

Final Report

# Vegetation Management Plan for Bennett Road Development Plan, Gisborne, Victoria

Prepared for

**G2 Urban Planning**

February 2021



**Ecology and Heritage Partners Pty Ltd**

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# 1 INTRODUCTION

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## 1.1 Background

Ecology and Heritage Partners Pty Ltd was engaged by G2 Urban Planning to prepare a Vegetation Management Plan (VMP) for the waterway reserve within the land proposed for the Bennett Road Development Plan, Gisborne, Victoria.

The VMP has been prepared in response to Point 5 of the Request for Further Information (RFI) from Melbourne Water, dated 18 November 2019. Point 5 states:

*‘Vegetation Management Plan – even in concept form must be submitted to Melbourne Water for approval, outlining vegetation and weed control works within the waterway reserve’.*

Ecology and Heritage Partners Pty Ltd previously completed a Biodiversity Assessment of the study area in July 2019 (Ecology and Heritage Partners 2019). This investigation sought to identify flora and fauna values within the study area and any potential legislative and policy requirements associated with the development.

## 1.2 Vegetation Management Plan Objectives

The Vegetation Management Plan has been prepared for the waterway reserve that flows from the south-west to the north-east of the study area. This plan details:

- The native vegetation to be retained and protected within the waterway reserve;
- Information relating to mitigation, monitoring and control methods to be implemented to achieve ecologically appropriate on-going management of pest species within the waterway reserve; and,
- Measures to minimise the spread of noxious weeds from the waterway reserve to the rest of the study area.

## 2 EXISTING CONDITIONS

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### 2.1 Vegetation Condition

Previous and current assessments of native vegetation within the study area provide a snapshot of the existing conditions prior to the commencement of the proposed construction within the development area. All remnant native vegetation patches were previously assessed and described as part of the Biodiversity Assessment (Ecology and Heritage Partners Pty Ltd 2019) and have since been confirmed as part of the targeted spring flora surveys conducted by Ecology and Heritage Partners in November and December 2020, during an optimal surveying period for flora species.

The study area contains vegetation ranging from highly modified areas dominated by exotic vegetation (i.e. pasture grasses and invasive species) in poor condition, to relatively intact wetlands in moderate condition. The majority of the study area comprises pasture grasses, land used for agricultural purposes, planted windrows and ornamental plantings. However, the waterway that flows from the south-western corner to the north-eastern corner of the study area contains scattered Eucalypts in the southern extent, and patches of Plains Sedgy Wetland (EVC 647) of varying quality and Tall Marsh (EVC 821) throughout the creekline. There is also a linear patch of Plains Grassland Heavier-soils (EVC 132\_61) within the northern extent of the study area, and several small patches of Stony Knoll Shrubland (EVC 649) within the eastern extent (Figure 2).

#### 2.1.1 Native Vegetation within the Waterway Reserve

##### Plains Sedgy Wetland

The creek that runs through the southern and eastern extent of the study area contains native vegetation with the highest diversity and condition. Plains Sedgy Wetland is patchy along the creek alignment and ranges from moderate to low condition (Plate 1). Species such as Common Tussock-grass *Poa labillardierei*, Tall Rush *Juncus procerus*, Tall Sedge *Carex appressa* and Common Spike-sedge *Eleocharis acuta* were common throughout the patches of Plains Sedgy Wetland.

Grassy, herbaceous and woody weeds species were common throughout the creekline and within the patches of Plains Sedgy Wetland (Plate 2). Species such as Spiny Rush *Juncus acutus*, Toowoomba Canary-grass *Phalaris aquatica*, Cape Weed *Arctotheca calendula*, Ribwort *Plantago lanceolata*, Blackberry *Rubus fruticosus* spp. agg. and Gorse *Ulex europaeus* were common throughout the creekline (Plate 2).



**Plate 1.** Small patch of poor-quality Plains Sedgy Wetland along the creekline (Ecology and Heritage Partners Pty Ltd 02/11/2020).



**Plate 2.** Woody weeds, including Blackberry, are common along the creekline (Ecology and Heritage Partners Pty Ltd 02/11/2020).

### Tall Marsh

One patch of Tall Marsh is present along the edges of a dam within the southern extent of the study area. Sedges densely populate the inflow drain to the dam, and emergent vegetation is present in the centre and around the edges (Plate 3, Plate 4). Species present include Common Reed *Phragmites Australia*, Common Spike-sedge and Narrow-leaf Cumbungi *Typha domingensis*.



**Plate 3.** Patch of Tall Marsh around the dam in the southern extent of the study area (Ecology and Heritage Partners Pty Ltd 05/11/2020).



**Plate 4.** Patch of Tall Marsh around the dam in the southern extent of the study area (Ecology and Heritage Partners Pty Ltd 05/11/2020).

### Introduced and Planted Vegetation

Areas not supporting native vegetation within the creekline had a high coverage (>90%) of exotic and invasive species, including 12 species listed as noxious under the *Catchment and Land Protection Act 1994* (CaLP Act), four of which are also listed as Weeds of National Significance (WoNS); Blackberry *Rubus fruticosus* spp. agg., Gorse *Ulex europaeus*, Serrated Tussock *Nassella trichotoma* and Broom *Genista* spp (Plate 5; Plate 6; Plate 7). Many exotic grass species present have been direct-seeded for use as pasture. Disturbed areas along the creekline also had a high coverage of environmental weeds such as Toowoomba Canary-grass, Perennial Rye-

grass *Lolium perenne* and Yorkshire Fog *Holcus lanatus*. Exotic and invasive species recorded along the creekline are given below in Table 1.

Planted vegetation within and around the creekline consists of exotic and non-indigenous tree species, most commonly Radiata Pine *Pinus radiata* and Sugar Gum *Eucalyptus cladocalys* (Plate 8).



**Plate 5.** Large infestations of Gorse along the creekline (Ecology and Heritage Partners Pty Ltd 05/11/2020).



**Plate 6.** Exotic grass species are common along the creekline (Ecology and Heritage Partners Pty Ltd 05/11/2020).



**Plate 7.** Common weeds within the creekline, including Blackberry, Artichoke Thistle and Briar Rose (Ecology and Heritage Partners Pty Ltd 05/11/2020).



**Plate 8.** Planted Sugar Gum along the creekline (Ecology and Heritage Partners Pty Ltd 02/11/2020).

**Table 1.** Exotic and invasive species recorded along the creekline during the assessment

Scientific Name	Common Name	Status
<i>Agapanthus spp.</i>	Agapanthus	-
<i>Arctotheca calendula</i>	Cape weed	-
<i>Avena sativa</i>	Oat	-
<i>Betula pendula</i>	Silver Birch	-
<i>Brassica spp.</i>	Turnip	-
<i>Cirsium vulgare</i>	Spear Thistle	<b>C</b>
<i>Crataegus monogyna</i>	Hawthorn	<b>C</b>
<i>Cynara cardunculus subsp. flavescens</i>	Artichoke Thistle	<b>C</b>
<i>Dactylis glomerata</i>	Cocksfoot	-
<i>Echium plantagineum</i>	Paterson's Curse	<b>C</b>
<i>Galenia pubescens var. pubescens</i>	Galenia	-
<i>Genista spp.</i>	Broom	<b>*C</b>
<i>Holcus lanatus</i>	Yorkshire Fog	-
<i>Hypochaeris spp.</i>	Cat's Ear	-
<i>Juncus acutus subsp. acutus</i>	Spiny Rush	<b>C</b>
<i>Lolium perenne</i>	Perennial Rye-grass	-
<i>Malus pumila</i>	Apple	-
<i>Nassella trichotoma</i>	Serrated Tussock	<b>*C</b>
<i>Oxalis pes-caprae</i>	Soursob	<b>R</b>
<i>Paspalum dasypleurum</i>	Paspalum	-
<i>Phalaris aquatica</i>	Toowoomba Canary-grass	-
<i>Pinus radiata</i>	Radiata Pine	-
<i>Plantago lanceolata</i>	Ribwort	-
<i>Rosa rubiginosa</i>	Briar Rose	<b>C</b>
<i>Rubus fruticosus spp. agg.</i>	Blackberry	<b>*C</b>
<i>Rumex crispus</i>	Curled Dock	-
<i>Silybum marianum</i>	Variagated Thistle	<b>C</b>
<i>Sonchus oleraceus</i>	Common Sow-thistle	-
<i>Trifolium repens var. repens</i>	White Clover	-
<i>Ulex europaeus</i>	Gorse	<b>*C</b>

## 2.3 Fauna Habitat

Native and planted vegetation within the creekline is likely to provide habitat such as nesting/roosting areas, and protective habitat for mobile fauna species such as small birds and mammals. The creekline provides habitat for common frog species, and potentially for the nationally significant Growling Grass Frog *Litoria raniformis*.

## 3 VEGETATION MANAGEMENT PLAN

### 3.1 Summary of Management Priorities and Definitions

An overview of management issues and control priorities for the study area is provided below (Table 2). Priorities have been based on the following criteria:

#### 3.1.1 Control Priority

**High priority:** Issue poses a high level of threat to ecological values and needs to be addressed immediately and on a frequent basis.

**Medium priority:** Issue has a high to moderate threat level and needs to be addressed in the short-term or on a regular basis.

**Low priority:** Issue has a medium to low threat level, or low likelihood of occurrence, and needs to be addressed on an irregular basis.

**Table 2.** Summary of management issues within the site

Management Issue	Comments	Control Priority
Weeds (noxious and environmental)	<ul style="list-style-type: none"> <li>Adverse impacts on native flora and fauna habitat</li> <li>Impacts to ecosystem services</li> </ul>	High
Stock	<ul style="list-style-type: none"> <li>Impacts to native vegetation from overgrazing and pugging</li> <li>Soil degradation</li> </ul>	High
Degradation of native vegetation	<ul style="list-style-type: none"> <li>Loss of native vegetation extent</li> <li>Impacts to ecosystem services</li> <li>Increase of exotic weeds</li> <li>Impacts to native fauna</li> </ul>	High
Pest animals (rabbits, foxes, feral cats, domestic pets)	<ul style="list-style-type: none"> <li>Predation on native wildlife</li> <li>Impacts on soil and vegetation health</li> </ul>	Moderate

### 3.2 Overview of Key Threats

Several potential threatening ecological processes and management issues exist along the creekline, with details on the nature and extent of these are outlined below.

Management priorities (control priority and threat level) should be actively reviewed on an annual basis to allow for resources to be focussed towards management issues, which may arise throughout the duration of the construction phase of the development, and to reflect the success or otherwise of management works previously undertaken.

#### 3.2.1 Weeds

Several noxious and environmental weeds were recorded within the study area during the site assessment. In general, the creekline is in a degraded condition, with key factors such as historical land use (agriculture) facilitating weed invasion within the study area.

Weeds often out-compete and exclude native vegetation, leading to the deterioration in fauna habitats and ecological value. Declared noxious weeds in Victoria are plants proclaimed under the *Catchment and Land Protection Act 1994* (CaLP Act) because they cause environmental or economic harm or have the potential to cause such harm (DPI 2008).

It should be noted that all land managers/persons are required under the CaLP Act to prevent the growth and spread of a Regionally Controlled weed (C) for which they are responsible. Land managers that do not control Regionally Controlled weeds may be issued with a Land Management Notice or Directions notice that requires specific control work to be undertaken. Failure to comply with the conditions of a Notice may result in court action and fines or the issuing of an infringement notice and fine (DPI 2008).

There are no legal requirements to eradicate or control Restricted Weeds (R) growing on land; however, Restricted Weeds cannot be traded, transported or knowingly spread in Victoria. Sections 70, 70A and 71 of the CaLP Act for all declared noxious weeds, irrespective of category or region, prohibits the:

- Transport of a noxious weed or its propagules within Victoria; and
- Deposition on land of a noxious weed or its seeds (DPI 2008).

**Threat Level:**

- **High** – Rapidly spreading species with the potential for high ecological impacts.
- **Moderate** – Moderately spreading species with the potential for high ecological impacts.
- **Low** – Slow spreading species with the potential for high ecological impacts.

**Infestation level:**

- **High** – Weed infestation over large areas across the site.
- **Moderate** – Weed infestation over moderate areas on the site.
- **Low** – Localised weed infestation within the site.

### 3.2.2 Pest Animals

Pest animals listed under the CaLP Act are likely to occur within the study area, with one species (European Rabbit) recorded with the study area during the assessment. European Rabbit is the most notable pest species within the surrounds (i.e. within 10 kilometres of the study area) and is considered the most appropriate focus for pest control efforts. Impacts associated with domestic cats and foxes are also likely to become an issue once development is established on site.

### 3.2.3 Native Vegetation

Without active management, areas supporting native vegetation values may be degraded over time. The main management issue for protecting retained native vegetation is weed control. Unless weed levels are low, exotic species will need to be controlled. The risk of ongoing weed invasion can be reduced by minimising disturbance in areas of retained native vegetation. Factors which promote weeds infestations include native vegetation clearance, vehicle traffic, other soil disturbance, and storage of materials and dumping of waste materials.

### 3.3 Management Actions

The following management actions and performance measures are detailed below to protect and enhance the creekline and to ensure the long-term functionality of the site in the future.

It should be noted that all management issues relating to the construction phase of the development are not addressed in this report and should be addressed in a Construction Environmental Management Plan prepared by the relevant contractor. Land along the creek will be managed under this report which will be triggered by a subdivision planning permit condition.

#### 3.3.1 Weed Control

Annual, ongoing weed control is one of the primary management requirements along the creekline. The objective of weed control is to reduce weed populations to manageable levels. As with all weed control operations, it is important to establish native vegetative cover as soon as practicable within disturbed areas to prevent establishment of exotic species. It is also important that only an experienced contractor undertakes weed control works within areas of higher quality native vegetation. Licensed weed control contractors should make appropriate decisions on which technique to use based on individual situations. Contractors will also need to be aware of the potential for new outbreaks of weed species not recorded in this assessment and implement appropriate weed control techniques as necessary.

A list of priority weeds that require control within the creekline (Figure 3) and their current level of threat are listed in Table 3.

Areas comprising patches of native vegetation are under continual pressure from weed emergence from seed storage within the soil and weed invasion from adjoining areas (edge effects). Several management techniques are recommended to control weeds, including physical removal, brush cutting and herbicide application. In most cases, herbicide will only be applied to weeds by using the spot-spraying technique, to prevent death or damage to non-target species. Weed control works should seek to eliminate all declared noxious weeds and woody weeds recorded along the creekline and at a minimum reduce the cover and abundance of all other weed species. A summary of weed management techniques for priority weeds and woody weeds is provided in Table 3. Various weed control techniques are outlined in Appendix 1.

#### Actions

- Undertake weed control works prior to the weeds flowering and setting seed or spreading;
- Eliminate all listed noxious weeds, WONS and other woody weeds;
- Undertake weed control with sensitivity to indigenous species also present, particularly indigenous grass species;
- Where appropriate, promote persistence and expansion of indigenous species populations; and,
- Monitor for the occurrence of new weeds or the further spread of current weeds.

#### Performance Indicators

Key performance indicators for weed management include:

- Meeting the requirements of the CaLP Act in relation to control of listed noxious weeds within the study area;

- No new significant weed invasions occur in the study area;
- Control (<5% cover) High threat weeds and woody weeds;
- Reduce cover of Moderate threat weeds to <10%; and,
- No increase in the cover of Low threat weeds within the study area.

**Table 3.** Priority weeds recorded within the study area and recommended control

Scientific Name	Common Name	Weed Classification	Current Threat Level	Extent of Infestation	Control Priority	Timing	Control Method
<i>Cirsium vulgare</i>	Spear Thistle	R Herbaceous	Low	Low	Low	Spring/Summer	SS/HP
<i>Crataegus monogyna</i>	Hawthorn	C Woody	High	High	High	Spring/Summer	MR/CP
<i>Cynara cardunculus</i> subsp. <i>flavescens</i>	Artichoke Thistle	C Herbaceous	High	High	High	Spring/Summer	SS/HP
<i>Echium plantagineum</i>	Paterson's Curse	C Herbaceous	Low	Low	Low	All year	SS/HP
<i>Genista</i> sp.	Broom	C Woody	Low	Low	Low	Spring/Summer	MR/CP
<i>Nassella trichotoma</i>	Serrated Tussock	C Herbaceous	High	Low	Moderate	Winter/Spring/ Summer	SS/HP
<i>Rosa rubiginosa</i>	Briar Rose	C Woody	Low	Low	Moderate	Spring/Summer/ Autumn	MR/CP
<i>Rubus fruticosus</i> spp. <i>agg.</i>	Blackberry	C Woody	High	High	High	Spring/Summer/ Autumn	MR/CP
<i>Silybum marianum</i>	Variegated Thistle	C Herbaceous	Low	Low	Low	Spring/Summer	SS/HP
<i>Ulex europaeus</i>	Gorse	C Woody	Moderate	Moderate	Moderate	All year	MR/CP

**Note.** Weed Classification = Noxious weed classification within the Port Phillip & Westernport CMA under the CaLP Act, C = Regionally controlled weed, R = Restricted Weed. SS = Spot Spray. HP = Hand Pull. MR = Mechanical Removal. CP = Cut and Paint

### 3.3.2 Pest Animal Management

All domestic animals such as cats and dogs should be fed in an inside area to ensure that the food is not scavenged by pest animals.

Several pest animals listed under the CaLP Act are likely to occur within the study area. The removal of pest animal harbours (such as hard rubbish, stockpiles of building materials and woody weed infestations) is a very important aspect of pest animal control. The management procedures detailed below should be incorporated into the management strategy for the site. Table 4 provides an evaluation of management measures commonly adopted to control European Rabbits in Victoria.

**Table 4.** Feasibility assessment of European Rabbit control methods

Method	Feasibility
Warren fumigation	<b>Low</b> – The site inspection identified very little evidence of warrens across the site, with rabbits likely to be harbouring in woody weeds, debris and the cover provided by indigenous trees and shrubs. In the event that significant warren networks become established, this method is considered suitable for control.
Long netting and night netting	<b>High</b> – Night netting is an effective method, particularly in situations where rabbits are leaving bushland harbour to feed in areas of open space.
Warren ripping	<b>Low</b> – As above. In order to avoid impacts on native vegetation communities, ripping would be constrained to areas of exotic grassland and other non-native vegetation.
Baiting (Pindone)	<b>Low</b> – Although an antidote exists for domestic pets which have ingested Pindone (Vitamin K1), the risks associated with the poisoning of domestic and native animals is considered unreasonable. Additionally, consultation with qualified pest controllers indicated that Pindone poisoning may not be successful, as rabbits are unlikely to feed on introduced bait if an abundance of existing food sources are present.

#### Timing of Rabbit control

European Rabbits commence breeding in autumn and continue until vegetation dries off, which generally occurs in early summer. Rabbit mortality is particularly high during summer months due to disease, lack of food and water, and high temperatures. Late summer and early autumn is therefore the best time to control rabbits as populations are naturally low.

#### Preferred control methods

The ongoing replacement of woody weeds (particularly *Pittosporum*) with indigenous plantings is considered the primary method of reducing rabbit populations. It is recommended that weeded areas are revegetated as soon as practically possible to reduce rabbits from establishing warrens within the clearings.

The feasibility assessment of control measures summarised in Table 4 indicate that night netting is the most appropriate method for actively controlling rabbits. This method avoids the use of poisons and is effective in situations where few warrens exist or where they are in areas of dense vegetation. Depending on the level of infestation, the removal of woody weeds may be enough to maintain sustainable rabbit levels in the long-term (assuming ongoing monitoring for warren establishment).

#### General Pest Animal Management Actions

- Continually monitor for the presence of pest animal fauna; and
- Where appropriate, undertake preferred control methods as summarised above.

#### General Pest Animal Performance Indicators

Key performance indicators for pest animal management include:

- Meeting the requirements of the CaLP Act in relation to the control of listed pest animals within the study area;
- Presence of pest fauna does not increase above baseline levels of occurrence;
- Achieving control of key fauna species within the study area within the specified management timeframe; and
- No new significant pest fauna invasions occur in the study area.

### 3.4 Timeframes and Priorities

The VMP should be activated at the civil construction phase for the development. This will be addressed by a planning permit condition on subdivision permits for adjoining land. This will ensure that there will be appropriate vegetation management along the water course. The timing of the management actions outlined within this report is key to the successful management of the vegetation within the site into the future.

At this time, the project is still in the project planning, however all land managers/persons are required under the CaLP Act to prevent the growth and spread of a Regionally Controlled weed (C) for which they are responsible. Therefore, weed control responsibilities are triggered at the time on property acquisition. The VMP is to be implemented immediately by the developer in vegetated areas yet to be developed on the site.

All technical on-ground works (i.e. pest animal and weed control) will require the input or services of suitably qualified and experienced contractors.

Management priorities should be undertaken in accordance with the definition and timings provided in Table 3, Management priorities (control priority and threat level) should be actively reviewed every year to allow for resources to be focussed towards management issues that may arise throughout the duration of the construction phase of the development and to reflect the success or otherwise of management works previously undertaken.

### 3.5 Monitoring

Monitoring of weed infestations and pest animal populations is required to evaluate the success of management actions and to allow for any modifications. The frequency of weed monitoring may need to vary to allow for seasonal variations and periods of active weed growth. Similarly, pest animal monitoring should be undertaken at a time of year when target species are most active.

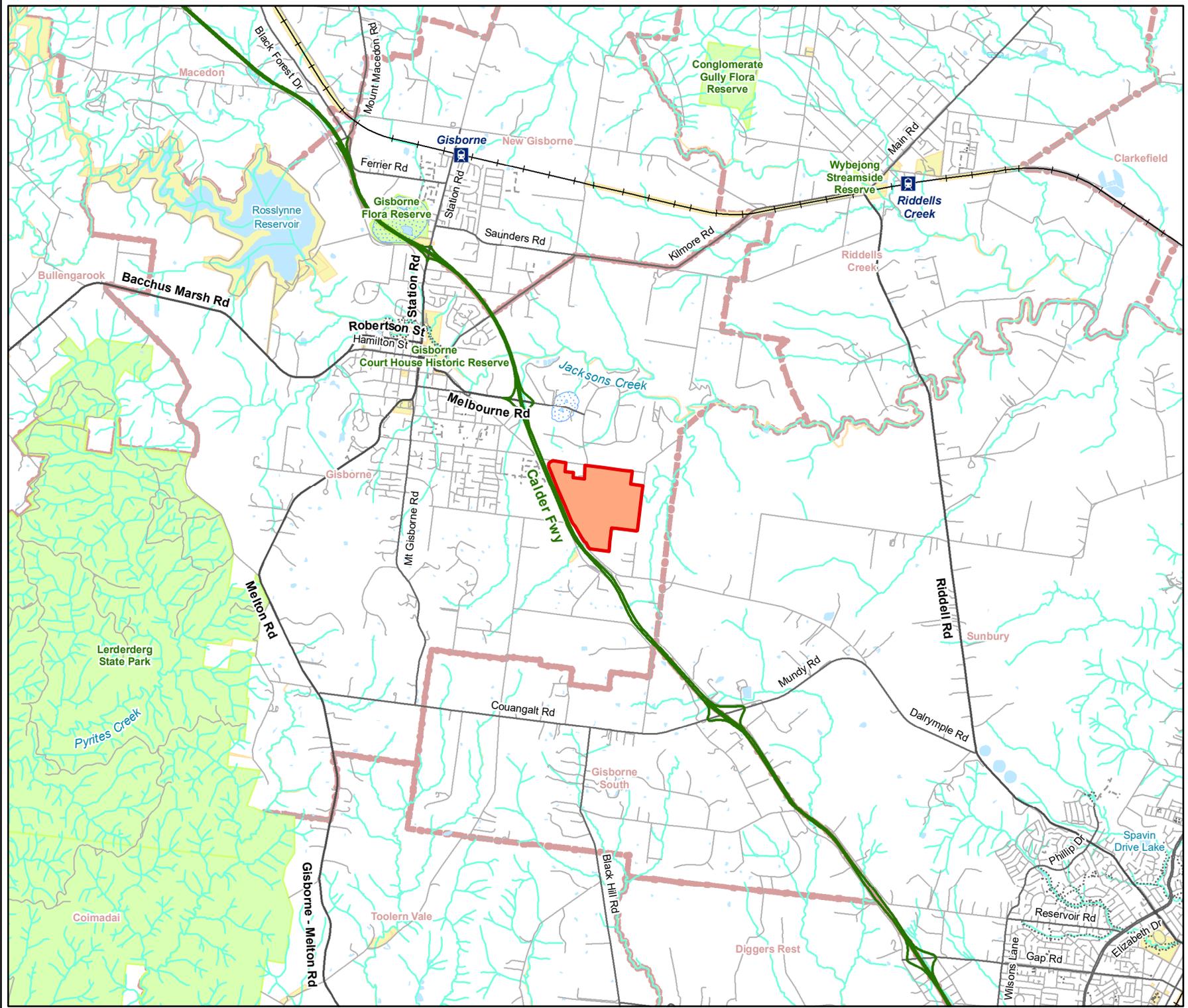
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## FIGURES

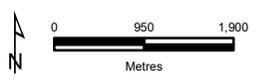
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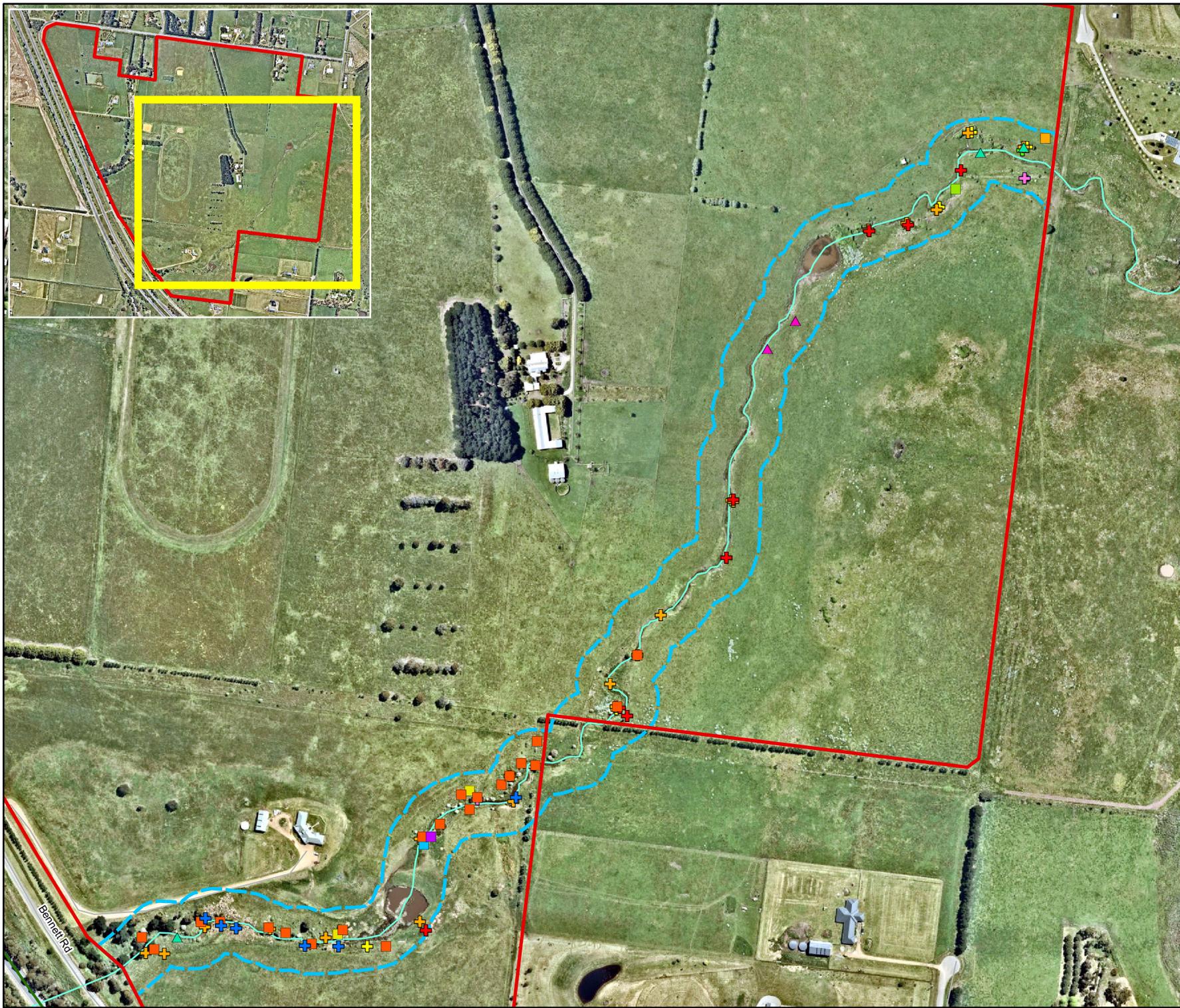
- Legend**
- Study Area
  - Railway
  - Freeway
  - Major Road
  - Collector Road
  - Minor Road
  - Proposed Road
  - Walking Track
  - Minor Watercourse
  - Permanent Waterbody
  - Land Subject to Inundation
  - Parks and Reserves
  - Crown Land
  - Localities



**Figure 1**  
**Location of the study area**  
*Vegetation Management Plan,  
 Bennett Road Development  
 Plan, Gisborne*

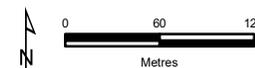


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- Legend**
- Study Area
  - 30m creek buffer
- Weeds**
- + Apple Tree
  - + Artichoke Thistle
  - + Blackberry
  - + Briar Rose
  - + Broom
  - + Gorse
  - Hawthorn
  - Patersons Curse
  - Serrated Tussock
  - Slender Thistle
  - Soursob
  - Sow Thistle
  - ▲ Spear Thistle
  - ▲ Variegated Thistle

**Figure 2**  
**Vegetation Management Plan**  
*Bennett Road Development Plan, Gisborne*



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## APPENDIX 1 WEED CONTROL MEASURES

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Weed control measures identified in Table 2 are described in detail below. Weed control measures (including type of herbicide) should follow the guidance of an experienced contractor for the control of the weed species identified above.

### **Spot spraying**

The application of herbicides is an effective and efficient control technique for a range of woody, herbaceous and grass weeds. The correct use and application of herbicides can provide targeted control of a range of species; however it must be stressed all use of herbicides must be used in accordance with the manufacturer's specifications and occupational health and safety policies.

Application methods for herbicides include spot spraying with a knapsack for small or sensitive areas, or for targeted species. Dabbing of species with foam tipped application device, with the herbicide applied from an attached bottle, should be used in sensitive areas or in areas where weed control is targeted to a small number of plants, especially bulbs or tuberous plants.

Timing of intervals, plant age and growth seasons, plant stress levels and climatic factors all need to be considered when develop methodologies for the application of herbicides to ensure successful outcomes. Problems exist with ongoing unsuccessful herbicide treatments, which may result in weeds developing herbicide resistance, or the build-up of chemicals in the soil. Surrounding plants' susceptibility to herbicides and ongoing uses of the treated areas should also be considered when choosing the right herbicide to be used in a weed control program, as some herbicides are residual and may persist within the soil for varying durations.

### **Drill and Fill**

Drill and fill, also known as direct injection, is a method where the selected herbicide (usually Glyphosate) is injected through a device into a hole that has been made into the targeted plant (i.e. woody species). The hole is usually made through the use of a drill but sometimes a tomahawk or saw may be used to put small nicks into the targeted plant. It is essential that the hole or nick must always be lower than the first branch containing foliage (i.e. ideally, the lowest possible point on the plant) and also the herbicide is applied into the hole as quick as possible. The general rule of thumb is that the herbicide must be applied within 30 seconds. Holes are scattered around the main trunk at 50 millimetre intervals, depending on the diameter of the trunk and also branches or angle of the trunk. It is essential that a complete ring around the trunk of the plant be made of this herbicide filled holes to ensure plant death, as large gaps may allow sections of the target tree to survive. Generally, the holes or nicks do not need to be deeper than 20 millimetres but do need to be deep enough to penetrate the outer cambium layer of the tree. This allows the phloem to carry the herbicide into the roots, which will kill the plant over several weeks, depending on conditions.

The benefits of this method include: the retention of standing material for habitat, no costs for the removal of the plant from the site; no dragging of material across sensitive areas; and, speed, as the method is fast to execute (i.e. drill and fill and move on).

The drawbacks of this method are that if it is not executed correctly, trees may re-grow, particularly as accessing the base of the trunk of spiny plants such as Hawthorn and African Box-thorn can be difficult.

However, if the application is successful, dead standing vegetation can become a fire hazard and look aesthetically displeasing to the community.

### **Cut and Paint**

The cut and paint method of control requires the cutting of the target species at the very base, under any foliage, and the immediate application of herbicide (usually a glyphosate, dependent on the target species). The application can be done through a 'dabber' bottle or paint brush. Care should be undertaken during application, to avoid splash of herbicide causing non-target damage. Once cut down, the biomass of the target species may sometimes be left on the ground, but usually requires removal. This is particularly necessary if it bears fertile seeds or has the potential to re-shoot from contact with moist ground (i.e. *Salix* sp.) or covers native vegetation.

Many herbicides are available that are very effective in the control of woody weed species. Typically, these herbicides are applied to the stem, trunk or roots of the target plant by 'drill and fill', 'cut and paint' or 'frilling' methods of application. These herbicides can be more effective than manual removal alone, as the chance of the plant re-sprouting is significantly reduced.

### **Manual Removal/Hand pulling**

Some weed species are resilient against other methods of eradication, such as herbicides, and should be targeted by manual removal. Infestations of species such as African Box-thorn, Fennel, Serrated Tussock and Toowoomba Canary-grass should be combated by manual removal techniques.

Additionally, manual removal is a crucial technique when used in conjunction with herbicides for the control of both woody and herbaceous weed species. This combination of weed eradication is advised for almost all weed species.