

Final Report

**EPBC 2014/7364: Construction Environmental  
Management Plan: Barry Road Development,  
Thomastown, Victoria**

Prepared for

**Barry Road Project Pty Ltd**

November 2018



**Ecology and Heritage Partners Pty Ltd**

## DOCUMENT CONTROL

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Draft	CEMP prepared in accordance with the Commonwealth's <i>Environmental Management Guidelines</i>	SLB/CR	16/10/2018
Final	Approved by DoEE	-	02/11/2018

### Acknowledgements

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- Jason Taylor (Urban Terrain Pty Ltd) for project and site information.
- Barry Road Project Pty Ltd for site access and project information;
- Tim Connell (City of Whittlesea) for planning and ecological information;
- The Department of Environment, Land, Water and Planning (DELWP) for access to ecological databases; and,
- The Department of Environment (DoE) for project advice and communications.

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## GLOSSARY

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Acronym	Description
CaLP	<i>Catchment and Land Protection Act 1994</i>
CMA	Catchment Management Authority
CEMP	Construction Environmental Management Plan
DELWP	Victorian Department of Environment, Land, Water and Planning
DoEE	Commonwealth Department of Environment and Energy
CEMP	Construction Environmental Management Plan
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVC	Ecological Vegetation Class
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i>
FIS	Flora Information System
MFL	Matted Flax-lily <i>Dianella amoena</i>
NES	National Environmental Significance
NTGVVP	Natural Temperate Grassland of the Victorian Volcanic Plain
PMST	Protected Matters Search Tool (DoE)
VBA	Victorian Biodiversity Atlas (DELWP)

## DECLARATION OF ACCURACY

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In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Full name (please print)

\_\_\_\_\_  
Organisation (please print)

\_\_\_\_/\_\_\_\_/\_\_\_\_\_  
Date

## EXECUTIVE SUMMARY

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### Introduction

Ecology and Heritage Partners Pty Ltd was engaged Barry Road Project Pty Ltd to prepare a Construction Environmental Management Plan (CEMP) to compensate for impacts associated with the residential development of a site located at 135-161 Barry Road, Thomastown, Victoria (EPBC 2014/7364).

This CEMP has been prepared in accordance with Condition 5 of EPBC Approval 2014/7364. Barry Road Project Pty Ltd or their nominated Development Manager is responsible for ensuring all actions detailed in this CEMP are undertaken to ensure that any potential impacts to the nationally significant Matted Flax-lily *Dianella amoena* and the *Natural Temperate Grassland of the Victorian Volcanic Plain* (NTGVVP) are appropriately mitigated.

A series of mitigation measures will be implemented within the construction area of the study site during the construction phase of the proposed development to ensure that construction activities do not impact on environmental values present within the Conservation Reserve or in surrounding areas, and that appropriate environmental protection measures are implemented during construction works.

All construction staff on site (i.e. the area of construction) will be made aware of this CEMP and their responsibilities regarding environmental management.

In addition to the mitigation measures within the construction area, a series of mitigation measures will also be implemented to protect the Conservation Reserve and Public Reserve during the construction phase of the proposed development. At a minimum, the following measures will be implemented prior to commencement of construction:

- Erect temporary fencing on the interface of the Conservation reserve and Public Reserve. The fence will be constructed with minimal impact to either reserve (i.e. no materials or soil stock piling). Particular care must be taken in areas where significant ecological values (NTGVVP, Matted Flax-lily) are present;
- Fencing of the reserves must be completed and clearly designated as a “No Go Zone”, prior to any construction or development activities reaching within 50 metres of any part of the reserves; and,
- Interpretive and educational signs will be placed around the reserve to highlight the importance of the reserves reserve. Fence and signage condition will be monitored on a weekly basis with any gaps or holes repaired immediately.

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# 1 INTRODUCTION

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## 1.1 Background

Ecology and Heritage Partners Pty Ltd was commissioned by Urban Terrain Pty Ltd on behalf of Barry Road Project Pty Ltd to develop a Construction Environmental Management Plan (CEMP) detailing the conservation and ongoing management objectives and actions for an *in-situ* Conservation Reserve located at 135-161 Barry Road, and the adjacent Crown land parcel located at 163-209 Barry Road, Thomastown, Victoria (the study area) (Figure 1).

This CEMP has been prepared in accordance with Condition 5 of EPBC Approval 2014/7364. Barry Road Project Pty Ltd or their nominated Development Manager is responsible for ensuring all actions detailed in this CEMP are undertaken to ensure that any potential impacts to the nationally significant Matted Flax-lily *Dianella amoena* and the *Natural Temperate Grassland of the Victorian Volcanic Plain* (NTGVVP) are appropriately mitigated.

The actions within this CEMP will commence as soon as this plan is approved.

Areas to be impacted by the proposed development and areas proposed to be retained within the Conservation Reserve are presented in Figure 2a and Figure 2b and summarised in Table 1. The conservation reserve has been specifically designed in accordance with the requirements of the Development Plan Overlay – Schedule 35 (DPO35) of the City of Whittlesea Planning Scheme, and to retain and protect habitat for Matted Flax-lily, and the NTGVVP community. The conservation reserve provides strategic connectivity to the adjacent Crown Land to the west, and the Whittlesea Public Gardens to the north, and is in close proximity to the existing conservation reserve on the other side of the Hume Freeway to the west.

**Table 1.** Matters of ecological significance to be impacted and retained

Ecological Value	Impacted	Retained	Total
NTGVVP	5.009 hectares	3.691 hectares	8.700 hectares
Matted Flax-lily	36*	38	74#

**Note:** \*These plants are proposed to be salvaged and translocated in to the conservation reserve as per the Matted Flax-lily Translocation Plan (Ecology and Heritage Partners 2018); # A total of 74 Matted Flax-lily were recorded during the 2015/2016 targeted surveys conducted by Ecology and Heritage Partners Pty Ltd.

## 1.2 Study Area

The Conservation Reserve encompasses two properties located at 135-161 Barry Road and 163-209 Barry Road, Thomastown, Victoria, approximately 20 kilometres north of Melbourne’s CBD (Figure 1). The study area is bordered by the Craigieburn Bypass (to the north and west) and existing residential development (to the east). The City of Whittlesea Public Gardens and Barry Road adjoins the northern boundary of the study area.

For the most part, the Conservation Reserve and surrounds are relatively flat consisting of both indigenous and exotic grassland vegetation, with areas of intact remnant grassland containing embedded basalt rocks. Historically, the site was used for grazing stock. It was unused at the time of the ecological assessments, with evidence suggesting the site is subject to dumping of rubbish and vehicle disturbance. As the site does not appear to have been subjected to any form of management aside from a firebreak slashed around the perimeter, it's condition appears to be degrading, and currently contains a significant infestation of the woody weed Sweet Briar *Rosa rubiginosa*.

According to the Department of Environment, Land, Water and Planning (DELWP) NatureKit Map (DELWP 2018), the study area occurs within the Victorian Volcanic Plain Bioregion. It is located within the jurisdiction of the Port Phillip and Westernport Catchment Management Authority (CMA) and the City of Whittlesea municipality.

### 1.2.1 Connectivity to adjacent parks and reserves

The study area exists as an isolated grassland remnant, fragmented from nearby Merri Creek and Cooper Street Grasslands by the Craigieburn Bypass.

The study area is immediately adjacent (on the other side of the Hume Freeway) to the Galada Tamboore Conservation Area currently managed by Parks Victoria. The Cooper Street Grassland Nature Conservation Reserve is located approximately 1.5 kilometres to the north-west of the study area. The proposed conservation reserve to be established as part of the development is also immediately adjacent to the Whittlesea Public Gardens to the north.

### 1.2.2 Native Vegetation Condition

The field assessment identified large areas of Plains Grassland within the study area which were consistent with the condition thresholds for NTGVVP, providing a complex and inherently variable ecological community (Figure 2a).

Observed vegetation throughout the majority of the study area consisted of a dense cover of indigenous Kangaroo Grass *Themeda triandra*. A sparse yet diverse mixture of other indigenous grasses and forbs was interspersed amongst the dominant Kangaroo Grass matrix (Plates 1 and 2). The more dominant interspersed species were Wallaby grasses *Rytidosperma* spp., Tussock grasses *Poa* spp., Yellow Rush-lily *Tricoryne elatior*, Blue Devil *Eryngium ovinum*, Wattle Mat-rush *Lomandra filiformis* and Grassland Wood-sorrel *Oxalis perennans*.

Scattered occurrences of Sheeps Burr *Acaena echinata*, Ruby Saltbush *Enchylaena tomentosa* var. *tomentosa*, Berry Saltbush *Atriplex semibaccata*, as well as the State-significant Slender Bindweed *Convolvulus angustissimus* subsp. *omnigracilis* (Plate 3), Arching Flax-lily *Dianella* sp. aff. *longifolia* (Benambra), and Fragrant Saltbush *Rhagodia parabolica* were also recorded.

Introduced species varied in their dominance and diversity with the more notable introduced species including Sweet Briar *Rosa rubiginosa*, Large Quaking-grass *Briza major*, French Flax *Linum trigynum*, Ribwort *Plantago lanceolata*, Bearded Oat *Avena fatua* and the Weed of National Significance Chilean Needle-grass *Nassella neesiana* (Plates 5 and 6).



### 1.2.3 Significant Communities

The critically endangered EPBC Act-listed NTGVVP ecological community is present in the study area (Figure 2). In accordance with relevant guidelines (DSEWPaC 2011), the native vegetation meets the following condition thresholds of the EPBC Act-listed NTGVVP:

- At least 50% of perennial native tussock cover consists of *Themeda*, *Austrostipa*, *Poa* and/or *Rytidosperma* genera; and,
- For a native vegetation remnant greater than one (1) hectare in size, the contiguous grassland patch should be at least 0.5 hectares in size.

### 1.2.4 Matted Flax-lily

A total of 74 Matted Flax-lily were recorded within the study area (Figure 2a), of which 36 are located within the development footprint, and 38 will be retained within the Conservation Reserve and Public Reserve. A Matted Flax-lily Translocation Plan has been prepared addressing impacts and mitigation measures associated with the species (Ecology and Heritage Partners 2018).



**Plate 1.** Plains Grassland within the study area



**Plate 2.** Plains Grassland within the study area



**Plate 3.** Slender Bindweed within the study area



**Plate 4.** Plains Sedgy Wetland within the study area



**Plate 5.** Sweet Briar within the study area



**Plate 6.** Sweet Briar within the study area.

### 1.3 Objectives

The objective of this CEMP is to respond to Condition 5 of EPBC approval 2014/7364. Specifically, the CEMP addresses the following approval conditions (Table 2):

**Table 2.** Conditions of EPBC 2014/7364 approval reference table.

Condition	Condition requirement	Plan reference
5a	Preparation of a CEMP to mitigate impacts to MFL and NTGVVP	This Document.
5b	The CEMP must include, but not be limited to:	
5b i	Site induction procedure	Section 2.2.1
5b ii	Temporary fencing must be erected around the construction area	Section 2.2.2 / Section 2.4.2
5b iii	No stockpiles may be located outside of the construction area	Section 2.2.3
5b iv	Dust depression controls must be established and sedimentary controls must be in place	Section 2.2.3 / Section 2.2.5
5b v	Weed spread prevention methods for both construction and conservation reserve area	Section 2.2.4 / Section 2.4.4

Section 2.4 of this report details the mitigation measures that will apply to the construction site to reduce impacts to surrounding native vegetation, including the conservation area and recipient site.

Section 2.5 (Conservation Reserve) and Section 2.6 (Public Reserve) of this report provides a framework for management of all areas to be retained as part of the development in order to maintain and enhance the identified ecological values present in the form of the NTGVVP ecological community and the MFL population.

## 2 MITIGATION MEASURES

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The following section of the report presents the actions required to mitigate potential impacts to the NTGVVP ecological community and Matted Flax-lily population that are to be retained within the Conservation Reserve, and the adjacent Public Reserve (Figure 2a; Figure 2b). It is essential to control the spread of weeds and introduced species within this community and bring the ecosystem back to its most natural state to enhance the habitat for the persistence of Matted Flax-lily, and the suite of other native species associated with the broader community.

By maintaining high value habitat for the species present within the conservation reserve, it can act not only as habitat for the extant population but also as a connecting site between the adjacent conservation areas, as well as a refuge area for neighbouring populations in the case of habitat destruction and degradation.

In combatting introduced grasses and weeds, particularly Chilean Needle-grass and Sweet Briar which are highly invasive, it should be recognised that there may be some impacts to the NTGVVP community and habitat for Matted Flax-lily, and that management actions must be conducted in a phased approach, whereby only small sections of the conservation reserve are treated at any one time. Adaptive and flexible management will therefore play a critical role in the ongoing success of the Reserves.

### 2.1 Responsibility

Barry Road Project Pty Ltd or their nominated Development Manager is responsible for ensuring all actions detailed in this CEMP are undertaken to ensure the objectives and performance targets are met. Management of the Conservation Reserve and Public Reserve will be transferred to the City of Whittlesea, with a Committee of Management established to ensure the management objectives are met in perpetuity. As the proponent, Barry Road Project will still retain the responsibility for complying with the approval conditions of EPBC 2014/7364 after the management of the reserves has been transferred.

### 2.2 Construction Mitigation Measures

A series of mitigation measures will be implemented within the construction area of the study site during the construction phase of the proposed development to ensure that construction activities do not impact on environmental values present within the Conservation Reserve or in surrounding areas, and that appropriate environmental protection measures are implemented during construction works. The following mitigation measures relate to the construction area.

#### 2.2.1 Environmental site induction

All construction staff on site (i.e. the area of construction) will be made aware of this CEMP and their responsibilities regarding environmental management. As such, all staff will attend an environmental site induction, which will inform contractors of the requirements of this CEMP. All main contractors undertaking construction works will be provided with a copy of the CEMP, which will include maps of the construction area, recipient site, conservation area and public reserve. Signage will be placed around construction offices to highlight the significance of the NTGVVP and Matted Flax-lily.

### 2.2.2 Fencing and No-Go Zones

Without active management and appropriate fencing, unrestricted access into the conservation reserve within the study area by vehicles and machinery may result in a loss of native vegetation cover, soil disturbance and compaction, and weed facilitation. Temporary fencing will be erected around the construction area prior to the commencement of works and will remain in place until the completion of works, or until replaced by permanent fencing. This will assist in confining the disturbance footprint to the construction area and prevent impacts to the recipient site. The fencing will be monitored on a weekly basis to maintain integrity. Damage to fences (i.e. gaps, holes) will be repaired immediately upon discovery.

### 2.2.3 Dust management

Dust is generated through exposure of dry soils and agitation through either construction activities (e.g. moving soils, vehicle and machinery movements) or by high winds that enable soil particles to become airborne. Construction activities and exposure of topsoil is likely to increase dust levels, which can pose a hazard to air quality. The following measures will be implemented to reduce dust levels as a result of construction activities (EPA 2004):

- Phase the work program to minimise land disturbance and retain vegetation where possible throughout the construction period;
- Stabilise exposed soil (stabilisation matting, mulch, progressive revegetation, roughen surface of exposed soil);
- Watering exposed soil and access tracks. Frequency of watering will be determined by weather conditions (e.g. dry, windy days likely to generate more dust), with a watercart to be maintained on site during dusty conditions.
- Dust suppression controls must be monitored on a weekly basis to ensure effectiveness.
- Protect soil stockpiles by applying the following measures:
  - Cover stockpiles with geotextile, stabilisation matting or other suitable material (where practicable);
  - Provision of slit fencing on the low side of each stockpile;
  - No stockpiles are to be located outside of the construction area;
  - Minimise the number and size of stockpiles; and,
  - Maximum 2:1 height to width ratio for soil stockpiles.

### 2.2.4 Weed Management

To minimise the likelihood of weed material being moved offsite and new weeds being transferred onto the site, weed control measures will be required prior to commencement of construction activities. The below actions will assist in limiting the spread of weeds into the recipient site and the conservation area.

- To minimise the spread of existing weeds from the site, the top 100 mm of vegetation/topsoil is to be removed throughout the construction zone and stockpiled in windrows;

- To avoid the introduction of new weeds into the site – machinery, vehicles and equipment initially coming onto site are required to be cleaned of excess soil and organic matter by high pressure air or water spray jets;
- A vehicle wash down area will be established on site for periodic cleaning of excess soil and organic matter (as required);
- All vehicles entering the Conservation Reserve or Public Reserve from the construction area must be cleaned free of weeds, soil and mud prior to entry;
- Any areas scheduled for rehabilitation or landscaping will be restored as soon as possible with indigenous plant species. This is to minimise the window of soil disturbance that could facilitate the spread or establishment of plant diseases and pest plants, and to ensure that non-indigenous plants are not introduced into the local area;
- Ongoing weed management will be carried out by a qualified weed contractor. The contractor and the Environmental Manager will continue to monitor the site to identify the establishment of new weeds and implement control actions accordingly.

### 2.2.5 Erosion and Sedimentation

Construction activities (e.g. soil excavation) may increase the potential for erosion and sedimentation and can pose a significant hazard to water quality. Measures employed for dust suppression are also effective as erosion and sedimentation controls. In addition to the measures outlined for dust suppression (Section 2.2.3), the following measures may be appropriate to reduce erosion and sedimentation (EPA 2004):

- Install sediment retention structures to divert flow away from exposed soils and prevent contaminated stormwater from accessing waterways. Such structures may include slit fences, straw bales, coir logs, rock or gravel, catch drains, earth banks, slopes and batters and rock bunds. A wide range of sediment retention structures are described in detail in EPA (2004).
- Ongoing sediment and erosion control: permanent stormwater protection through ‘water-sensitive urban design’ principles must be incorporated post-construction within the detailed design phase of the development.
- Sedimentation controls must be monitored on a weekly basis to ensure effectiveness.

### 2.2.6 Waste Management

Construction activities will involve the use of fuels, lubricants, chemicals and construction waste materials that pose a risk to soil, waterways and groundwater contamination.

- A designated set down area of vehicle and equipment storage, vehicle refuelling and dumping of contaminated waste will be established prior to commencement of construction activities. The area must (EPA 2004):
  - Be located away from drainage lines, stormwater inlets, waterways, areas of significant flora and fauna and other sensitive areas identified on site;
  - Be appropriately bunded to contain all contaminated water; and,
  - Be clearly signed for easy identification.

- All waste material will be contained (within suitable skips onsite) and cleaned on a regular basis to ensure skips do not overflow and litter does not enter surrounding residential areas;
- Appropriate methods of disposal for wastes are dependent on the classification of the waste material and are detailed in Classification of Wastes (EPA 2008a); and,
- The construction contractor will be made aware of their responsibility to keep the construction zone clean during construction, which is to be outlined within a relevant site induction.

### 2.2.7 Fire Management

The potential for a fire to start within a works area can be particularly high in grassland and vegetated areas. The contractor will be made aware of the following safety procedures to minimise the risk of fire:

- All vehicles and machinery will be parked in designated parking areas (where appropriate);
- All staff will be made aware of the declared Fire Danger Period and days of Total Fire Ban;
- Weather conditions will be monitored during periods of high fire danger, such as windy or very hot days;
- Adequate fire suppression equipment will be on-site as per the requirements of Regulation 109 and 110 of the Country Fire Authority Regulations 2004. The contractor's personnel will be made aware of the location and operation of this equipment; and,
- The construction Supervisor will be supplied with the contact number for the local CFA unit.
  - Country Fire Authority (CFA rescue service, Epping)  
Address: 2 Oherns Road, Epping, Victoria 3076  
Epping CFA phone: (03) 9401 2462  
CFA Headquarters phone: (03) 9262 8444  
Emergency phone: 000

### 2.2.8 Noise Management

Noise levels will be managed in accordance with the State Environmental Protection Policy (Control of Noise from Commerce, Industry and Trade) (EPA 1989). The hours of operation for construction works will comply with the *Noise from large residential subdivision or urban development sites* (EPA 2008b), as these guidelines specify normal work hours for land preparation or smaller residential development sites within existing urban areas:

- Mondays – Fridays: 7am – 6pm; and,
- Saturdays: 9am – 1pm (noise before 9am is prohibited).

Noise level will not exceed background noise during the hours of:

- 6 – 10 pm Monday to Friday;
- 1 – 10 pm Saturdays;
- 7am – 10 pm Sundays and public holidays; and,

- Noise will not be audible within a habitable room of any residential premises between 10 pm and 7 am.

The following actions are recommended by the Environmental Guidelines for Major Construction Sites (EPA 1996) and will be implemented:

- Fit and maintain appropriate mufflers on earth-moving and other vehicles on the site;
- Enclose noisy equipment;
- Provide noise attenuation screens, where appropriate;
- Where an activity is likely to cause a noise nuisance to nearby residents, restrict operating hours to between 7 am and 6 pm weekdays and 7 am to 1 pm Saturday, except where, from practical reasons, the activity is unavoidable;
- Noise should not be above background levels inside any adjacent residence between 10 pm and 7 am;
- Advise local residence when unavoidable out-of-hours work will occur;
- Schedule deliveries to the site so that disruption to local amenity and traffic are minimised; and,
- Minimise air vibrations.

## 2.3 Conservation Reserve

### 2.3.1 Mitigation Measures during Construction

A series of mitigation measures will be implemented to protect the Conservation Reserve during the construction phase of the proposed development. At a minimum, the following measures will be implemented prior to commencement of construction:

- Erect temporary fencing on the title boundary of the Conservation Reserve. The fence will be constructed with minimal impact to the Conservation Reserve (i.e. no materials or soil stock piling). Particular care must be taken in areas where significant ecological values (NTGVVP, Matted Flax-lily) are present;
- The temporary fence around the Conservation Reserve must be replaced by a permanent fence at the time when the Section 173 agreement (or other security mechanism) is placed on-title;
- Fencing of the Conservation Reserve must be completed and clearly designated as a “No Go Zone”, prior to any construction or development activities reaching within 50 metres of any part of the Conservation Reserve; and,
- Interpretive and educational signs will be placed around the reserve to highlight the importance of the conservation reserve. Fence and signage condition will be monitored on a weekly basis with any gaps or holes repaired immediately.

## 2.4 Public Reserve

### 2.4.1 Mitigation Measures during Construction

A series of mitigation measures will be implemented to protect the Public Reserve during the construction phase of the proposed development. At a minimum, the following measures will be implemented prior to commencement of construction:

- Erect temporary fencing between the Public Reserve and the construction footprint. The fence will be constructed with minimal impact to the Public reserve (i.e. no materials or soil stock piling). Particular care must be taken in areas where significant ecological values (NTGVVP, Matted Flax-lily) are present;
- The temporary fence around the Public Reserve must be replaced by a timber post and cable fence around the perimeter of the Public Reserve at one (1) metre back of kerb once construction is finished. This fence will be in constructed in accordance with Standard Detail SDL.3.05 of the City of Whittlesea Parks and Open Space landscape construction detail;
- Fencing of the Public Reserve must be completed and clearly designated as a “No Go Zone”, prior to any construction or development activities reaching within 50 metres of any part of the Public Reserve;
- Any areas disturbed on the edges of the construction footprint should be revegetated/direct seeded with local provenance species from the Plains Grassland EVC; and,
- Fence condition will be monitored on a weekly basis with any gaps or holes repaired immediately.

## 2.5 Management and Monitoring

Refer to Section 3 of the Environmental Management Plan (EMP) prepared to support the Development Plan for the study area (Ecology and Heritage Partners 2016) for further information relating to the ongoing management obligations to ensure the ecological values within the Conservation Reserve and Public Reserve are maintained and/or enhanced. It is noted that the Development Plan (and associated EMP) were formally approved by the City of Whittlesea on 20/09/2017.

Monitoring and reporting obligations relating to the reserves are detailed in Section 3.5 of the EMP, and a 10-year schedule of works (management actions table) for the Conservation Reserve is provided in Table 10 of the EMP (Ecology and Heritage Partners 2016).

Management actions and reporting obligations relating specifically to the recipient site are specified in the Matted Flax-lily Translocation Plan (Ecology and Heritage Partners 2018).



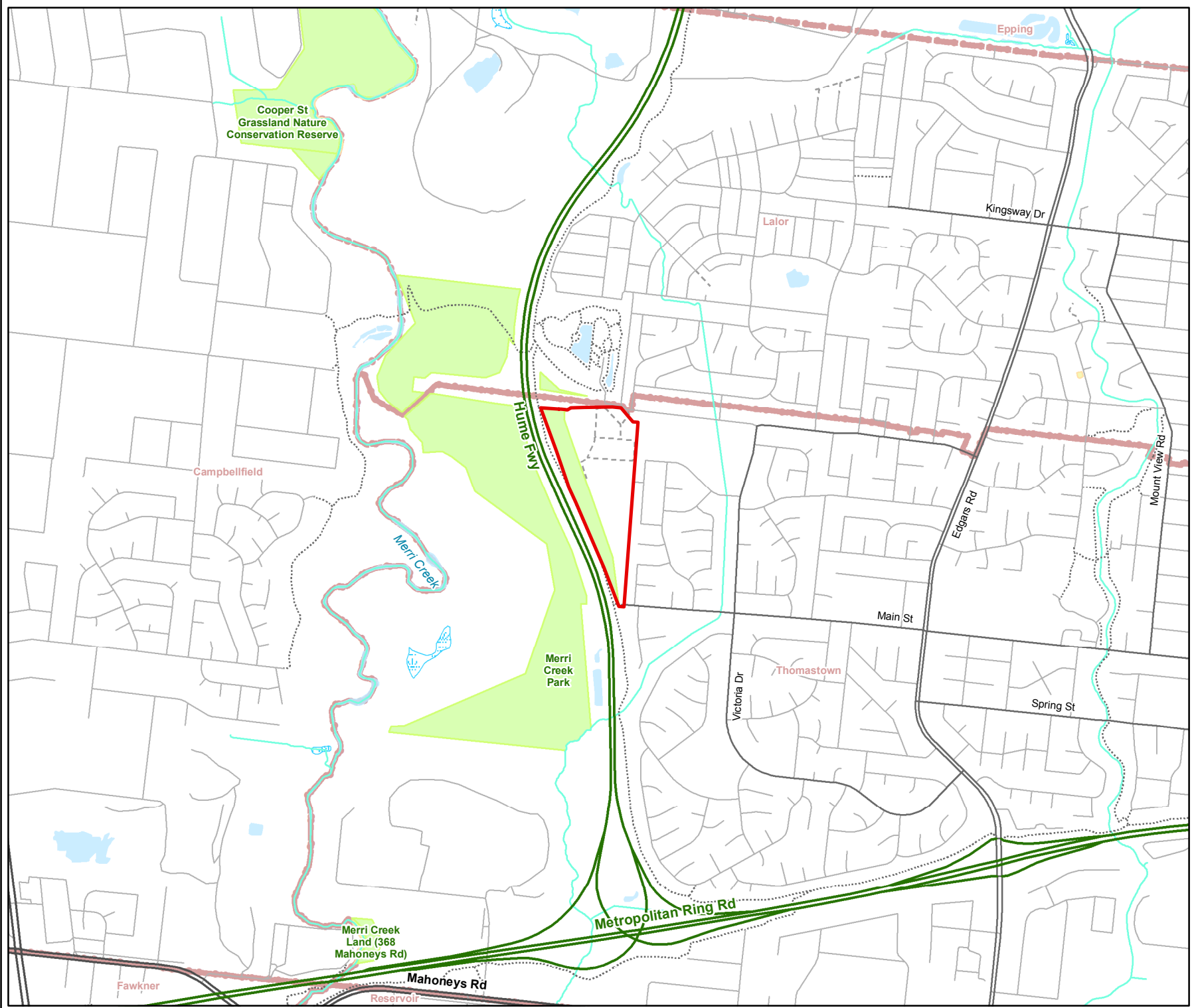
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## FIGURES

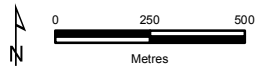
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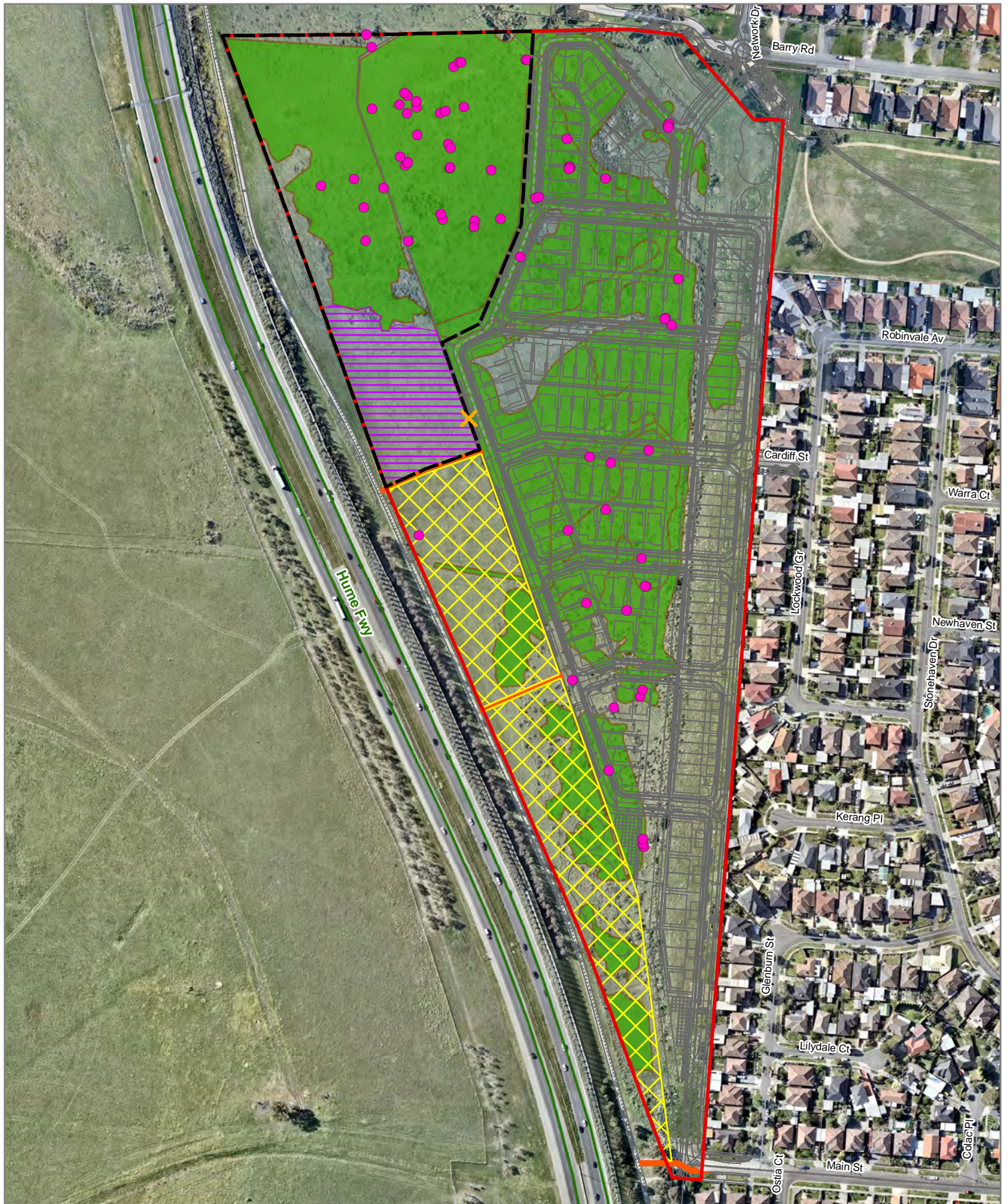
- Legend**
- Study Area
  - Freeway
  - Major Road
  - Collector Road
  - Minor Road
  - Proposed Road
  - Walking Track
  - Minor Watercourse
  - Permanent Waterbody
  - Wetland/Swamp
  - Parks and Reserves
  - Crown Land
  - Localities



**Figure 1**  
**Location of study area**  
*Construction Environmental Management Plan (EPBC 2014/7364)*



VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.



**Figure 2a**  
**Ecological values**  
**within the**  
**Conservation Reserve**  
*Construction*  
*Environmental*  
*Management Plan*  
*(EPBC 2014/7364)*

**Legend**

- Study Area
- Conservation Reserve
- Development plan
- Bike access / access
- Public reserve
- X Access gate
- Matted Flax-lily recipient site
- Matted Flax-lily records
- Natural Temperate Grassland of the Victorian Volcanic Plain









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**Figure 2b**  
**Ecological values**  
**within the**  
**Conservation Reserve**  
*Construction*  
*Environmental*  
*Management Plan*  
*(EPBC 2014/7364)*

**Legend**

-  Conservation Reserve Fence
-  Development plan
-  Access gate
-  Matted Flax-lily recipient site
-  Matted Flax-lily records
-  Natural Temperate Grassland of the Victorian Volcanic Plain



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## APPENDICES

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## Appendix 1. Risk

### Appendix 1.1. Risk Assessment

**Table A1.1.** Risk assessment table for Construction Environmental Management Plan.

Management objective/desired outcome	Event or circumstance	Relevant management actions/measures	Residual risk			Trigger detection and monitoring activity/ies	Feasible/effective corrective actions	Notes
			L	C	RR			
<b>To protect retained areas of NTGVVP and MFL specimens during construction</b>	CEMP fail to adequately address objectives	Engage an expert to manage this process. Ensure all impacts are suitably confined to construction area.	Unlikely	High	Medium	Reduction in extent and quality of retained NTGVVP and MFL habitat	Stop works. Ensure all actions within the CEMP are correctly implemented	The erection of temporary fencing will delineate the Public Reserve and Conservation reserve from the works area
	Adjacent land management practices fail to support attainment of objectives	Ensure understanding of CEMP objectives. All contractors inducted onto site made aware of values within Conservation Reserve and Public Reserve	Unlikely	Moderate	Low	Adjacent land practices begin to negatively impact Reserves	Take steps to halt negative impacts. Follow up with stakeholder discussions	Based on the current land management practices in the region and it is unlikely that any foreseeable land management practices within the vicinity will impact the Conservation Reserve and/or recipient site
	Insufficient funds provided by approval holder to implement the plan.	Ensure reputable land holder to implement plan.	Unlikely	Moderate	Low	Mitigation measures not being undertaken	Review plan for cost efficiencies.	The contractor will abide by the actions detailed in the CEMP.
	Unintended impacts to retained Reserves areas	Stop works. Review CEMP. Plan for scheduling delays.	Possible	Moderate	Medium	Monitoring and/or annual reporting	Take steps to halt negative impacts. Follow up with stakeholder discussions	Temporary fencing will delineate the Public Reserve and Conservation reserve from the works area

## Appendix 1.2. Risk Assessment and Management Definitions

### Risk framework

		• Consequence				
		• Minor	Moderate	• High	• Major	• Critical
• Likelihood	• Highly Likely	Medium	• High	• High	• Severe	Severe
	Likely	• Low	• Medium	• High	• High	• Severe
	Possible	• Low	• Medium	Medium	• High	• Severe
	Unlikely	• Low	• Low	Medium	• High	• High
	Rare	• Low	• Low	• Low	Medium	• High

### Likelihood and consequence

<b>Qualitative measure of likelihood (how likely is it that this event/circumstances will occur after management actions have been put in place/are being implemented)</b>	
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances
<b>Qualitative measure of consequences (what will be the consequence/result if the issue does occur)</b>	
Minor	Minor risk of failure to achieve the plan's objectives. Results in short term delays to achieving plan objectives, implementing low cost, well characterised corrective actions.
Moderate	Moderate risk of failure to achieve the plan's objectives. Results in short term delays to achieving plan objectives, implementing well characterised, high cost/effort corrective actions.



High	High risk of failure to achieve the plan's objectives. Results in medium-long term delays to achieving plan objectives, implementing uncertain, high cost/effort corrective actions.
Major	The plan's objectives are unlikely to be achieved, with significant legislative, technical, ecological and/or administrative barriers to attainment that have no evidenced mitigation strategies.
Critical	The plan's objectives are unable to be achieved, with no evidenced mitigation strategies.