

Final Report

Environmental Management Plan: Barry Road Development, Thomastown, Victoria

Prepared for

YourLand Developments on behalf of 135 Barry Road Pty Ltd

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GLOSSARY

Acronym	Description
CaLP	<i>Catchment and Land Protection Act 1994</i>
CMA	Catchment Management Authority
CMP	Conservation Management Plan
DELWP	Victorian Department of Environment, Land, Water and Planning
DoEE	Commonwealth Department of Environment and Energy
EMP	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
NTG	Natural Temperate Grassland
NTGVVP	Natural Temperate Grassland of the Victorian Volcanic Plain
PMST	Protected Matters Search Tool (DoE)
VBA	Victorian Biodiversity Atlas (DELWP)
WSUD	Water Sensitive Urban Design

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1 INTRODUCTION

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 an Environmental Management Plan (EMP) 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 EMP addresses the 'Environmental Management Plan' requirement of Section 3.0 of Schedule 35 to the Development Plan Overlay (DPO35) in the City of Whittlesea planning scheme, and partially meets the 'Request for Additional Information' as requested by the Commonwealth Department of the Environment (DoE) as part of referral 2014/7364 under the *Environment Protection and Biodiversity Act 1999* (EPBC Act).

A series of ecological assessments and targeted surveys have been undertaken at the study area between 2010 and 2016 with the purpose of identifying ecological implications associated with the development of the study area. The following matters of ecological significance have been identified within the study area:

- One nationally significant flora species Matted Flax-lily *Dianella amoena*, listed as *Endangered* under the EPBC Act;
- One nationally listed ecological community, *Natural Temperate Grassland of the Victorian Volcanic Plain* (NTGVVP) listed as *Critically Endangered* under the EPBC Act; and,
- One State-listed ecological community *Western (Basalt) Plains Grassland*;
- Three state-significant flora species Slender Bindweed *Convolvulus angustissimus* subsp. *omnigracilis*, Flax-lily *Dianella longifolia* var. *grandis*, and Fragrant Saltbush *Rhagodia parabolica*.

Areas to be impacted by the proposed development and areas proposed to be retained within the conservation reserve are presented in Figure 2 and summarised in Table 1. The conservation reserve has been specifically designed in accordance with the requirements of the DPO35, and to retain and protect habitat for Matted Flax-lily, and areas of Natural Temperate Grassland of the Victorian Volcanic Plain (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#
Plains Grassland	5.009 hectares	3.713 hectares	8.722 hectares
Plains Grassy Wetland	0.01 ha	0.00 ha	0.01 ha

Note: *These plants are proposed to be salvaged and translocated in to the conservation reserve as per the Translocation Plan detailed in Section 4; # 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 study area is located at 135-161 Barry Road (the private land) and the adjacent Crown land parcel located at 163-209 Barry Road, Thomastown, Victoria, approximately 20 kilometres north of Melbourne's CBD (Figure 1). The private land covers approximately 11.7 hectares and is triangular in shape, with the adjacent Crown Land being approximately 5.1 hectares in area. 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 study area is 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 and more recent surveys, 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, the condition appears to be degrading, and currently contains a significant infestation of the woody weed Sweet Briar *Rosa rubiginosa*.

The parcel at 135-161 Barry Road was subject to Amendment C179 of the Whittlesea planning scheme and has been rezoned General Residential Zone – Schedule 1 (GRZ1) and is affected by a Design and Development Overlay – Schedule 2 (DDO2), a Development Plan Overlay – Schedule 35 (DPO35), and a Melbourne Airport Environs Overlay – Schedule 2 (MAEO2) in the northern half of the site. The adjacent Crown Land parcel is zone Public Use Zone – Transport (PUZ4) and is affected by the DDO2 and MAEO2 (DELWP 2022c).

According to the Department of Environment, Land, Water and Planning (DELWP) NatureKit Map (DELWP 2022a), 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.

1.3 Objectives

The objective of this EMP is to respond to the application requirements for development plan as required by Clause 3.0 of the DPO35 in the Whittlesea planning scheme. Specifically, the EMP includes the following components:

1. A Native Vegetation Management Plan for the on-site conservation reserve, as well as additional conservation areas in the adjacent Crown Land;
2. An Offset Management Plan for the native vegetation to be removed to facilitate the development of the remainder of the study area; and,
3. A Matted Flax-lily Translocation Plan.

For the purposes of this report, given the overlap of many requirements for both the Native Vegetation Management Plan and Offset Management Plan, these plans have been incorporated into Section 2 and Section 3 of this Environmental Management Plan (EMP). Section 2 details the vegetation impacts and associated offset obligations and offset strategy, while Section 3 (Conservation Management Plan) provides a framework for management of the proposed conservation areas in order to maintain and enhance the identified ecological values present in the form of remnant Natural Temperate Grassland of the Victorian

Volcanic Plain (NTGVVP) community and the Matted Flax-lily population, and provide applicable, transparent governance arrangements that allow ongoing management objectives and performance targets to be readily measured, monitored, audited and enforced.

The Matted Flax-lily Translocation Plan is provided in Section 4 of this report, and solely relates to the activities required to translocate salvaged plants into the identified recipient site, and ongoing management actions to maintain the health of the salvaged individuals and enhance the habitat within the recipient area.

1.4 Water Sensitive Urban Design

As one of three (3) potential options being investigated as part of the Water Sensitive Urban Design (WSUD) strategy, a wetland may be created within the Public Reserve in the southern portion of the Crown Land (Option 2) (Figure 2a; Figure 2c). Should Option 2 be pursued as part of the planning application, this EMP must be amended to ensure consistency with the Development Plan.

Further information is provided in Section 3.4.1.1 of this report.

2 EXISTING CONDITIONS

This section relates to the conditions, proposed impacts and offset obligations generated under State and local policy of the development site at 135-161 Barry Road, Thomastown (the private land).

2.1 Site of Proposed Vegetation Removal

The private land covers approximately 11.7 hectares and contains a total of 6.83 hectares of Plains Grassland (EVC 132_61) vegetation, and 0.01 hectares of Plains Sedgy Wetland (EVC 647). Of this, a total of 5.01 hectares of Plains Grassland and 0.01 hectares of Plains Sedgy Wetland is proposed to be removed to facilitate the development of the private land for residential use, and a total of 1.82 hectares of Plains Grassland will be retained within the proposed 1.83 hectare conservation reserve established in the north-west of the private land (Figure 2a).

All Plains Grassland recorded within the private land corresponds to the nationally significant ecological community *Natural Temperate Grassland of the Victorian Volcanic Plain* (NTGVVP). A total of 74 Matted Flax-lily were recorded during targeted surveys undertaken by Ecology and Heritage Partners in 2015/2016.

2.1.1 Connectivity to adjacent parks and reserves

The private land 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.

2.1.2 Ecological Vegetation Classes

2.1.2.1 Plains Grassland

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). A total of seven Plains Grassland habitat zones of varying quality were recorded during the site assessment (Ecology and Heritage Partners 2014), with patches differing in quality predominantly due to native species diversity, weed cover, and extent of bare ground available for recruitment (Table 2).

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 Sheep's 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), Flax-lily, and Fragrant Saltbush *Rhagodia parabolica* were also recorded (Figure 2a)

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* spp., and the Weed of National Significance Chilean Needle-grass *Nassella neesiana*.



Plate 1. Plains Grassland within the study area



Plate 2. Plains Grassland within the study area

2.1.2.2 Plains Sedgy Wetland

One small patch of Plains Sedgy Wetland was identified within the private land during the field assessment (Ecology and Heritage Partners 2014). This patch was dominated by Common Spike-sedge *Eleocharis acuta*, with no other wetland species recorded (Plate 4).

Introduced species present included Quaking-grass, Ribwort, Oat, and Chilean Needle-grass.



Plate 3. Slender Bindweed within the study area



Plate 4. Plains Sedgey Wetland within the study area

Table 2. Habitat hectare assessment within the private land.

Vegetation Zone		A	B	C	D	E	F	G	H
Bioregion		VVP	VVP	VVP	VVP	VVP	VVP	VVP	VVP
EVC / Tree		PG(HS)	PG(HS)	PG(HS)	PG(HS)	PG(HS)	PG(HS)	PG(HS)	PSWe
EVC Number		132_61	132_61	132_61	132_61	132_61	132_61	132_61	647
Patch Condition	Large Old Trees /10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Canopy Cover /5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Under storey /25	20	15	5	15	15	15	5	5
	Lack of Weeds /15	4	0	4	4	0	0	0	7
	Recruitment /10	6	3	3	3	3	3	3	3
	Organic Matter /5	5	3	3	3	2	3	2	3
	Logs /5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Treeless EVC Multiplier	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
	Subtotal =	47.6	28.56	20.4	34	27.2	28.56	13.6	24.48
Landscape Value /25		10	10	10	10	10	10	10	10
Habitat Points /100		57.6	38.56	30.4	44	37.2	38.56	23.6	34.48
Habitat Score		0.58	0.39	0.3	0.44	0.37	0.39	0.24	0.34
Total Area (ha)		2.837	1.142	0.116	0.582	0.816	0.264	1.071	0.01
Area (ha) to be removed		1.034	1.142	0.116	0.582	0.816	0.264	1.071	0.01
Area (ha) to be retained		1.803	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.1.3 Predominantly Introduced Vegetation (Grasslands)

2.1.3.1 Vegetation Condition

The remainder of the conservation area consists of predominantly exotic vegetation dispersed throughout existing EVC patches within the conservation reserve. These areas have little or no native vegetation present. These disturbed areas are dominated by exotic grasses, including, Chilean Needle-grass and Rye-grasses

Lolium spp. Exotic herbs such as Galenia, Ribwort and Artichoke Thistle are prevalent with scattered stands of the woody weed Sweet Briar. These areas are considered to be in poor condition as they support a large number of introduced grasses and weeds, many of which are highly invasive (Plate 5-6).



Plate 5. Sweet Briar within the study area



Plate 6. Sweet Briar within the study area

2.1.4 Significant Communities

The critically endangered EPBC Act-listed NTGVVP ecological community is present in the study area (Figure 2). In accordance with relevant guidelines (Threatened Species Scientific Committee 2008), the habitat zone 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* (synonym *Austrodanthonia*) 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.

Plains Grassland is dominated by Kangaroo-grass and Wallaby-grass, which comprise approximately 60% of the total vegetation cover in the area. The area of NTGVVP is 6.83 hectares (Figure 2). Plains Grassland in the study area is also listed as the FFG Act Western (Basalt) Plains Grassland ecological community. The FFG Act community does not have cover and condition thresholds and all Plains Grassland is generally considered part of the ecological community.

2.2 Permitted Clearing Assessment (Biodiversity Assessment Guidelines)

2.2.1 Vegetation proposed to be removed

The study area is within Location A, with 5.009 hectares of native vegetation proposed to be removed. As such, the permit application falls under the Moderate Risk-based pathway (Table 3). The condition scores for vegetation proposed to be removed are based the habitat hectare assessment undertaken by Ecology and Heritage Partners (2014) (Table 2).

Table 3. Permitted Clearing Assessment (Biodiversity Assessment Guidelines) (DEPI 2013).

Risk-based pathway	Moderate
Total Extent	5.009
Remnant Patch (ha)	5.009
Scattered Trees (no.)	0
Location Risk	A
Strategic Biodiversity Score (SBS)	0.242

2.2.2 Offset Targets

The offset requirement for native vegetation removal is 0.731 General Biodiversity Equivalence Units (BEU). No Specific offset obligations are generated by the proposal.

A summary of proposed vegetation losses and associated offset requirements is presented in Table 4 and the Biodiversity Impact and Offset Requirements (BIOR) Report is presented in Appendix 2.

Table 4. Offset targets (Biodiversity Assessment Guidelines) (DEPI 2013).

General Offsets Required	0.731 General BEUs
Specific Offsets Required	N/A
Vicinity (catchment / LGA)	Port Phillip and Westernport CMA / City of Whittlesea
Minimum Strategic Biodiversity Score*	0.194

Note: BEU = Biodiversity Equivalence Units

2.3 Offset Strategy

2.3.1 Commonwealth (EPBC Act)

The Australian Government's EPBC Act Environmental Offsets Policy (DSEWPaC 2012) outlines a framework for the use of environmental offsets under the EPBC Act including when they can be required, how they are determined and the framework under which they operate. Clear guidelines on what constitutes a suitable offset are provided and should be considered as part of any proposed offset strategy.

A detailed offset strategy pertaining to obligations under the EPBC Act in accordance with the preliminary document request for EPBC referral 2014/7364 will be provided to the Department of the Environment (DoE) separately to this document.

2.3.2 State (The Guidelines)

2.3.2.1 Offset Strategy

Ecology and Heritage Partners are a DELWP accredited OTC offset broker. We have been assisting permit holders meet their native vegetation offset obligations since 2006. Ecology and Heritage Partners broker native vegetation credits between permit holders and credit holders across all CMAs and have an excellent knowledge of the type and extent of available credits in the marketplace.

The offset obligation of 0.731 General BEUs generated by native vegetation removal associated with the development is proposed to be secured via two methods as described below.

Enhanced management of existing vegetation

This offset is available on the basis that the conservation reserve will be secured with an on-title agreement (Section 173 agreement) and contains an approved 10-year Management Plan outlining the management actions required to protect and improve the current condition and achieves the gain targets outlined in this report.

Security gain

Currently no prior vegetation security agreements cover the proposed offset site. To achieve the relevant security requirement for the offset site, it is proposed to place a Section 173 agreement under the *Planning and Environment Act 1987* over the offset area.

Maintenance gain

A maintenance gain will be achieved through the management of the offset site with a focus on:

- Preventing removal of existing vegetation and excluding grazing;
- Installation of fencing and signage to minimise future disturbance; and,
- Monitoring for and eradicating any new weed species.

Improvement gain

An improvement gain will be achieved through the management of the offset site with a focus on:

- Eliminating high threat woody weeds;
- Biomass control of herbaceous and grassy weeds, thus facilitating the natural regeneration of native species through soil stored seed and recruitment from existing plants; and,
- Pest animal control

Through the enhanced management of 1.821 hectares of existing native vegetation within the private land, and 1.241 hectares within the Crown Land, a total of **0.248 General BEUs** with an SBS of 0.268 will be generated (Appendix 3). These credits meet both the minimum SBS, and the 'Vicinity' attributes as required by DELWP, and as requested by Council, can be used towards meeting the overall offset target. This would leave an outstanding obligation of **0.377 General BEUs** to be sourced outside of the City of Whittlesea (Table 5).

Section 3 of this report details how the 3.062 hectares of Plains Grassland vegetation within the conservation reserve will be managed and protected in order to generate the required gain.

Third party offsets

Port Phillip and Westernport CMA

Ecology and Heritage Partners can confirm that the remaining offset obligations generated by this proposal can be satisfied through existing credits registered DELWP's Native Vegetation Credit register. Several landowners registered in this offset database have suitable General Biodiversity Equivalence Unit (BEUs) native

vegetation credits available within the Port Phillip and Westernport CMA, and it is anticipated that the remaining offset obligation can be secured through an OTC scheme without any difficulty.

Table 5. Breakdown of Offset Strategy mechanism.

Offsets Required	General Offsets Required (BEU)	0.731	
	Enhanced management of existing vegetation within the Conservation Reserve	0.248 (Conservation Reserve)	0.248
Offsets Generated	3 rd Party Offsets	0.106 General BEUs (City of Whittlesea)	0.354
	3 rd Party Offsets	0.377 General BEUs (Port Phillip CMA)	0.377
Target			0.731

3 CONSERVATION MANAGEMENT PLAN

The following section of the report presents the actions required to implement the management strategy for conservation reserve, and generate the estimated gain described in Appendix 3. 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 a 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 impact 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, flexible and to some degree experimental management will therefore play a critical role in the ongoing success of the reserve.

3.1 Conservation Reserve

The conservation reserve is proposed to comprise a single area of 4.151 hectares, comprising 1.833 hectares within the private land (Shown as Reserve No. 2 TGM [2016]) and 2.318 hectares within the Crown Land (Figure 2b). The conservation reserve is to be managed solely for the purposes of conservation. In addition, the conservation reserve will be managed in order to achieve a gain of approximately 0.248 General BEUs to partially offset the loss of native vegetation associated with the proposed development of the private land. This management will involve the control of environmental weeds and pest animals, and biomass reduction within the offset site.

Specifically, this management plan has the following objectives:

- The land is managed for conservation purposes;
- Rehabilitate the site and maintain habitat important for Matted Flax-lily;
- Weed control works should be undertaken by a suitably experienced and qualified contractor to eliminate all high threat woody weeds within the offset site;
- Ensure weed cover does not increase above current levels;
- Install and maintain fencing and signage;
- Undertake supplementary planting/direct seeding of native grasses where necessary;
- Monitor threatened flora and fauna;
- Control pest animal populations (i.e. rabbits and foxes) beyond the legal duty of care; and,
- Implement this plan over the prescribed 10-year offset period to achieve the potential habitat gains.

The offsets are proposed to be located within native vegetation of Habitat Zone A of the offset site, which involves the management of 3.048 hectares of *Heavier Soils* Plains Grassland (Figure 2),

In addition, the conservation reserve will comprise an area of approximately 0.777 hectares of predominantly non-native vegetation for use as a recipient site for 36 translocated Matted Flax-lily individuals (Figure 2b). Management actions specific to the recipient site are further detailed in Section 4 of this report.

3.1.1 Matted Flax-lily

3.1.1.1 Conservation Status

Matted Flax-lily was described by Carr and Horsfall (1995). It is listed as endangered under the Commonwealth EPBC Act, endangered under the Victorian Advisory List of Rare or Threatened Plants in Victoria (DSE 2013) and listed as Threatened under FFG Act.

3.1.1.2 Species Description

Matted Flax-lily is a perennial, tufted, mat-forming lily which can form patches of up to five metres wide. The plant can grow vegetatively, through sending underground rhizomatous roots, which rise above the ground with a tiller of several leaves, spread over a distance from the parent plant. This in turn can prove problematic in determining the number individual plants within a close proximity (< one metre). Therefore, any tillers not separated by at least one metre are in most circumstances considered to be a single individual plant.

The leaves of the Matted Flax-lily are generally glaucous, blue in colour and usually but not always having small hooks (teeth) along the margins and midrib. The leaves taper to approximately 45 centimetres long depending on site and climatic conditions and are born on tillers with the leaves arranged alternatively, with several leaves per tiller (DSE 2006). Matted Flax-lily generally flowers between November and January but may continue flowering with summer and autumn rains. It has pale blue to violet flowers with bright yellow stamens and berries, which are generally purple in colour (Plates 7-8). The flowers and berries are born on culms extending to typically 30 centimetres in height, but this may alter depending on plant location and season (Carter 2010).



Plate 7. Matted Flax-lily within the study area (Ecology and Heritage Partners 2016)



Plate 8. Matted Flax-lily within the study area (Ecology and Heritage Partners 2016)

3.1.1.3 Ecology

Plants typically occur in grasslands, grassy woodlands and grassy wetlands in Victoria (Carter 2010). Grasses typically dominate the understorey layer (Carr and Horsfall 1995), including native species such as Kangaroo Grass *Themeda triandra*, Weeping Grass *Microlaena stipoides* var. *stipoides*, Common Tussock-Grass *Poa labillardierei*, and Slender Wallaby-grass *Rytidosperma racemosum* var. *racemosum*. In grassy woodlands, a variety of eucalypt species dominate, with Blackwood a common understorey component at many sites (Carter 2010). Rocks are often present on sites in the Victorian Volcanic Plain bioregion, and usually offer protection from grazing by stock, pest animals and native fauna.

3.2 Security Arrangements

In accordance with the requirements of the DPO35, the proposed conservation reserve will have an on-title legal agreement in the form of a Section 173 agreement under the *Planning and Environment Act 1987* put in place to ensure it is secured and managed appropriately in perpetuity (Table 6). The agreement will be implemented, and the conservation reserve secured prior to commencement of construction activities associated with the proposed development.

The Proponent or their nominated Development Manager is responsible for ensuring all actions detailed in this CMP are undertaken to ensure the objectives and performance targets are met.

It is understood that the management of the Conservation Reserve and other public reserves are proposed to be transferred to the City of Whittlesea and a Committee of Management established to ensure the management objectives are met in perpetuity. Discussions relating to the proposed timing and transfer of management and responsibility are currently ongoing.

Should the Conservation Reserve and/or the recipient site be transferred to the City of Whittlesea, or any other party, the responsibility for ongoing managing, monitoring and reporting will also be transferred to the new entity.

Table 6. Security and Management Responsibility.

Offset Security and Management Responsibility	
Who is responsible for meeting offset requirements?	The Proponent
Type of security agreement	Section 173 of the <i>Planning and Environment Act 1987</i>
Agreement or Planning Permit Number (ID) *	TBC
Date 10-year offset management to commence	TBC
Date 10-year offset management expires	TBC
Registered on title?	Yes
Offset site management responsibility Name	The Proponent
Responsible Authority	City of Whittlesea

Note. The need for formal endorsement of this EMP and security agreement shall be a condition of the subdivision planning permit.

3.3 Management Actions

Management actions described below are to be implemented for a mandatory period of 10 years. Following this period, the responsible authority (or landowner) will continue to manage the conservation reserve after the completion of year 10 as specified in this plan, such that:

- Weed cover is managed in perpetuity to ensure it does not increase beyond the level attained at year 10 of management;
- NTGVVP ecological community is maintained or improved; and,
- Matted Flax-lily habitat and population is maintained or improved.

Year 1 of this Plan commences at the time of Action 0.1 and 0.2 being completed (See Table 10).

Any proposed uses or development of the site which conflict with the landowner's commitments are not permitted under this plan. The sensitivities of the site should be considered with all management actions and all contractors entering the site need to be made aware of the values.

3.3.1 Mitigation Measures during Construction

A series of mitigation measures will be implemented during the construction phase of the proposed development to ensure that construction activities do not impact on environmental values present within the reserve or in surrounding areas, and that appropriate environmental protection measures are implemented during construction works. 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 and along the eastern interface of the Crown Land. The fence will be constructed with minimal impact to the conservation reserve and Crown Land (i.e. no materials or soil stock piling). Particular care must be taken in areas where significant ecological values 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 area and Crown Land 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 or Crown Land; 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.

In addition to the above, a Construction Environment Management Plan must be prepared to ensure impacts to the conservation reserve during the construction phase are avoided. The plan should include:

- Environmental site induction to inform contractors of the environmental values present on site and the importance of protecting these areas;
- Fencing and No-Go Zones;
- Dust management;
- Erosion and sedimentation control;
- Pest plant control;
- Waste management;
- Fire management; and,
- Noise management.

As a condition of the future subdivision permit and Section 173 Agreement a bond or bank guarantee to the value of \$100,000.00 (incl. GST) shall be lodged for the duration of the conservation reserve to ensure adequate rectification or reinstatement works are completed which may result from damage by the owner or its agents through construction works and/or maintenance period prior to transfer of land ownership and management responsibilities to Council.

3.3.2 Access Control and Fencing (Conservation Reserve)

Without active management and appropriate fencing, unrestricted access into the conservation reserve by vehicles and machinery may result in loss of native vegetation cover, soil disturbance and compaction, and weed facilitation. As such, permanent fencing will be required to protect the conservation reserve. In order to ensure a more pleasing visual amenity, the fencing treatment around the Conservation Reserve will be in accordance with the landscape masterplan (designed by Spiire and provided by Yourland) and will include:

- Erection of a permanent rabbit-proof fence surrounding the conservation reserve with two Rabbit-proof access gates for maintenance works and emergency access (Figure 2a);
- The fence must be located one (1) metre back of kerb, be constructed with minimal impact to the conservation reserve (i.e. no materials or soil stock piling), and be to the satisfaction of the City of Whittlesea;
- Append rabbit-proof fencing to the existing fence along the Western boundary of the Conservation Reserve;

- This style of fence must be erected along the northern boundary of the Conservation Reserve abutting the VicRoads land.
- Interpretive and educational signs will be placed around the reserve to highlight the importance of the conservation reserve and the significance of NTGVVP and Matted Flax-lily; and,
- Fence and signage condition will be monitored on an annual basis with any gaps or holes repaired immediately.

3.3.3 Biomass Control

Biomass control or reduction is essential for protection against grass fires, and for the maintenance of flora and fauna values. In particular, although Matted Flax-lily is naturally found in grassy habitats, the species requires relatively open structured grassland with inter-tussock spaces and the closure of inter tussock space from a lack of fire or grazing may reduce the areas available for occupancy within the site.

In order to avoid adversely impacting Matted Flax-lily, it is crucial that any prescribed burns are low-intensity and patchy (i.e. mosaic). Furthermore, prescribed burns should be conducted in early spring (September/October) to avoid summer breeding season, or early autumn (March/April) to avoid removing large areas of vegetation during winter.

With regard to weed control, it is recommended to conduct burning before plants set seed in early spring. In theory, the use of fire also offers greater opportunity for the germination of native grasses and herbs, although it will inevitably also promote germination of weed species. While the promotion of weed seed germination is far from ideal, the process also aids in the exhaustion of the soil seed bank over time.

The following principles should be considered with regard to biomass control/ecological burns:

- Develop a burn plan that includes consideration of nearby properties and landholders, and distance to the Hume Highway and submit for approval by Municipal Fire Prevention Officer in consultation with the District 14 CFA, MFB, DELWP and VicRoads. Consider the use of Traffic Management or notification associated equipment (e.g. Variable Message Signs);
- Undertake ecological burning for biomass control at 2 to 3-year intervals in a mosaic pattern to ensure all areas of the Conservation Reserve are captured (with the exception of the MFL recipient site - see next dot point). No more than half the site must be burnt on any single occasion;
- Ecological burns should not be undertaken within the MFL recipient site (Figure 2a) until Year 5 (or a minimum of 3 years after native seedling establishment) to ensure translocated MFL and native grass establishment;
- Evaluate the need for biomass control on an annual basis; and,
- For safety reasons any prescribed burns must be conducted in calm weather conditions only (generally during Autumn), especially as the subject conservation reserve is directly adjacent to residential dwellings.

3.3.4 Weed Control

Weed control activities will be strategically employed in a mosaic fashion to ensure that habitat remains suitable for Matted Flax-lily.

The conservation reserve contains weeds that are considered to be a high threat to grassland communities, with Sweet Briar and Chilean Needle Grass considered a particular threat to the biodiversity values of the site. These species can rapidly colonise areas where appropriate management regimes are not implemented (i.e. regular burnings and weed control), and 'crowd-out' species, such as Matted Flax-lily, which persist in the inter-tussock space. Appropriate management measures must be implemented to: a) reduce the prevalence of these species; and, b) ensure they are appropriately controlled over the medium to long term.

The following general guidelines should be taken as basic management principles in regard to weed control:

- Weed control methodology for eradicating graminoid and herbaceous weeds will consist of manual removal and/or spot spraying weeds with an appropriate herbicide. Care should be taken when spraying herbicide to ensure that the poison does not affect native vegetation in the local application area. Weed species should be treated before seed is set, which may involve localised slashing if spot-spraying proves ineffective. A dye should be used in the spray to mark where the spraying has occurred;
- Selective herbicide application is preferable to broad area application but clearly the loss of non-target species needs to be balanced with the threat of incomplete control of the existing weed population;
- Eliminate high threat environmental weeds (cover reduced to <1%) within higher quality vegetation with low weed cover and controlling high threat environmental weeds within vegetation with medium cover of weeds (cover reduced to <5%);
- Control all other weeds within the conservation reserve (cover reduced to <5%);
- Any weed control should be done in a manner that minimises soil disturbance;
- Where herbicide application is employed, waterway sensitive products and non-residual herbicides are to be employed;
- Pest plants that reproduce sexually (by seed) are best controlled before seed set. A summary of weed control protocols is provided in Table 7;
- To reduce the amounts of herbicide used, the target biomass should be reduced (e.g. slashed) before application so the herbicide can also be absorbed by the actively regrowing plants. Herbicides are only effective when plants are actively growing; and,
- Weed control works should be monitored regularly to assess their effectiveness, perform follow up works and evaluate the feasibility of management objectives.

Table 7. Control protocols for key weed species recorded within or have the potential to occur in the study area.

Species	Weed Type	Treatment Methods	Timing of Treatment	Desired Outcome
<i>Avena fatua</i> Bearded Oat	Graminoid	Annual Spraying (before seeding)	Mid-Winter Late Spring	– C
<i>Anthoxanthum odoratum</i> Sweet Vernal-grass	Graminoid	Annual Spraying (before seeding)	Mid-Winter Late Spring	– C
<i>Briza major</i> Large Quaking-grass	Graminoid	Annual Spraying (before seeding)	Mid-Winter Late Spring	– C

Species	Weed Type	Treatment Methods	Timing of Treatment	Desired Outcome
<i>Cirsium vulgare</i> Spear Thistle	Herbaceous	Manual Removal, Annual Spraying (before seeding)	All Year	E
<i>Cynara cardunculus</i> Artichoke Thistle	Herbaceous	Manual Removal, Annual Spraying (before seeding)	All Year	E
<i>Echium plantagineum</i> Paterson's Curse	Herbaceous	Manual Removal, Annual Spraying (before seeding)	Late winter - mid Spring	C
<i>Foeniculum vulgare</i> Fennel	Herbaceous	Manual Removal, Annual Spraying (before seeding)	All Year	C
<i>Hypochoeris radicata</i> Flatweed	Herbaceous	Annual Spraying (before seeding)	Early-mid Spring	C
<i>Lolium perenne</i> Perennial Rye-grass	Graminoid	Annual Spraying (before seeding)	Early-mid Spring	C
<i>Lycium ferocissimum</i> African Boxthorn	Woody	Manual Removal, Spot Spraying, Cut and Paint	All Year	E
<i>Nassella hyalina</i> Cane Needle-grass	Graminoid	Annual Spraying (before seeding)	Early-mid Spring	E
<i>Nassella neesiana</i> Chilean Needle-grass	Graminoid	Annual Spraying (before seeding)	Early-mid Spring	E
<i>Nassella trichotoma</i> Serrated Tussock	Graminoid	Annual Spraying (before seeding)	Early-mid Spring	E
<i>Phalaris aquatica</i> Toowoomba Canary-grass	Graminoid	Annual Spraying (before seeding)	Early-mid Spring	C
<i>Plantago lanceolata</i> Ribwort	Herbaceous	Annual Spraying (before seeding)	Early-mid Spring	C
<i>Romulea rosea</i> Onion Grass	Herbaceous	Annual Spraying (before seeding)	Early-mid Spring	C
<i>Rosa rubiginosa</i> Sweet Briar	Woody	Cut and Paint, Spot Spraying	All Year	E
<i>Brassica</i> spp. Turnip	Herbaceous	Manual Removal, Annual Spraying (before seeding)	Early-mid Spring	C
<i>Trifolium</i> spp. Clover	Herbaceous	Annual Spraying (before seeding)	Early-mid Spring	C
<i>Xanthium spinosum</i> Bathurst Burr	Herbaceous	Annual Spraying (before seeding)	Early-mid Spring	C

Notes: C = Control (<5% cover), E = Eliminate (<1% cover)

3.3.4.1 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, all 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, dabbing of weeds in sensitive areas with a foam-tipped application device, rig spraying with a pump for larger areas, dabbing of cut stumps and injection of woody weeds.

Timing of the interval of spot spraying is dependent upon many factors such as plant age and growth seasons, plant stress levels and climatic factors. All these factors need to be considered when develop methodologies for the application of herbicides to ensure successful outcomes. Surrounding native 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.

3.3.4.2 Cut and Paint

The cut and paint method requires the cutting of the generally woody species at the very base, below any foliage, and the immediate application of herbicide (usually Glyphosate within 30 seconds of cutting the stump). 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 requires removal. This is particularly necessary if it bears fertile seeds or has the potential to reshoot from contact with ground (i.e. African Boxthorn) or covers native vegetation. As Sweet Briar is the main woody weed species, biomass should be removed from the site and disposed of in a waste disposal site as the woody debris will provide harbour to pest animals.

3.3.5 Pest Animal Control

Cats and foxes may predate locally common fauna, and these two species should be the target of a pest animal control program within the conservation area. European Rabbits remain a threat for the regeneration/recruitment of native species throughout western Victoria. The land owner/contractor is to monitor pest animal use of the offset site whilst undertaking vegetation management works. Any changes in the influences of pest animals may require a change in the management actions.

The following key management actions will be undertaken to ensure success of the pest animal program:

- Identify potential harbour and burrows, and destroy if soil disturbance can be minimised and all native vegetation retained;
- Undertake a pest animal control program (e.g., trapping of foxes, hares, rabbits or feral cats); and,
- Monitor the population of pest animals during weed control works and adapt management as considered appropriate.

All pest animal control needs to be undertaken by suitably qualified contractors familiar with the ecology of Plains Grassland of the Victorian Volcanic Plain. Inappropriate pest animal control techniques may lead to off target damage or the wrong species being targeted. The sensitivities of the site should be considered with all management actions and all contractors entering the site need to be made aware of the values. The pest animal contractor will be responsible preparing and undertaking an adaptive management plan for the monitoring and eradication of pest animals from the offset site.

3.3.5.1 Rabbits and Hares

Given the conservation will be located immediately adjacent to residential development, options for control are limited. Rabbit proof fences in the first instance should be installed and maintained to limit rabbit movements throughout the conservation reserve. The removal of rabbit harbour (e.g. stockpiled rocks and dense woody weed infestations) should then be undertaken, while warrens if present should be fumigated and closed.

3.3.5.2 Foxes

It is likely that foxes will utilise the site and may be also residents. The removal of fox harbour such as rock piles, rubbish and woody weeds will eliminate hiding spots. Further control techniques such as shooting, or baiting should not be undertaken in the urban area around the development.

3.3.6 Direct Seeding or Supplementary Planting

All direct seeding and/or supplementary planting will primarily focus on the area of the Crown Land designated as the MFL recipient site (Figure 2a). Direct seeding within areas supporting existing Patches of Plains Grassland EVC is not required.

To encourage rapid colonisation with native grasses of areas devoid of native vegetation direct seeding with native grasses should be undertaken. Areas with a moderate to high cover of introduced flora or areas which are unnaturally bare (areas subject to previous disturbance or weed cover) should be targeted for direct seeding. Grasses which could be used in direct seeding can include Kangaroo Grass, Wallaby-grass species, Spear-grass species and other grassland graminoids which are indigenous to the local areas. Grass seed must be locally sourced and collected in summer as seed matures (i.e. of local provenance). Seed is best collected by brush cutting grass including foliage and culms (thatch), collected in large bags, stored in cool dry places and baited for insects.

In the MFL recipient site, bare areas between swaths of MFL should be planted/direct seeded with species hardy species that generally take to broad environmental conditions (e.g. those with strong survivorship traits) and are consistent with Plains Grassland EVC (e.g. native Wattle Mat-rush *Lomandra filiformis*, Wallaby-grass species, Spear-grass species, and Kangaroo Grass to a lesser extent). No seeding of non-grassy species will be undertaken across the other areas of native grass direct seeding.

Prior to planting/direct seeding commencing, a minimum two years of site preparation, including intensive weed control and /or light cultivation is required to clear high threat weeds, especially grasses. The weed control should be undertaken over late spring and summer to control grasses. Prior to distribution of grass seed, a follow up weed control event should be conducted to target germinating weeds. After sufficient autumn rains and moisture content has built up in the soil, seed collected during the previous summer should be evenly distributed over the bare areas. After winter, seed should have dropped into the soil. Follow up sensitive weed control must be undertaken.

As such, the overarching management strategy for these areas is to progressively replace the Chilean Needle-grass and Sweet Briar with native vegetation consistent with the Plains Grassland EVC. Management activities will be conducted in a mosaic fashion, aiming to introduce connectivity to areas of high-quality vegetation through revegetation and supplementary planting. Site preparation and revegetation efforts will radiate outwards from the edge of each patch with the ultimate aim of increasing native vegetation in the MFL recipient site and uniting all patches throughout the site.

Revegetation and supplementary planting will proceed in accordance with the following aims:

- Areas to be direct seeded require at least two years of site preparation before commencement. Site preparation will include herbicide application on at least two occasions each Management Year, with the final application in mid-spring prior to the plants setting seed; and,

- Direct seeding efforts will focus on establishing native grasses to competitively replace pasture grasses and high threat weeds. Other grasses may include Red-legged Grass, Wallaby-grass species. Once a swath of native grasses has been established, revegetation efforts can start to introduce other herbaceous species that contribute to grassland diversity appropriate to the local EVC.

3.4 Other areas of retained native vegetation

3.4.1 Public Reserve

Areas to the south of the conservation reserve located within the Crown Land contain Plains Grassland vegetation and Matted Flax-lily (Figure 2b). These areas will not be impacted by the proposed development and are proposed to be retained and incorporated into a public reserve. The Development Plan requires the construction of two shared paths through the Crown Land Reserve. The path locations have been guided by a suitably qualified ecologist and will be constructed through the public reserve in such a way as to minimise impacts on any retained natural values.

Management actions within the Public Reserve should focus on the prevention of weeds spreading into these areas and discouraging access to these areas. Actions which need to be undertaken in these areas include:

- Weed control for species listed under the *Catchment and Land Protection Act* including Chilean Needle Grass, Sweet Briar and Boxthorn, with weed control following the prescriptions detailed in Section 3.4.4;
- Biomass control as per Section 3.3.3;
- Installation of a timber post and cable fence around the perimeter of the public reserve at one (1) metre back of kerb. This fence will be constructed in accordance with Standard Detail SDL.3.05 of the City of Whittlesea Parks and Open Space landscape construction detail;
 - Rabbit proofing of fences is not a requirement of the fencing standards of the Public Reserve.
- The post and cable fencing (SDL.3.05) will extend either side of the shared path connections to the Hume Freeway shared path;
- Installation of a heavy-duty maintenance access gate to allow emergency and maintenance access into the public reserve. The specifications of this gate will be in accordance with Standard Detail SR.1.19 of the City of Whittlesea Parks and Open Space landscape construction detail;
- Any areas disturbed on the edges of the construction footprint should be revegetated/direct seeded with local provenance species from the Plains Grassland EVC;
- Retained Matted Flax-lily marked and labelled with individual tags made from galvanised steel and anchored by stainless steel orchid pins for monitoring purposes. Further, the retained plants should be marked with GPS points and detailed on a map for reference; and,
- Report to the City of Whittlesea as per the reporting regime detailed in Section 3.5 on outcomes of the management of the public reserve.

Additional detail regarding fencing and gate specification, and relevant location is provided in the Landscape Management Plan (John Patrick Pty Ltd 2016) submitted as part of the Development Plan.

3.4.1.1 Potential Wetland

As part of the Water Sensitive Urban Design (WSUD) strategy required by the Development Plan, a potential wetland may be created within the Public Reserve in the southern portion of the Crown Land (Figure 2a; Figure 2c). This wetland is one of three (3) potential options being investigated, with ongoing discussions taking place between the City of Whittlesea and Barry Road Projects Pty Ltd. to resolve the strategy. Should the option within the Crown Land be chosen (Option 2), an amendment to Section 2.3.2 of this Plan will be required to address the biodiversity implications, and associated offset obligations generated by native vegetation removal to ensure consistency with the Development Plan.

3.4.2 Fire protection and biomass reduction

Given the highly modified nature of the surrounding landscape, the fire risk is considered to be low. However, to minimise the fire hazard posed to the surrounding properties, particularly to the east and south, a two (2) metre firebreak will be installed and maintained along the eastern and southern boundary of the public reserve. This firebreak will be regularly (at least three times per year) maintained, with the grass slashed to a height of 75 millimetres.

Throughout the remainder of the conservation and public reserves site, biomass should be controlled, through slashing of the grass at least twice a year (early Spring & mid-Summer) to a height of 100 millimetres, or mosaic burning. Along with biomass control, fire risk will be reduced through the control of woody and herbaceous weeds. When slashing, care should be taken not to destroy existing seedlings/recruits present in the offset site, or Matted Flax-lily plants.

3.5 Monitoring and Reporting

Monitoring of native vegetation (NTGVVP) and Matted Flax-lily habitat by a suitably qualified ecologist should be undertaken to ensure key performance targets are met and the responsible authorities notified of the successes and failures of works through regular progress reports. Progress reports will be provided to the responsible authority at the end of year 1, 2, 5 and 10 of the program (Table 8). Ongoing monitoring will also provide feedback to inform an adaptive management approach, which is critical to tailor management actions to prevailing environmental conditions and also for the provision of contingency plans. For example, if monitoring data suggests that one form of management, such as burning compared to slashing or scraping for direct seeding, appears to be having a detrimental effect, or alternatively a positive effect on localised ecological values, then management will be adapted accordingly.

3.5.1 Monitoring

3.5.1.1 Native vegetation

Monitoring is required to assess the positive and negative impacts of management actions on the integrity of the study area, and to implement change if required. Vegetation monitoring will be conducted annually, with progress reports provided to the responsible authority at the end of year 1, 2, 5 and 10 of the program.

The quality and extent of native vegetation within the Conservation Reserve will be ground-truthed and re-assessed during Year 1 using the VQA assessment methodology (DSE 2004) by a VQA accredited ecologist to confirm the quality and extent of native vegetation values present (See Action 1.11 and 1.12 in Table 10).

This monitoring will be undertaken by a suitably qualified ecologist, with some input from the landowners. However, the frequency of monitoring may need to vary to allow for seasonal variations and to target periods of active weed growth. Similarly, pest animal monitoring should be undertaken at a time of year when these animals are most active so that an accurate assessment of population sizes can be made.

It is recommended that monitoring be undertaken by qualified ecological consultants familiar with the methodology as well as any offset and EPBC Act referral requirements. Monitoring and progress reports should include the following:

- Collection of baseline data to be used as a reference point to assess the impacts of management actions;
- Overall condition and composition of vegetation as well as consideration of Gain outcomes;
- Biomass levels;
- Distribution and abundance of significant flora species;
- The extent, severity, trend and presence of current weed species and any new and emerging weed species; and,
- Implementation of permanent photo points. Photographs must be taken at the same location and during the same time of each year. Photo points will allow monitoring of weed populations and maintenance of the current condition of native vegetation within the offset site. Details of photo points and photographs will be provided to DELWP where required as evidence of progress.

3.5.1.2 Matted Flax-lily

Long-term independent monitoring of the plants within the conservation area is crucial to ensuring ongoing survival of Matted Flax-lily (Vallee *et al.* 2004). All existing plants in the conservation area must be monitored to compare growth, survival and recruitment. These will be tagged and monitored.

Monitoring at the conservation area will involve the documentation of key threatening processes such as drought stress, the presence of pest plants and animals, biomass and other site disturbances, together with the growth and survival rates of the existing population and new recruits.

If plants perish, the immediate area should be assessed for seed recruitment. All recruits will be tagged and monitored in accordance with the existing population.

Translocated Matted Flax-lily

A total of 36 Matted Flax-lily plants are estimated to be impacted as part of the proposed development. These plants will be translocated in to the designated MFL recipient site in accordance the translocation plan detailed in Section 4 of this report

3.5.1.3 Other Monitoring

Information relating to fencing and signage, weed control and pest animal control will be provided by landowners and the relevant contractors. This information will be included in the progress report, discussed below.

3.5.2 Reporting

Progress reports will be provided to the responsible authority at the end of year 1, 2, 5 and 10 of the program. Information to be provided in the progress report includes:

- A copy of the Management Actions Table (Table 10) detailing actions completed during the reporting period;
- A description of the specific monitoring results from ecological surveys undertaken for Matted Flax-lily;
- Success of weed and pest animal control work;
- Successful management tools (i.e. techniques used to control weed species, protection of new plants, monitoring technique, etc.);
- Any problems or issues experienced (i.e. new infestation of weed species, etc.);
- Any corrective actions and contingency measures where monitoring indicates that there has been a deterioration in NTGVVP, or Matted Flax-lily populations; and,
- Photographs showing evidence of works.

If any agreed management actions or commitments are incomplete or have not been undertaken in the times specified, the contractor is to document the justification and the actions that will be undertaken to implement management requirement.

3.5.2.1 *Template for a Landowner Monitoring and Reporting Form*

The landowner agrees to submit the Monitoring and Report Form to the appropriate authority. The template for a landowner monitoring and reporting form is shown in Table 8. Information required includes:

- A copy of the Management Action Table from the CMP (Table 10) with information on which actions have been completed for year/s of this reporting period;
- A description of the specific monitoring results from surveys undertaken;
- Details of any fencing or security works;
- Success of weed and pest animal control work;
- Successful management tools (i.e. techniques used to control weed species, protection of new plants, monitoring technique, etc.);
- Any problems or issues experienced (i.e. new infestation of weed species, storm damage to fencing, etc.); and,
- The provision of photographs showing evidence of works.

If any agreed management actions or commitments are incomplete or have not been undertaken in the times specified, the responsible party (Hanson) must explain the reasons why and what program of action/s will be undertaken to implement the action. If no action has been undertaken, an explanation (i.e. reason/s) will be required and how the targets specified will be met.

3.6 On-going Management after 10 years

At the end of the formal 10-year management period, the management responsibilities for the conservation reserve, and the public reserve must ensure the quality of the site is maintained at their Year 10 levels in perpetuity.

The landowner will continue to manage the conservation reserve and public reserve after the completion of Year 10 as specified in this CMP, such that:

- Regular clean-up of litter during weed control works will be undertaken;
- Weed cover does not increase beyond the level attained at completion of Year 10; and,
- Pest animals are controlled to the level attained at the completion of Year 10.

Table 8. Landowner Monitoring and Reporting Form.

Landowner of offset site		
Location and address of offset site		
Offset site number (if applicable)		
Offset plan reference number (if applicable)		
Responsible Authority	City of Whittlesea	
Report #		
Actions completed within the offset site (since commencement)	Date and details of action	Key performance target met (Y/N)
Signature		
Date		

3.7 Management Actions Table

Management actions are summarised in Table 10. The actions constitute the minimum management requirements for the conservation reserve over the mandatory 10-year management period.

3.8 Cultural Heritage

While a Cultural Heritage Management Plan (CHMP) or Cultural Heritage Permit (CHP) is not required for this project, it is possible cultural heritage artefacts may be uncovered as part of ground works associated with construction and there is still a legislative requirement to protect any material of Aboriginal cultural heritage origin that is unearthed. If any material of Aboriginal cultural heritage origin is discovered during works, those works must cease immediately and the contingencies outlined in Appendix 4 must be undertaken. **Note:** this applies to ground works (i.e. soil cultivation) associated with land management activities, such as direct seeding and planting works.

4 MATTED FLAX-LILY TRANSLOCATION PLAN

4.1 Permits and Approval

Details regarding the proposed impacts and measures to mitigate and manage the translocated plants at the recipient site are provided in this report to ensure all stakeholders are fully informed and all statutory obligations are met. Further information regarding the Matted Flax-lily has been provided separately to the Commonwealth as part of the request for further information relating to referral EPBC 2014/7364.

4.2 Recipient site

4.2.1 Selection of Potential Recipient Sites

Several elements are required for an acceptable recipient site. An acceptable recipient site should have the following attributes:

- The site must suit the biology and ecology of the translocated species;
- The recipient site should be of similar quality to the salvage site (i.e. the same EVC);
- The site must be large enough to support a self-sustaining population;
- The site should be free from grazing and erosion;
- The recipient site should be in close proximity to the salvage site; and,
- The site should be secure and protected through covenants or agreements against future development.

The recipient site is included as a component within the conservation reserve established across the Crown Land and private land (Figure 2b). As the recipient site is immediately adjacent to the construction footprint, suitable habitat for Matted Flax-lily is considered to be present. The close proximity and similar ecological conditions should increase the likelihood of success for the translocated specimens.

Management access to the recipient site will be provided for from gate on the eastern side of the recipient site, from an internal road from within the residential development. This will be established prior to translocation, and construction activities.

Translocation will not be undertaken in areas which support significant amount of embedded basalt rock as it will be difficult to successfully dig recipient holes for translocated specimens. Rocks should not be removed to create a recipient site as this may cause unnecessary damage to the grassland, while removing important habitat for small fauna. A site inspection by a botanist familiar with the ecology of Matted Flax-lily will be undertaken prior to translocation to identify suitable locations within the recipient site for the transplanted individuals.

4.2.2 Current Conditions at the Recipient Site

The proposed recipient site comprises an area within the Crown Land at the southern edge of the Conservation Reserve and is currently vacant Crown Land subject to regular disturbance through mowing for the purposes

of maintaining a firebreak. Specifically, the proposed recipient site is dominated by exotic grassland, and free of the woody weed Sweet Briar which is present throughout much of the rest of the study area. As such, while the recipient site is adjacent to a large existing population of Matted Flax-lily, and contains suitable habitat, the translocation of Matted Flax-lily into the recipient site will not result in degradation of existing Plains Grassland vegetation and will not require woody weed control prior to translocation.

The broader management actions detailed in the CMP (Section 3) will be undertaken within the recipient site to ensure that the recipient site is enhanced, and that suitable habitat for the Matted Flax-lily is maintained in perpetuity. Specific management actions relating to the translocation and ongoing management within the recipient site are detailed below

4.3 Roles and Responsibility

The Proponent, or their nominated Development Manager is responsible for ensuring all actions detailed in this translocation plan are undertaken to ensure the translocation and management of the Matted Flax-lily over the five-year period are conducted in a manner which ensures that performance targets are met.

Barry Road Project should employ a specialist contractor to undertake the salvage and translocation of the Matted Flax-lily and also undertake negotiations with a nursery that specialise in indigenous plants to manage the nursery plants for the duration of the five-year period. A botanist familiar with the species and ecology of Matted Flax-lily should be employed to ensure the salvage is undertaken in accordance with the plan and provide ongoing monitoring and reporting obligations to the relevant authorities. Prior to removal, a pre-salvage survey must be undertaken to ensure all Matted Flax-lily plants within the development footprint are identified and marked.

The weed and biomass management of the recipient site should be undertaken by a specialist contractor, familiar with Matted Flax-lily to ensure weed control does not impact on replanted salvage material.

Should the Conservation Reserve and/or the recipient site be transferred to the City of Whittlesea, or any other party, the responsibility for ongoing managing, monitoring and reporting will also be transferred to the new entity.

It is our understating that the City of Whittlesea are willing to take on management responsibility, including implementation of the EMP prior to the end of the 10 year management period detailed in Table 10, provided all associated costs incurred are paid by the approval holder, unless otherwise negotiated.

These matters will be noted in principle within the Section 173 Agreement.

4.4 Timing

The salvage of all Matted Flax-lily material within the development footprint will be undertaken prior to the start of construction and once the necessary approvals have been provided.

The ideal time for any salvaged material to be translocated is early winter (June – July), however plants can be relocated outside of the hottest, driest months (i.e. December, January, February and March) provided adequate watering and detailed monitoring is undertaken to ensure the continued health and vigour of plants. Regardless of timing, supplementary watering of replanted salvaged material is recommended with the frequency of this being dependent on rainfall and climatic conditions.

4.5 Removal Technique

The removal will be supervised by a qualified botanist, and all patches and their full extent assessed by measuring the size of the patch, number and height of tillers, general health, and whether it is flowering or not. During removal plants will be labelled according to the patch number and segment, to ensure once they arrive at the recipient site and/or nursery they are easily identifiable as to which patch they have been removed from and the total number of divided segments.

All vegetative material to be disturbed should be removed from the impact site. The procedure for removal will be:

1. All patches to be removed will be identified with marker paint, and plants will be recorded against the monitoring sheet;
2. Plants will be watered the day before the proposed removal to loosen the soil and to ensure the plants are not drought stressed during salvage and movement;
3. Material will be dug from the ground by hand using spades clean of dirt; and,
4. During excavation, soil will be maintained around the root system, however plants can survive if exposed to air for short periods.

The patches will be divided into a size which fits into a polystyrene box or similar to allow for ease of handling and transport. Generally, plants will be divided into three near equal segments. However, this may change depending on the conditions on the day, including how well the soil binds together and the size of the patches. Once plants are lifted from the ground and placed into polystyrene boxes, two thirds of the salvaged material will be immediately taken to a nursery experienced in the propagation of *Dianella* (Section 4.6.2 below), the final third will be taken to the recipient site to be immediately placed into pre-excavated and systematically arranged holes (Section 4.6.3).

4.6 End Use of Salvaged Material

After the necessary approvals are obtained, all 36 of the Matted Flax-lily recorded during the recent targeted survey within the development site will be removed. This material will be divided at the time of salvage, to allow for ease of management and to allow for a variety of end use of the plants.

Three uses are recommended for any salvaged material:

1. One third of material salvaged be immediately transferred to the recipient site (direct translocation);
2. One third of material taken to a suitable nursery and 'grown on' in pots, once the plants have taken to the potting medium and site conditions allow replanting, the plants will be planted into the recipient site (delayed translocation); and,
3. One third of the material kept in a nursery for a period of five years to provide a contingency if plants within the recipient site fail to establish, these plants will be transferred to the Whittlesea City Council or other relevant organisations to be utilised in projects for revegetation or landscaping in the local area once the five year period is up.

If material is required for another purpose then the proponent and referral authorities need to be notified, at least a third of *in situ* material should not be removed from the nursery within the first five years to ensure enough material is kept as contingency for the loss of plants within the recipient site.

4.6.1 Direct Translocation

The direct translocation from the impact site to a recipient site needs to take place on the same day as the material is removed to minimise stress on the plants.

Material will be removed as discussed in Section 4.5 and transported directly to the recipient site. The following steps will be taken to ensure successful establishment at the recipient site:

1. Soil from around the salvaged material will be kept in place as a sod, to help the plants establish within the recipient site. This also helps with moisture retention around the root zone;
2. Holes at the recipient site will be prepared before the salvage of plants at the impact site, to minimise the time out of the ground for the salvaged material;
3. Holes will be dug deeper than the clod of soil from the impact site, soil will also be broken up at the base of the hole to allow quick penetration of the soil by the roots of the salvaged material;
4. Holes should be filled with water before the translocation to soften and loosen the surrounding soil, also helping to remove air pockets in the soil;
5. A weed free medium will be placed in the hole to allow an easy fit and manoeuvrability for the clod of soil;
6. The sod containing the material will be placed into the medium in the hole, ensuring the medium is tightly packed around the sod, removing air pockets and binding the medium together to prevent erosion;
7. The area around the plant will be mulched with certified weed free mulch, consisting of either wood chips or pea straw; and,
8. After planting the sod will be watered by hand until it is wet enough for water to no longer penetrate the soil.

The placement of the salvaged material will be recorded with a GPS and labelled, according to the patch from which it was removed, with a metal 'dog tag' held in the ground with a peg. Where possible, the holes will be systematically lined up to allow for ease of monitoring.

4.6.2 Nursery Management

Material which is taken to a nursery will have the soil removed and be thoroughly washed to allow for division of the rootstock/tillers. Rootstock/tillers will be divided into segments that will fit into an eight-inch pot (or similar) and filled with a suitable medium (native potting mix). Each divided segment will be labelled according to their patch number, box number and then also its end use, to ensure they are tracked through the translocation process.

After the plants are divided into segments and placed within pots, they must be managed correctly to ensure survival within the nursery environment. This can be dependent on conditions and the length of time they will stay in the nursery. Watering and fertilisation will need to be undertaken correctly throughout the period and

generally *Dianella* within a nursery environment will do well and will spread within their container. If plants become pot bound, division and correct labelling must be undertaken. Before being planted into the recipient site, plants need to be hardened off to ensure they are not stressed by a sudden change in conditions including frost, wind and reduced water.

Disease and pest control is important to ensure no diseases or pests are introduced to the recipient site, and plants suspected of being diseased will be treated according to nursery guidelines and/or destroyed appropriately. At no time will plants suspected of carrying a disease or having pests be introduced to a recipient site. Weeding of pots will also be undertaken periodically and correct hygiene procedures practiced at all times within the nursery. Nursery populations will be monitored by a qualified person every three months in the first year, and then twice a year for the remainder. It is anticipated that the nursery population will be translocated back into the recipient site at the first suitable opportunity.

Discussions with the City of Whittlesea have indicated that there is existing space within their nursery for basic management of stock. However, the nominated ecologist monitoring and managing the other translocated individuals must undertake regular visits (3 monthly) to the nursery for weeding and other maintenance obligations until such a time when the Conservation Reserve and associated responsibilities are vested with Council, or another party.

4.6.3 Delayed Translocation

The delayed translocation will occur once plants have become established within the nursery environment and site conditions at the recipient site are favourable e.g. soil moisture, climatic conditions, weed control has been undertaken and fencing erected, if required.

The ideal time to plant the salvaged material into the recipient site is outside the hottest and driest months (December to March) and preferably in early winter (June or July) when rainfall is highest, and conditions are cool. Adequate rainfall will reduce the potential requirement for supplementary watering of replanted material. Planting the material at the earliest stage before summer will also maximise the growth of the material, allow for a higher rate of establishment, and maximise the potential for long-term survival within the recipient site.

The delayed planting is similar to that of the direct translocation:

1. Holes need to be pre dug systematically and filled with water the day before material from the pots is removed;
2. Holes need to be dug approximately 100 millimetres wider and 50 millimetres deeper than the pot in which the material is grown in, this allows the soil to be loosened and increases the soils permeability and allows moisture to penetrate the soil to a deeper level;
3. Pots containing material will be well watered before planting into the hole;
4. Plants from the nursery will be 'hardened' before they are planted;
5. Care will be taken when removing the material from the pot to keep the medium intact around the root system before placing into the hole.
6. Extra medium may need to be placed into the hole to ensure the material is tightly packed into the hole;

7. The material and medium will then be covered in certified weed free mulch, consisting of either wood chips or pea straw.
8. Watering by hand will then be undertaken; care will be undertaken not to wash medium away.

Each plant will be labelled according to the nursery number and a waypoint taken from a GPS.

4.7 Management of Salvaged Material within the Recipient Site

4.7.1 Salvaged Material Placement at the Recipient Site

Planting of the material at the recipient site should be done in systematic order to help the monitoring of the plants. Material should be placed away from perimeter fencing, areas of pest animal or pest plants and in areas which limit impacts on native vegetation when digging holes. Plants should be approximately placed no closer than two metres from one another to ensure over time, plants can be counted as individuals. Once placed into the recipient site, plants should be marked with a stake to enable identification and also a GPS waypoint taken to record the location on a GIS layer.

4.7.2 Watering

Watering of both direct and delayed translocated material will be undertaken to ensure plants establish quickly. The requirement for watering is dependent on a number of factors including timing of the planting, soil type and topography, rainfall and mulch. The plants will be monitored for drought and heat stress and supplementary watering undertaken when required to ensure the health of any translocation plants.

The period between October and March is crucial for the establishment of translocation plants, with those that survive this period over the first year more likely to establish successfully (G. French. pers. comm.). Once plants survive the initial summer, ongoing watering is unlikely to be required unless extreme, drought conditions are experienced. Table 9 below is a suggested period for watering after replanting, however the periods between watering may vary depending on climatic conditions, and monitoring of the plants will be important to ensure successful establishment.

Table 9. Watering requirements for replanted salvaged MFL plants.

Months after planting	Period between significant rainfall events (<5mm) that will trigger watering	Watering Required
0 - 3	2 weeks	Weekly thereafter until significant rainfall
3 - 9	3 - 4 weeks	Fortnightly thereafter until significant rainfall
9 - 21	1 – 2 Months	Monthly thereafter until significant rainfall
21 - 36	1 – 2 Months	Only if plants display signs of stress

4.7.3 Grazing

Grazing pressure by introduced and native animals can have a considerable effect on the successful outcome of the proposed salvage and translocation. A rabbit-proof fence will be established around the perimeter of the recipient site (and greater conservation reserve) in part to reduce grazing pressure upon replanted salvaged material, as kangaroos and rabbits are currently known to occur at the site. Caging or using tree

guards may be an option to protect individual plants if fencing of the entire recipient site is not effective in protecting the salvaged material. Pest animal control will be undertaken as part of the overall management of the conservation reserve. Fencing along with signage will also protect the site from accidental and potentially intentional human disturbance.

4.7.4 Pest Plant Management

Pest plant control will be required within the recipient site and should be undertaken before and after the planting of the salvaged material. The focus of control efforts should be on pest plants which compete with the salvaged material for available space, light, water and nutrients. Initially the focus of any management actions should be on high threat/high impact species at first and as numbers reduce over time the focus should shift to other species which are not considered high threat but may still compete with the replanted salvage material. Hand weeding around the salvaged plants must occur on a regular basis, especially on plants directly translocated which may carry weeds not already established within the recipient site. Given that Matted Flax-lily is susceptible to some herbicides it is important that skilled contractors familiar with Matted Flax-lily be used to ensure off-target damage is avoided.

4.7.5 Biomass Reduction

As Matted Flax-lily is generally found in grassy habitats, it can be self-maintaining in areas of high ground storey biomass e.g. dense grassy swards. However, the closure of inter tussock space from a lack of fire or grazing may reduce the areas of available occupancy within a recipient site. Grass length should be monitored around replanted salvaged material to ensure both native and exotic grass species are not limiting the growth of the salvaged material. If required, measures such as slashing, mosaic burning or weed control should be employed to lower the levels of the recipient site biomass. All measures to lower biomass measures must be done in consultation with a botanist familiar with the growth of Matted Flax-lily and also the management of native vegetation to limit potential impacts on replanted salvaged material. Slashing, burning or grazing may also be employed as forms of weed control.

4.7.6 Labelling

The correct labelling of all salvaged material should be undertaken to ensure plants can be tracked through the entire process. Plants should be labelled with small metal dog tags prior to their removal from the impact site, labelling should follow an alphabetic system for whole distinct plants in the ground e.g. A, B, C, D etc. Once plants are broken up at the impact site, they should then form a numeric system e.g. A1 would describe the first plant part to be removed, this plant would be directly taken to the recipient site, A2 would be taken to the nursery to be grown on in tubes to be planted in year two or three, A3 would be taken to a nursery as backup for the loss of plants. If further plants are removed from the same patch then they follow on A4 direct translocation, A5 delayed translocation, A6 back up material. The main priority is to be able to extract three plants from every patch for all end uses; however, the size of patches may only enable two or one plant to be removed, in these cases reducing the size of salvaged material may enable the desired number of patches to be salvaged.

Plant growth in a nursery often exceeds the pots capacity within a year or two. If repotting is required then labelling of divided material should be followed with numeric numerals, for example A2i, A3i and so forth. Within the nursery the side of pots should be labelled with a permanent marker along with a tag. At the

recipient site plants need to be labelled with a small metallic dog tag, embedded in the ground with a peg to prevent removal by animals or humans.

4.7.7 Access and Signage

The recipient site will be adequately fenced to demarcate it from the developed area. A lockable vehicle access gate will be installed in at least one section of the fence to provide access to the recipient site (Figure 2). At the entrance, signs will be erected that show activities that are allowed or prohibited in the area (e.g. no pets, no dumping of rubbish).

Signs will be erected highlighting the area's role in protection of the Matted Flax-lily and Natural Temperate Grassland of the Victorian Volcanic Plain. Signage will remain in place for the duration of the management plan.

4.7.8 Monitoring

Monitoring is critical to the success of any salvage and translocation of flora species (Vallee *et al.* 2004). Monitoring by a qualified botanist familiar with the ecology and growth habits of Matted Flax-lily should be undertaken to ensure the on-going survival of the plants and reporting to the relevant approval authorities. Monitoring will look at drought stress, pest plant and animal impacts, biomass and other site disturbances, along with measuring the replanted salvaged materials growth. Monitoring should be undertaken fortnightly for the first two months, monthly for the next four months, bi-monthly for the remainder of the first year and then every 3 to 6 months for the remainder of the five-year monitoring and management period. This should occur for each planting event, i.e. direct translocation, any planting of nursery stock, etc. Water will be provided as required during monitoring and management visits.

Should extreme weather events, such as periods of prolonged heat, occur during the first year of translocation, additional monitoring and management visits may be required.

To enable accurate monitoring and ongoing assessment of the health of the translocated plants, the following measurements will be recorded:

- dimensions of the plants;
- number of "leaflets" or "tillers" associated with each plant;
- average tiller height; and,
- whether or not the plant is flowering and the number of flowering spikes or culms from that season present.

A report should be prepared for the proponent and relevant referral authorities six months after replanting the salvaged material, then ongoing at every 12 months. The report will detail the growth level of the plants and include information on disturbances, deaths, further plantings and conditions at both the recipient site and nursery.

4.7.9 Performance Targets

The ultimate aim of translocation is to ensure the conservation of the genetic diversity of a species. The conservation of genetics is especially critical for endangered species and the loss of genetics from even a single plant can be seen as a failure of the translocation process.

The translocation of any species can be inherently difficult and may put excessive stress on material which is disturbed. However, Matted Flax-lily has been successfully translocated for several projects within the Melbourne region where disturbance was unavoidable. The success of these translocations is due in part to its strong tuberous root system which is dividable and generally tolerates disturbance. However, previous success should not be relied upon and each salvage and translocation must be carefully planned and managed to ensure success.

The aim of translocating flora is to ensure no genes are lost, regardless of whether they are contained in a single individual or entire population. Conserving genetic diversity drives the success of translocation, with any loss from the death of material seen as a failure to conserve the genetics of an individual.

Vallee *et al.* (2004) has detailed stringent criteria for determining the success of translocated plant species, criteria is broken into segments for short- and long-term success, and also the success of management of material in an *ex-situ* situation.

In the short-term biological success can be determined through:

- Greater than 70% of transplants surviving, with representatives from the range of genetic individuals planted;
- The new or enhanced populations have similar characteristics to the natural population(s), such as the survival and growth of translocated individuals;
- Survival of transplants to reproductive stage (producing flowers and fruit);
- The reproduction of translocated individuals, including the production of flowers and fruit at levels consistent with naturally occurring plants; and,
- Seed viability is consistent with that in naturally occurring plants.

Long-term Criteria includes:

- New seedlings are established;
- The number of individuals within the population being maintained or increased by natural recruitment; and,
- Adequate levels of biodiversity, particularly genetic variation, are maintained through generations.

Criteria for determining successful establishment and maintenance of the *ex situ* collection:

- The required number of transplants were available for the translocation proposal;
- Correct labelling and documentation maintained through cultivation;
- Techniques for successful propagation of the taxon are understood; and,
- A genetically representative collection was maintained.

Due to recruitment of Matted Flax-lily in a natural system being currently poorly known, the measurement of success through recruitment is not possible. The conservation of all genetic material should therefore be kept as a higher goal in determining success of the translocation.

Table 10. 10-year Conservation Management Plan for the Conservation Reserve.

Year	Action No.	Land use and management actions to be completed	Resource/personnel required	Timing of action	Key performance target
Year 1					
0	0.1	Endorse Environment Management Plan.	Council	Pre-commencement of any works associated with the construction of the residential development.	EMP approved by relevant parties. No construction works to occur until Action 0.1, 0.2, and 1.1 and 1.2 are satisfied. Year 1 of this Plan commences at the time of Action 0.1 and 0.2 being completed.
0	0.2	Secure Conservation Reserve with Section 173 Agreement.	Landowner/Council	Once EMP endorsed	Conservation Reserve secured with on-title agreement. No construction works to occur until Action 0.1, 0.2, and 1.1 and 1.2 are satisfied. Year 1 of this Plan commences at the time of Action 0.1 and 0.2 being completed.
0	0.3	Commence salvage of Matted Flax-lily plants.	Landowner/ Bushland Manager/ Qualified Ecologist	Once Conservation Reserve secured with s.173.	All impacted Matted Flax-lily salvaged from development footprint.
1	1.1	Install Perimeter Rabbit Proof Fence and No Go signage around Conservation Reserve prior to any pre-development activities, site clearing and/or other 'early works'.	Landowner/Fencing Contractor	Prior to the commencement of all construction works including any approved early works or site clearing.	Permanent fence is installed, and signs erected prior to commencement of residential development works.
1	1.2	Install temporary construction fencing around Public Reserve and No-Go signage prior to any predevelopment activities, site clearing and/or other 'early works'.	Landowner/Fencing or Building Contractor	Prior to the commencement of all construction works including any approved early works or site clearing.	Temporary fence is installed, and signs erected prior to commencement of residential development works.
1	1.3	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	Prior to commencement of residential development works – Ongoing.	All rubbish removed and removed immediately if dumping occurs.
1	1.4	Removal of all woody weeds specifically African Boxthorn and Sweet Briar. Remove all woody debris from site.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce cover of woody weeds to <1%.

Year	Action No.	Land use and management actions to be completed	Resource/personnel required	Timing of action	Key performance target
1	1.5	Undertake control of exotic grasses and herbaceous broad leaves. Two visits in spring, one visit in summer, autumn, winter.	Bushland Mgt Contractor/ Landowner	Before seed heads mature in spring/summer Five visits per year.	Reduction in weed cover to <5% cover.
1	1.6	Conduct rabbit control if required. (Warren fumigation and/or thatch removal).	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
1	1.7	Undertake biomass reduction either through weeding or small mosaic burns in selected areas.	Bushland Mgt Contractor/ Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
1	1.8	Undertake collection of grass seeds for direct seeding in Year 3.	Bushland Mgt Contractor/ Landowner	Summer	Enough seed collected to cover areas to be direct seeded in Year 3.
1	1.9	Prepare area to be direct seeded in year 3 (MFL Recipient Site - Figure 2a).	Bushland Mgt Contractor/ Landowner	Spring/Summer	Area of low native cover prepared to be directed seeded.
1	1.10	Install signage detailing significance of area for ecological values.	Landowner	Immediately after acceptance of Offset Management Plan.	Signage is installed and remains in place for the duration of the offsets.
1	1.11	Ground-truth and reassess quality and extent (i.e. VQA Assessment) of ecological values within the Conservation Reserve.	VQA-accredited ecologist	Spring/Summer	Confirm the quality and extent of ecological values present within the Conservation Reserve.
1	1.12	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Qualified Ecologist/ Landowner	12 months after CMP is implemented.	Report provided to relevant authorities detailing monitoring results.
Year 2					
2	2.1	Undertake control of woody weeds.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.
2	2.2	Undertake control of exotic grasses and herbaceous broadleaves. Four visits per year.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
2	2.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
2	2.4	Maintain Perimeter Fence.	Bushland Mgt Contractor/Landowner	Ongoing	Fence is maintained and fixed if broken.

Year	Action No.	Land use and management actions to be completed	Resource/personnel required	Timing of action	Key performance target
2	2.5	Undertake biomass reduction either weeding/mosaic burns in selected areas.	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
2	2.6	Prepare area to be direct seeded in year 3 (MFL Recipient Site - Figure 2a).	Bushland Mgt Contractor/Landowner	Spring/Summer	Area of low native cover prepared to be directed seeded.
2	2.7	Undertake collection of seeds (herbs) for planting in Year 3 and provided to nursery to grow.	Bushland Mgt Contractor/Nursery/Landowner	Summer	Seed collected to allow nursery to grow plants for year 3 planting.
2	2.8	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities.
2	2.9	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
2	2.10	Undertake collection of grass seeds for direct seeding in Year 3.	Bushland Mgt Contractor/ Landowner	Summer	Enough seed collected to cover areas to be direct seeded in Year 3.
Year 3					
3	3.1	Undertake control of woody weeds.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.
3	3.2	Undertake control of exotic grasses and herbaceous broadleaves (See Table 7). Four visits per year	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
3	3.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
3	3.4	Maintain Perimeter Fence.	Landowner	Ongoing	Fence is maintained and fixed if broken.
3	3.5	Undertake biomass reduction either weeding/mosaic burns in selected areas.	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
3	3.6	Undertake direct seeding with native grasses in bare areas (MFL Recipient Site - Figure 2a).	Bushland Mgt Contractor/Landowner	Winter	Areas prepared in Years 1&2 are direct seeded.

Year	Action No.	Land use and management actions to be completed	Resource/personnel required	Timing of action	Key performance target
3	3.7	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities.
3	3.8	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
Year 4					
4	4.1	Undertake control of woody weeds.	Bushland Mgt Contractor/Landowner.	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.
4	4.2	Undertake control of exotic grasses and herbaceous broadleaves (See Table 7). Four visits per year.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
4	4.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
4	4.4	Maintain Perimeter Fence.	Landowner	Ongoing	Fence is maintained and fixed if broken.
4	4.5	Undertake biomass reduction either weeding/mosaic burns in selected areas.	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
4	4.6	Undertake direct seeding with native grasses in bare areas. Supplementary planting of herbaceous species (MFL Recipient Site - Figure 2a).	Bushland Mgt Contractor/Landowner	Winter	Supplementary planting undertaken during winter in inter-tussock spaces.
4	4.7	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities
4	4.8	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
Year 5					
5	5.1	Undertake control of woody weeds.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.

Year	Action No.	Land use and management actions to be completed	Resource/personnel required	Timing of action	Key performance target
5	5.2	Undertake control of exotic grasses and herbaceous broadleaves. Three visits per year.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
5	5.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
5	5.4	Maintain Perimeter Fence.	Landowner	Ongoing	Fence is maintained and fixed if broken.
5	5.5	Undertake biomass reduction either weeding/mosaic burns in selected areas (MFL Recipient Site - Figure 2a).	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
5	5.6	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities.
5	5.7	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
5	5.8	Replacement of plant deaths from supplementary planting of herbs.	Bushland Mgt Contractor/Landowner	Winter	80% survival target for supplementary planting.
Year 6					
6	6.1	Undertake control of woody weeds.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.
6	6.2	Undertake control of exotic grasses and herbaceous broadleaves (See Table 9). Three visits per year.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
6	6.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season – late summer/early autumn.	Significant reduction in number/signs of rabbits.
6	6.4	Maintain Perimeter Fence.	Landowner	Ongoing	Fence is maintained and fixed if broken.
6	6.5	Undertake biomass reduction either weeding/mosaic burns in selected areas.	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
6	6.6	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities.

Year	Action No.	Land use and management actions to be completed	Resource/personnel required	Timing of action	Key performance target
		reserves and provide annual report to relevant authorities.			
6	6.7	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
Year 7					
7	7.1	Undertake control of woody weeds.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.
7	7.2	Undertake control of exotic grasses and herbaceous broadleaves. Three visits per year	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
7	7.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
7	7.4	Maintain Perimeter Fence	Landowner	Ongoing	Fence is maintained and fixed if broken.
7	7.5	Undertake biomass reduction either weeding/mosaic burns in selected areas	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
7	7.6	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities.
7	7.7	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
Year 8					
8	8.1	Undertake control of woody weeds.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.
8	8.2	Undertake control of exotic grasses and herbaceous broadleaves (See Table 7). Three visits per year	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
8	8.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
8	8.4	Maintain Perimeter Fence	Landowner	Ongoing	Fence is maintained and fixed if broken.

Year	Action No.	Land use and management actions to be completed	Resource/personnel required	Timing of action	Key performance target
8	8.5	Undertake biomass reduction either weeding/mosaic burns in selected areas	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
8	8.6	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities.
8	8.7	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
Year 9					
9	9.1	Undertake control of woody weeds.	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.
9	9.2	Undertake control of exotic grasses and herbaceous broadleaves. Three visits per year	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
9	9.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
9	9.4	Maintain Perimeter Fence	Landowner	Ongoing	Fence is maintained and fixed if broken.
9	9.5	Undertake biomass reduction either weeding/mosaic burns in selected areas	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
9	9.6	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities.
9	9.7	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
Year 10					
10	10.1	Undertake control of woody weeds (Table 9).	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Ensure cover of woody weeds is <1%.

Year	Action No.	Land use and management actions to be completed	Resource/personnel required	Timing of action	Key performance target
10	10.2	Undertake control of exotic grasses and herbaceous broadleaves. Three visits per year	Bushland Mgt Contractor/Landowner	Before seed heads mature in spring/summer.	Reduce perennial grass cover to <40% and annual grasses/broadleaves to <5%.
10	10.3	Conduct rabbit control if required.	Pest Mgt Contractor/Landowner	After peak breeding season - late summer/early autumn.	Significant reduction in number/signs of rabbits.
10	10.4	Maintain Perimeter Fence	Landowner	Ongoing	Fence is maintained and fixed if broken.
10	10.5	Undertake biomass reduction either weeding/mosaic burns in selected areas	Bushland Mgt Contractor/Landowner	Autumn	Areas of inter-tussock space opened up to allow recruitment.
10	10.6	Removal of all existing rubbish from site and rubbish removed immediately if further dumping occurs.	Landowner/Contractor	At least every 2 months.	All rubbish removed and removed immediately if dumping occurs.
10	10.7	Prepare a new management plan that reflects the ongoing management activities required to maintain the biodiversity gains achieved over the previous 10 years of management into perpetuity. This should include ongoing Matted Flax-lily management and monitoring requirements.	Qualified Ecologist	Prior to the end of the CMP actions.	Approved to the satisfaction of relevant authorities.
10	10.8	Monitor status of vegetation condition, and the status Matted Flax-lily and the condition of habitat within the reserves and provide annual report to relevant authorities.	Landowner/ Qualified Ecologist	Early Summer	Progress report to satisfaction of relevant authorities.

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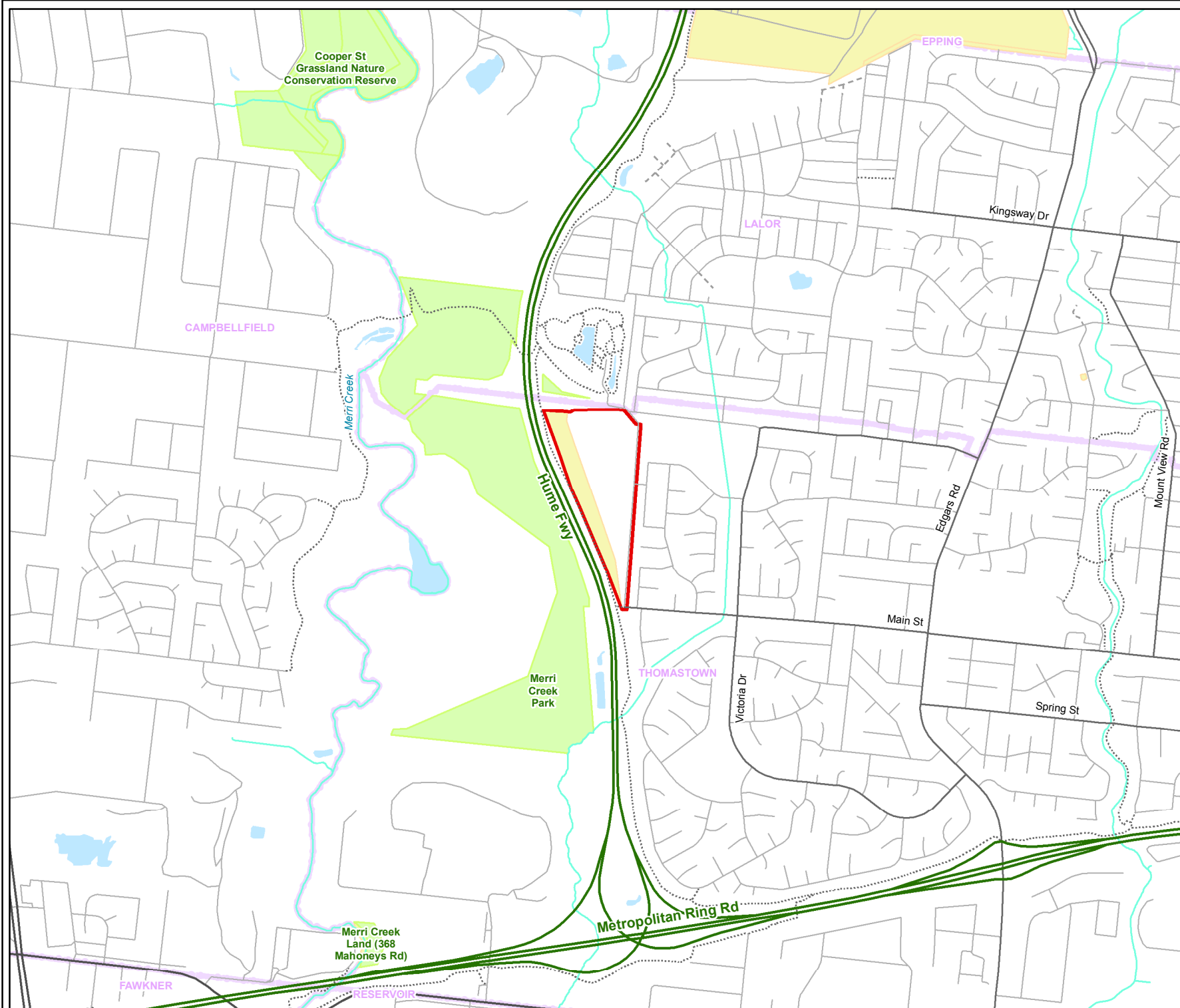
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FIGURES



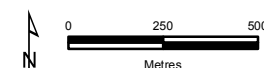
Legend

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



Figure 1

Location of the study area
Environmental Management Plan for 135-161 Barry Road, Thomastown



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Figure 2a

Ecological values and development plan

Environmental Management Plan for 135-161 Barry Road, Thomastown



Legend

 Study Area

 Crown Land

 Private Land

 Conservation Area

 Development plan

 Bike access / access

 Public reserve

 Potential wetland

 Potential Matted Flax-lily recipient site

● Matted Flax-lily records

+ Arching Flax-lily

+ Rhagodia

+ Slender Bindweed

Native Vegetation

Plains Grassland (EVC); Natural Temperate Grassland of the Victorian Volcanic Plain (EPBC Act community)

Plains Sedgy Wetland



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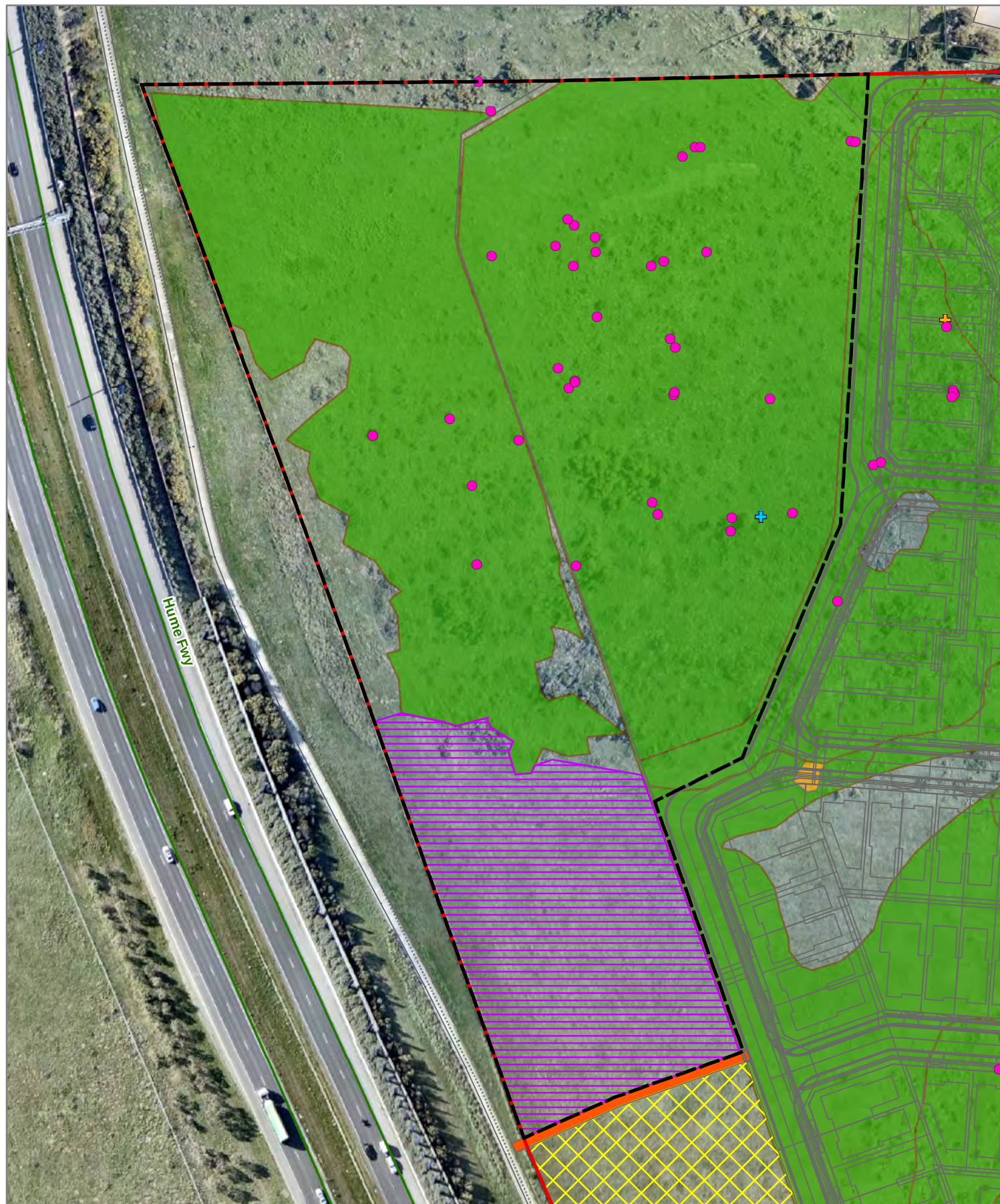


Figure 2b
Ecological values in
the Conservation Area
Environmental
Management Plan for
135-161 Barry Road,
Thomastown

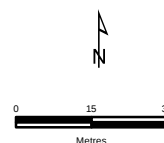
Legend

- Study Area
- Conservation Area
- Development plan
- Bike access / access
- Public reserve
- Potential Matted Flax-lily recipient site

- Matted Flax-lily records
- + Arching Flax-lily
- + Rhagodia

Ecological Vegetation Classes

- Plains Grassland
- Plains Sedgey Wetland



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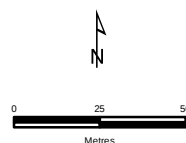


Figure 2c
Ecological values in the Public Reserves
Environmental Management Plan for 135-161 Barry Road, Thomastown

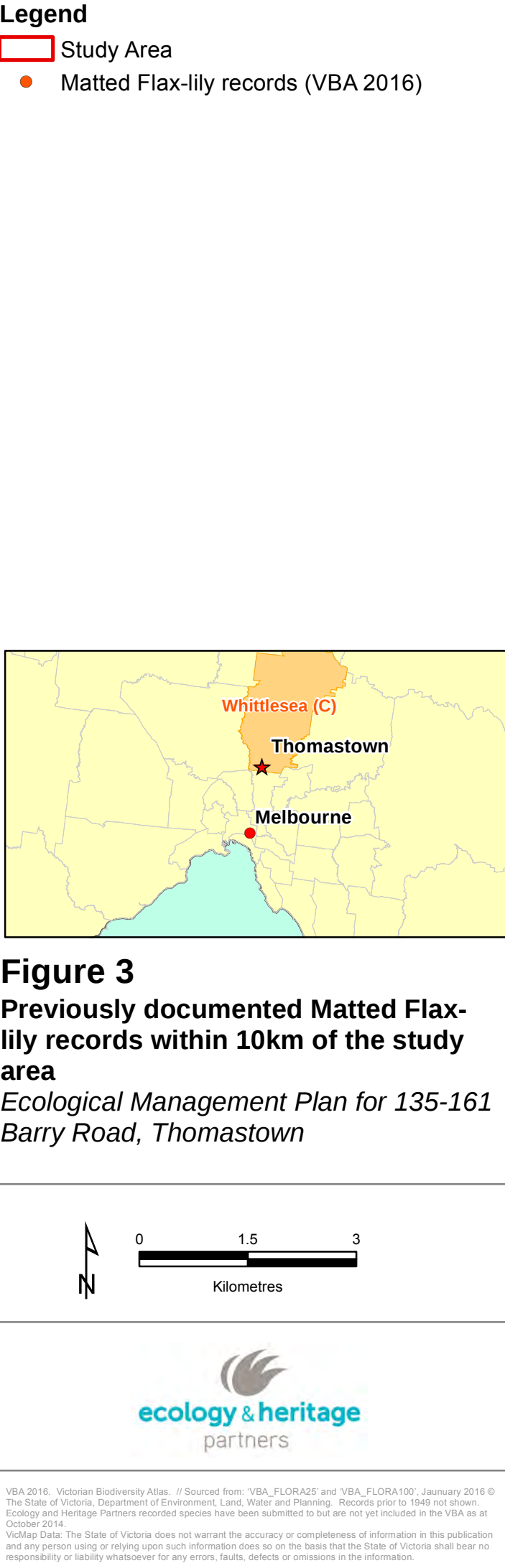
Legend

- Study Area
- Conservation Area
- Development plan
- Bike access / access
- Public reserve
- Potential wetland
- Potential Matted Flax-lily recipient site

- Matted Flax-lily records
- Ecological Vegetation Classes**
- Plains Grassland



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APPENDIX 1 FLORA

Appendix 1.1 Flora Results

Legend:

CR/EN/VU Listed as Critically Endangered/Endangered/Vulnerable under the EPBC Act

Cr Listed as Critically Endangered under the FFG Act (DELWP 2022d)

I Protected under the FFG Act (DELWP 2019)

***** Listed as a noxious weed under the CaLP Act

w Weed of National Significance

Table A1.1. Flora recorded within the study area.

Scientific Name	Common Name	Notes
INDIGENOUS SPECIES		
<i>Acaena agnipila</i>	Hairy Sheep's Burr	-
<i>Acaena echinata</i>	Sheep's Burr	-
<i>Asperula conferta</i>	Common Woodruff	-
<i>Atriplex semibaccata</i>	Berry Saltbush	-
<i>Austrostipa bigeniculata</i>	Kneed Spear-grass	-
<i>Austrostipa scabra</i> subsp. <i>falcata</i>	Rough Spear-grass	-
<i>Austrostipa</i> spp.	Spear Grass	-
<i>Asperula conferta</i>	Common Woodruff	-
<i>Chloris truncata</i>	Windmill Grass	-
<i>Convolvulus angustissimus</i> subsp. <i>omnigracilis</i>	Slender Bindweed	-
<i>Dianella amoena</i>	Matted Flax-lily	EN, cr
<i>Dianella longifolia</i> var. <i>grandis</i>	Flax-lily	cr
<i>Einadia nutans</i>	Nodding Saltbush	-
<i>Eleocharis acuta</i>	Common Spike-sedge	-
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush	-
<i>Erodium crinitum</i>	Blue Heron's-bill	-
<i>Eryngium ovium</i>	Blue Devil	-
<i>Geranium</i> spp.	Crane's Bill	-
<i>Linum marginale</i>	Native Flax	-
<i>Lomandra filiformis</i>	Wattle Mat-rush	-
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass	-
<i>Oxalis perennans</i>	Grassland Wood-sorrel	-

Scientific Name	Common Name	Notes
<i>Poa labillardierei</i>	Common Tussock-grass	-
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	-
<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	Slender Wallaby-grass	-
<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass	-
<i>Rytidosperma</i> spp.	Wallaby-grass	-
<i>Senecio quadridentatus</i>	Cotton Fireweed	I
<i>Tricoryne elatior</i>	Yellow Rush-lily	-
NON-INDIGENOUS OR INTRODUCED SPECIES		
<i>Agrostis capillaris</i> var. <i>capillaris</i>	Brown-top Bent	-
<i>Avena</i> spp.	Oat	-
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	-
<i>Aizoon pubescens</i> var. <i>pubescens</i>	Galenia	-
<i>Brassica</i> spp.	Turnip	-
<i>Briza</i> spp.	Quaking-grass	-
<i>Bromus catharticus</i>	Prairie Grass	-
<i>Bromus diandrus</i>	Great Brome	-
<i>Bromus hordeaceus</i> subsp. <i>hordeaceus</i>	Soft Brome	-
<i>Catapodium rigidum</i>	Fern Grass	-
<i>Cenchrus clandestinus</i>	Kikuyu	-
<i>Cirsium vulgare</i>	Spear Thistle	*
<i>Cynara cardunculus</i> subsp. <i>flavescens</i>	Artichoke Thistle	*
<i>Dactylis glomerata</i>	Cocksfoot	-
<i>Echium plantagineum</i>	Patterson's Curse	*
<i>Ehrharta erecta</i> var. <i>erecta</i>	Panic Veldt-grass	-
<i>Foeniculum vulgare</i>	Fennel	*
<i>Hypochaeris</i> spp.	Cat's-ear	-
<i>Helminthotheca echioides</i>	Ox-tongue	*
<i>Linum trigynum</i>	French Flax	-
<i>Lysimachia arvensis</i>	Pimpernel	-
<i>Lolium</i> spp.	Rye Grass	-
<i>Nassella hyalina</i>	Cane Needle-grass	*
<i>Nassella neesiana</i>	Chilean Needle-grass	*w
<i>Nassella trichotoma</i>	Serrated Tussock	*w
<i>Paspalum dilatatum</i>	Paspalum	-
<i>Phalaris aquatica</i>	Toowoomba Canary-grass	
<i>Plantago</i> spp.	Ribwort	
<i>Romulea rosea</i>	Onion Grass	-

Scientific Name	Common Name	Notes
<i>Rosa rubiginosa</i>	Sweet Briar	*
<i>Sonchus</i> spp.	Sow-thistle	-
<i>Sporobolus africanus</i>	Rat-tail Grass	-
<i>Trifolium</i> spp.	Clover	-
<i>Ulex europaeus</i>	Gorse	*w
<i>Xanthium spinosum</i>	Bathurst Burr	*
<i>Vulpia</i> spp.	Fescue	-

APPENDIX 2 PERMITTED CLEARING OBLIGATIONS

Biodiversity impact and offset requirements report

This report **does not represent an assessment by DELWP** of the proposed native vegetation removal. It provides additional biodiversity information to support moderate and high risk-based pathway applications for permits to remove native vegetation under clause 52.16 or 52.17 of planning schemes in Victoria.

Date of issue: 25/08/2016

DELWP ref: EHP_0496

Time of issue: 3:52 pm

Project ID	EHP7479_Thomastown
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Summary of marked native vegetation

Risk-based pathway	Moderate
Total extent	5.009 ha
Remnant patches	5.009 ha
Scattered trees	0 trees
Location risk	A
Strategic biodiversity score of all marked native vegetation	0.242

Offset requirements if a permit is granted

If a permit is granted to remove the marked native vegetation, a requirement to obtain a native vegetation offset will be included in the permit conditions. The offset must meet the following requirements:

Offset type	General offset
General offset amount (general biodiversity equivalence units)	0.731 general units
General offset attributes	
Vicinity	Port Phillip and Westernport Catchment Management Authority (CMA) or Whittlesea City Council
Minimum strategic biodiversity score	0.194 ¹

See Appendices 1 and 2 for details in how offset requirements were determined.

NB: values presented in tables throughout this document may not add to totals due to rounding

¹ Minimum strategic biodiversity score is 80 per cent of the weighted average score across habitat zones where a general offset is required

Biodiversity impact and offset requirements report

Next steps

Any proposal to remove native vegetation must meet the application requirements of the moderate risk-based pathway and it will be assessed under the moderate risk-based pathway.

If you wish to remove the marked native vegetation you are required to apply for a permit from your local council. Council will then refer your application to DELWP for assessment, as required. **This report is not a referral assessment by DELWP.**

The biodiversity assessment report from NVIM and this biodiversity impact and offset report should be submitted with your application for a permit to remove native vegetation you plan to remove, lop or destroy.

The Biodiversity assessment report generated by the tool within NVIM provides the following information:

- The location of the site where native vegetation is to be removed.
- The area of the patch of native vegetation and/or the number of any scattered trees to be removed.
- Maps or plans containing information set out in the *Permitted clearing of native vegetation – Biodiversity assessment guidelines*
- The risk-based pathway of the application for a permit to remove native vegetation

This report provides the following information to meet application requirements for a permit to remove native vegetation:

- Confirmation of the risk-based pathway of the application for a permit to remove native vegetation
- The strategic biodiversity score of the native vegetation to be removed
- Information to inform the assessment of whether the proposed removal of native vegetation will have a significant impact on Victoria's biodiversity, with specific regard to the proportional impact on habitat for any rare or threatened species.
- The offset requirements should a permit be granted to remove native vegetation.

Additional application requirements must be provided with an application for a permit to remove native vegetation in the moderate or high risk-based pathways. These include:

- A habitat hectare assessment report of the native vegetation that is to be removed
- A statement outlining what steps have been taken to ensure that impacts on biodiversity from the removal of native vegetation have been minimised
- An offset strategy that details how a compliant offset will be secured to offset the biodiversity impacts of the removal of native vegetation.

Refer to the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* and for a full list and details of application requirements.

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Melbourne 2016

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Obtaining this publication does not guarantee that an application will meet the requirements of clauses 52.16 or 52.17 of the Victoria Planning Provisions or that a permit to remove native vegetation will be granted.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of clauses 52.16 or 52.17 of the Victoria Planning Provisions.

Biodiversity impact and offset requirements report

Appendix 1 – Biodiversity impact of removal of native vegetation

Habitat hectares

Habitat hectares are calculated for each habitat zone within your proposal using the extent and condition scores in the GIS data you provided.

Habitat zone	Site assessed condition score	Extent (ha)	Habitat hectares
1-1-G	0.240	0.103	0.025
2-2-G	0.240	0.952	0.229
3-3-D	0.440	0.580	0.255
4-4-C	0.300	0.116	0.035
5-5-F	0.390	0.253	0.099
6-6-B	0.390	1.144	0.446
7-7-H	0.340	0.006	0.002
8-8-E	0.370	0.816	0.302
9-9-A	0.580	1.014	0.588
10-15-A	0.580	0.025	0.015
TOTAL			1.995

Impacts on rare or threatened species habitat above specific offset threshold

The specific-general offset test was applied to your proposal. The test determines if the proposed removal of native vegetation has a proportional impact on any rare or threatened species habitats above the specific offset threshold. The threshold is set at 0.005 per cent of the total habitat for a species. When the proportional impact is above the specific offset threshold a specific offset for that species' habitat is required.

The specific-general offset test found your proposal does not have a proportional impact on any rare or threatened species' habitats above the specific offset threshold. No specific offsets are required. A general offset is required as set out below.

Clearing site biodiversity equivalence score(s)

The general biodiversity equivalence score for the habitat zone(s) is calculated by multiplying the habitat hectares by the strategic biodiversity score.

Habitat zone	Habitat hectares	Proportion of habitat zone with general offset	Strategic biodiversity score	General biodiversity equivalence score (GBES)
1-1-G	0.025	100.000 %	0.177	0.004
2-2-G	0.229	100.000 %	0.256	0.059
3-3-D	0.255	100.000 %	0.250	0.064
4-4-C	0.035	100.000 %	0.110	0.004
5-5-F	0.099	100.000 %	0.237	0.023
6-6-B	0.446	100.000 %	0.227	0.101
7-7-H	0.002	100.000 %	0.264	0.000

Biodiversity impact and offset requirements report

Habitat zone	Habitat hectares	Proportion of habitat zone with general offset	Strategic biodiversity score	General biodiversity equivalence score (GBES)
8-8-E	0.302	100.000 %	0.250	0.076
9-9-A	0.588	100.000 %	0.258	0.152
10-15-A	0.015	100.000 %	0.271	0.004

Mapped rare or threatened species' habitats on site

This table sets out the list of rare or threatened species' habitats mapped at the site beyond those species for which the impact is above the specific offset threshold. These species habitats do not require a specific offset according to the specific-general offset test.

Species number	Species common name	Species scientific name
10019	Red-chested Button-quail	Turnix pyrrhotorax
10045	Lewin's Rail	Lewinia pectoralis pectoralis
10050	Baillon's Crake	Porzana pusilla palustris
10174	Bush Stone-curlew	Burhinus grallarius
10187	Eastern Great Egret	Ardea modesta
10195	Australian Little Bittern	Ixobrychus minutus dubius
10197	Australasian Bittern	Botaurus poiciloptilus
10212	Australasian Shoveler	Anas rhynchotis
10215	Hardhead	Aythya australis
10216	Blue-billed Duck	Oxyura australis
10217	Musk Duck	Biziura lobata
10220	Grey Goshawk	Accipiter novaehollandiae novaehollandiae
10230	Square-tailed Kite	Lophoictinia isura
10238	Black Falcon	Falco subniger
10498	Chestnut-rumped Heathwren	Calamanthus pyrrhopygius
10598	Painted Honeyeater	Grantiella picta
12159	Striped Legless Lizard	Delma impar
13207	Growing Grass Frog	Litoria raniformis
15021	Golden Sun Moth	Synemon plana
501084	Purple Diuris	Diuris punctata var. punctata
501456	Clover Glycine	Glycine latrobeana
503455	Rye Beetle-grass	Tripogon loliiformis
504206	Purple Blown-grass	Lachnagrostis punicea subsp. punicea
504655	Pale Swamp Everlasting	Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' variant
505084	Matted Flax-lily	Dianella amoena
505337	Austral Crane's-bill	Geranium solanderi var. solanderi s.s.

Biodiversity impact and offset requirements report

Appendix 2 – Offset requirements detail

If a permit is granted to remove the marked native vegetation the permit condition will include the requirement to obtain a native vegetation offset.

To calculate the required offset amount required the biodiversity equivalence scores are aggregated to the proposal level and multiplied by the relevant risk multiplier.

Offsets also have required attributes:

- General offsets must be located in the same Catchment Management Authority (CMA) boundary or Local Municipal District (local council) as the clearing and must have a minimum strategic biodiversity score of 80 per cent of the clearing.²

The offset requirements for your proposal are as follows:

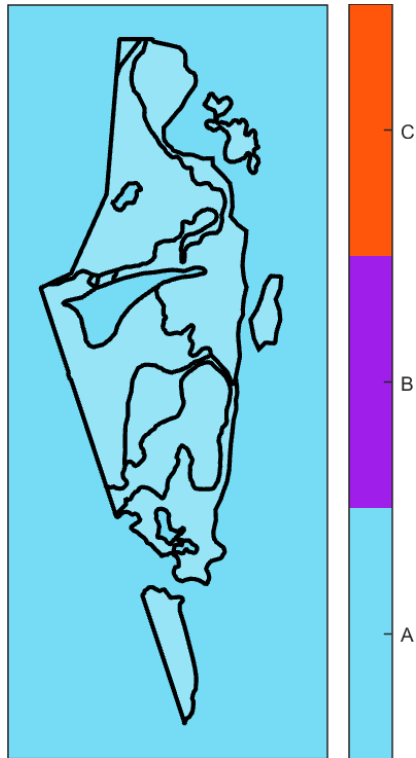
Offset type	Clearing site biodiversity equivalence score	Risk multiplier	Offset requirements	
			Offset amount (biodiversity equivalence units)	Offset attributes
General	0.487 GBES	1.5	0.731 general units	Offset must be within Port Phillip And Westernport CMA or Whittlesea City Council Offset must have a minimum strategic biodiversity score of 0.194

² Strategic biodiversity score is a weighted average across habitat zones where a general offset is required

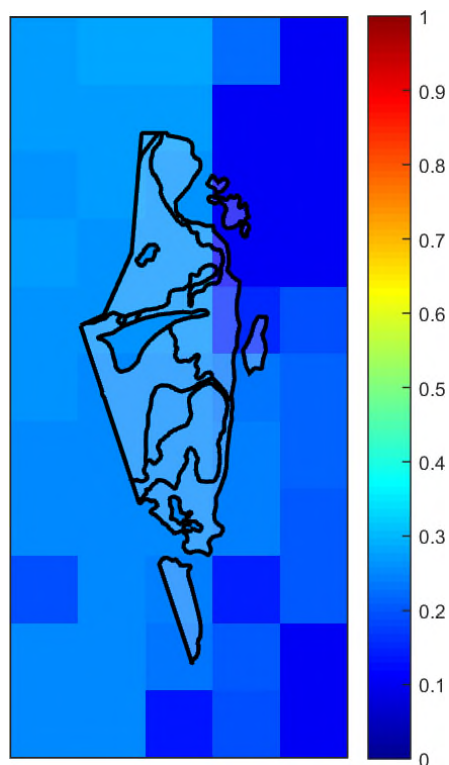
Biodiversity impact and offset requirements report

Appendix 3 – Images of marked native vegetation

1. Native vegetation location risk map



2. Strategic biodiversity score map



Biodiversity impact and offset requirements report

3. Aerial photograph showing marked native vegetation





Biodiversity impact and offset requirements report

Glossary

Condition score This is the site-assessed condition score for the native vegetation. Each habitat zone in the clearing proposal is assigned a condition score according to the habitat hectare assessment method. This information has been provided by or on behalf of the applicant in the GIS file.

Dispersed habitat A dispersed species habitat is a habitat for a rare or threatened species whose habitat is spread over a relatively broad geographic area greater than 2,000 hectares.

General biodiversity equivalence score The general biodiversity equivalence score quantifies the relative overall contribution that the native vegetation to be removed makes to Victoria's biodiversity. The general biodiversity equivalence score is calculated as follows:

$$\text{General biodiversity equivalence score} = \text{habitat hectares} \times \text{strategic biodiversity score}$$

General offset amount This is calculated by multiplying the general biodiversity equivalence score of the native vegetation to be removed by the risk factor for general offsets. This number is expressed in general biodiversity equivalence units and is the amount of offset that is required to be provided should the application be approved. This offset requirement will be a condition to the permit for the removal of native vegetation.

$$\text{Risk adjusted general biodiversity equivalence score} = \text{general biodiversity equivalence score clearing} \times 1.5$$

General offset attributes General offset must be located in the same Catchment Management Authority boundary or Municipal District (local council) as the clearing site. They must also have a strategic biodiversity score that is at least 80 per cent of the score of the clearing site.

Habitat hectares Habitat hectares is a site-based measure that combines extent and condition of native vegetation. The habitat hectares of native vegetation is equal to the current condition of the vegetation (condition score) multiplied by the extent of native vegetation. Habitat hectares can be calculated for a remnant patch or for scattered trees or a combination of these two vegetation types. This value is calculated for each habitat zone using the following formula:

$$\text{Habitat hectares} = \text{total extent (hectares)} \times \text{condition score}$$

Habitat importance score The habitat importance score is a measure of the importance of the habitat located on a site for a particular rare or threatened species. The habitat importance score for a species is a weighted average value calculated from the habitat importance map for that species. The habitat importance score is calculated for each habitat zone where the habitat importance map indicates that species habitat occurs.

Habitat zone Habitat zone is a discrete contiguous area of native vegetation that:

- is of a single Ecological Vegetation Class
- has the same measured condition.

Biodiversity impact and offset requirements report

Highly localised habitat	A highly localised habitat is habitat for a rare or threatened species that is spread across a very restricted area (less than 2,000 hectares). This can also be applied to a similarly limited sub-habitat that is disproportionately important for a wide-ranging rare or threatened species. Highly localised habitats have the highest habitat importance score (1) for all locations where they are present.
Minimum strategic biodiversity score	The minimum strategic biodiversity score is an attribute for a general offset. The strategic biodiversity score of the offset site must be at least 80 per cent of the strategic biodiversity score of the native vegetation to be removed. This is to ensure offsets are located in areas with a strategic value that is comparable to, or better than, the native vegetation to be removed. Where a specific and general offset is required, the minimum strategic biodiversity score relates only to the habitat zones that require the general offset.
Offset risk factor	There is a risk that the gain from undertaking the offset will not adequately compensate for the loss from the removal of native vegetation. If this were to occur, despite obtaining an offset, the overall impact from removing native vegetation would result in a loss in the contribution that native vegetation makes to Victoria's biodiversity. To address the risk of offsets failing, an offset risk factor is applied to the calculated loss to biodiversity value from removing native vegetation. <i>Risk factor for general offsets = 1.5</i> <i>Risk factor for specific offset = 2</i>
Offset type	The specific-general offset test determines the offset type required. When the specific-general offset test determines that the native vegetation removal will have an impact on one or more rare or threatened species habitat above the set threshold of 0.005 per cent, a specific offset is required. This test is done at the permit application level. A general offset is required when a proposal to remove native vegetation is not deemed, by application of the specific-general offset test, to have an impact on any habitat for any rare or threatened species above the set threshold of 0.005 per cent. All habitat zones that do not require a specific offset will require a general offset.
Proportional impact on species	This is the outcome of the specific-general offset test. The specific-general offset test is calculated across the entire proposal for each species on the native vegetation permitted clearing species list. If the proportional impact on a species is above the set threshold of 0.005 per cent then a specific offset is required for that species.
Specific offset amount	The specific offset amount is calculated by multiplying the specific biodiversity equivalence score of the native vegetation to be removed by the risk factor for specific offsets. This number is expressed in specific biodiversity equivalence units and is the amount of offset that is required to be provided should the application be approved. This offset requirement will be a condition to the permit for the removal of native vegetation. <i>Risk adjusted specific biodiversity equivalence score</i> <i>= specific biodiversity equivalence score clearing × 2</i>

Biodiversity impact and offset requirements report

Specific offset attributes Specific offsets must be located in the modelled habitat for the species that has triggered the specific offset requirement.

Specific biodiversity equivalence score The specific biodiversity equivalence score quantifies the relative overall contribution that the native vegetation to be removed makes to the habitat of the relevant rare or threatened species. It is calculated for each habitat zone where one or more species habitats require a specific offset as a result of the specific-general offset test as follows:

$$\text{Specific biodiversity equivalence score} = \text{habitat hectares} \times \text{habitat importance score}$$

Strategic biodiversity score This is the weighted average strategic biodiversity score of the marked native vegetation. The strategic biodiversity score has been calculated from the *Strategic biodiversity map* for each habitat zone.

The strategic biodiversity score of native vegetation is a measure of the native vegetation's importance for Victoria's biodiversity, relative to other locations across the landscape. The *Strategic biodiversity map* is a modelled layer that prioritises locations on the basis of rarity and level of depletion of the types of vegetation, species habitats, and condition and connectivity of native vegetation.

Total extent (hectares) for calculating habitat hectares This is the total area of the marked native vegetation in hectares.
The total extent of native vegetation is an input to calculating the habitat hectares of a site and in calculating the general biodiversity equivalence score. Where the marked native vegetation includes scattered trees, each tree is converted to hectares using a standard area calculation of 0.071 hectares per tree. This information has been provided by or on behalf of the applicant in the GIS file.

Vicinity The vicinity is an attribute for a general offset.
The offset site must be located within the same Catchment Management Authority boundary or Local Municipal District as the native vegetation to be removed.

APPENDIX 3 OFFSET SITE DETAILS

Offset site report

This report provides information about native vegetation offset sites in accordance with the *Permitted clearing of native vegetation – Biodiversity assessment guidelines*. The information in this report is based on spatial information and site gain in habitat hectares, provided by the offset provider (or their representative), about the offset site to DELWP. Any changes to this input information will change the amount of offsets available at the offset site and will require this report to be reissued.

This report should be read in conjunction with the *Native vegetation offset market fact sheet* that provides information on how offsets are measured and categorised, and how they can be used to satisfy conditions on permits to remove native vegetation and traded as credits in the offset market.

Date of issue: 25/08/2016

DELWP ref: EHP_0497

Time of issue: 3:54 pm

Project ID	EHP7479_Thomastown
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Summary of offset site

Total extent	3.062 ha
Remnant patches	3.062 ha
Revegetation	0.000 ha
Number of biodiversity class areas (BCAs)	1
Catchment Management Authority and Municipal district	Port Phillip And Westernport CMA, Whittlesea City Council

Summary of biodiversity equivalence units available at offset site

The offset site has the following general and specific biodiversity equivalence units.

General biodiversity equivalence units	0.248 general units*
Specific biodiversity equivalence units	Nil

*Note that some biodiversity equivalence units may be alternates. The use of any biodiversity equivalence units of one type within a BCA will result in a proportional reduction in biodiversity equivalence units of other types within that BCA.

NB: Values presented in tables throughout this document may not add to totals due to rounding.

Offset site report

Offset site details

Biodiversity equivalence units available and attributes by BCA

The biodiversity equivalence units and attributes for each BCA are as follows:

BCA	Offset type	Biodiversity equivalence units	Offset attributes
1	General	0.248 general units	0.268 strategic biodiversity score Port Phillip And Westernport CMA or Whittlesea City Council

Site gain in habitat hectares

Site gain in habitat hectares is calculated for each biodiversity class area (BCA) in the offset site using the extent and site gain per hectare scores in the GIS data provided.

BCA	Site gain per hectare*	Extent (ha)	Site gain in habitat hectares
1	0.302	3.062	0.924
TOTAL			0.924

* This value has been calculated using the site gain per hectare values for each habitat zone as provided with the GIS file of the offset site. The site gain per hectare value for a BCA is calculated from the weighted average of site gain per hectare values for all habitat zones that intersect with the BCA.

Offset site report

Offset site biodiversity equivalence unit calculations by biodiversity class area

The general biodiversity equivalence units for the biodiversity class area are calculated by multiplying the site gain in habitat hectares by the strategic biodiversity score.

Where a BCA has specific units for one or more rare or threatened species, the specific biodiversity equivalence units for each BCA is calculated by multiplying the site gain in habitat hectares by the habitat importance score for each of these species.

BCA	Site gain in habitat hectares	Offset type	General offset attributes	Specific offset attributes		Biodiversity equivalence units*
			Strategic biodiversity score	Species number, Species common name, Species scientific name	Habitat Importance Score	
1	0.924	General	0.268			0.248 general units

*Note that biodiversity equivalence units within a BCA are alternates. The use of any biodiversity equivalence units of one type within a BCA will result in a proportional reduction in biodiversity equivalence units of other types within that BCA.

Next steps

Offset sites must meet eligibility criteria as outlined in the *Native vegetation gain scoring manual, version 1* available on the DELWP website and any other relevant requirements. Eligible offset sites that are intended to be banked or sold as credits must be registered on the native vegetation credit register. A habitat hectare assessment is required to be undertaken before any offset can be registered on the credit register.

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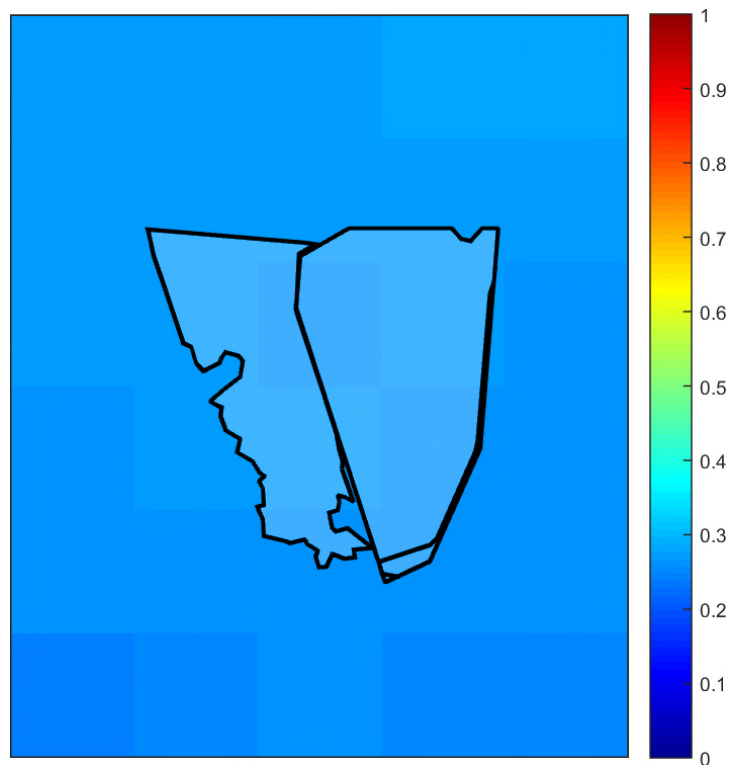
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Appendix 1 – Images of marked native vegetation

1. Aerial photograph showing marked native vegetation



2. Strategic biodiversity score map



Offset site report

Glossary

Alternate offset types	Offset types within a biodiversity class area (BCA) are alternates. The use of one offset type will result in the proportional reduction of all other offset types within the BCA. For example, in a BCA that has 1 general unit and 2 specific units for a particular rare or threatened species, if all of the general units are used (100 per cent) there will be no specific units remaining, as these specific units will also reduce by 100 per cent. Alternatively, if in this same BCA only half the general units were used (50 per cent) then there will be 0.5 general units and 1 specific units remaining, half the original values.
Biodiversity Class Area (BCA)	The BCA is the organisational unit of an offset site. BCAs are determined by the unique combination of general and specific biodiversity equivalence units calculated across the offset site.
Condition score	This is the site-assessed condition score for the native vegetation. Each habitat zone in the offset site is assigned a condition score according to the habitat hectare assessment method. This information has been provided by or on behalf of the applicant in the GIS file submitted for processing.
General biodiversity equivalence units (general units)	The general biodiversity equivalence units (general units) quantify the relative overall contribution that the protection and management of native vegetation at the offset site makes to Victoria's biodiversity. The general biodiversity equivalence units is calculated as follows: $\text{General biodiversity equivalence units} = \text{site gain in habitat hectares} \times \text{strategic biodiversity score}$
General offset attributes	The attributes of a general offset site must match those in an offset requirement that is a condition on a permit to remove native vegetation, in order for that offset site to be used to satisfy the permit condition. General offsets must be located in the same Catchment Management Authority boundary or Municipal District (local council) as the clearing site. They must also have a strategic biodiversity score that is at least 80 per cent of the clearing site. The strategic biodiversity score of a general offset is determined by the biodiversity class area the units are sold from.
Habitat importance score	The habitat importance score is a measure of the relative importance of the habitat located on a site for a particular rare or threatened species, compared to all other habitat for that species. The habitat importance score for a species is a weighted average value calculated from the habitat importance map for that species. The habitat importance score is calculated for each biodiversity class area where the habitat importance map indicates that species habitat occurs and where the protection of habitat across the offset agreement is greater than the threshold test.
Habitat zone	Habitat zone is a discrete contiguous area of native vegetation that: • is of a single Ecological Vegetation Class • has the same measured condition.
Offset type	There are two types of offsets, general offset and specific offsets. All offset sites can be general offsets. Sites that are mapped as habitat for specific rare or threatened species can be specific offsets for those species habitat.

Offset site report

Site gain in habitat hectares

Site gain in habitat hectares is a site-based measure that combines extent and site gain per hectare of native vegetation at an offset site. The site gain in habitat hectares measures both the current status of native vegetation at a site and the potential site gain from the protection and management of the native vegetation at that site. The condition of a site, or the gain in condition due to protection and management actions are multiplied by the extent (area in hectares) of native vegetation to calculate the site gain in habitat hectares value. For a biodiversity class area the site gain in habitat hectares is determined using the following formula:

$$\text{Site gain in habitat hectares} = \text{total extent (hectares)} \times \text{site gain per hectare}$$

Site gain per hectare

This is the site-assessed gain per hectare for the native vegetation based on the agreed management and security commitments. Each habitat zone in the offset proposal is assigned a site gain per hectare according to the habitat hectare assessment and gain scoring methods. This is a number between 0 and 1. This information has been provided by or on behalf of the applicant in the GIS file. These values are aggregated to the level of the BCA in order to calculate offset amounts at the offset site.

Specific offset attributes

The attributes of a specific offset site must match those in an offset requirement that is a condition on a permit to remove native vegetation, in order for that offset site to be used to satisfy the permit condition. Specific offsets must be located in the mapped habitat for the species that has triggered the specific offset requirement.

Specific biodiversity equivalence units (specific units)

Specific biodiversity equivalence units (specific units) are associated with a particular rare or threatened species habitat. The specific biodiversity equivalence units quantifies the relative overall contribution that the protection and management of native vegetation at an offset site makes to the habitat of the relevant rare or threatened species. Specific units are calculated for each species in each biodiversity class area where the result of the threshold test is greater than 0.0025 per cent. Specific units are calculated as follows:

$$\begin{aligned} \text{Specific biodiversity equivalence units}_{\text{species } x} \\ = \text{site gain in habitat hectares} \times \text{habitat importance score}_{\text{species } x} \end{aligned}$$

Strategic biodiversity score

This is the weighted average strategic biodiversity score of the marked native vegetation. The strategic biodiversity score has been calculated from the *Strategic biodiversity map* for each BCA. The strategic biodiversity score of native vegetation is a measure of the native vegetation's importance for Victoria's biodiversity, relative to other locations across the landscape. The *Strategic biodiversity map* is a modelled layer that prioritises locations on the basis of rarity and level of depletion of the types of vegetation, species habitats, and condition and connectivity of native vegetation.

Threshold test

By default, a threshold test is applied to offset sites to limit the number of rare or threatened species for which specific biodiversity equivalence units are calculated. This is done to make organising and trading credits more manageable. The test determines if the offset site can generate specific habitat protection for any rare or threatened species above a threshold. The threshold is set at 0.0025 per cent of the total habitat for a species. When the proportion of habitat protected is above the threshold, specific biodiversity equivalence units are calculated for that species.

Offset site report

**Total extent
(hectares) for
calculating site
gain in habitat
hectares**

This is the total area of offset site native vegetation in hectares.

The total extent of native vegetation is an input to calculating the site gain in habitat hectares at a site and in calculating the total gain in general and specific biodiversity equivalence units.

APPENDIX 4 CULTURAL HERITAGE CONTINGENCY

It is the responsibility of the Project manager/Development Manager and all contractors to have a copy of these contingencies on site throughout all works that require ground disturbance.

If Ancestral remains are uncovering during works, the following actions must be undertaken:

- **STOP WORKS**, leave the remains in place, and protected from any harm or damage;
- **DO NOT** take any photography or video of the remains, unless instructed to do so by Office of Aboriginal Affairs Victoria (OAAV);
- The on-site manager must immediately notify the State Coroner's Office. A forensic anthropologist will assess the report and determine whether the Victorian Police must be contacted;
- If there are reasonable grounds to believe that the human remains are Ancestral Remains, OAAV, the relevant Area Chief Ranger and the Manager of the Cultural Heritage Branch and the relevant Regional Aboriginal Heritage Coordinator must be contacted;
- **DO NOT** contact the media; and,
- OAAV in consultation with the relevant Registered Aboriginal Parties (RAP) or Traditional Owner group, will determine the appropriate course of action as required by s.18(2)(b) of the Aboriginal Heritage Act. Works are not to commence until these requirements have been met.

If any other Aboriginal Cultural Heritage is uncovered during works, the following actions must be undertaken:

- **STOP WORKS**, leave in heritage in place, and protected from any harm or damage;
- Immediately notify the on-site manager and OAAV;
- Ensure that works at the location of the discovery are suspended and an appropriate buffer established around the Aboriginal heritage place or site and/or object. If necessary, isolate by a fence, safety webbing, or other suitable barrier; and,
- All workers must be notified of the discovery and they should not continue works within the buffer area at this point.

Note: works may recommence, outside this area of exclusion.

The project Manager, and RAP/Traditional Owners organisations will collaborate and agree on the appropriate actions, including:

- Approvals and/or authorisations (CHMP/ CHP); and,
- Update/ and or completion of relevant Aboriginal cultural heritage records.