	>2m	1.5-2m	1.5 – 1	1.0-0.5m	>0.5m	**2**
Presence of mottling	None				Extensive	**3**
Course fragments (%)	<10	10-20	20-40		>40	**1**
Permeability * (m/d)	0.3-0.15	0.08-0.15 0.3-0.6	0.06-0.08 0.6-1.5	1.5-2.0	<0.06 >2.0	**1**
pH	6-8		4.5-6		<4.5, >8	**3**
Emerson Aggregate	4, 6, 8	5	7	2, 3	1	**4**
Electrical Conductivity	<0.3	0.3-0.8	0.8-2	2-4	>4	**1**
Sodicitiy ESP%	<3		6-8	8-14	>14	**4**
Overall Site Rating			**Poor**			**4**

11. Source: AS/NZ1547:2012

7. The Management Program

This LCA has been prepared to accompany an application to the Macedon Ranges Shire Council for the construction of a four bedroom six person occupancy dwelling. A secondary treatment system either septic tank with sand filter or package treatment plant such as the Taylex ABS is suitable for the site. As such, this report provides recommendations for treatment and land application systems that are appropriate to the land capability. The following sections provide an overview of a suitable system, with sizing and design considerations and justification for its selection. Detailed design for the system is beyond the scope of this study but should be undertaken at the time of building application and submitted to Council.

7.1 Treatment System

To treat domestic wastewater and allow irrigation with the treated effluent, the existing system provides secondary treatment with disinfection to meet Environment Protection Authority requirements for irrigation. Indicative target effluent quality is:

- BOD <20 mg/l;
- SS <30 mg/l;

7.2 Land Application

A range of possible land application systems have been considered, such as absorption trenches, evapotranspiration/absorption (ETA) beds, surface and subsurface irrigation, and sand mounds. The preferred system is pressure compensating **subsurface irrigation**. In combination with the selected secondary treatment system subsurface irrigation will provide even and widespread dispersal of highly treated effluent loads within the root-zone of plants. Subsurface irrigation will provide beneficial reuse of wastewater. It will also ensure that the risk of effluent being transported off this site will be negligible.

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7.3 Sizing the Irrigation System

To determine the necessary size of the irrigation area water and nutrient balance modelling has been considered.

The water balance method is used to calculate the area required to balance all inputs and outputs, without the need for wet weather storage. As a result of these considerations, 368m² of area is recommended.

Water Balance

A preliminary model water balance with wet month storage and a daily wastewater of 900 litres indicates the field sizing is satisfactory. A water balance sizing the LAA at 368m² is contained in the appendices.

Nutrient Balance

A nutrient balance has been considered to check that the LAA is of sufficient size to ensure nutrients are assimilated by the soils and vegetation. It is acknowledged that a proportion of nitrogen will be retained in the soil through processes such as mineralisation and volatilisation.

A nitrogen balance sizing the LAA at 348m² is attached in the appendices.

We are of the opinion that the area required for nitrogen assimilation and phosphorus can be met by the above sized LAA.

Summary and Discussion

It is worth noting that modelling includes several significant factors of conservatism:

- Hydraulic load (900 L/day). This assumes 6 people will permanently occupy a 4 − bedroom residence. It is very likely that the actual occupancy and daily water usage will be substantially less than this;
- From the nutrient balances, in the absence of site specific data very conservative estimates of crop nutrient uptake rates and total nitrogen lost to soil processes are considered.

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7.4 Siting and Configuration of the Land Application Area

It is preferable to keep the irrigation area as high on the property as possible based upon the proposed site plan. Eco Vision has delineated on the provided site plan a suitable LAA, but the areas tested are deemed suitable.

As well as providing area for application of effluent, it is important that buffer distances be adhered to. It is important to note that buffers are measured as the overland flow path for run-off water from the effluent irrigation area.

The LAA area is sized at 368m² and located downslope of the proposed house as shown on the site plan.

It is recommended that the owner consult an irrigation expert familiar with wastewater irrigation equipment, to help design and install the irrigation system. The irrigation plan must ensure good, even application of effluent.

7.5 Irrigation System Design

A detailed irrigation system design is beyond the scope of this report; however, a general description of subsurface irrigation is provided here for the information of the client and Council.

Subsurface irrigation comprises a network of drip-irrigation lines that is specially designed for use with wastewater. The pipe contains pressure compensating emitters that employ a biocide to prevent build-up of slimes and inhibit root penetration. The laterals are usually 0.5 to 1.0 m apart, roughly parallel and along the contour if possible. -Installation depth is commonly 100-150 mm. It is critical that the irrigation pump be sized properly to ensure adequate pressure and delivery rate to the irrigation network.

A filter is installed in the main line to remove fine particulates that could block the emitters. This must be cleaned regularly following manufacturer's instructions.
Vacuum breakers should be installed at the high points in the system to prevent air and soil being sucked back into the drippers when the pump shuts off. Flushing valves are an important component and allow periodic flushing of the lines, which should be done at least yearly. Flush water can be either returned to the treatment system or should be released where it will be readily absorbed.

All trenching used to install the pipes must be backfilled properly to prevent preferential subsurface flows along trench lines, particularly where trenches are not absolutely parallel to contours. Irrigation areas should not be subject to high traffic movement, especially by vehicles, otherwise compaction around emitters can lead to premature system failure.

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7.6 Buffer Distances

Buffer distances from LAAs are required to help prevent human contact, maintain public amenity and protect sensitive environments. Council generally adopts the following nominal buffers secondary sewage and greywater effluent, described in EPA Vic (891.4):

Landscape feature or structure	Setback distances (m)		
	Primary sewage and greywater systems	Secondary sewage and greywater systems	Advanced secondary greywater systems [3]
Building			
Wastewater field up-slope of building [7]	6	3	3
Wastewater field down-slope of building	3	1.5	1.5
Wastewater up-slope of cutting/escarpment [12]	15	15	15
Allotment boundary			
Wastewater field up-slope of adjacent lot	6	3	1
Wastewater field down-slope of adjacent lot	3	1.5	0.5
Services			
Water supply pipe	3	1.5	1.5
Wastewater up-slope of potable supply channel	300	150	150
Wastewater field down-slope of potable supply channel	20	10	10
Gas supply pipe	3	1.5	1.5
In-ground water tank [14]	15	7.5	3
Stormwater drain	6	3	2
Recreational areas			
Children's grassed playground [15]	6	3 [16]	2 [16]
In-ground swimming pool	6	3 [16]	2 [16]
Surface waters (up-slope of:)			
Dam, lake or reservoir (potable water supply) [8,13]	300	300 [4]	150
Waterways (potable water supply) [9,13]	100	100 [4,5,17]	50
Waterways, wetlands (continuous or ephemeral, non-potable); estuaries, ocean beach at high-tide mark; dams, reservoirs or lakes (stock and domestic, non-potable) [8,9]	60	30	30
Groundwater bores			
Category 1 and 2a soils	NA [11]	50 [19,]	20
Category 2b to 6 soils	20	20	20
Watertable			
Vertical depth from base of trench to the highest seasonal water table [18]	1.5	1.5	1.5
Vertical depth from irrigation pipes to the highest seasonal water table [18]	NA	1.5	1.5

All nominal buffers are achievable for a suitably sized LAA.

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8. Monitoring, Operation and Maintenance

Maintenance is to be carried out in accordance with the certificate of approval and Council's permit conditions. The system proposed above will only function adequately if appropriately maintained. Residents will be required to carry out maintenance as discussed below.

To ensure the treatment system functions adequately, residents must

- Have a suitably qualified maintenance contractor service the AWTS as required by Council under the approval to operate.
- Any pump will need regular maintenance and seals checked regularly.
- Use household cleaning products sparingly and check that they are suitable for septic tanks;
- Keep as much fat and oil out of the system as possible; and
- Conserve water

To ensure the land application system functions adequately, residents must:

- Regularly harvest (mow) vegetation within the LAA and remove this to maximise uptake of water and nutrients;
- Monitor and maintain the subsurface irrigation system following the manufacturer's recommendations, including flushing of irrigation lines;
- Regularly clean in-line filters;
- Not erect any structures over the LAA;
- Minimise vehicle access to the LAA, to prevent compaction; and
- Ensure that the LAA is kept level by filling any depressions with good quality topsoil (not clay).
- Good water conservation is an important aspect in the overall management of onsite systems. It will be important for the ongoing performance of both the treatment and application system that they are not overloaded hydraulically. AAA rated plumbing is recommended for all future water fixtures.

9. Stormwater Management

As mentioned above, stormwater runoff is not expected to be a major concern in this case. However, the construction and maintenance of diversion drains would provide an additional precaution. Roof stormwater must not be disposed in the LAA.

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10. Conclusions

As a result of our investigations, we recommend that a sustainable onsite wastewater management system can be built to meet the needs of a new residence on the allotment.

Specifically, we recommend the following:

- Installation of a secondary waste treatment plant (either AWTS or Sand Filter with septic) with the Taylex ABS system being suitable and meets BOD <20 mg/l and SS <30 mg/l;
- System requires supervision by the designer and test on completion;
- Subsurface irrigation is used in conjunction with a secondary waste treatment system the LAA area is sized at 368m² using the nominated area method as the most limiting factor.
- The LAA is to be located downslope of the proposed house. Watercourse setbacks to the LAA to Bolinda Creek exceed 60 metres. The actual position of the LAA can be adjusted slightly in consultation with Eco Vision Australia.
- Do not allow any vehicle access and utilise surface plants that tolerate wet conditions (including roots) and have a high evapo-transpiration capacity. Where possible use plants well exposed to the sun. Plant high transpiration species to minimise waterlogging.
- Use of low phosphorus and low sodium (liquid) detergents to improve effluent quality and maintain soil properties;
- Operation and management of the treatment and disposal system in accordance with manufacturer's recommendations and the recommendations made in this report; and
- Construction of diversion drains on sides of the LAA to divert stormwater and surface water run-on.

Robert Krainz

Land Management Consultant
Grad Cert. Environmental Management (CSU), Ad. Dip. Land Management (Syd), Cert Hort. Landscape & Nursery (Qld)

11. References & Bibliography

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11. APPENDICES

i. Site Locality Plan – Property Reports
ii. Proposed Development Plan
iii. Existing conditions
iv. Bureau of Meteorology Climate Report for Macedon Forestry – 087036 and Rainfall Report Romsey – 087130
v. Water & Nitrogen Balance
vi. Test Site Location Plan
vii. Borelogs Descriptions

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APPENDIX i

SITE LOCALITY PLAN – PROPERTY PLANNING REPORTS

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Department of Environment, Land, Water and Planning

Planning Property Report

from www.planning.vic.gov.au on 22 November 2017 08:18 AM

Address: MULLALYS ROAD BOLINDA 3432
Lot and Plan Number: Lot 1 TP833680
Local Government (Council): MACEDON RANGES **Council Property Number:** 1198401
Directory Reference: VicRoads 60 D8

Planning Zone

FARMING ZONE (FZ)

Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

Zones Legend

ACZ - Activity Centre	IN1Z - Industrial 1	R1Z - General Residential
B1Z - Commercial 1	IN2Z - Industrial 2	R2Z - General Residential
B2Z - Commercial 1	IN3Z - Industrial 3	R3Z - General Residential
B3Z - Commercial 2	LDRZ - Low Density Residential	RAZ - Rural Activity
B4Z - Commercial 2	MUZ - Mixed Use	RCZ - Rural Conservation
B5Z - Commercial 1	NRZ - Neighbourhood Residential	RDZ1 - Road - Category 1
C1Z - Commercial 1	PCRZ - Public Conservation & Resource	RDZ2 - Road - Category 2
C2Z - Commercial 2	PDZ - Priority Development	RGZ - Residential Growth
CA - Commonwealth Land	PPRZ - Public Park & Recreation	RLZ - Rural Living
CCZ - Capital City	PUZ1 - Public Use - Service & Utility	RUZ - Rural
CDZ - Comprehensive Development	PUZ2 - Public Use - Education	SUZ - Special Use
DZ - Dockland	PUZ3 - Public Use - Health Community	TZ - Township
ERZ - Environmental Rural	PUZ4 - Public Use - Transport	UFZ - Urban Floodway
FZ - Farming	PUZ5 - Public Use - Cemetery/Crematorium	UGZ - Urban Growth
GRZ - General Residential	PUZ6 - Public Use - Local Government	
GWAZ - Green Wedge A	PUZ7 - Public Use - Other Public Use	-- Urban Growth Boundary
GWZ - Green Wedge	PZ - Port	

Railway | Tram | River, stream | Lake, waterbody

VICTORIA State Government | Environment, Land, Water and Planning

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Department of Environment, Land, Water and Planning

Planning Overlay

ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO)
ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 2 (ESO2)

Overlays Legend

- AEO - Airport Environs
- BMO - Bushfire Management
- CLPO - City Link Project
- DCPO - Development Contributions Plan
- DDO - Design & Development
- DDOPT - Design & Development Part
- DPO - Development Plan
- EAO - Environmental Audit
- EMO - Erosion Management
- ESO - Environmental Significance
- FO - Floodway
- HO - Heritage
- ICPO - Infrastructure Contributions Plan
- IPO - Incorporated Plan
- LSIO - Land Subject to Inundation
- MAEO1 - Melbourne Airport Environs 1
- MAEO2 - Melbourne Airport Environs 2
- NCO - Neighbourhood Character
- PO - Parking
- PAO - Public Acquisition
- RO - Restructure
- RCO - Road Closure
- SBO - Special Building
- SLO - Significant Landscape
- SMO - Salinity Management
- SRO - State Resource
- VPO - Vegetation Protection
- Railway
- Tram
- River, stream
- Lake, waterbody

Note: due to overlaps some colours on the maps may not match those in the legend.

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Areas of Aboriginal Cultural Heritage Sensitivity

This property is within, or is affected by, one or more areas of cultural heritage sensitivity as described in the Aboriginal Heritage Regulations 2007.

The data provides indicative information about the location and extent of areas of Aboriginal cultural heritage sensitivity and is provided to assist with the decisions about the potential need to prepare a Cultural Heritage Management Plan in relation to proposed activities on this property.

For further information about whether a Cultural Heritage Management Plan is required go to Aboriginal Heritage Planning Tool

To find out if your property has any recorded Aboriginal cultural heritage places, such as scarred trees, occupation sites or places of burial, you can request information from the Victorian Aboriginal Heritage Register.

Find out more about the Victorian Aboriginal Heritage Register

Aboriginal Cultural Heritage Sensitivity Aboriginal Cultural Heritage Sensitivity Selected Land
Railway Tram River, stream Lake, waterbody

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Further Planning Information

Planning scheme data last updated on 15 November 2017.

A **planning scheme** sets out policies and requirements for the use, development and protection of land. This report provides information about the zone and overlay provisions that apply to the selected land. Information about the State, local, particular and general provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting Planning Schemes Online

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the Planning & Environment Act 1987. It does not include information about exhibited planning scheme amendments, or zonings that may abut the land. To obtain a Planning Certificate go to Titles and Property Certificates

For details of surrounding properties, use this service to get the Reports for properties of interest

To view planning zones, overlay and heritage information in an interactive format visit Planning Maps Online

For other information about planning in Victoria visit www.planning.vic.gov.au

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APPENDIX ii

PROPOSED DEVELOPMENT PLAN, LANDVIC, GEOVIC & AERIAL PHOTO

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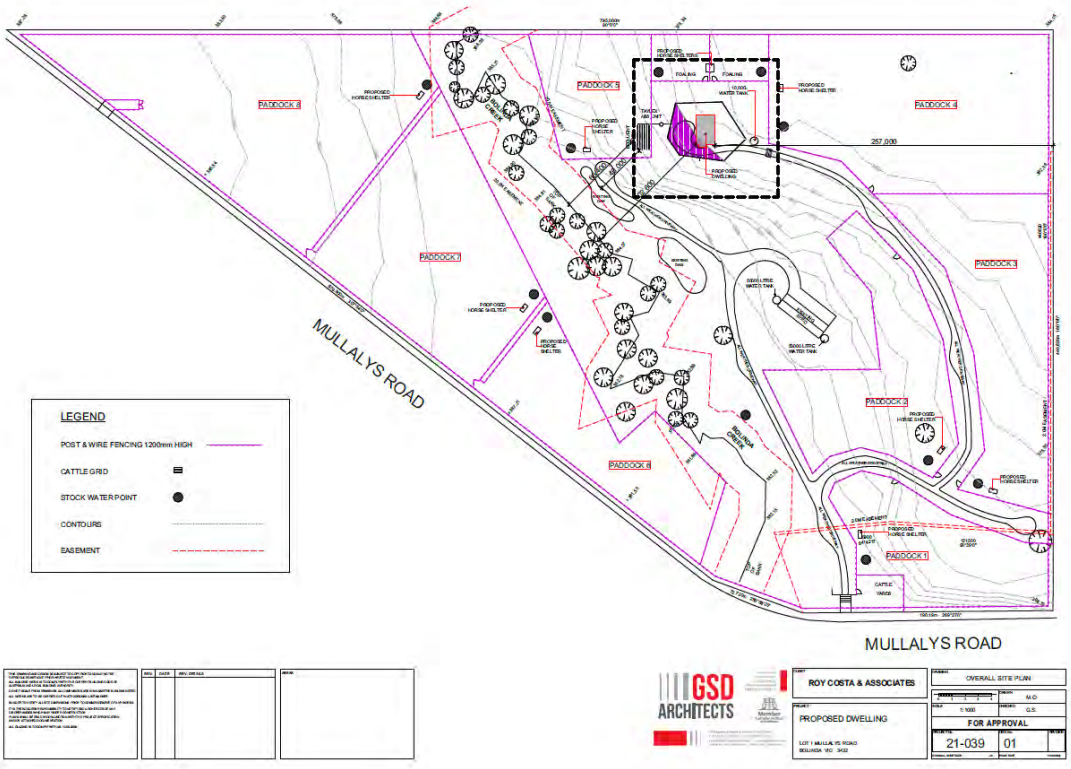

Ref: 14BO22 LCA – 78 Mullalys Road (Lot 1 TP833680), Bolinda
Page **26** of **40**

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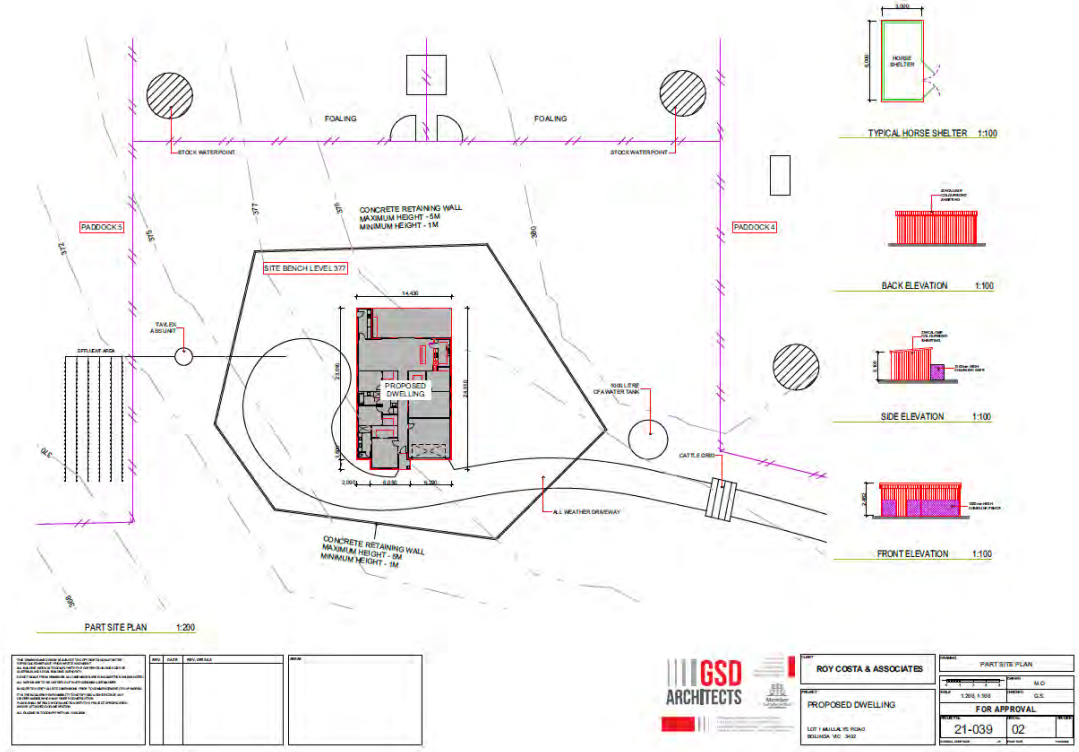

GSD ARCHITECTS

ROY COSTA & ASSOCIATES

PROPOSED DWELLING

PART SITE PLAN

FOR APPROVAL

21-039 02

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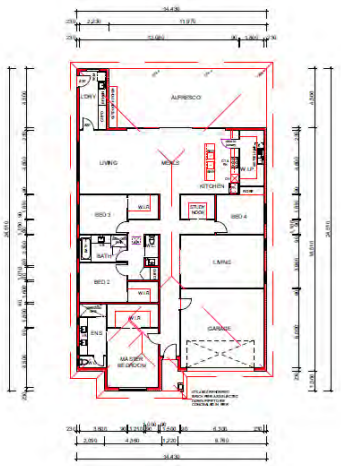
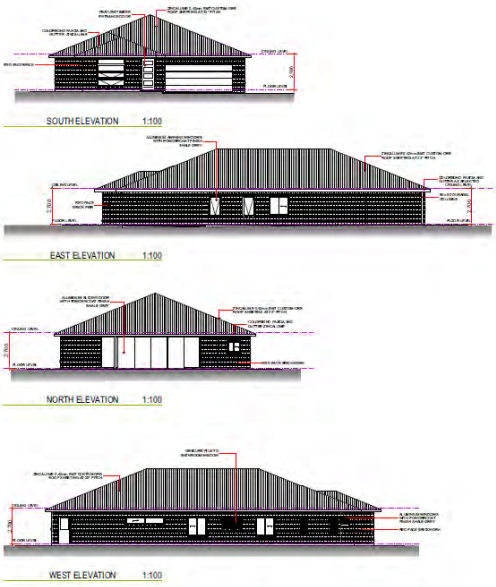


FLOOR PLAN 1:100



SOUTH ELEVATION 1:100

EAST ELEVATION 1:100

NORTH ELEVATION 1:100

WEST ELEVATION 1:100

GSD ARCHITECTS

ROY COSTA & ASSOCIATES

PROPOSED DWELLING

FOR APPROVAL

21-039 03

Ref: 14BO22 LCA – 78 Mullalys Road (Lot 1 TP833680), Bolinda
Page **28** of **40**

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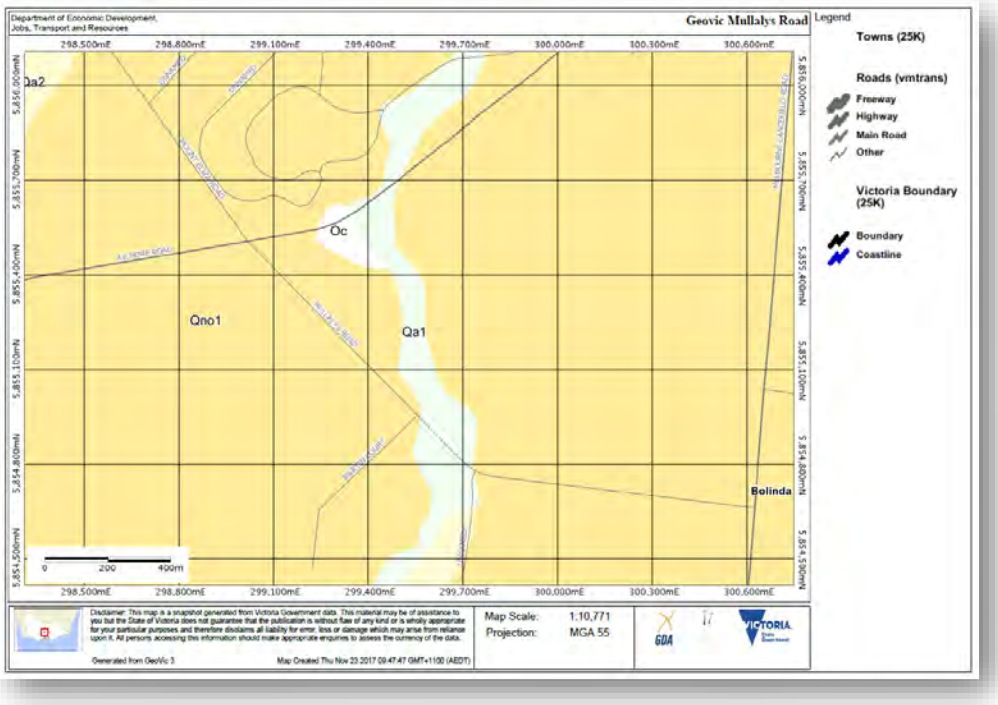

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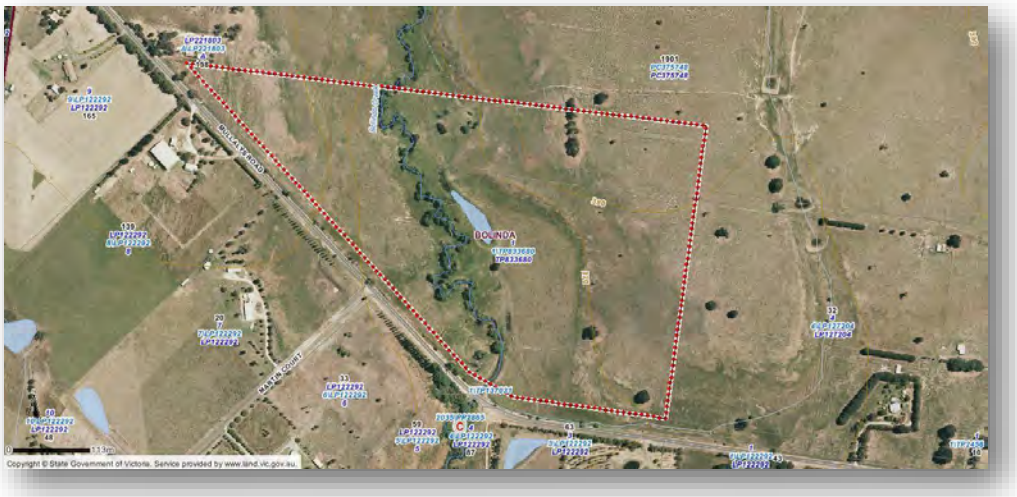

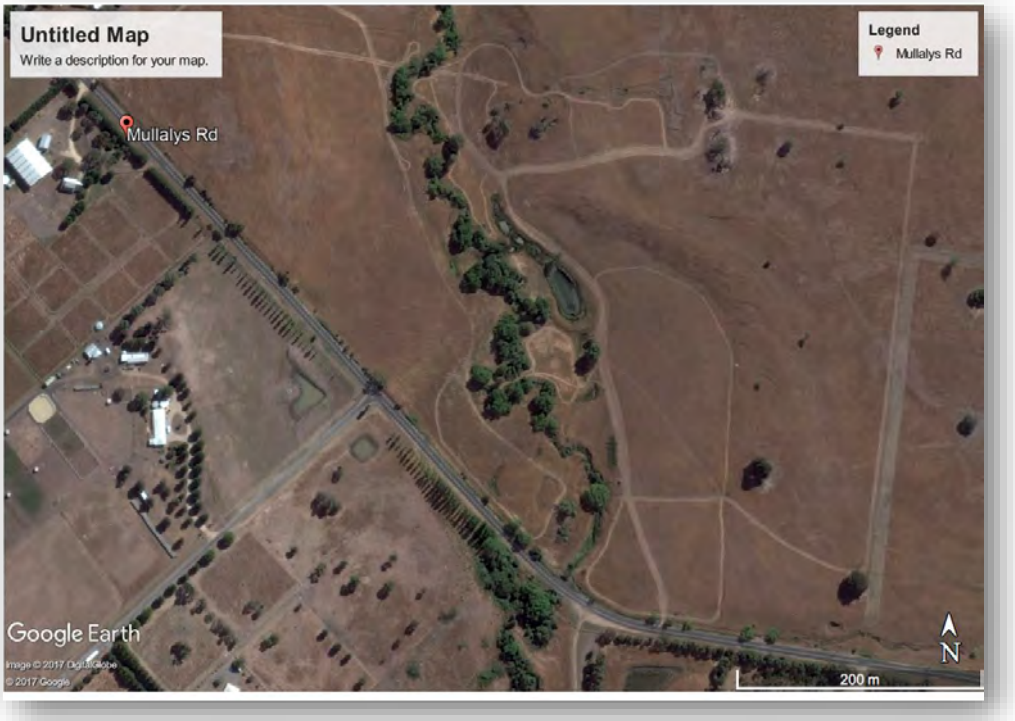

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APPENDIX iii

EXISTING CONDITIONS

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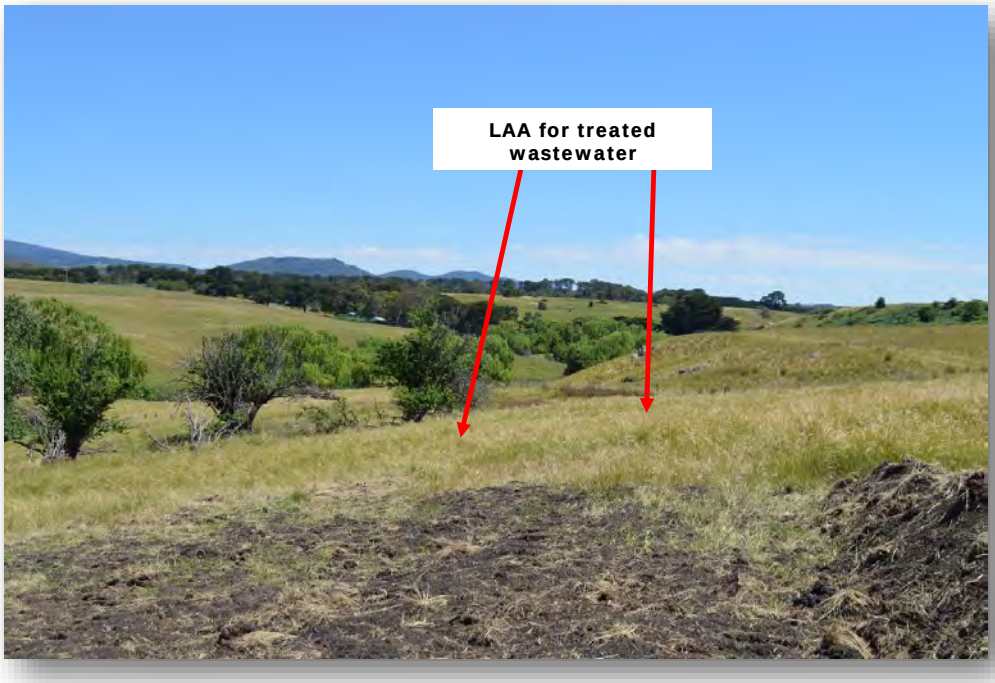

P1 – View towards the north depicting the location of the proposed LAA for secondary treated wastewater (78 Mullalys Road (Lot 1 TP833680) Bolinda).

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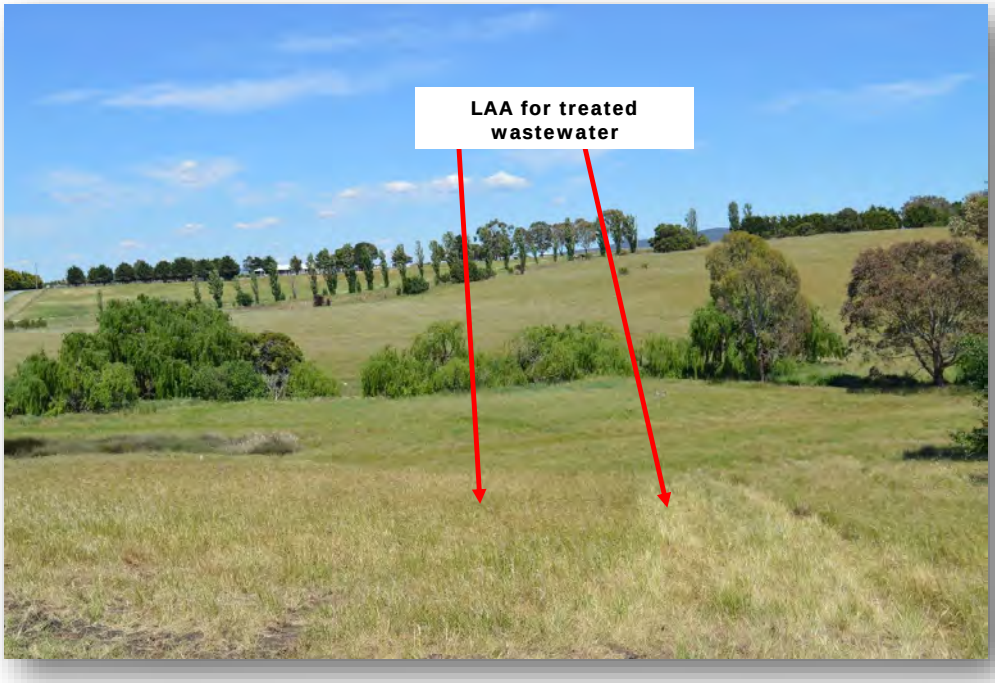

P2 – View towards the west depicting the location of the proposed LAA for secondary treated wastewater (78 Mullalys Road (Lot 1 TP833680) Bolinda).

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APPENDIX iv

CLIMATE STATISTICS TEMPERATURE MACEDON FORESTRY CLIMATE STATION – 087036 & RAINFALL ROMSEY CLIMATE STATION – 087130

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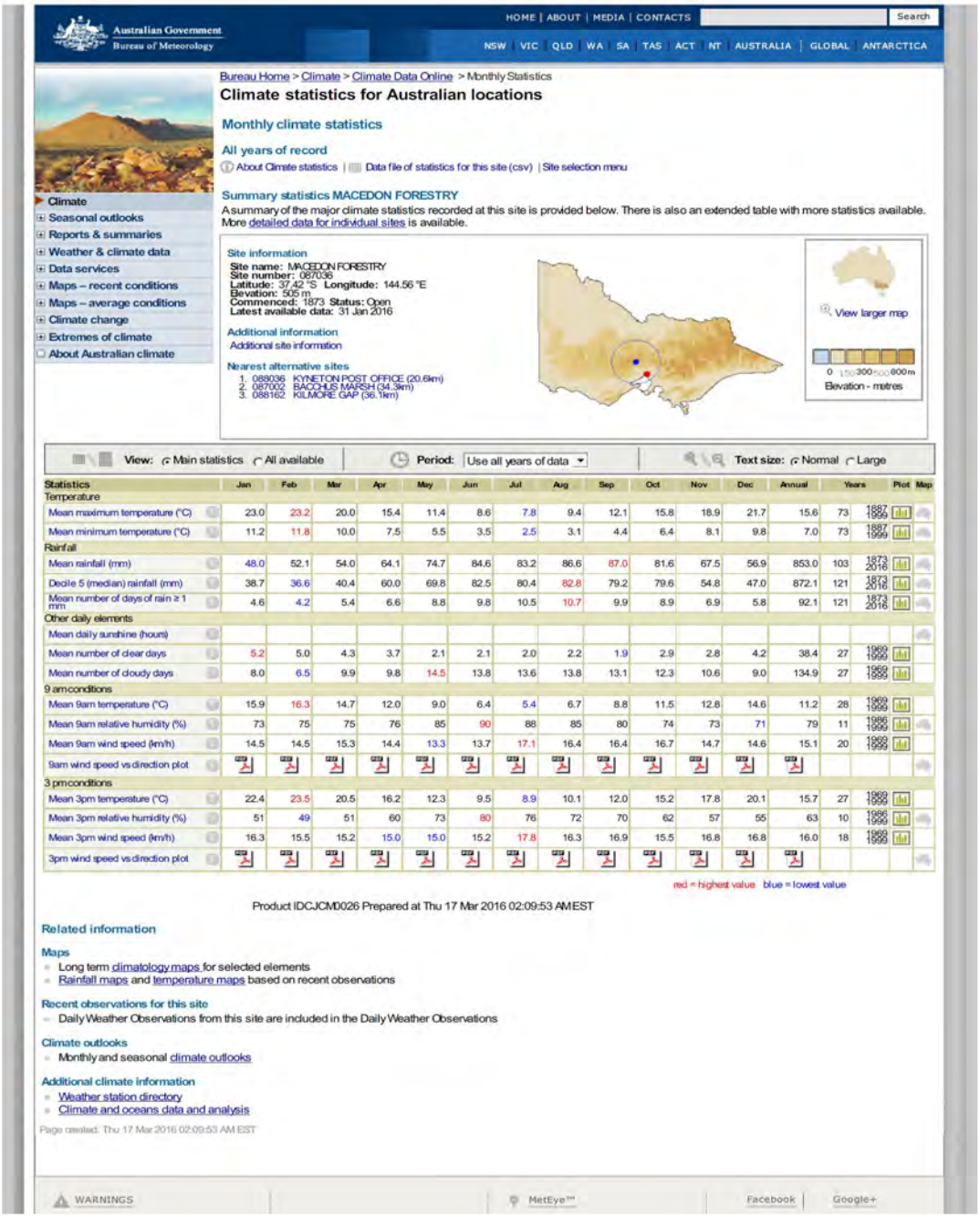

Australian Government
Bureau of Meteorology

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Bureau Home > Climate > Climate Data Online > Monthly Statistics

Climate statistics for Australian locations

Monthly climate statistics

All years of record

About Climate statistics | Data file of statistics for this site (csv) | Site selection menu

- Climate
- Seasonal outlooks
- Reports & summaries
- Weather & climate data
- Data services
- Maps – recent conditions
- Maps – average conditions
- Climate change
- Extremes of climate
- About Australian climate

Summary statistics MACEDON FORESTRY

A summary of the major climate statistics recorded at this site is provided below. There is also an extended table with more statistics available.
More detailed data for individual sites is available.

Site information
Site name: MACEDON FORESTRY
Site number: 087036
Latitude: 37.42 °S Longitude: 144.56 °E
Elevation: 505 m
Commenced: 1873 Status: Open
Latest available data: 31 Jan 2016

Additional information
Additional site information

Nearest alternative sites
1. 088036 KYNETON POST OFFICE (20.6km)
2. 087002 BACCHUS MARSH (34.3km)
3. 088162 KILMORE GAP (36.1km)

View larger map
0 150 300 500 600 m
Elevation - metres

View: Main statistics / All available | Period: Use all years of data | Text size: Normal / Large

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	Plot	Map
Temperature																
Mean maximum temperature (°C)	23.0	23.2	20.0	15.4	11.4	8.6	7.8	9.4	12.1	15.8	18.9	21.7	15.6	73 1887 1999		
Mean minimum temperature (°C)	11.2	11.8	10.0	7.5	5.5	3.5	2.5	3.1	4.4	6.4	8.1	9.8	7.0	73 1887 1999		
Rainfall																
Mean rainfall (mm)	48.0	52.1	54.0	64.1	74.7	84.6	83.2	86.6	87.0	81.6	67.5	56.9	853.0	103 1873 2016		
Decile 5 (median) rainfall (mm)	38.7	36.6	40.4	60.0	69.8	82.5	80.4	82.8	79.2	79.6	54.8	47.0	872.1	121 1873 2016		
Mean number of days of rain ≥ 1 mm	4.6	4.2	5.4	6.6	8.8	9.8	10.5	10.7	9.9	8.9	6.9	5.8	92.1	121 1873 2016		
Other daily elements																
Mean daily sunshine (hours)																
Mean number of clear days	5.2	5.0	4.3	3.7	2.1	2.1	2.0	2.2	1.9	2.9	2.8	4.2	38.4	27 1969 1999		
Mean number of cloudy days	8.0	6.5	9.9	9.8	14.5	13.8	13.6	13.8	13.1	12.3	10.6	9.0	134.9	27 1969 1999		
9 am conditions																
Mean 9am temperature (°C)	15.9	16.3	14.7	12.0	9.0	6.4	5.4	6.7	8.8	11.5	12.8	14.6	11.2	28 1969 1999		
Mean 9am relative humidity (%)	73	75	75	76	85	90	88	85	80	74	73	71	79	11 1986 1999		
Mean 9am wind speed (km/h)	14.5	14.5	15.3	14.4	13.3	13.7	17.1	16.4	16.4	16.7	14.7	14.6	15.1	20 1969 1999		
9am wind speed vs direction plot																
3 pm conditions																
Mean 3pm temperature (°C)	22.4	23.5	20.5	16.2	12.3	9.5	8.9	10.1	12.0	15.2	17.8	20.1	15.7	27 1969 1999		
Mean 3pm relative humidity (%)	51	49	51	60	73	80	76	72	70	62	57	55	63	10 1986 1999		
Mean 3pm wind speed (km/h)	16.3	15.5	15.2	15.0	15.0	15.2	17.8	16.3	16.9	15.5	16.8	16.8	16.0	18 1969 1999		
3pm wind speed vs direction plot																

red = highest value blue = lowest value

Product IDCJCM0026 Prepared at Thu 17 Mar 2016 02:09:53 AM EST

Related information

Maps
- Long term climatology maps for selected elements
- Rainfall maps and temperature maps based on recent observations

Recent observations for this site
- Daily Weather Observations from this site are included in the Daily Weather Observations

Climate outlooks
- Monthly and seasonal climate outlooks

Additional climate information
- Weather station directory
- Climate and oceans data and analysis

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APPENDIX v

WATER & NITROGEN BALANCE

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Nominated Area Water Balance & Storage Calculations - Sub surface Irrigation

Site Address: 78 Mullalys Lane , Riddells Creek

INPUT DATA

Design Wastewater Flow	Q	900	L/day
Design DIR	DI R	21	mm/week
Daily DIR		3.0	mm/day
Nominated Land Application Area	L	300	m sq
Crop Factor	C	0.7-0.8	unitless
Retained Rainfall	Rf	0.8	unitless
Rainfall Data	Gisborne (087026)		
Evaporation Data	Melbourne Airport (086282)		

900 Ave hydraulic load

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	R	\	mm/month	44.8	48.4	43.7	52.2	56.4	67.9	68.1	76.3	75.2	67.7	68.7	49.6	719
Evaporation	E	\	mm/month	200.4	195.2	148.6	96.5	91.4	57.8	61.2	68.2	111.8	225.6	189	268.7	1714.4
Crop Factor	C			0.80	0.80	0.80	0.75	0.75	0.65	0.65	0.65	0.75	0.80	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	160.3	156.2	118.9	72.4	68.6	37.6	39.8	44.3	83.9	180.5	151.2	215.0	1328.455
Percolation	B	(DIR/7)xD	mm/month	93.0	84	93.0	90.0	93.0	90.0	93.0	93.0	90.0	93.0	90.0	93.0	1095.0
Outputs		ET+B	mm/month	253.3	240.16	211.9	162.4	161.6	127.6	132.8	137.3	173.9	273.5	241.2	308.0	2423.5
INPUTS																
Retained Rainfall	RR	R*Rf	mm/month	35.84	38.72	34.96	41.76	45.12	54.32	54.48	61.04	60.16	54.16	54.96	39.68	575.2
Effluent Irrigation	W	(QxD)/L	mm/month	93.0	84.0	93.0	90.0	93.0	90.0	93.0	93.0	90.0	93.0	90.0	93.0	1095.0
Inputs		RR+W	mm/month	128.8	122.7	128.0	131.8	138.1	144.3	147.5	154.0	150.2	147.2	145.0	132.7	1670.2
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-124.5	-117.4	-83.9	-40.4	-10.4	-2.1	-2.8	-5.8	-30.4	-126.3	-96.2	-175.3	-287.2
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Storage for Nominated Area	N		mm	48.16												
	V	NxL	L	14448												
LAND AREA REQUIRED FOR ZERO STORAGE			m^2	128	125	158	224	240	369	356	366	237	127	145	104	

MINIMUM AREA REQUIRED FOR ZERO STORAGE: 368.6 m^2

Nitrogen Balance

Site Address: 78 Mullalys Road (Lot 1 TP833680) Bolinda

SUMMARY - LAND APPLICATION AREA REQUIRED BASED NITROGEN BALANCE 299 m^2

INPUT DATA[1]

Wastewater Loading			Nutrient Crop Uptake					
Hydraulic Load	900	L/day	Crop N Uptake	220	kg/ha/yr	which equals	60.27	mg/m^2/day
Effluent N Concentration	25	mg/L						
% N Lost to Soil Processes (Geary & Gardner 1996)	0.2	Decimal						
Total N Loss to Soil	4500	mg/day						
Remaining N Load after soil loss	18000	mg/day						

NITROGEN BALANCE BASED ON ANNUAL CROP UPTAKE RATES

Minimum Area required with zero buffer			Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)		
Nitrogen	299	m^2	Nominated LAA Size	300	m^2
			Predicted N Export from LAA	-0.03	kg/year
			Minimum Buffer Required for excess nutrient	0	m^2

CELLS

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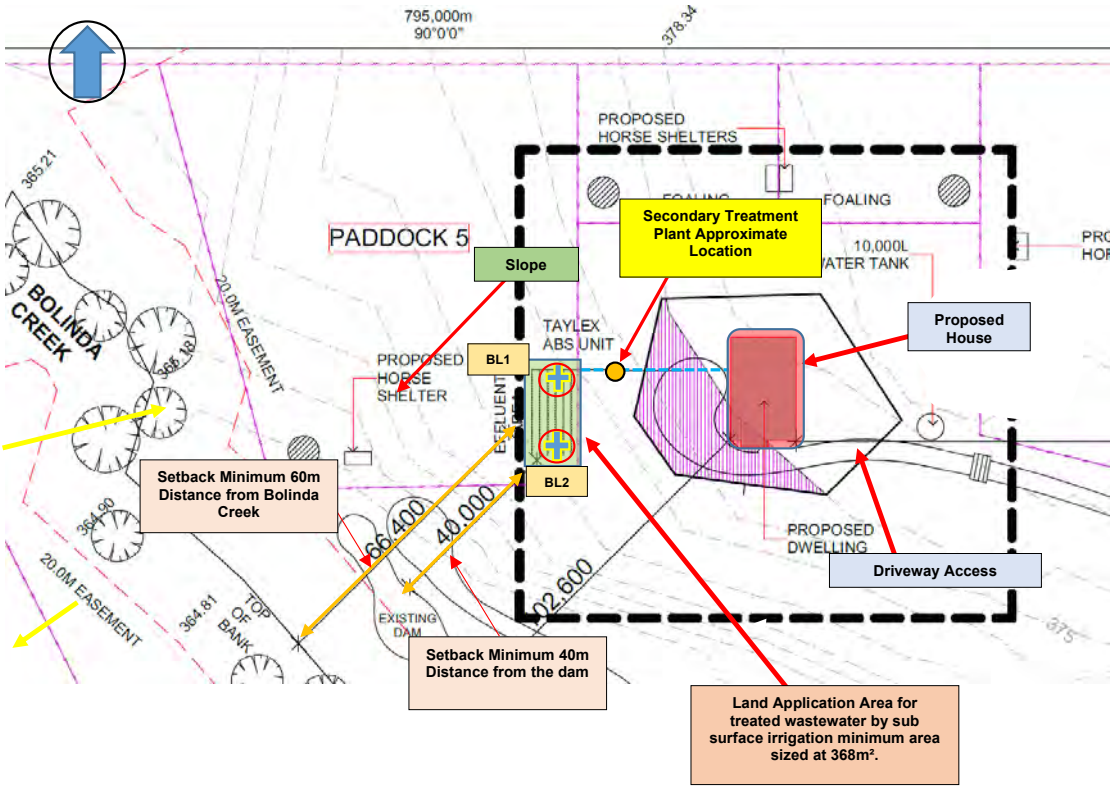
APPENDIX vi

TEST SITE LOCATION PLAN

BORE LOG LOCATION PLAN & PROPOSED LAA (NOT TO SCALE)

Date: 28/02/22

78 Mullalys Road (Lot 1 TP833680)



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APPENDIX vii

BORELOGS

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BORELOG SHEET

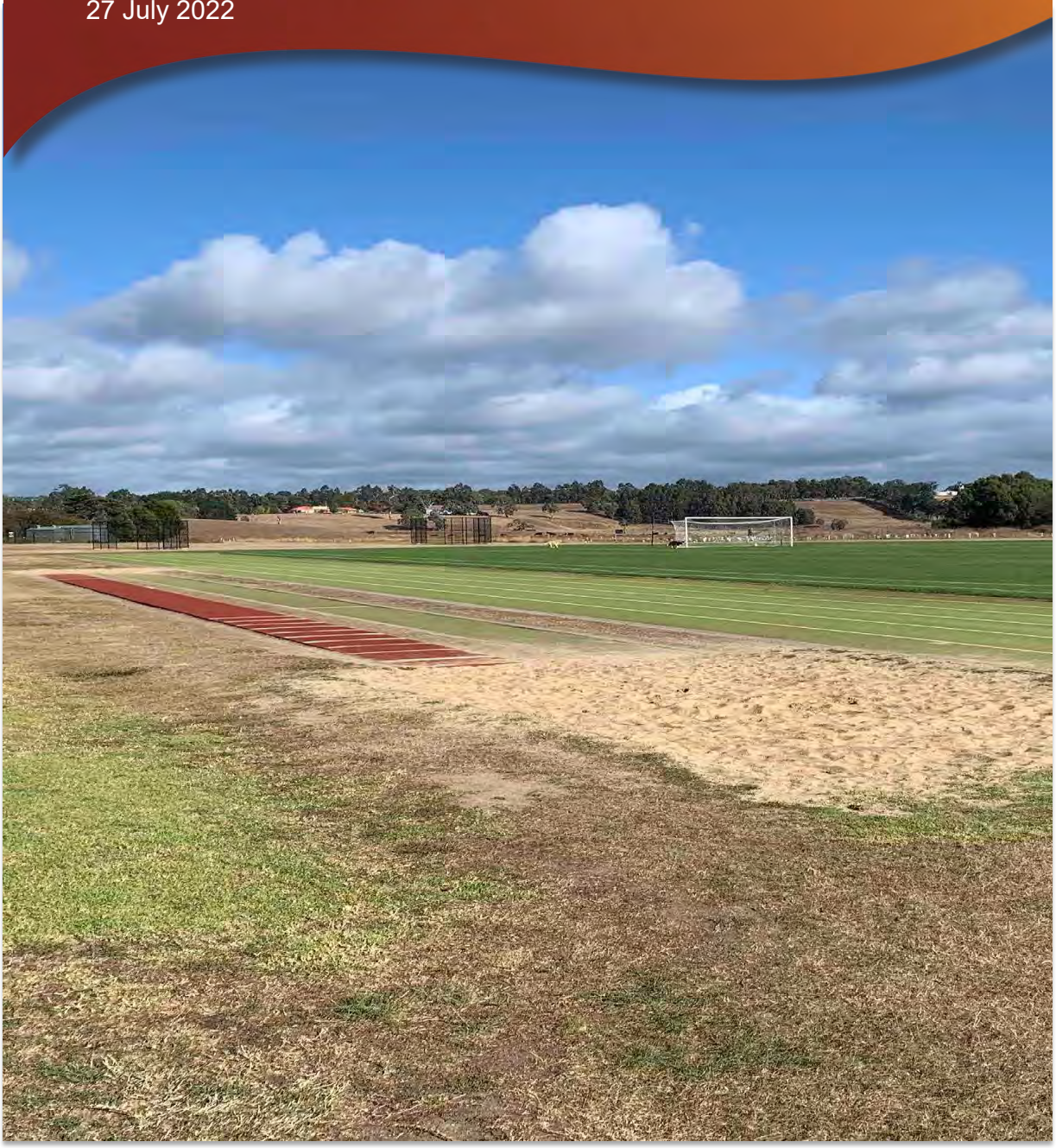
CLIENT: Greenedge Environmental on behalf of Roy Costa & Associates
PROJECT ADDRESS: 78 Mullalys Road (Lot 1 TP833680), Bolinda
JOB NO: 89KO17
FIELD WORK DATE: 23/11/17
LOGGED BY: Rob Krainz
DRILLING METHOD: 100mm Earth Auger, Shovel and Crowbar

	BORELOG 1				BORELOG 2		
DEPTH	Soil Profile	Clr	Fill	DEPTH	SOIL PROFILE	Clr	Fill
100mm	Clay Loam (Dk Gy)			100mm	Clay Loam (Dk Gy)		
200mm	Moist			200mm	Moist		
300mm				300mm			
400mm				400mm	Light Clay (Dk Gy)		
500mm	Light Clay (Dk Gy)			500mm	Moist		
600mm	Moist			600mm	Red mottles		
700mm	Red mottles			700mm			
800mm				800mm			
900mm	Light Med Clay (Dk Gy)			900mm	Light Med Clay (Dk Gy)		
1000mm	Moist – Red mottles			1000mm	Moist - Red mottles		
1100mm				1100mm			
1200mm				1200mm			
1300mm				1300mm			
1400mm				1400mm			
1500mm				1500mm			
1600mm	End Log			1600mm	End Log		
1700mm				1700mm			
1800mm				1800mm			
1900mm				1900mm			
2000mm				2000mm			
2100mm				2100mm			

Macedon Ranges Shire Council

Master Plan
Dixon Field, Gisborne

27 July 2022



Contents

INSIGHT Leisure Planning

Macedon Ranges Shire Council

Master Plan - Dixon Field Gisborne

1. Introduction

Background & Project Purpose

Dixon Field is a multi-purpose open space and recreation reserve located centrally in Gisborne - bordered by Jacksons Creek, the Macedon Ranges Council Gisborne Offices and Robertson Street.

Dixon Field is currently home to the following tenant sporting clubs:

- Gisborne Soccer Club
- Gisborne Tennis Club
- Macedon Ranges Croquet Club
- Gisborne Cricket Club
- Gisborne Little Athletics Club

Dixon Field has an emergency services helipad on the eastern side of the reserve.

The reserve also caters for a large number of casual users including walkers, runners, dog walkers and casual sporting use.

Macedon Ranges Shire Council ('Council') is land owner and manager of the reserve.

Facilities at Dixon Field

- Two pavilions with multiple change rooms, canteen, umpires rooms
- 4-5 soccer pitches (depending on configuration and size)
- Sportsground lighting for main soccer pitch with limited training lights
- One synthetic cricket pitch
- Eight synthetic grass tennis courts (all with lighting) and pavilion
- Croquet green and pavilion
- 100m synthetic grass athletics track
- Synthetic rubber long jump run ups
- Two discuss/shotput cages
- Storage facilities
- Helipad
- Walking tracks

The purpose of the master plan is to provide direction for future improvements to Dixon Field, including possible staging and indicative capital costs. It is envisaged that the master plan will be implemented over a 20 year period given the costs involved. It is expected that changing circumstances, opportunities and further investigations will result in some changes to the detail but not to the overall direction of the plan.

There are a number of key issues to be considered in developing the master plan, including – but not limited to:

- Consideration of soccer club improvement priorities and a critical assessment of likely future needs. Consideration may be given to a synthetic soccer pitch, additional sportsground lighting and associated facilities.
- Future of tennis provision within Dixon Field and the broader Gisborne area – including consideration of provision for Bullengarook, New Gisborne and Gisborne tennis clubs.
- Consideration of croquet provision within Dixon Field and likely future needs.
- Consideration of Little Athletics facilities including determination of future requirements.
- Consideration of shared use facilities.
- Assessment of car parking needs.
- Assessment of and consideration of non-sporting club usage.
- Consideration of opportunities for linkages to other significant open space areas in Gisborne.

Study area

2. Site Analysis

Existing Conditions

Site Observations

Croquet club along gravel road

8 x tennis courts

Playground in central location between tennis courts and fields

Gisborne Soccer club rooms

Gisborne Soccer Club pavilion and field

Soccer bench on wheels

Track and field facilities

Shotput throwing cages

Helipad location next to soccer field

Council Gisborne office

Water tank next to Croquet Club

Council entrance from Robertson Street

Revegetated area along Jacksons Creek

Existing portion of path along Jacksons Creek

Jacksons Creek

Wetland area

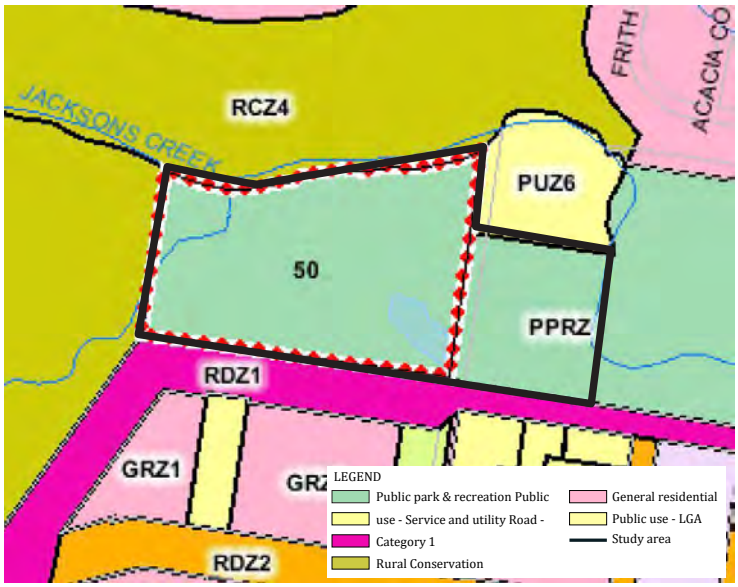
Bird hide located along board walk in wetland

Dixon field signage off Robertson Street

Statutory Planning

The land within the Study Area is zoned PPRZ (Public park and recreation). It is primarily bordered on the north by land zoned for rural conservation, apart from the area occupied by the Council offices.

Land Use Planning Zones (Source: Planning Maps Online)
Planning Scheme Zones around Dixon Field



Planning Overlays (Source: Melbourne Water / GHD)
Flood affected areas around Dixon Field

History

The original inhabitants and traditional land owners of the Gisborne region are the Wurundjeri Woi Wurrung people, with European settlement commencing in the area from 1837.

Today Gisborne is the largest township in the Macedon Ranges and is located within a commutable distance to the Melbourne CBD - approximately 45-minute drive along the Calder Freeway or a 50 minute train ride on the Bendigo Line.

Dixon Field was freehold land purchased by the Shire of Gisborne from the Dixon family in the early 1980's for use as an active recreation reserve.

The Gisborne Botanic Gardens neighbours Dixon Field to the east, and is accessible by a footbridge over Jackson Creek. Opened in 1991, it is home to flora and fauna, and provides seating and walking paths.

Historic Map of Gisborne, 1856
(source: State Library of Victoria)

3. Background Documents

Macedon Ranges Strategic Context

Council Plan 2021–2031

- Strategic objectives:
  - Connecting communities
  - Healthy environment, healthy people
  - Business and tourism
  - Deliver strong and reliable government

Sport and Active Recreation Strategy 2018-2028

- Support development of Dixon Field as a Regional soccer venue, however a synthetic soccer pitch is not recommended given high capital costs, ongoing maintenance requirements and anticipated levels of demand.
- Support upgrade/resurfacing and lighting at Gisborne Tennis Club - having regard to broader demand assessment.
- Confirm priorities for Little Athletics facilities, including possible upgrade to 100m track (i.e. synthetic replacement or grass - to be determined).
- Acknowledge proposed renovations to the existing old pavilion to improve change room provision.
- Confirm priorities for possible Croquet facility improvements.

Climate Change Action Plan, 2017

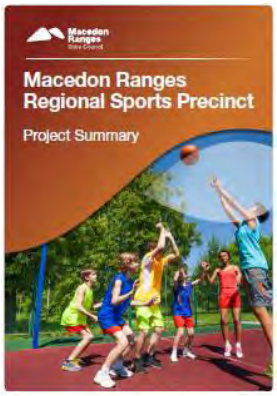
- Council is committed to achieving zero net emissions by 2030.
- The master plan supports sustainable development principles, including Water Sensitive Urban Design (WSUD).
- Detailed designs for individual improvement projects will need to consider initiatives to support Council's target of zero net emissions by 2030.

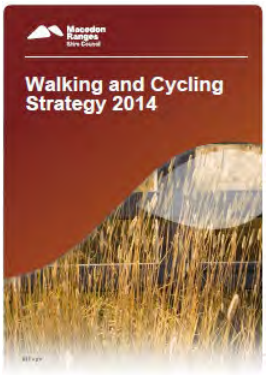
Open Space Strategy 2013

- Maximise opportunities for sporting field provision within Dixon Field.
- Improve the Jacksons Creek corridor for recreational use and protection of environmental values.
- Compliment proposed improvements to the Gisborne Botanic Gardens - primarily effective linkages and connections.
- Note: Council is undertaking a review and developing a new Open Space Strategy in 2022. The Open Space Strategy review will not impact the Dixon Field Master Plan.

Macedon Ranges Regional Sports Precinct

- There is a shortage of sporting fields in Gisborne, New Gisborne and the surrounding areas - maximise opportunities for sports field provision at Dixon Field, primarily for soccer and cricket.
- Review demand for tennis at Dixon Field and/or Regional Sports Precinct.





Walking and Cycling Strategy 2014

- Support extension of the existing off-road shared trail along Jacksons Creek through Dixon Field and connecting to residential areas to the north-west of the reserve.
- Ensure an appropriate network of paths and trails within Dixon Field.
- Minimum standard for shared paths is 2.5m wide concrete (preferred).
- Ensure adequate support facilities, including consideration of
  - Bike racks
  - Seating
  - Shade
  - Shelter
  - Drinking water
  - Dog litter bags
  - Signage

Gisborne Botanic Gardens Master Plan 2017

- Consider opportunities to improve the interfaces - including connections and linkages - between the Botanic Gardens and Dixon Field.

Municipal Emergency Management Plan 2020

- No reference to Dixon Field or existing helipad.

Macedon Ranges Strategic Environmental Works Plan

- For Council managed waterway reserves in the Port Phillip and Westernport Catchment
- Dixon Field is adjacent to the Jacksons Creek A catchment area identified in the plan.

Dixon Field Lighting Strategy 2010

- Lighting provision to be reviewed having regard to the preferred playing field layout determined as part of this master plan.

Sustainable Buildings Policy 2021

- This policy applies to and includes provisions for all new Council building projects, asset renewal, extensions to existing facilities, building maintenance works and demolition.
- All new Council building projects, asset renewal, extensions, building maintenance works and demolition must comply with the minimum requirements set out in Table 1 in the Sustainable Buildings Policy.

Strategic Context Other

Football Federation Victoria (FFV) State Facilities Strategy to 2026

- Explore options for additional soccer pitch provision, including possible synthetic surface.
- Ensure adequate support amenities and facilities.

Tennis Australia National Tennis Facility Planning and Development Guide 2018

- Ensure existing and proposed tennis facilities maximise opportunities for club sustainability, participation and broad community use.

Croquet Victoria Growing Croquet Facilities Infrastructure Planning Project 2020-2030

- In consultation with the club, consider options for possible relocation to an alternative site (e.g. Golf Club). If not supported, then consider facility upgrade requirements, in particular accessible toilet and pavilion facilities. Options to share facilities with other sports or existing facilities to be considered (e.g. tennis).

Victorian Cricket Infrastructure Strategy 2018-2028

- Master plan to consider opportunities to maximise playing field layout to support cricket (shared with soccer).
- Pavilion and amenities to support multi-use and Universal Design.

Little Athletics Victoria – Strategic Plan

- Ensure existing and proposed athletics facilities maximise opportunities for club sustainability, participation and broad community use.

Active Victoria: a strategic framework for sport and recreation in Victoria 2017-2021

- Master plan improvements to focus on maximising the use of existing infrastructure; increasing capacity and supporting a range of active and passive recreation opportunities.

4. Population and Demographic Characteristics

The following information has been sourced from:

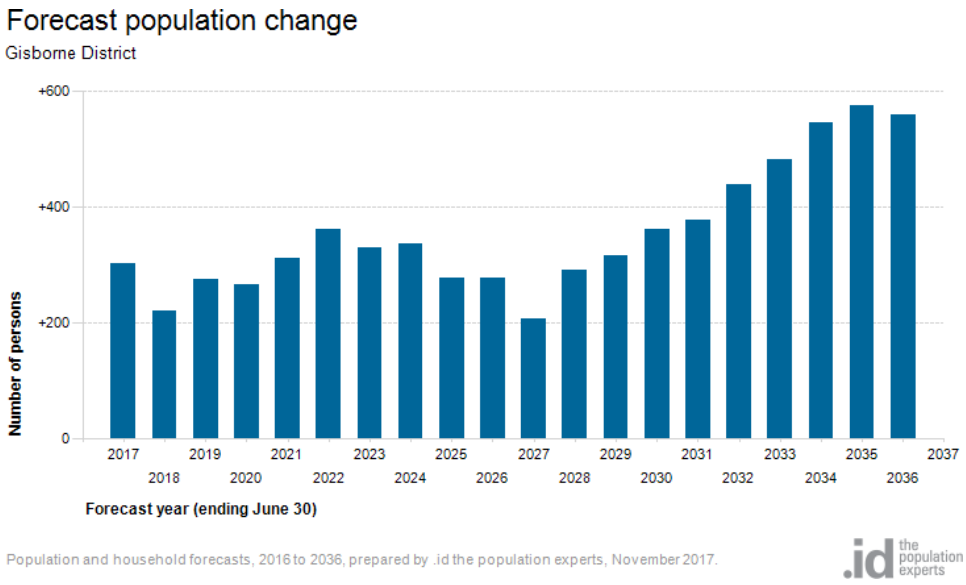
Source: https://forecast.id.com.au/macedon-ranges
Source: https://profile.id.com.au/macedon-ranges/home

and are based on 2016 Census information data.

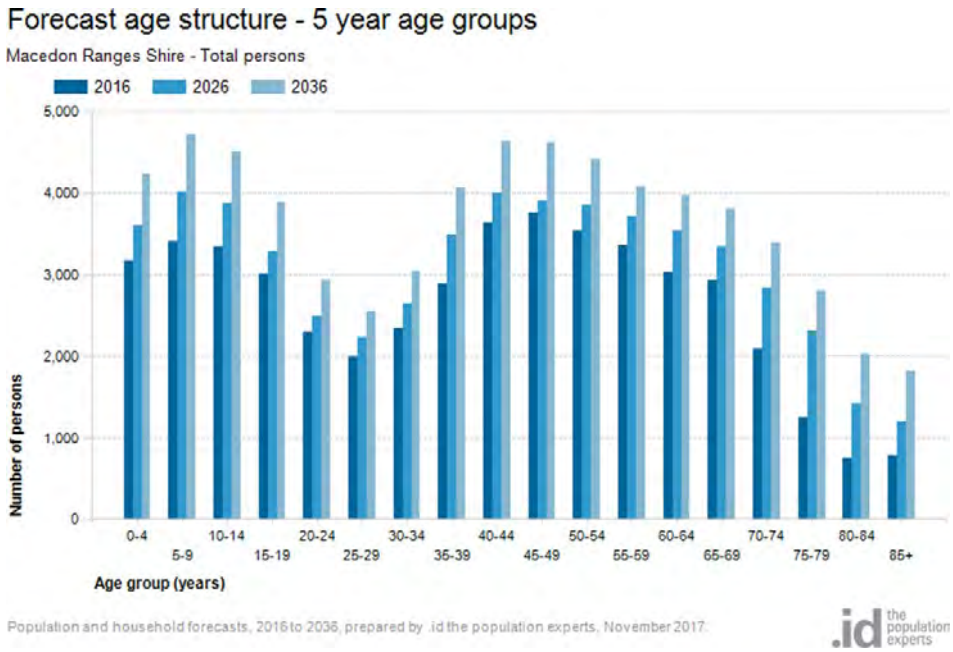
Population Change

The Macedon Ranges Shire population forecast for 2022 is 51,907 persons, and is forecast to grow to 65,405 by 2036. A large proportion of all population growth across the Shire is projected to occur in the Gisborne District (i.e. 7,109 people or approximately 42% of the Shire total).

The greatest population change for Gisborne District is forecast for the period from 2032 to 2036, which is expected to have a net increase of 2,604 people.



In 2016, the dominant age group for persons in Gisborne District was ages 5 to 9 years, which accounted for around 8.0% of the total population. This is expected to continue through to 2026 with an expected increase of an additional 300 people in this age group, accounting for approximately 8.4% of the total population. The largest 5 year age group in 2026 will be those aged 5 to 9 years, with a total of 1,364 persons.



At a Shire-wide level, the median age of residents is approximately 42 years. Almost twenty-one percent (21%) are aged between 0-14 years and 17% are aged 65 years and over. However, the proportion of those aged 65 years and over is expected to increase to over 20% by 2026.

The ageing profile of the community will influence leisure participation demands. Opportunities for participation in tennis and croquet can be expected to increase as the community ages. However, whilst demand for participation in traditional formal sports can be expected to experience growth associated with population increases, demand for informal, non-club based leisure opportunities can also be expected to increase associated with the physical activity participation preferences of an ageing community (e.g. including walking and social gathering).

The collective impact from sustained population growth and forecast growth to 2036 will increase demand for access to existing open space and sporting facilities provided at Dixon Field.

5. Community Survey

Respondent Profile

97% of respondents have used Dixon Field in the past 12 months

Sample size: 108 people

51% aged between 35 - 49

57% female

Respondent Make Up

59% non members

21% Gisborne Soccer Club

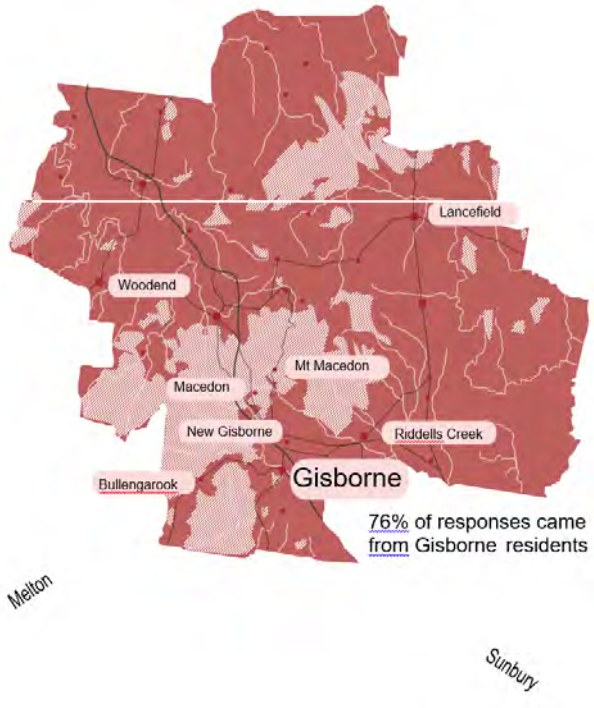
11% Gisborne Tennis Club

5% Gisborne Little Athletics

4% Gisborne Cricket Club

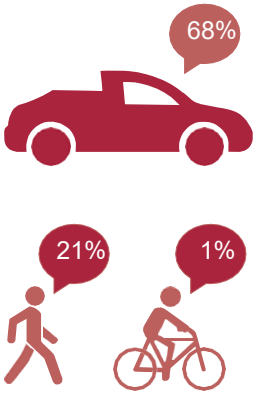
0% Macedon Ranges Croquet Club

Shire Map



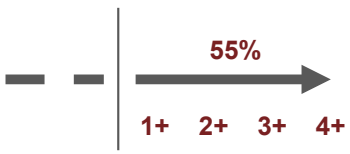
76% of responses came from Gisborne residents

Most Popular Mode of Accessing Reserve

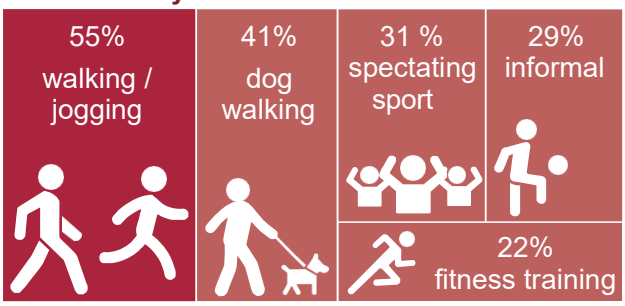


Frequency of Use

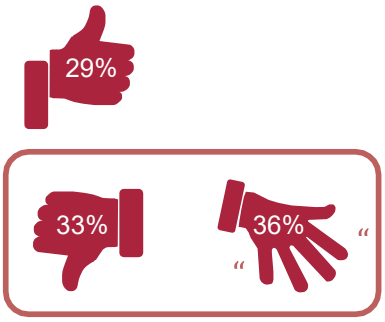
Respondents who visited the reserve at least once per week



Most Popular Activities undertaken by all users



Meeting Needs



Suggestions to meet needs - approximately 10% of respondents suggested each

additional toilets for clubs

new playground facilities

improve field drainage

improve tennis courts and clubrooms

Other suggestions to meet needs - approximately 5% of respondents suggested each

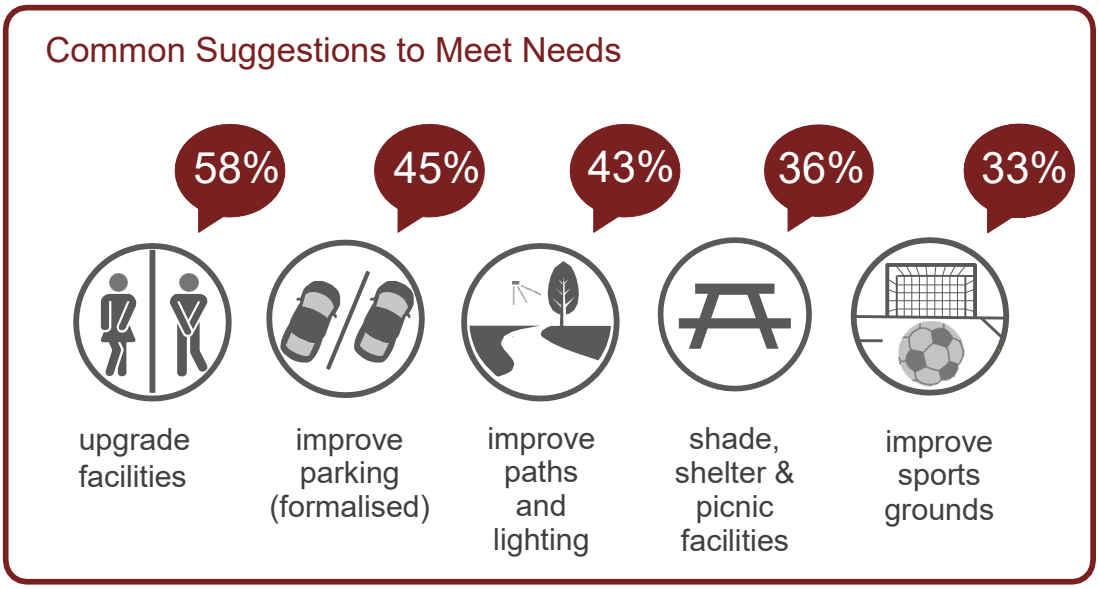
improve clubrooms

improve field lighting

establish BMX track

enclosed dog park

develop full athletics track



Additional Consultation

In addition to the broad Community Survey, consultation activities were also undertaken with a range of key stakeholders to help identify the initial Issues and Opportunities outlined in this document. Meetings, telephone interviews and email exchanges were conducted with the following groups:

- MRSC staff workshop.
- Gisborne Little Athletics.
- Gisborne Soccer Club.
- Macedon Ranges Croquet Club.
- Gisborne Tennis Club.
- Gisborne Cricket Club.
- Central Highlands Cricket Victoria & Gisborne & District Cricket Association.
- Gisborne Football & Netball Club.
- Macedon Ranges Tennis Association.
- Ambulance Victoria (AV) Team Manager Gisborne.
- Gisborne CFA Captain Gisborne Fire Brigade.
- Gisborne SES - Deputy Controller Operations, Gisborne.
- Gisborne Police.
- CASA (Civil Aviation Safety Authority).

6. Issues and Opportunities

The following is a summary of issues and opportunities identified during the preliminary consultation and site investigation phase.

Overall:
- Increase walking and cycling connectivity.
- Encourage multi-use recreation and community facilities.
- Maximise opportunities for sporting field provision within Dixon Field.
- Improve environmental outcomes at the site through use of best practice sustainable design and enhancement of the site's natural values. Maximise sustainable design features in detailed designs for individual improvement projects.
- Detailed designs for individual projects to consider geotechnical requirements.

Tennis:

1 Council recently completed structural improvement works to Courts 1&2, resurfacing Courts 3&4 and lighting installation on Courts 7&8. Additional spectator seating and path connections may be needed to enhance the amenity of the tennis facilities.

2 The pavilion lacks toilet facilities and provides limited social space.

3 There is potential for a new shared use pavilion facility to service the tennis and croquet clubs.

4 Potential for Dixon Field to be enhanced to provide the south of the Shire with higher standard tennis facilities taking into consideration issues of a number of existing smaller clubs (eg. Bullengarook and New Gisborne) in the long term. Any additional courts at Dixon Field would be dependent upon no nett increase in the number of club competition courts in the Gisborne area (i.e. relocation of courts).

Cricket:

5 Dixon Field is used primarily as an overflow venue for cricket, particularly juniors and lower grade senior levels. A minimum of two ovals/ pitches are required. The ability to establish full size (senior) pitches is constrained by existing vegetation, helipad and road infrastructure.

6 Additional shade, shelter and seating is required to service the playing fields.

7 Consideration could be given to a new public toilet / shelter facility to service the eastern playing fields and general recreational use.

Croquet:

8 Potential relocation of the Croquet Club to an alternative location has been considered (e.g. to Gisborne Golf Club), however the benefits of remaining at Dixon Field outweigh potential benefits from possible relocation – specifically the opportunity to maximise shared use facilities (i.e. tennis / croquet pavilion); maximise use of existing infrastructure (i.e. existing croquet courts); accessibility (i.e. proximity/location within central Gisborne); well established existing use and ongoing club sustainability (including evidence of recent membership growth). It is acknowledged that the existing croquet clubroom lacks toilet facilities and provides limited social space for users. The tennis club clubroom is similarly inadequate, therefore an opportunity exists to explore options for a new shared use pavilion to service the needs of both user groups and consolidate existing infrastructure within Dixon Field.

9 There is demand for access to an additional croquet court with grass species that remains playable year-round to service current and future participation needs.

Soccer:

10 Current issues include poor field drainage, excess wear and tear, lack of lighting and high demand for soccer fields. Dixon Field is considered a Regional soccer venue in the Macedon Ranges.

11 Opportunity to explore optimal field configuration, for high use demand. Field configuration is constrained by existing vegetation, helipad and infrastructure.

12 Improve sports lighting options to allow training use of other playing fields (i.e. spread wear from main soccer pitch) while maximising energy efficiency and flexibility for different lighting conditions and uses.

13 Support the proposed future Stage 3 Pavilion extension for new social/ community facility.

Little Athletics:

14 Existing concrete track edging is considered a safety issue, restricts flexibility for soccer and could be removed.

15 The existing 120m synthetic section of track requires replacement / renewal.

16 One existing jumping pit and run-up requires replacement/renewal.

Other:

17 Improve the Jacksons Creek corridor for recreational use and protection and enhancement of environmental values.

18 Improve walking paths and trails, including along Jacksons Creek.

19 Ensure adequate support amenities and facilities (including seating, shade and shelter where appropriate).

20 Subject to more extensive investigation, enhance the existing wetland / stormwater treatment area.

21 The location of the existing Helipad restricts use for playing fields. Consider options for possible relocation within Dixon Field, or convert current concrete pad into grass landing pad.

22 Incorporate additional water storage and pump infrastructure to support playing field irrigation.

23 Existing road access and car parking requires formalisation to improve capacity, safety and circulation. Consideration of shared/ overflow carparking opportunities between Dixon Field and the Civic precinct at peak usage times to maximise advantage of both sites. Maximise permeability and / or treat stormwater runoff through WSUD infrastructure.

7. Long Term Master Plan (20+ years)

Component A
A1 - New shelter, BBQ, toilets and storage
A2 - New connecting path
A3 - Jacksons Creek revegetation
A4 - New reserve signage (throughout)
A5 - Realign gravel car parking

Component B
B1 - Potential location for relocated helipad
B2 - New water tank and shed
B3 - Pitch 2 & oval 2 improvements including shelters, LED lights, scoreboard, behind the goal safety netting, seating and junior cricket pitch
B4 - New 5-a-side pitches with synthetic grass and fencing, option for future LED lighting.
B5 - Landscaping to Component B areas

Component C
C1 - New shared clubhouse for tennis & croquet
C2 - New tennis courts (9 & 10, 11 & 12)
C3 - Sheltered seating and path improvements around tennis courts
C4 - New playground

Component D
D1 - Social facility extension
D2 - Landscaping to Component D areas

Component E
E1 - Circuit road

Component F
F1 - Pitch 3 for junior cricket and junior soccer
F2 - Pitch 1 improvements to playing surface, lighting (LED), turf, drainage and irrigation, as well as removal of athletics track concrete edge strip and installation of behind the goal safety netting. Improvements to athletics track & field facilities including new synthetic straight section, jumping pits, throwing cages and alternate on-field athletics track line marking reference points. NB: as part of oval reconstruction works explore options to move facilities closer to the main pavilion.
F3 - New carpark

Component G
G1 - New croquet green
G2 - Undertake environmental assessment and feasibility of wetlands enhancement, considering the replacement of the former board walk.
G3 - Investigate potential additional off-street parking
G4 - Re-vegetation within reserve
G5 - New circuit path

Macedon Ranges Shire Council

Draft Master Plan - Dixon Field Gisborne

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8. Indicative Implementation

Many of the items in the Master Plan are either related or rely on other items to be implemented first. Items can be packaged to provide for more attractive funding opportunities. Indicative component packages and order have been developed that may change depending on circumstances.

The implementation of this plan (and therefore the priority of each component) is dependent on the provision of funding to undertake the works. Opportunities for funding may include but are not limited to Council Budget processes, State and Federal Government Sport and Recreation grants, and community environment grants.

To support Council's commitment to achieve zero net emissions by 2030, any future developments should ensure sustainable design features are included.

All items in the table below are subject to detailed design.

COMPONENT	ITEM	INDICATIVE COST
Component A		
A1	New shelter, BBQ, toilets and storage.	$385,000
A2	Establish a new formal path connection from the proposed new shelter/toilets to the existing sports pavilion.	$110,000
A3	Jacksons Creek revegetation including staged removal of poplar trees and other woody weeds. Investigate installation of viewing platform.	$110,000
A4	Reserve signage including entrance, wayfinding and interpretive signage where appropriate.	$33,000
A5	Realign gravel car parking to service new shelter.	$55,000
A6	Preliminary planning and detailed design for future works including soil tests where required.	$165,000
	subtotal	**$858,000**
Component B		
B1	Relocate helipad including access road and improved access and car parking.	$275,000
B2	New storage shed and additional water tank.	$110,000
B3	Pitch 2 & oval 2 development, including new surface, drainage, irrigation, LED lights, behind the goal safety netting and other supporting infrastructure.	$1,100,000
B4	2x fenced 5-a-side pitches on artificial grass (approx. 30m x 18.5m). (Option for future LED lighting not costed).	$255,000
B5	Landscaping to Component B areas	$22,000
	subtotal	**$1,762,000**

COMPONENT	ITEM	INDICATIVE COST
Component C		
C1	Shared tennis and croquet clubhouse. Detailed design to include measures for detention and/or treatment of runoff.	$1,155,000
C2	Two new tennis courts.	$176,000
C3	Allowance for path improvements and sheltered seating around tennis courts.	$132,000
C4	New playground	$55,000
	subtotal	**$1,518,000**
Component D		
D1	Multi-purpose social facility extension and surrounds and car parking. Detailed design to include measures for detention and/or treatment of runoff.	$880,000
D2	Landscaping to Component D areas	$22,000
	subtotal	**$902,000**
Component E		
E1	Circuit road through site, including parking, landscaping and with controlled gate access in front of proposed tennis/ croquet clubhouse. Gate closed when croquet operating mid-week. Maximise permeability and / or treat storm water runoff through WSUD infrastructure where appropriate as part of detailed design considerations.	$820,000
	subtotal	**$820,000**

COMPONENT	ITEM	INDICATIVE COST
Component F		
F1	Pitch 3 and Oval 1 improvements including Junior soccer pitch approx. 70 x 55m and Junior cricket oval approx. 40m radius with synthetic pitch.	$660,000
F2	Pitch 1 improvements to playing surface, lighting (LED), turf, drainage and irrigation, as well as removal of athletics track concrete edge strip and installation of behind the goal safety netting. Improvements to athletics track & field including new synthetic straight section, jumping pits, throwing cages and alternate on-field athletic track line marking reference points. NB: as part of oval reconstruction works explore options to move facilities closer to the main pavilion.	$825,000
F3	Triangular carpark adjacent to tennis courts, including landscaping. Detailed design to include measures for detention and/or treatment of runoff.	$242,000
	subtotal	**$1,727,000**
Component G		
G1	Additional croquet green	$165,000
G2	Undertake environmental assessment and feasibility of wetlands enhancement.	$33,000
G3	Construct new angle parking off Bacchus Marsh - Gisborne Road. Maximise permeability and / or treat storm water runoff through WSUD infrastructure where appropriate as part of detailed design considerations.	$330,000
G4	Additional re-vegetation allowance	$220,000
G5	Circuit Path allowance. Any path lighting along Jacksons Creek to be LED, and on timers so that lighting does not operate all night.	$440,000
	subtotal	**$1,188,000**
	TOTAL	**$8,775,000**

MRSC- Dixon Field Master Plan Feedback on Draft Report

The following table provides a summary of key comments, suggestions or feedback received following public exhibition (June, 2020) of the draft master plan report.

Group / Club	Summary of key comments, issues or suggestions	Implications for the Master Plan
Council Staff / Agencies		
1.	1. Background documents – please refer to Council's Environment Strategy and Climate Change Action Plan. It would be good to explicitly refer to council's commitment to achieve zero net emissions by 2030 which is included in the climate change action plan. Issues and Opportunities: 2. Overall - Add "Improve environmental outcomes at the site through use of best practice sustainable design and enhancement of the site's natural values" 3. 12 – Sports lighting – Add "Improve sports lighting options to allow training use of other playing fields while maximising energy efficiency and flexibility for different lighting conditions and uses" 4. 23 – Roads and car parking – Add "Maximise permeability and / or treat storm water runoff through WSUD infrastructure" 5. Former landfill – One of the former Directors of Operations advised that the land running parallel with Robertson Street was a former creek that was filled in with municipal waste – i.e. it was a tip / landfill. You might want to consider soil contamination tests in your implementation plan if required. 6. Wetland – storm water and flow analysis is required to determine what changes are required to the wetland design and whether it can be reduced in size or not. Can this "Storm water analysis and WSUD concept plans" be added to "Item G2" (or a new item created) with a cost of approximately $20k. 7. Jacksons Creek – Support for proposed Poplar removal and revegetation. I agree with David Galloway that other woody weeds should be added removed as well. Change A3 to "Jacksons Creek revegetation including staged removal of Poplar trees and other woody weeds'. Increase the amount to $100k. Include "Investigate installation of a viewing platform". 8. Long term Masterplan / Implementation Plan. We should be aiming for new or expanded	1. Update Council Plan to Year 3 version. Add reference to Climate Change Action Plan and zero net emissions target by 2030. 2. Add comment to Issues and Opportunities. 3. Add comment to Issues and Opportunities. 4. Add comment to Issues and Opportunities. 5. Add comment where appropriate. Detailed designs for individual projects to consider possible construction implications. 6. Add a note to G2 as follows "Assess current wetlands through storm water analysis and WSUD concept plans to determine feasibility and/or scope of re-engineer/reduction of wetlands", plus cost allowance for additional planning work to item G2. 7. Add allowance and note to A3. 8. The costs provided are indicative, and detailed planning/QS will be required once scope of individual development projects is determined, including sustainable design features. Add comment in 'Issues and Opportunities' section in 'Overall' box to 'maximise sustainable design features in detailed designs for individual improvement projects'.

Group / Club	Summary of key comments, issues or suggestions	Implications for the Master Plan
	facilities to be carbon neutral. This can include on-site power generation (solar panels) as well as energy efficiency building design. If this hasn't been factored into the costs, add $100k for sustainable design features.	
2.	1. The main risk is if the masterplan is based only on an aerial measurement rather than an on the ground a surveyed plan to ensure everything identified fits. 2. Rather than refurbish the existing pavilion/toilets I would suggest applying for around 150k extra funding (proper cost estimate should be done) and building a new change rooms and toilets where the suggested public toilets are, servicing field 2. This would allow for the existing older pavilion to be demolished and this space could be used for the desired function room. This would also negate the need to relocate the existing water tank, where the current pavilion extension is proposed. 3. Considerations into food truck opportunities on peak days e.g. providing planned locations with external GPOs. Key risks: 4. Costs relating to any earth works. Potential for contaminated soil. Will impact services, stormwater, etc. 5. Services – sewer connection locations. 6. Services – Is there gas? Are electrical upgrades going to be required? 7. Masterplan based on aerial measurement, not on a surveyed plan. 8. Council office future extension space will be limited. 9. Flood – has the relevant water authority been engaged to determine risk to assets. Will increasing stormwater to the creek create a higher flood risk?	1. No change proposed – scope of the MP did not include budget for a new feature and level survey. Survey data provided by Council has been considered (Feb, 2010). 2. No change proposed – as per instructions from Recreation Services. 3. No change proposed – consider in detailed design of car park upgrades. 4. Noted, no change proposed. 5. Noted, no change proposed. 6. Noted, no change proposed. 7. No change proposed – as per item 1. 8. No change proposed. 9. No change proposed – Melbourne Water has been consulted.
3.	1. Melbourne Water would be supportive of removing woody weeds from creek corridor. I'm not sure $70k would get very far, however there would be cost sharing opportunities available with Melbourne Water for these suggested works. Revegetation in this zone should be indigenous species relevant to the local EVC, and done in partnership between with MRSC's environmental department, open space team and Melbourne Water. 2. With regards to the commentary around improvements to drainage, given there appears to be a fair amount of impervious surfaces proposed (new carparks, roads etc.), could WSUD options to treat this water be	1. Increase allowance for creek revegetation and control to $100k. 2. Add notes to support WSUD principles in car park and hard surface areas as part of detailed designs i.e. "Maximise permeability and / or treat storm water runoff through WSUD infrastructure where appropriate as part of detailed design considerations" 3. Add a note to G2 as follows "Assess current wetlands through storm water analysis and WSUD concept plans to determine feasibility and/or scope of re-engineer/reduction of wetlands",

Group / Club	Summary of key comments, issues or suggestions	Implications for the Master Plan
	investigated opposed to traditional drainage methods (i.e. pipe to creek)? 3. Could there be a flow modelling analysis undertaken to understand what flows this 'wetland' is capturing before making a decision to reduce its size and allow greater untreated flows to enter the Jacksons Creek? Also, Melbourne Water would support the removal of the Willow's currently in this wetland as the seed bank from these weeds are currently making its way into the creek, where Melbourne Water and Council have invested a large amount of funds trying to control downstream. 4. Also worth noting that construction of any buildings/shelters in this greater floodplain should be referred to Melbourne Water for formal approval.	plus cost allowance for additional planning work to item G2. 4. No change required.
Residents		
4.	• I have viewed the Draft Plan for Dixon Field. I concur with the Plans as displayed.	Support noted, no change required.
5.	1. I would like to see an ecological assessment done of the area to ensure that loss of habitat will not occur when the proposed work is done. 2. I am concerned about the idea of more concrete footpaths that will line Jacksons creek. If paths do occur in the future they will need to be carefully planned with the environment and wild life issues as first priority. Night lighting is not needed here and it comes with environmental problems such as attracting insects to the lights instead of the moon and many animals rely on the finding insects in the moon light. I don't support lighting on a foot path. 3. The entire area of Dixon fields is shown to be a flood affected. Huge earth works would be needed to fix the drainage problem in the area and I worry that this kind of work should not be done so close to a water way. I would like to see the wetland improved and a information sign go up that talks about the importance of wetlands and what is special about this wetland. This would enable people to learn about the wetland and learn about the Macedon ranges species.	1. No change to MP proposed – any works along the creek will involve assessment and input from Council's Environmental Team. 2. Add a note that any path lighting along Jacksons Creek to be on timers so that lighting does not operate all night. 3. Alter text at A4 in the Implementation Plan - add "Reserve Signage including entrance, wayfinding and interpretive signage where appropriate"
6.	• Support the Dixon Field plan. I like the idea of the temporary road between the Croquet and tennis facilities. This will allow anyone with walking disabilities to be dropped off at the club house, giving them easy access to the courts or club house. With this road being closed during time of play ensures safety for all members.	Support noted, no change required.

Group / Club	Summary of key comments, issues or suggestions	Implications for the Master Plan
7.	1. I would like to express my objection to the proposed master plan for Dixon Field as it is too sports dominated. 2. The total cost of $7,655,000 is an irresponsible waste of money in any timeframe, but with the link on council's website stating "Dixon Field in five years – have your say" this is out of touch with the priorities of those who will be left paying the cost both environmentally and financially for many decades to come. 3. The way forward for the future is firmly with environmentally conscious decisions and plans, not like this one, which is environmentally irresponsible. There is no excuse, in these times of climate awareness for the proposed damage and over-development of this significant site in Gisborne. 4. There is need to support the "natural" open space for the wellbeing of the community and I just cannot understand how suddenly the MRSC can find $7,655,000 over 5 years and yet leave assets like the Gisborne botanic gardens which 100% of the community can enjoy left floundering. 5. There is still much doubt on how these sporting events will continue after Covid-19 with social distancing and other restrictions having an impact on all sports. The proposed plan does not account for these ongoing restrictions and I would suggest that the MRSC postpone this entire activity.	1. Comment noted, no change proposed. 2. Comment noted, no change proposed – the MP incorporates initiatives to improve sustainability and environmental outcomes. 3. Comment noted, no change proposed – the MP incorporates initiatives to improve sustainability and environmental outcomes. 4. Comment noted, no change proposed – the MP incorporates initiatives to improve sustainability and environmental outcomes. 5. Comment noted, no change proposed.
Clubs / Groups		
8.	1. The croquet club requests access to an equipment shed to accommodate our mower, playing equipment and outdoor furniture. 2. Expansive shade cover is also required to spectator areas.	1. Alter B2 to include "New storage shed and additional water tank". Amend cost allowance to include shed. 2. Show seating and shading to spectator areas, including adjacent to 'pedestrian crossing/through road'.
9.	1. Be great to have the existing 120-meter track replaced by a new synthetic track. 2. At this stage it is one of the two long jump run ups (not both) that will need replacing due to wear and tear. The long jump pits themselves would be better if they had concrete edges. 3. Re car park. It would be good to be more specific about the solution. e.g. move bollards in 2 meters with asphalted car park, line marking and associated drainage. 4. Re drainage it would be good to be more specific. e.g. there are currently two storm water drains that directly empty into Dixon Field. What is the specific plan regarding these	1. Support noted, no change proposed. 2. Comment noted, no change proposed – this can be addressed in detailed designs. 3. Comment noted, no change proposed – this can be addressed in detailed designs. 4. Comment noted, no change proposed – additional engineering planning will be required for the wetland and stormwater management in the broader

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	and the storm water that currently goes into the pond that no longer exists on the plan?	catchment outside the scope of this MP.
10.	1. Overall the Master Plan looks great and is very exciting for Gisborne and tennis in the region. 2. Location of shared Tennis / Croquet clubrooms (C1) - shown on plan on the Court 9 &10 side of the circuit road. We are keen to keep the location as shown on the plan. 3. Each tennis court should be accessible from internal pathways with seating and shelters (not from external footpaths / car park area or through the courts playing surface (interrupting play), therefore we propose: 4. The MRSC have confirmed the courts will have an external boundary fence and internal fences around each set of courts (as it is currently). This needs to be shown or described in the master plan. 5. The master plan provides an internal pathway in front of courts 5&6, 11&12, 1&2 and 3&4 but not in front of 9&10 and 7&8, we will need the pathway shown on the master plan to be extended to in front of courts 9 &10 and onto the clubrooms to allow internal access to each court (as is currently). 6. The internal pathway needs to allow space and provide bench seats and shelters in front of each set of courts for spectators, and parents for junior competition (as is currently). 7. Noting that the playground is currently alongside, accessible and visible directly from the tennis club, we believe the playground location shown on the Master plan would be too far away from the tennis courts and possibly hidden from view from the tennis courts by the swamp lands. This could create a potential health and safety risk for the children using this playground. 8. In our opinion the design team should try to find a more suitable location for the playground that is visible from the new clubhouse and also from some/all of the tennis courts.	1. Support noted, no change proposed. 2. Support noted, no change proposed. 3. Review and adjust paths and spectator facilities servicing tennis courts. 4. As above. 5. As above. 6. As above. 7. No change to location of playground proposed – it is intended to service all park users, not just tennis club. 8. As above.
11.	1. FFV would support Dixon Fields to be considered as a “Regional Football Precinct” – and the facility to continue to cater for multi-sport e.g. athletics, cricket, walking paths. 2. Football Victoria’s State Facilities Strategy to 2026 identified the need for an additional full-size pitch by 2026, however the participation data available over the past couple of years, would indicate that new pitches are required now to cater for demand. 3. FFV would support the installation of a synthetic pitch with floodlighting as it can	1. Support noted, no change proposed. 2. Support noted, no change proposed. 3. No change proposed – full synthetic pitch (soccer or athletics) is not supported in this master plan, however this could potentially be considered in the longer term (beyond the 20-year timeframe for this master plan) if demand requires.

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	provide 3 times the number of hours & competition vs a natural grass pitch. Pitch 1 location could be ideal for a synthetic pitch and can be combined with a synthetic athletics track. 4. Prioritize provision of additional pitch (B3), synthetic or grass. 5. Provision of a second full size pitch will be a massive factor in unlocking current and future growth. 6. Prioritize synthetic 5-a-side pitches (B4) if pitch 2 remains grass, and consider fencing & floodlighting, if possible. 7. We would support the proposed extension to the pavilion with provision of 4 – 6 female friendly changerooms, match official changerooms, social space, etc. 8. Prioritize carparking (F3) as current provisions are below what is required.	4. Comment noted, no change proposed. 5. Comment noted, no change proposed. 6. Comment noted, no change proposed. 7. Comment noted, no change proposed. 8. Comment noted, no change proposed.
12.	1. Current club membership is around 330 active players – Dixon Field is used for junior / lower grade cricket. We envisage that Dixon will only ever be our 3rd or 4th ground so it isn't as critical. 2. The toilets and kitchen area are a long way from the grounds. 3. There is no shade cover for players or spectators or seats. 4. Top-three priorities: Shade cover and seats adjacent the cricket ground would be ideal for cricket. Car Parking improvement.	1-4. No change required - spectator seating and shade provision is included in the draft plan.
13.	1. Support increased parking areas in the MP in addition to those currently allocated in the plan, including development of the Robertson Street "road verge". 2. The establishment of shelters and rest facilities for walkers and sporting spectators is supported. 3. Supportive of increasing the wetland in its current location to avoid the possibility of adverse impact on the wildlife nesting in this site. Any decision to relocate the wetlands would be strongly opposed due to the stated negative impact.	1. Support noted, no change required. 2. Support noted, no change required. 3. Alter note to G2 as follows "Assess current wetlands through storm water analysis and WSUD concept plans to determine feasibility and/or scope of re-engineer/reduction of wetlands", plus add cost allowance for additional planning work to item G2.
14.	1. Club challenges identified in submission: a) limited lit areas restricts opportunities for training b) current drainage is insufficient, and combined with limited lighting areas of playing surface become very damaged c) site flexibility - only one full size soccer pitch, other areas are constrained by helipad and cricket pitch d) valve boxes too close to playing surface	1. a) no change required, improved lighting options are included in the master plan b) no change required, master plan includes the need for drainage works (component F2) c) no change required, master plan proposes two full size soccer pitches and relocation of the helipad d) noted, the location of irrigation valve boxes in relation to playing

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	e) concrete perimeter of the athletics track compromises main soccer pitch area. 2. Club supports the following items in the proposed master plan: additional full size soccer pitch with lighting, relocation of the helipad, expanded change and social facilities, expanded and paved car park, additional amenities between soccer pitch 2 &3, and improved lighting options. 3. Club raised the following concerns with the draft master plan: a) main pitch is compromised by athletics track b) no perimeter or safety fencing on main pitch c) drainage on main pitch needs to be improved d) will now have two soccer pitches compromised by cricket pitches e) no plans for synthetic soccer pitches included f) have valve boxes been removed g) no considerations for eastern side of facility (all sports). 4. Club have submitted their own proposed layout configuration for consideration, which proposes: a) three full size soccer pitches that can be reconfigured into smaller pitches for junior teams b) separation of cricket pitch from soccer pitch (as well as maintain number of current cricket pitches proposed to just one) c) relocation of athletics track and infrastructure d) mix of synthetic and natural turf pitches e) expansion of new amenities between pitch 2 & 3 to include storage space	surfaces can be addressed as part of any future surface upgrade works e) to support flexibility of use and the need to spread areas of use to manage playing surface wear and tear, removal of the athletics track concrete edge strip is recommended as part of any future playing surface upgrade works. An alternate means of providing permanent athletics track line marking points of reference is to be included as part of concrete removal works. Relocation of athletics facilities is not supported in this master plan, however this could potentially be considered in the longer term (beyond the 20-year time frame for this master plan). 2. Support noted, no change required. 3. a) see response 1e) b) installation of perimeter fencing around the main soccer pitch is not supported due to the multi-use open space nature of the reserve, however the addition of behind the goal netting has been included in the master plan as part of future development considerations at the two full size soccer pitches c) see response 1b) d) no change required, like with many other sports, participation numbers in cricket continue to grow, the planned future provision of an additional cricket pitch to cater for this expected continued growth is supported e) Council's Sport and Active Recreation Strategy 2018-2028 supports development of Dixon Field as a regional soccer venue, however a synthetic soccer pitch is not recommended given high capital costs, ongoing maintenance requirements and anticipated levels of demand. As a result a full synthetic pitch (soccer or athletics) is not supported in this master plan, however this could potentially be considered in the longer term (beyond the 20-year timeframe for this master plan) if demand requires f) see response 1d)

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		g) component B of the master plan includes improved facilities for the eastern side of the reserve (pitch 2 /oval 2 improvements) including shelters, lights, behind goal netting, scoreboard, seating and a new shelter, toilets & BBQ building is proposed between pitch 2 & 3 4. a) suggested club reconfiguration layout of facilities is not to scale, cannot fit three full size soccer pitches as suggested, two full size pitches have been included in the master plan with options available to reconfigure into junior pitches as required b) understand principle behind suggested separation of cricket pitch in proposed club layout, however the suggested club layout of soccer pitches (and cricket pitch) does not fit within the area indicated if drawn to scale c) see response 1e) suggested club reconfiguration layout of facilities is not to scale and an athletics track and full sized soccer pitch would not fit in the area indicated d) see response 3e) e) alter plan to include additional storage space at A1 amenity block

The following table provides a summary of key comments, suggestions or feedback received following follow up consultation with submitters (November 2021) of the draft master plan report.

Group / Club	Summary of key comments, issues or suggestions	Implications for the Master Plan
Council Staff / Agencies		
15.	1. On page 6 it says under Little Athletics "14. Existing concrete Edging is considered a safety issue, restricts flexibility for soccer and could be removed." This is contrary to the feedback received from Gisborne Little Athletics. If you remove this edging then you remove the 400m Little Athletics Track both for Little Athletics, schools that use the track for their sports days and the many casual users and training runners that use the track throughout the week and year. If council can replace the concrete with another acceptable permanent solution that would be fine. 2. "16. Existing jumping pits and run ups require replacement/renewal." Actually there are two long jump run ups. One requires replacement/renewal and the other one is relatively new and doesn't.	1. Alternate permanent in ground markers are being proposed in the master plan. 2. Noted – update plan accordingly
16.	1. CASA does not regulate helicopter landing sites outside an aerodrome. The responsibility for approvals and conditions is a matter for the relevant planning authority. Civil Aviation Regulations 1988 (CAR) 92 emphasise that the responsibility for operating safely in and out of a helicopter landing site rests with the pilot of the aircraft. The pilot in command of a helicopter is responsible for ensuring that a site used for landing and taking off is suitable for the purpose and can be conducted with safety at the time of the flight. CASA is not aware of any published flight procedures associated with the operation of the existing HLS, and recommends that you contact operators of the current the HLS (such as the Police Air Wing and Air Ambulance) who can provide you with specific helicopter operational related information.	1. Noted that CASA do not regulate helicopter landing sites outside an aerodrome. Master plan consultant originally received feedback from CASA, SES, Ambulance Vic, Vic Police, CFA, and Aviation Australia in June 2020, which informed the relocation site proposed in the draft master plan.

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17.	1. The use of the site for a helicopter landing site is exempt from a planning permit under Clause 62.01 and there is no concern re the potential relocation of the helipad but I note the following: a) it is likely a CHMP or consent from AV would be required. b) part of the helipad is in a road reserve that is zoned RDZ1 and DoT approval will be required. c) the land is also affected by an LSIO and it would be advisable to obtain the comments from Melbourne Water in this regard.	1. Noted that no planning permit required for the helipad relocation, however that further approvals would be required from relevant authorities before commencing any relocation works. These approvals would be sought during detailed design.
18.	I will confirm that FV agree with the issues and opportunities listed, and echo and re-iterate all of Kevin's initial comments, while making a few additional notes, particularly: 1. Support the inclusion of Component A1 toilet & storage shelter given the length of the site for toilets and storage from Pitch 1 across to Pitch 2/5-A-Side Pitches, as well as Component A2 providing greater connectivity between green spaces. 2. Support the proposed location for the helipad at B1 to allow for greater utilization of green space for Pitch 2 3. While understanding the desire to retain grass surfaces for cricket use, etc, FV would encourage the consideration of a synthetic surface on Pitch 1 or 2 at Dixon Field to significantly increase capacity/handle wear and tear at the site, particularly given the cost associated with completely overhauling existing grass surfaces. 4. Recommend prioritizing synthetic 5-a-side pitches instead of grass (B4) if Pitch 1 and/or Pitch 2 remain grass, with consideration for fencing & floodlighting, as amenities such as this see great activation at other sites.	1. Support of these two items noted. 2. Support of helipad relocation noted. 3. No change proposed – full synthetic pitch (soccer or athletics) is not supported in this master plan, however this could potentially be considered in the longer term (beyond the 20-year timeframe for this master plan) if demand requires. 4. Add synthetic surface and fencing of 5-a-side pitch (B4) with option of future lighting.
19.	1. Acknowledge and support the improvements incorporated into draft master plan, including: ○ adding safety fencing behind the goals	1. Support of included items noted.

Group / Club	Summary of key comments, issues or suggestions	Implications for the Master Plan
	○ additional facilities on the eastern side of the facility ○ removal of helipad ○ additional lighting for the entire facility ○ planned car park improvements	Suggest a meeting in person with club representatives to discuss club submission further in early 2022.
	2. Cricket pitches: We cannot make any clearer that cricket pitches cannot be placed in the middle of a soccer pitch. There are numerous ways to incorporate both, but your plan currently ignores the safety and well-being of our participants just to cater for cricket overflow. There are only 2 full size soccer pitches in Macedon Ranges and there is probably a dozen cricket pitches in the council. Adding 2 more soccer pitches with cricket pitches doesn't address this overall short coming. We are not willing to compromise on this and we will continue to highlight that cricket pitches in the middle of soccer pitches is NOT acceptable or safe and also clearly against the guidelines outlined by Football Victoria. There is more than enough space to get creative and we feel our counter submission, while only providing one cricket pitch, demonstrates that both can be incorporated safely.	2. Suggested club reconfiguration layout of facilities is not to scale, cannot fit three full size soccer pitches as suggested, two full size pitches have been included in the master plan with options available to reconfigure into junior pitches as required. Understand principle behind suggested separation of cricket pitch in proposed club layout, however the suggested club layout of soccer pitches (and cricket pitch) does not fit within the area indicated if drawn to scale. Like with many other sports, participation numbers in cricket continue to grow, the planned future provision of an additional cricket pitch to cater for this expected continued growth is supported.
	3. Athletics Track: Leaving the main pitch and athletics track in the same spot does not make best use of the facility. Our suggestion is to relocate athletics to the front of council offices. In order to properly address the appalling drainage on the main pitch, the athletics track needs to be torn up anyway (I understand the athletics club would like the main track resurfaced also) so putting it back in the exact same spot doesn't make best use of the huge available space that is being poorly utilised right now.	3. To support flexibility of use and the need to spread areas of use to manage playing surface wear and tear, removal of the athletics track concrete edge strip is recommended as part of any future playing surface upgrade works. An alternate means of providing permanent athletics track line marking points of reference is to be included as part of concrete removal works. Relocation of athletics facilities is not supported in this master plan, however this could

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	4. Lighting improvements as part of a Multi Generation Project Plan (MGPP): Gisborne Soccer Club would support and contribute towards establishing a MGPP that would enable some of the urgent problems to be addressed as part of completing the master plan. Increasing lighting should be a priority that would also help address ground wear and draining issues by allowing us to use more of the facility at night during winter. Improved car park should also me part of a 1st generation execution. 5. This plan needs to provide for the needs of the community for the next 20, 30, 40 years. It's paramount that it's done properly. We are willing to work with the council to find a solution that works for everybody, think outside the box and look at what needs to be done to make it work for the whole community.	potentially be considered in the longer term (beyond the 20-year time frame for this master plan). Suggested club reconfiguration layout of facilities is not to scale and an athletics track and full sized soccer pitch would not fit in the area indicated. 4. The master plan includes lighting upgrades and improvements for soccer pitches. Council has committed funding in 2021/22 to undertake current urgent maintenance work on the existing soccer pitch lighting. The Dixon Field Master Plan will be used to inform and guide future projects at the reserve, not sure what purpose an additional plan would serve. 5. A reserve master plan is developed in collaboration with all stakeholders to ensure that appropriate facilities and spaces are provided to meet the current and future sporting and recreational needs for all users. Due to the changing aspirations and priorities of tenant clubs and the broader community, along with development pressures that come with these changes, it is necessary to review master plans over time.
20.	Please see my comments below in red, against the original comments provided from Environment 1. **Background documents** – please refer to Council's *Environment Strategy* and *Climate Change Action Plan*. It would be good to explicitly refer to council's commitment to achieve zero net emissions by 2030 which is included in	1. Review the following documents in reference to Dixon Field, and update master plan background documents as appropriate: - Macedon Ranges Strategic Environment Works Plan for Council-managed Waterway reserves in the Port Phillip and Westernport Catchment - Macedon Ranges Sustainable Design Policy 2021

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	the climate change action plan. Climate Change Action Plan Added. Please also include the Macedon ranges Strategic Environment Works Plan for Council-managed Waterway reserves in the Port Phillip and Westernport Catchment as it covers restoration of this section of Jackson creek (available on our website). Also include requirement to adhere to Councils sustainable design policy 2021. 2. **Long term Masterplan / Implementation Plan** – incorporate actions to help minimise emissions. We should be aiming for new or expanded facilities to be carbon neutral. This can include on-site power generation (solar panels) as well as energy efficiency building design. If this hasn't been factored into the costs, add $100k for sustainable design features. Ensure sustainable design requirements is noted in B2, C1 and D1 – have you allowed for this in costings? Add bike parking in D1.	2. Council's sustainable design policy 2021: - include requirement to adhere to this policy at B2, C1 and D1 - consider inclusion of bicycle parking in D1
21.	1. New soccer shed is missing from plan 2. CHMP/LUAA considered? 3. Does the wetlands take overflow from the carpark? May require increase in size to accommodate increase in surface water collection – Hydraulic assessment required. 4. It's a storm water catchment – does it have the capacity to take more water – from all new paved tennis courts and formalised car parks. 5. New toilets would mean the Dixon Field pavilion toilets are closed to public and only used/maintained by clubs. 6. Helipad controls are based at Gisborne office – relocating Helipad will require set up of controls to be allowed for in new Croquet/Tennis Pavilion – secure cupboard for Council FM staff to enter every month to conduct testing and maintenance. 7. No lighting shown on the Tennis Courts 8. No Car park lighting shown 9. Way finding lighting for walking paths?	1. New soccer shed is on the plan. 2. To be considered as part of detailed design when undertaking any works. 3. To be considered as part of detailed design work for this element. 4. To be considered as part of detailed design work for this element. 5. Dixon Field pavilion public toilets would remain as public toilets, and new toilets could be for club use. 6. To be considered as part of detailed design work for this element. 7. Include light towers on plan 8. Locations/inclusion to be considered as part of detailed design work for this element.

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	10. B2 tanks – are they just irrigation or CFA access required? Tanks are not accessible by road 11. Allowance for retaining walls or Fill for Croquet pitch as levels are different and 2 to 3m fall from one to the other 12. New social room extension is over top of tank and pump which will need to be relocated – not sure where to as not indicated on map 13. Oval 2 needs protection fencing at north end – will hit Council building 14. Pitch three needs Protection fencing to stop balls going into car park space at south end and creek on north end 15. Outdoor gym equipment missing from plan 16. Shotput nets overlap new croquet pitch and they do not integrate with the athletics area as hidden by trees. 17. Power supply upgrade from Powercor will be required to service everything 18. What are the two little white rectangles on pitch 2 at each corner? 19. Gap of grass between pitch 2 and B4 little pitch needs to be replaced with concrete – no point mowing between 20. Can pitch 2 be relocated to where pitch 3 is and reoriented and Pitch 3 can go in front of the offices – for kids and training – leaves more room for smaller pitch and the helipad could stay in more in vicinity of current location. 21. Council Office car parking – is this to be included in masterplan as when offices not in use the car parking can be utilised on weekends 22. The area between croquet club pitch and tennis /croquet pavilion – what is it as not o legend. 23. Doubtful VicRoads would allow controlled vehicular access at this location due to bend on road etc. 24. Tennis Courts 7&8, 9&10, 3&4 show little white boxes – are these shelters? 25. Tennis court numbering all over the place and needs to be more in order 26. Car parking allowances and space – has this been actually measured – parking north of courts 3&4 not enough space for	9. To be considered as part of detailed design work for this element. 10. These are irrigation tanks. 11. To be considered as part of detailed design work for this element. 12. To be considered as part of detailed design work for this element. 13. End of goal fencing has been included. 14. Pitch 3 is a junior pitch and end of goal fencing is deemed not necessary due to the existing usage and distance from other infrastructure, as well as fencing impeding on the open space nature of this area. 15. Any fitness equipment in this area would be at the end of its life, and should be removed given the recent installation of a fitness station further along Jacksons Creek in Aitken Reserve. 16. Review and update plan as required. 17. To be considered as part of detailed design when undertaking any works. 18. Possible future spectator seating 19. Agree if B4 is to become a synthetic surface area, otherwise this area could be mowed as part of the pitch mowing. 20. Unfortunately a full sized pitch will not fit in the suggested pitch 3 area. 21. Council office parking is outside the scope of this master plan. Council office car parking can continue to be used by user groups outside of office hours. 22. Labelled on plan as controlled vehicular access with pedestrian priority. 23. To be considered as part of detailed design work for this element. 24. Possible future spectator seating 25. Court numbering is the responsibility of the club and courts

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	these parking bays on both sides of the road. 27. Controls for tennis court lighting currently sits in new car park to west of court 3&4	have been labelled as per the club's current labelling. 26. To be considered as part of detailed design work for this element. 27. Location of new lighting control box to be included on the plan.