

# **Native Vegetation and Biodiversity Impact Assessment of Western Irrigation Network works for "Oak Park" (315 Sharkey Road) at Balliang East within City of Greater Geelong**

**March 2021**



## Documentation

<b>Report Title</b>	Native Vegetation and Biodiversity Impact Assessment of Western Irrigation Network works for "Oak Park" at Balliang East within City of Greater Geelong
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## Introduction

### Project Description

The Western Water WIN (Western Irrigation Network) project includes working with rural landholders in developing on farm irrigation plans. Much of this involves determining suitable areas for placement of Centre Pivot irrigation for reuse irrigation and developing a suitable long-term concept plan for the landholders.

"Oak Park" property (hereafter called site) at Sharkeys Road Balliang East is owned by Chris Sharkey in Balliang East in City of Greater Geelong. It is a broad-acre cropping and sheep-grazing enterprise and has been identified as suitable for a WIN project. This site has a number of scattered trees and small tree clumps which are likely to be protected through local, state and commonwealth legislation.

The site falls into two Local Government Areas - The City of Greater Geelong and Moorabool Shire. Balliang Creek dissects the property north-south, with the property on the eastern side of the creek being within The City of Greater Geelong, and the western side being in Moorabool Shire. For this reason, two Vegetation and Biodiversity Impact Assessments have been completed - one for each Local Government Area.

Tree Wishes has been engaged to assist Western Water with regard to vegetation and biodiversity planning matters for this WIN project for this site.



**Figure 1.** Originally plains grassland, now the site carries extensive croplands with occasional scattered trees. Some of the background trees are remnants of a plains woodland community.

## Study Area

Variable/Constant	Description
Location	315 Sharkey Road, Balliang East
General Description of the Land	Volcanic plains cropping and grazing land with a broad creek valley
Aspect	Flat
Municipality	Moorabool Shire Council and the City of Greater Geelong
Planning Zones	Farming Zone (FZ)
Overlays	<p><b>City of Greater Geelong</b></p> <p>Environmental Significance Overlay - Schedule 4</p> <p><b>Moorabool Shire</b></p> <p>Design And Development Overlay - Schedule 2</p> <p>Environmental Significance Overlay - Schedule 2</p> <p>Environmental Significance Overlay - Schedule 7</p>
Bioregion	Victorian Volcanic Plains (VVP)

## Scope of Assessment

The objective of this report is to provide native vegetation and biodiversity planning advice to Western Water on the development of a WIN this site. The following steps were undertaken to determine the implications of the proposed works:

1. A detailed desktop review of existing databases including *Natureshare* databases, DELWP modelling, NVIM, Council sources and the Victorian Biodiversity Atlas.
2. A site visit to survey tree, native vegetation and biodiversity features (verify desktop research).
3. A report providing advice on landholder obligations/options with regard to biodiversity appropriate development on site.

## Environmental Planning Context

### Commonwealth legislation

#### *Environment Protection and Biodiversity Conservation Act 1999*

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) applies to sites where proposed developments or projects may have a significant impact on matters of National Environmental Significance (NES). There are currently seven matters of National Environmental Significance:

- World Heritage properties
- National Heritage places
- Nationally listed threatened species and ecological communities
- Listed migratory species
- Ramsar wetlands of international importance
- Commonwealth marine areas
- Nuclear actions (including uranium mining).

Under the EPBC Act, a proponent must refer proposed actions that may have a significant impact on matters of national environmental significance to the Australian Government Environment Minister (or delegate).

### State legislation

#### *Planning and Environment Act 1987*

Since 1989, a planning permit from City of Greater Geelong Council is required for proposals to remove, destroy or lop native vegetation on land greater than 0.4 hectares. In some instances, exemptions to the planning permit requirement can apply and are outlined in Clause 52.17 of the Victorian Planning Provisions, under the Planning and Environment Act 1987.

#### Guidelines for the removal, destruction or lopping of native vegetation 2017

The purpose of the Guidelines is to set out, and describe the application of Victoria's statewide policy in relation to assessing and compensating for the removal of native vegetation. This includes:

- the assessment of impacts from removing native vegetation on biodiversity and other values; and

- how offsets are calculated and established to compensate for the loss in biodiversity value from the removal of native vegetation.

Assessments of native vegetation are conducted using the Native Vegetation Information Management system (NVIM), which has been used to produce a Native Vegetation Removal Report for this site. NVIM is an online tool to access Victoria's native vegetation information. The tool is designed for accessing the information and generating reports required to apply for a permit to remove native vegetation using Victoria's permitted clearing regulations (Clause 52.16 and Clause 52.17 of the Victoria Planning Provisions).

The tool generates a report that can be submitted with an application for a permit to remove native vegetation. The tool also determines what assessment pathway an application will follow. The assessment pathway for an application to remove native vegetation reflects its potential impact on biodiversity and is determined from the location and extent of the native vegetation to be removed. The three assessment pathways are:

- Basic – limited impacts on biodiversity.
- Intermediate – could impact on large trees, endangered EVC, and sensitive wetlands and coastal areas.
- Detailed – could impact on large trees, endangered EVC, sensitive wetlands and coastal areas, and could significantly impact on habitat for rare or threatened species.

### *Flora and Fauna Guarantee Act 1988*

The Flora and Fauna Guarantee Act 1988 (FFG Act) is the key piece of Victorian legislation for the conservation of threatened species and communities, protected flora and fauna and for the management of potentially threatening processes.

Threatened species and vegetation communities are listed under the FFG Act and action statements are prepared for each listed item, which provides background information, reasons for decline and current threats, as well as management actions. Protected flora species are not threatened but require protection for other reasons. For example, highly sought-after species such as ferns, orchids and grass trees are protected to control their removal in the wild.

Proposed works or activities on public land which may kill, injure or disturb threatened or protected flora species require a Protected Flora License or Permit from DELWP. Proponents are required to apply for an FFG Act permit to 'take' listed and/or protected flora species and listed vegetation communities in areas of public land (i.e. within road reserves). An FFG Act permit is generally not required for removal of listed and/or protected flora species and communities on private land.

## Local legislation

- This site lies within City of Greater Geelong local government area (LGA).
- Explicit within the planning scheme for this LGA is the aim to avoid the removal, destruction or lopping of native vegetation.
- The removal of native vegetation within this LGA requires a permit application through the Clause 52.17 of the Planning Scheme whereby a permit is required to "remove, destroy or lop native vegetation, including dead native vegetation".
- A permit for the removal of the vegetation may also be required in planning schemes with vegetation relevant specifications of overlays. This site carries the following such overlays:
  - The Environmental Significance Overlay Schedule 4 (ESO4) termed *Grasslands within the Werribee Plains Hinterland* covers the entire site except for the creekline.
    - Under ESO4 a permit applies only for native vegetation
- City of Greater Geelong Planning Scheme carries legislation through both clause and overlays that aims to protect native vegetation. The removal of native vegetation will require an application through the planning scheme that addresses this legislation.

## Site Environmental Descriptions

### General

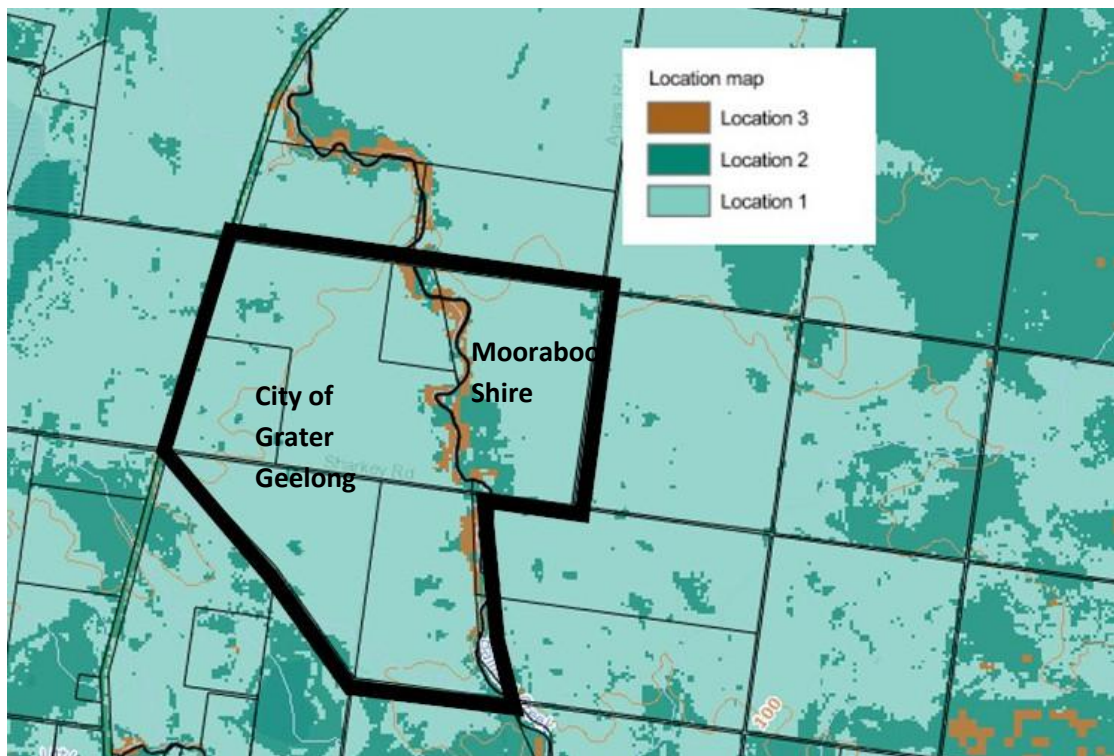
- The property rests in a broad-acre grazing and cropping landscape. As a result of this history, the vast majority of the original native vegetation has been cleared.
- Remnant trees and woodland communities remain in the non-arable parts such as rocky rises, creek valleys or in the corners of paddocks.
- There is great value in conserving these few remnants and encouraging natural regeneration and connectivity through property layout design and revegetation.
- Some planted native trees exist as shelter or other amenity features across the paddocks.

## Desktop modelling

- The Australian Government Department of Agriculture, Water and the Environment EPBC Act Protected Matters Report revealed that the listed communities:
  - Natural Temperate Grasslands of Victorian Volcanic Plain is likely to occur within this site, and
  - Grey Box (*Eucalyptus microcarpa*) Grassy Woodland and Derived Native Grasslands of South-eastern Australia may occur within this site.

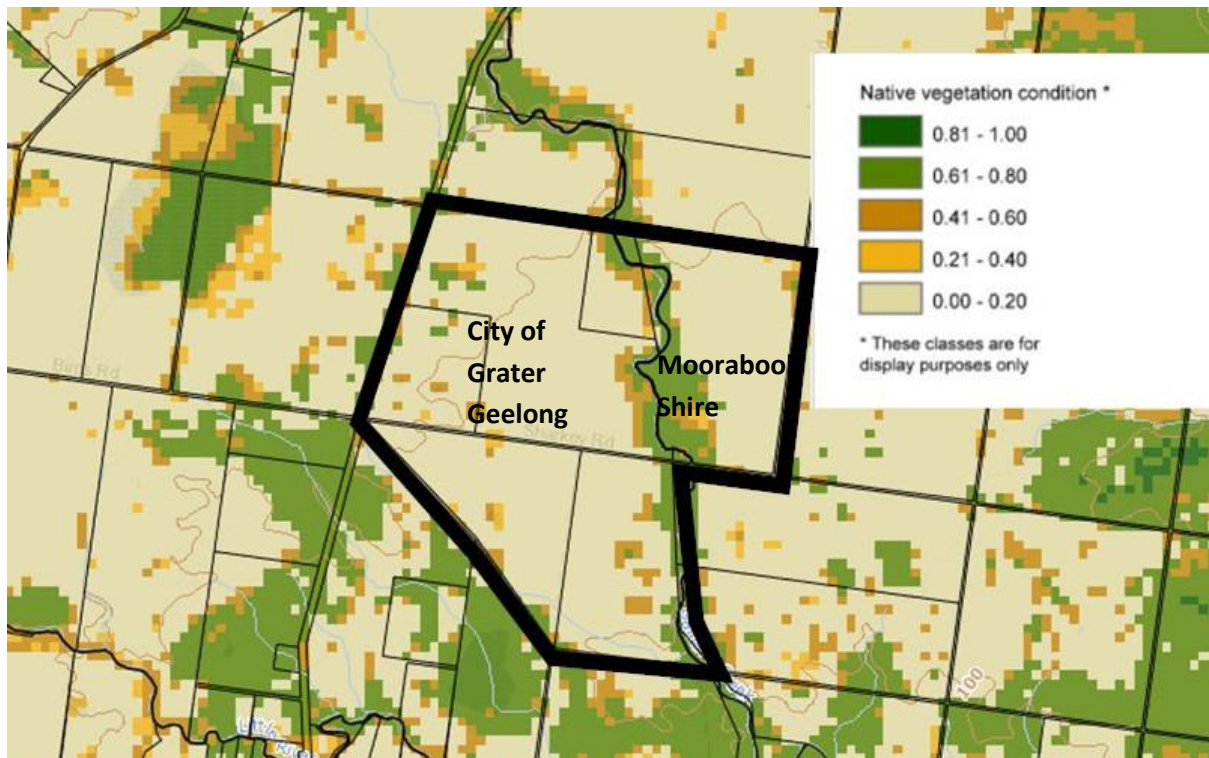


- The Victorian Government's DELWP *Naturekit* website (<http://maps.biodiversity.vic.gov.au/viewer/?viewer=NatureKitgovernment>) indicated that the pre-1750 vegetation system across this site and much of the broader plains landscape was almost entirely composed of Low-rainfall Plains Grassland Ecological Vegetation Class (EVC 132\_63). This was largely a treeless vegetation system dominated by medium height graminoids (grass-like plants) and chenopods (saltbushes).
- According to NVIM mapping, shown in Figure 2 below, most of the property is within Location 1, with smaller portions toward the Balliang Creek valley within Location 2 and Location 3.



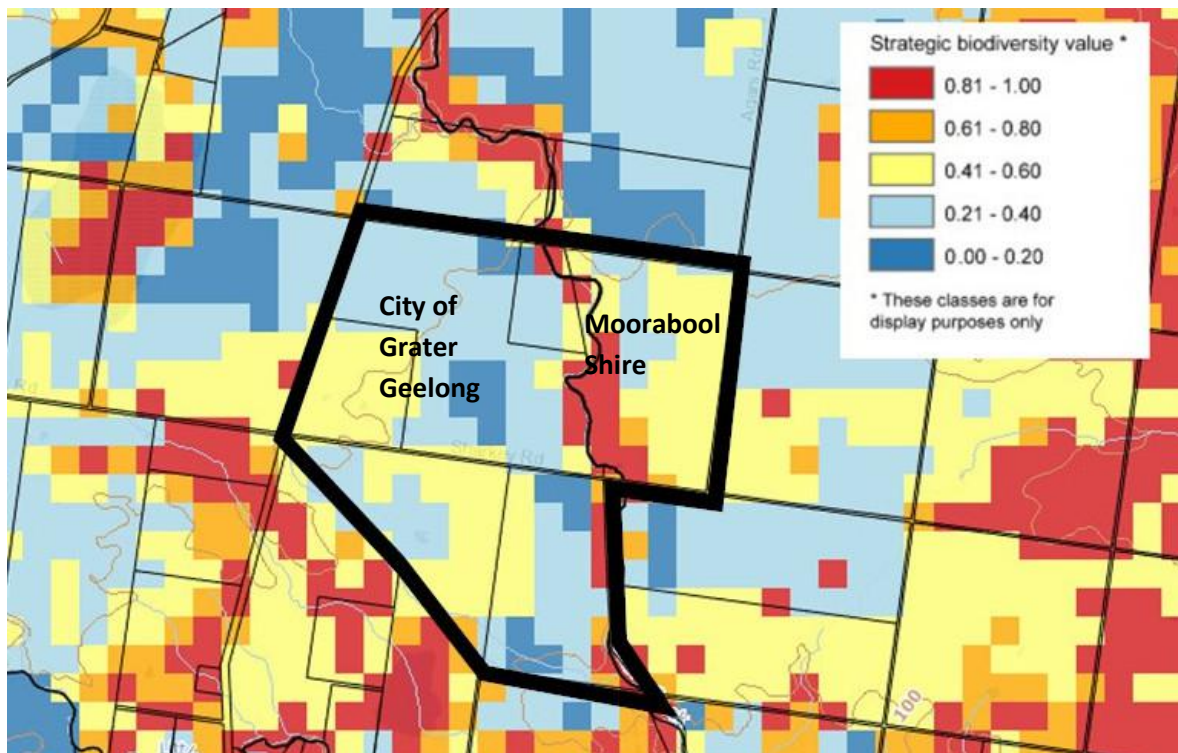
**Figure 2.** Location categories across the site as according to DELWP's NVIM.

- According to NVIM mapping, shown in Figure 3 below, most of the property carries native vegetation of near zero condition (0.00 – 0.20), with the valley environs carrying vegetation of increasingly higher values up to 0.61 – 0.80.



**Figure 3.** Native vegetation condition across the site as according to DELWP's NVIM.

- According to NVIM mapping, shown in Figure 4 below, most of the property carries strategic biodiversity values of 0.21 - 0.60, with the valley environs carrying vegetation of increasingly higher values up to 1.00.



**Figure 4.** Strategic Biodiversity Value across the site as according to DELWP's NVIM.

## Definitive

- The vast majority of the site is cleared of native vegetation.
- Surveying the site has confirmed that EVC 132\_63 was likely to be the common pre-1750 EVC. The presence, however, of *Eucalyptus microcarpa*, *Eucalyptus camaldulensis*, *Eucalyptus leucoxylon* and *Allocasuarina luehmannii* across the site and adjoining roadsides and properties indicates that the EVC 803 Plains Woodland was also part of the mosaic of plains grassland and plains woodland vegetation patterns.
- The site carries remnant patches and scattered trees from both EVC 132\_63 and 803. Approximately 13.4 hectares of EVC exists across this site (according to *Naturekit* modelling).
- Some of the native vegetation patches may correspond (depending on size and condition thresholds) with the Natural Temperate Grasslands of Victorian Volcanic Plain and the Grey Box (*Eucalyptus microcarpa*) Grassy Woodland commonwealth-listed communities.
- These patches and scattered trees reflect the NVIM modelling for native vegetation condition and strategic biodiversity value, in that the quality is higher nearer the Balliang Creek valley.

## Proposed Impacts on Native Vegetation

### Direct Impacts

Direct impacts will occur from the removal of vegetation in order to install the irrigation infrastructure.

- Five centre pivot irrigation systems will be installed across the 406 hectares of the property (in both the City of Greater Geelong and the Moorabool Shire).
- This proposal will unavoidably remove one *Eucalyptus microcarpa* (Grey Box) tree and two singleton *Melicytus dentata* (Tree Violet) understorey shrubs within the City of Greater Geelong. This tree is native and considered a scattered tree and the shrubs are regarded as patches of remnant native vegetation (rnv).
- The tree is semi-mature with a Diameter at Breast Height (DBH) measurement of 39.4 cm.
- The shrubs are mature with an approximate cover of 5 sq. m. each.
- NVIM tool measures the combined area of impact for the loss of one tree and two patches as 0.033 hectares.
- Figure 5 shows the location of these impacts as standing separate from other nearby scattered trees at the edge area between the cropped paddocks and the broader creek valley and adjoining stony ground.
- All other native vegetation including along the creek valley will avoid impact. The pipeline infrastructure will be installed to avoid all native trees and vegetation. A 15m protection zone will be applied to native vegetation.

## Indirect Impacts

Indirect impacts are as a result of recycled water, particularly nutrients on native vegetation.

- Run-off of irrigation water has the potential to impact native vegetation, by increasing nutrient loads. The likely impact is higher weed growth, and potentially death of native trees and shrubs which cannot tolerate the nutrient load.
- It is not expected that there will be any indirect impacts associated as part of the project.
- Irrigation water must be contained to the irrigation area, and run-off from irrigation water is not permitted. Pivot irrigation is best practise irrigation method for managing run-off.
- The risk of pipe leakages or failure are low, and systems are in place the monitor water flow, which will cause an alert leading to quick action to stop the flow.





**Figure 6.** Tree A is a semi mature *Eucalyptus microcarpa* (Grey Box) tree, unavoidably proposed for removal to allow the centre point irrigation pivot.



**Figure 7.** Patch 1 is a single *Melicytus dentata* (Tree Violet) shrub, self-sown among the rock pile in the cropping paddock.



**Figure 8.** Patch 2 like Patch 1 is represented by a single *Melicytus dentata* (Tree Violet) shrub, self-sown among the rock pile in the cropping paddock. It is in the shrub cluster to the right here, most of which is *Lycium ferocissimum* (African Boxthorn). The image shows the modified cropping environment across this site. The trees in the middle ground to the left are not impacted upon.

### Commonwealth legislation

#### *Environment Protection and Biodiversity Conservation Act 1999*

##### Listed Communities

While the impacted *Eucalyptus microcarpa* (Grey Box) tree can form part of the EPBC Act listed Grey Box (*Eucalyptus microcarpa*) Grassy Woodland and Derived Native Grasslands of South-eastern Australia (GBGW) threatened ecological community, the two impacted trees have been assessed as scattered trees not forming a patch of native vegetation. The quality and condition of vegetation containing the two impacted Buloke trees does meet the size or condition thresholds specified in the guidelines / listing criteria for the GBGW threatened ecological community. As identified in the Commonwealth guidelines to assessing these communities (DSEWPC, 2011) conditions provided are intended to focus protection on vegetation remnants that are most functional and in relatively good to excellent condition. As scattered trees and shrubs this vegetation cannot be considered as most functional as it lies within a cleared, ploughed and cropped landscape.

Furthermore, the impact area, importantly, is confined to 0.033 hectares, below the 0.500 ha threshold for woodland for quality. Additionally, the majority of the 13.4 hectares of rnv is being retained. Indeed an approximate retain to remove ratio is 400:1.

**Action required:** No referral required.

### State legislation

*Planning and Environment Act 1987*

#### Impact metrics

The NVIM tool assesses the impacts as occurring across 0.033 hectares of Location 1 category native vegetation. Two large trees are impacted upon and this requires a basic assessment pathway approach to the applying to remove native vegetation.

#### Minimisation

Ground surveys and discussions with Western Water staff and consultants were undertaken with regard to minimising impacts. Several large remnant eucalypts to the south and south-east of the site were initially proposed to be impacted upon. These were able to be avoided after the process of 'workshopping for minimisation'.

#### Offsets

The official offset requirement for these proposed losses is 0.008 general biodiversity units. This will be obtained through third-party sources and the quote is attached in Appendix B.

#### **Action required:**

1. A NVRR is required. This is attached to this report as Appendix A.
2. An offset quote is provided in Appendix B.

### *Flora and Fauna Guarantee Act 1988*

The two communities of Western (Basalt) Plains Grassland and Grey Box – Buloke Grassy Woodland, along with the species *Allocasuarina luehmannii* (Buloke) are all listed as threatened under this FFG Act. There is no impact proposed to communities of listed vegetation because the impacts are confined to scattered tree and not patches of native vegetation (i.e. sub-threshold for quality). Additionally, the works are on private land and the losses are confined to private land.

#### **Action required:**

None required - No permit is required to remove FFG listed communities because there are no patches of communities impacted. Permits are generally not required for impacts on private land, therefore, no permit is required as the impacts are confined to private land.

## Local legislation

### ESO4 - Grasslands within the Werribee Plains Hinterland

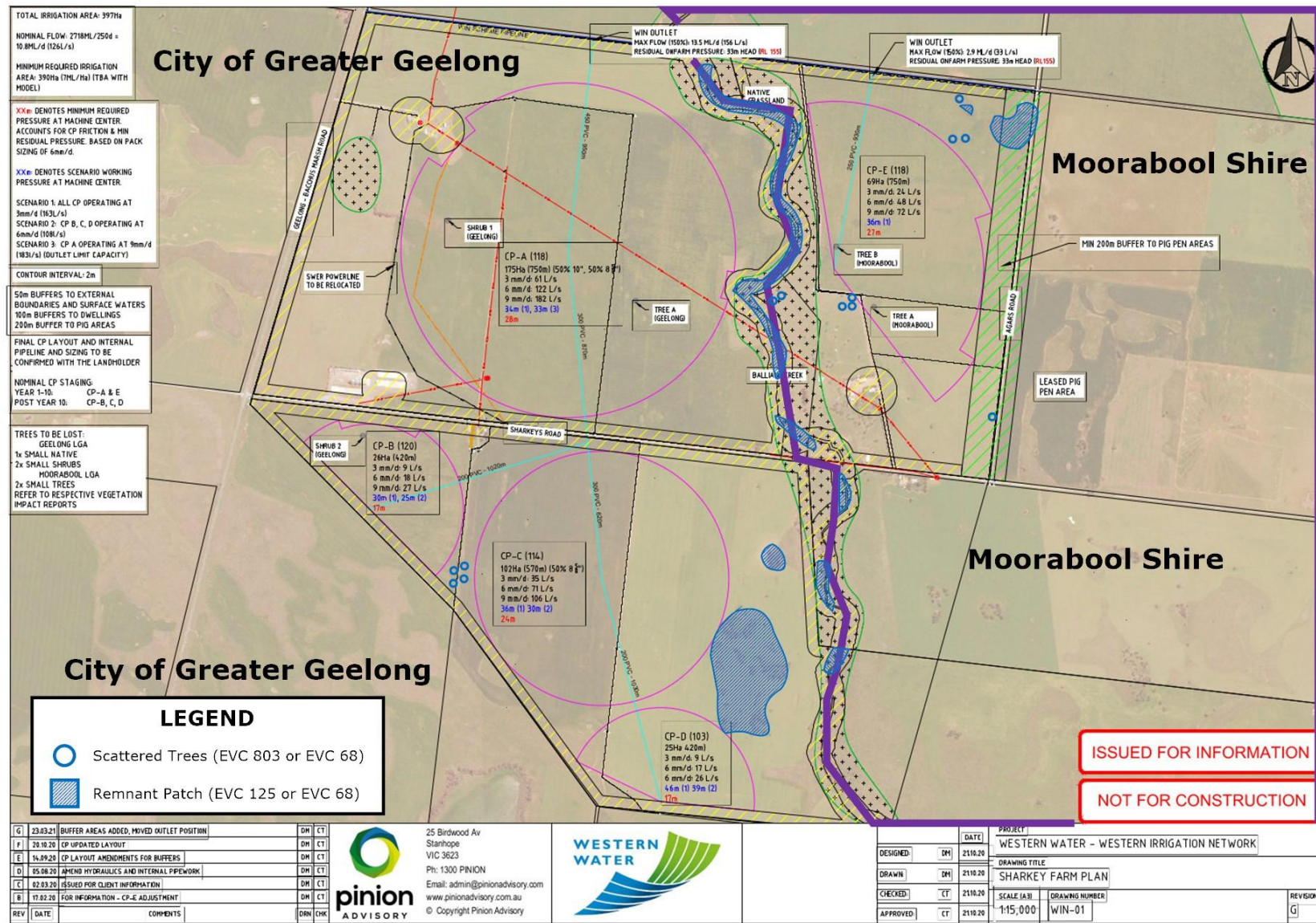
Native vegetation is proposed for removal which triggers the requirement of a permit under this Overlay. The information within this report including the NVRR in Appendix A provides the detail on the extent of proposed losses, minimisation steps and offset requirement.

**Action required:** permit is required for removal of native vegetation under this overlay.

## Conclusion

- "Oak Park" is a broad-acre cropping and sheep-grazing enterprise and has been identified as suitable for a WIN project.
- The site lies within two Local Government Areas - The City of Greater Geelong and Moorabool Shire.
- The property rests in a broad-acre grazing and cropping landscape. As a result of this history, the vast majority of the original native vegetation has been cleared.
- The vast majority of the site is cleared of native vegetation.
- Remnant trees and woodland communities remain in the non-arable parts such as rocky rises, creek valleys or in the corners of paddocks.
- Surveying has revealed that the site carries remnant patches and scattered trees from both EVC 132\_63 and 803. Approximately 13.4 hectares of EVC exists across this site.
- Some of the native vegetation patches may correspond (depending on size and condition thresholds) with the Natural Temperate Grasslands of Victorian Volcanic Plain and the Grey Box (*Eucalyptus microcarpa*) Grassy Woodland commonwealth-listed communities.
- Five centre pivot irrigation systems will be installed across the 406 hectares of the property.
- This proposal will unavoidably remove three areas of native vegetation - one *Eucalyptus microcarpa* (Grey Box) tree and two understorey shrubs. All three plants are native and considered as a scattered tree and two separate patches of remnant native vegetation (rnv).
- NVIM tool measures the combined area of impact for the loss of these two trees as 0.033 hectares.
- All other native vegetation including along the creek valley will avoid impact.
- Planning permits are required to remove these two trees under state and local legislation.
- Offsets will be purchased through third-party sources.



**Map 1. Remnant Native Vegetation Across Oak Park**

## **Appendix A – Native Vegetation Removal Report**

## **Appendix B - Offset Quote**