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Report to:	MAB Corporation Pty Ltd		
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Biosis matter nos:	35103, 25346 and 16630		

File name: 35103.Edgards.Creek.Management.Plan.FIN02.20220729.docx

**Citation:** Biosis 2022. Alliance Business Park, Epping: Edgars Creek Management Plan. Report for MAB Corporation. Author: Steve Mueck,

Biosis Pty Ltd, Melbourne. Project No. 35103

Version/date	Internal review by	Date sent to client	
Draft version 01	MSG	31/05/2022	
Final version 01	MSG	15/06/2022	
Final version 02	SGM	18/07/2022	

# Acknowledgements

Biosis Research acknowledges the contribution of the following people and organisations in undertaking this study:

- MAB Corporation: Dan Rush, Antonio Brekalo and Mike Martin
- Department of Environment, Land, Water and Planning for access to the Victorian Biodiversity Atlas

The following Biosis staff were involved in this project:

- Sally Mitchell for mapping
- Matt Gibson for quality assurance

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# **Contents**

Sun	nmary	V
1.	Introduction	6
1.1	Project background	6
1.2	Scope	6
1.3	Edgars Creek Reserve	9
1.4	Objectives	9
1.5	Timeframe and implementation	9
2.	Conservation Management Plan	10
2.1	Current management actions	10
	2.1.2 Protect the Edgars Creek corridor	10
2.2	Construction management actions	12
	2.2.1 General works management	12
2.3	Infrastructure maintenance actions	13
	2.3.1 Scanlon Drive culverts	13
	2.3.2 Storm-water Ponds	14
	2.3.3 Management of created wetlands	15
2.4	Habitat management	16
	2.4.2 Biomass control in terrestrial areas	16
	2.4.3 Weed control	17
	2.4.4 Revegetation within the creek corridor	18
Ref	erences	20
	pendix 1 Annual management actions in the Edgars Creek Corridor	
	t <b>of Figures</b> ure 1 Location of Alliance Business Park, O'Herns Road, Epping Victoria	7
_	ure 2 Biodiversity values within the Alliance Business Park, Edgars Creek Corridor, Epping	
_	ure 3 Creek corridor works within the Alliance Business Park, Edgars Creek Corridor	
List	t of Tables	
Tab	le 1 Progress of actions: Protect the Edgars Creek corridor	12
Tab		
Tab	le 3 Maintenance actions	14
Tab	le 4 Progress of actions: Construction of created wetlands	15
Tab	le 5 Progress of actions: Management of created wetlands	16
Tab	le 6 Progress of actions: Biomass control in terrestrial areas	17
Tab	le 7 Progress of actions: Weed control	19



Table 8	Management actions for the northern section of the Edgars Creek Corridor from July	2022 (in
accordan	ce with EPBC 2012/6298)	24
Table 9	Management actions for the northern section of the Edgars Creek Corridor from July	2022 (in
accordan	ce with EPBC 2017/7930)	30



# **Summary**

Biosis Pty Ltd was commissioned by MAB Corporation (MAB) to prepare a consolidated management plan for the reach of Edgars Creek (the creek corridor) surrounded by Alliance Business Park in Epping. This includes the creek corridor retained in association with two referrals under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) including EPBC 2012/6298 and 2017/7930. These referrals resulted in the production of separate management plans for the creek corridor associated with each stage of Alliance Business Park. These plans were to be reviewed on a regular basis and, in both instances, the land was eventually to be passed to the City of Whittlesea (Council).

This revised and updated plan covers all of the creek corridor within Alliance Business Park and supersedes previously approved plans in relation to both abovementioned referrals. The construction of Alliance Business Park has been completed and the creek corridor is to be transferred into Council's ownership in the second half of 2022.

The design of stormwater infrastructure proposed as part of Referral 2017/7930 was required to be redesigned by Melbourne Water and this updated design is described in this plan. Similarly the final development design initiated unexpected erosion adjacent to Jersey Drive and an array of bund walls and associated rehabilitation works were required to mitigate this impact. These mitigation works have been incorporated into this plan.

The priority for the management of this section of Edgars Creek will be to maintain a habitat corridor suitable for the movement of Growling Grass Frog (GGF) *Litoria raniformis*. Edgars Creek is recognised as an important dispersal corridor for GGF in the Epping area and it is important that habitat connectivity is maintained along its length to link populations upstream and downstream of the creek corridor.

This plan documents the actions that MAB has committed to undertake to ensure that habitat connectivity is maintained along Edgars Creek. While the land will be transferred to Council during 2022 and Council commits to the ongoing implementation of the plan, Alliance Business Park Pty Ltd will retain ultimate responsibility for the implementation of the plan until the end of the approval period for each referral (31 December 2027 for the portion covered by EPBC 2012/6298 and 1 August 2038 for the portion covered by EPBC 2017/7930). A summary of the annual management actions required in the creek corridor (as per the above EPBC Approvals) is provided at Appendix 1 of this plan. Beyond those dates Council will be responsible for maintenance of the ecological values present in perpetuity.

This plan incorporates the following principles:

- Protection of the established creek corridor along Edgars Creek, which will be allocated an appropriate conservation zoning at the earliest opportunity.
- Ongoing management of habitat within the creek corridor to maintain and improve its value as habitat for GGF.
- Maintenance of the culverts associated with the Scanlon Drive crossing over Edgars Creek to ensure they do not inhibit the movement of GGF.
- Protection and maintenance of other biodiversity values including habitat for threatened fauna (i.e. Golden Sun Moth Synemon plana), flora (i.e. Matted Flax-lily Dianella amoena and Tough Scurf-pea Cullen tenax) and vegetation communities (i.e. Natural Temperate Grassland of the Victorian Volcanic Plain which equates to Plains Grassland).

This plan should be reviewed every 2 years to ensure it remains fit for purpose.



# 1. Introduction

# 1.1 Project background

Biosis Pty Ltd (Biosis) was commissioned by MAB Corporation (MAB) to review the two Edgars Creek Management Plans (ECMP) and consolidate these into a single management plan for the reach of Edgars Creek within the Alliance Business Park, OHerns Road, Epping (Figure 1).

Alliance Business Park covers 93.7 ha and has been developed as an industrial estate. A corridor averaging 50 metres either side of the creek has been retained within the subdivision to maintain habitat continuity for populations of Growling Grass Frog (GGF) *Litoria raniformis* known to occur to the north and south of this property.

The creek corridor also supports other Matters of National Environmental Significance (MNES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) including a population of Golden Sun Moth (GSM) *Synemon plana*, a small population of Matted Flax-lily (MFL) *Dianella amoena* and small remnants of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) (Figure 2). The biodiversity values of the site are documented in Biosis (2012, 2017a).

Due to the presence of MNES on the site, the original proposals for subdivision were referred to the Australian Minister for the Environment to determine if approval was required under the EPBC Act (Referral 2012/6298 and Referral 2017/7930). Both proposals were deemed to be controlled actions by the Department of Agriculture, Water and the Environment (DAWE) (or its predecessors). Conditions for the projects' approval included the preparation of a Growling Grass Frog Conservation Management Plan (CMP) for the relevant sections of Edgars Creek. The state Department of Environment, Land, Water and Planning (DELWP) also included a condition within the planning permits for subdivision as follows:

An Edgars Creek Management Plan must be prepared to the satisfaction of the Department of Environment, Land, Water and Planning that includes the revegetation, translocation, and GGF habitat issues. When approved the Plan will be endorsed by the Responsible Authority and form part of this planning permit.

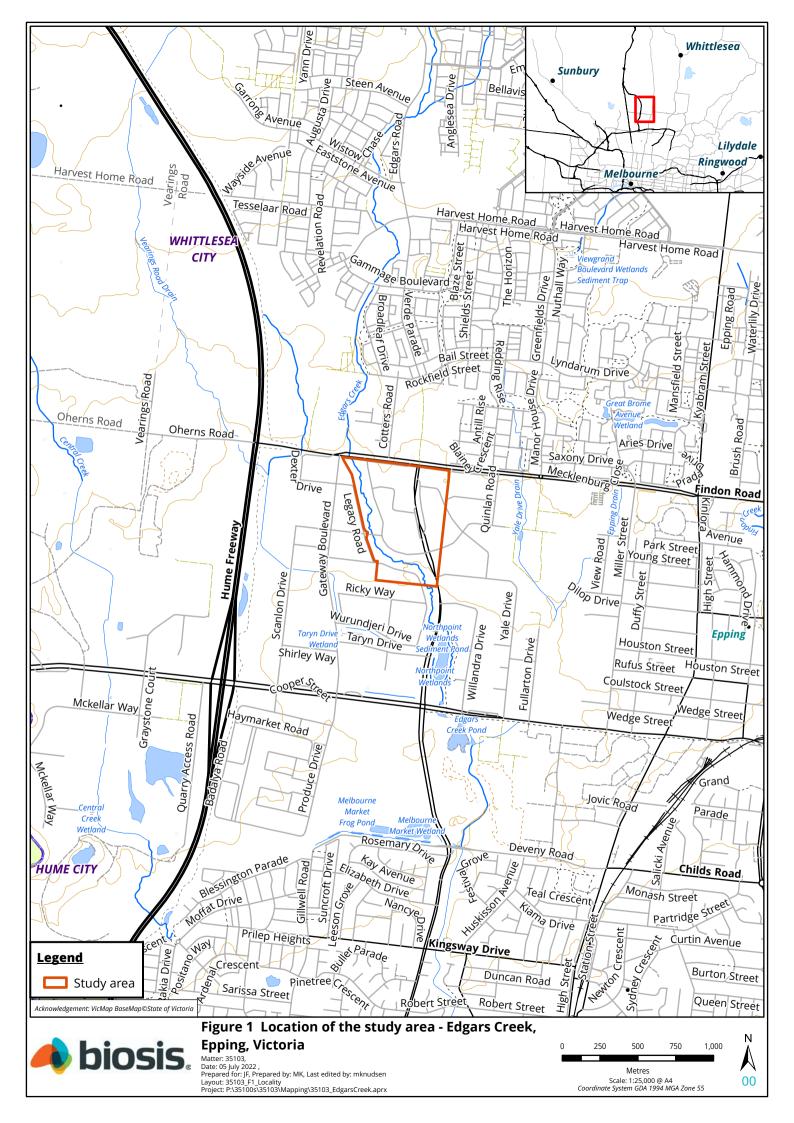
This plan is a revision and consolidation of the two originally approved management plans (Biosis 2013, Biosis 2017b) and encompasses the requirements of both DELWP and DAWE. The City of Whittlesea (Council) have also had input into the preparation of this consolidated plan.

A part of the construction of the eastern half of Alliance Business Park Melbourne Water required a different stormwater management solution to that identified in EPC 2017/7930. The establishment of Jersey Drive also initiated unexpected erosion. To mitigate this outcome an engineering solution was required. There different engineering outcomes are described in this plan. Adjustments to the approval requirements associated with EPBC 2017/7930 to accommodate these design alterations are in progress.

# 1.2 Scope

This plan deals with the management of the Edgars Creek Corridor, primarily to maintain its value as dispersal habitat for GGF. The original plans (Biosis 2013, Biosis 2017b) guided the management of these values in the context of construction activities associated with the development outside the creek corridor, as these had the potential to impact on the values within the corridor itself. However, development outside of the creek corridor as part of the two approvals for this industrial estate has now been completed. This updated plan deals with ongoing management requirements to control weeds and otherwise maintain other biodiversity values, including MNES within the creek corridor (Figure 2).

The area of land directly covered by the consolidated Management Plan is shown in Figure 2.





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# 1.3 Edgars Creek Reserve

The Edgars Creek Reserve within Alliance Business Park is identified (from north to south) as three parcels of land:

- RES2 in PS724897 (121W Scanlon Drive Epping 3076)
- RES3 in PS724897 (29W Jersey Drive Epping 3076)
- RES1 in PS814757 (575W Edgars Road Epping 3076)

All parcels are currently identified as Municipal Reserves and are zoned Comprehensive Development Zone – Schedule 2 (CDZ2) under the Whittlesea Planning Scheme (Planning Scheme).

These three parcels of land are referred to as the 'creek corridor' within this plan.

# 1.4 Objectives

The objectives of this plan are to identify the necessary management actions which will:

- Protect GGF habitat corridor along Edgars Creek.
- Allow for the long-term maintenance of Edgars Creek as habitat for GGF, by ensuring that animals can move unimpeded along the creek corridor.
- Improve habitat values along the creek corridor to benefit GGF.
- Protect and maintain other biodiversity values including habitat for threatened fauna (i.e. Golden Sun Moth *Synemon plana*), flora (i.e. Matted Flax-lily *Dianella amoena* and Tough Scurf-pea *Cullen tenax*) and vegetation communities (i.e. Natural Temperate Grassland of the Victorian Volcanic Plain which equates to Plains Grassland).

# 1.5 Timeframe and implementation

This management plan for the creek corridor will be implemented in perpetuity by Council. The Conservation Management Plan (CMP) has been reviewed in 2022 and should be reviewed every 2 years thereafter to ensure it is able to meet the stated objectives.

Implementation of the plan will be the responsibility of MAB until such time as the ownership of the creek corridor is transferred to the responsible authority (the City of Whittlesea). Implementation of the actions outlined in this plan will then become the responsibility of the new land owner; although Alliance Business Park Pty Ltd remains ultimately responsible under the EPBC Act until the expiration of the relevant approvals (31 December 2027 for the western portion covered by EPBC 2012/6298 and 1 August 2038 for the eastern portion covered by EPBC 2017/7930). Adjustments to the approval conditions associated with EPBC 2017/7930 are in progress and are expected to be in place by the end of 2022.

A summary of the annual management actions required in the creek corridor (as per the above EPBC Approvals) is provided at Appendix 1 of this plan.



# 2. Conservation Management Plan

The eastern margin of what was 275 O'Herns Road and the southern third of what was 165 – 195 O'Herns Road is traversed by Edgars Creek, an ephemeral waterway supporting native riparian vegetation. GGF is known to occur in constructed wetlands on Edgars Creek to the north and south of O'Herns Road (Biosis 2012). It is likely that GGF use Edgars Creek to disperse throughout the landscape, including the section within Alliance Business Park. Within the creek corridor, Edgars Creek currently supports few inherent habitat values for GGF activity other than its value as a route for dispersal. There are no natural areas within the creek corridor that are likely to be used as a breeding site and previous targeted surveys within the creek corridor failed to detect the species (Biosis 2012, Biosis 2017a). However, with the construction of offline wetlands in the south of the creek corridor and online ponds in association with the construction of the bridge over Scanlon Drive, potential breeding habitat is now present within the creek corridor.

To protect existing native vegetation and maintain habitat connectivity along Edgars Creek for GGF, a corridor averaging about 50 m either side of Edgars Creek was excluded from development. A road crossing was constructed over Edgars Creek (part of Scanlon Drive) during the later stages of the development process (i.e. during 2019). The width of the corridor is constrained at the southern end of the creek by the defined location of Edgars Road and the existing road network surrounding this extension to the Alliance Business Park. Melbourne Water also required a storm-water treatment wetland to be constructed on the northern side of the creek, just east of the centre within the creek corridor. This wetland was constructed to provide potential breeding habitat for GGF and enhance the local habitat for this species. This storm-water treatment wetland was constructed in 2019.

# 2.1 Current management actions

The creek corridor has been clearly defined by secure fencing and all works adjacent to the creek corridor, including the construction of shared pathways and adjacent roads, has been completed.

The impact of the revised stormwater design is outlined in Figure 3 as is the designed location of three proposed bund walls and erosion rehabilitation works.

# 2.1.2 Protect the Edgars Creek corridor

The creek corridor needs to be protected by means of appropriate conservation zoning and/or overlay provisions. The Planning Scheme will need to be amended to re-zone the three defined reserves (RES1 to 3, identified in Section 1.3 of this plan) from its current zoning (CDZ2).

# **Actions**

 Council, in negotiation with MAB, has determined that the creek corridor will be rezoned as Public Conservation and Recreation Zone (PCRZ). This will facilitate ongoing management to maintain GGF habitat values as required under the EPBC Act and the planning permit.

The progress of this action is outlined in Table 1.

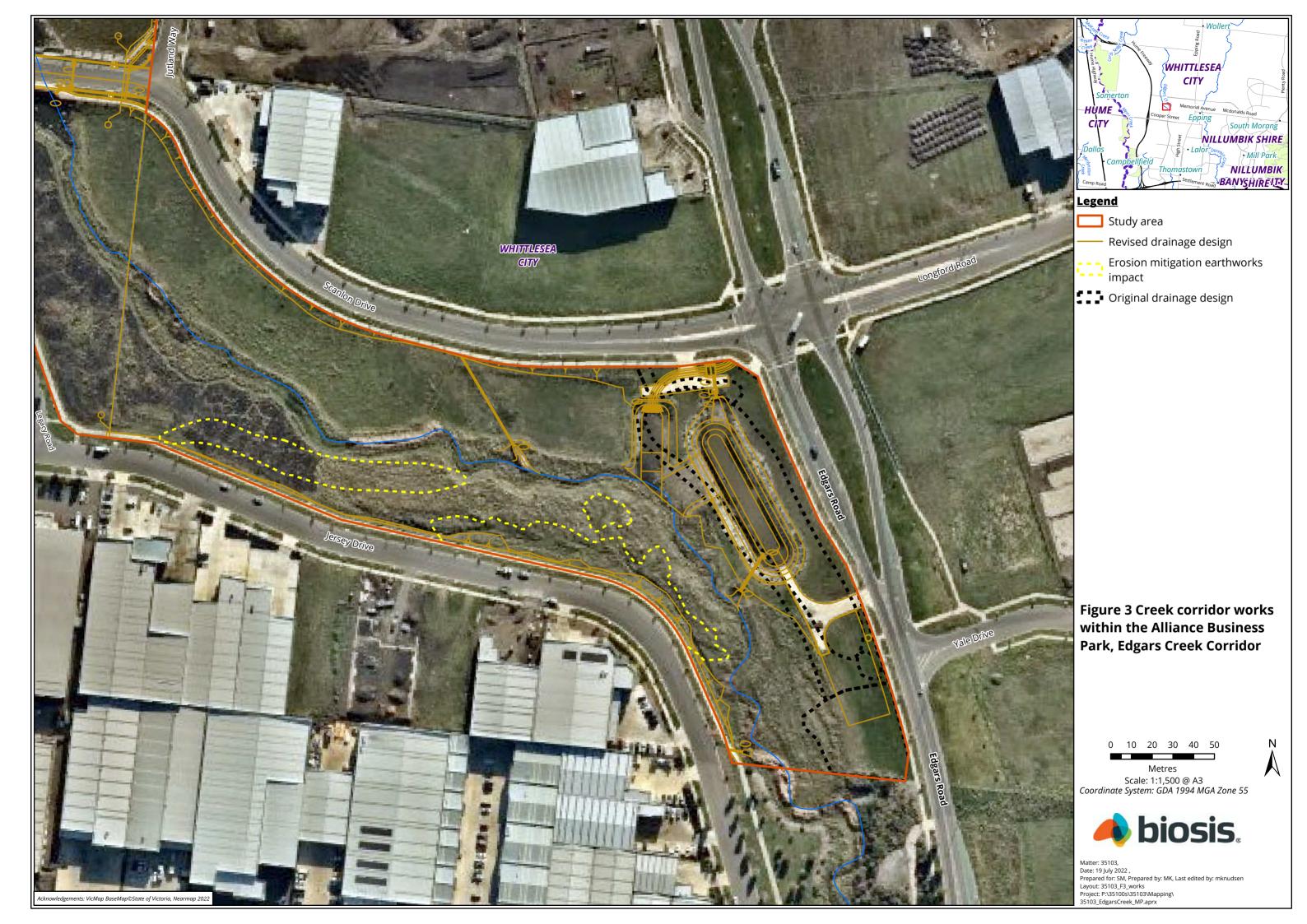




Table 1 Progress of actions: Protect the Edgars Creek corridor

Actions	Status	Comments
MAB in consultation with City of Whittlesea will rezone the creek	Incomplete	To be completed by the City of
corridor during the next routine rezoning of land procedures		Whittlesea as part of a routine
performed in association with general changes in land use tabled with		rezoning of land schedule in the near
Council. This will provide a legal framework for ongoing management		future.
to maintain GGF habitat values as required under the EPBC Act and the		
planning permit.		

# 2.2 Construction management actions

The construction of Alliance Business Park included part of the floodplain of Edgars Creek in the south of the creek corridor. Post construction flooding of Edgars Creek has resulted in unexpected erosion which, if left unaddressed, will undermine the established shared path and a portion of Jersey Drive. Works within the creek corridor are therefore required to remediate this active area of erosion (Figure 3).

# 2.2.1 General works management

The creek corridor will be protected from the erosion rehabilitation works to the maximum extent possible while allowing for the establishment of flood and erosion mitigation works to allow the Edgars Creek floodplain to function without undermining the established infrastructure on the southern margin of RES1. This will include the following actions. Progress toward achieving these outcomes is outlined in Table 2.

## **Actions**

- Induction of all construction and site personnel will include information about GGF and its habitat
  within the defined works area, along with protection measures that will be in place and enforced
  during the construction period.
- Works within the creek corridor will be informed and guided by pre-construction survey(s) for GGF.
   Advice will be sought from a suitably qualified zoologist and this advice will be provided to Council and DELWP to provide appropriate permit restrictions to works within the creek corridor.
- Any GGF found will be salvaged/ relocated as appropriate under a protocol approved by DELWP.
- Contractors will be inducted on the protocol to follow if GGF are found within a work area.
- Rehabilitation and revegetation works for areas disturbed within the creek corridor will take into
  account the habitat requirements of the species, in accord with advice from a zoologist experienced
  with the species' habitat.
- Works will minimise the extent of exposed soil and/ or soil stockpiles.
- Exposed areas will be sprayed with water as required to suppress dust emission.
- Areas disturbed by erosion control and flood mitigation works will be stabilised with revegetation works using appropriate indigenous plantings.
- Sediment control fences (e.g. geotextile or similar) will be placed at the limit of works fencing to
  prevent contaminated water and silt from entering the surrounding creek corridor. This fencing will
  also restrict the capacity for GGF to move away from the creek and into works areas. While not
  specifically a frog-proof design, observations suggest such fencing (provided it is maintained) can act
  as a deterrent to frog movement.
- Earth and debris will not be pushed through fences into the broader creek corridor.
- Protective fencing and sediment control measures will be regularly inspected and maintained in good repair at all times.



Table 2 Progress of actions: General works management

Actions	Status	Comments
Clearly define the works area required for flood / erosion mitigation works.	In progress	A defined works area to be identified. No works are to occur outside this defined area.
Induction of all construction and site personnel will include information about GGF and its habitat within the development area, along with protection measures that will be in place and enforced during the construction period.	In progress	
Where works are required within the creek corridor, pre-construction survey for the GGF will be undertaken in areas of potential habitat.	In progress	
Any GGF found will be salvaged / relocated if appropriate under a protocol approved by DELWP.	In progress	Document to occurrence or absence of any GGF.
Contractors will be inducted on the protocol to follow if GGF are found within a work area.	In progress	
Rehabilitation and revegetation works within the creek corridor will take account of the habitat requirements of the species, in accord with advice from a zoologist experienced with the species' habitat.	In progress	Prepare a rehabilitation plan once the works area has been identified.
Dust will be controlled during works to prevent deposition on native vegetation in the creekline. Measures will include: - minimise extent of exposed soil and/or soil stockpiles - water as required to suppress dust emission - revegetation / stabilisation of bare soil	In progress	
Sediment control fences (e.g. geotextile or similar) will be placed at the limit of works fencing to prevent contaminated water and silt from entering the broader creek corridor. This fencing will have the dual effect of reducing the capacity for GGF to move away from the creek and into works areas.	In progress	
Earth and debris will not be pushed through fences into the broader creek corridor.	In progress	Weekly inspections to report on the integrity of the creek corridor surrounding the works area.
Protective fencing and sediment control measures will be regularly inspected and maintained in good repair at all times.	In progress	Weekly inspections to report on the integrity of the creek corridor surrounding the works area.

# 2.3 Infrastructure maintenance actions

It is imperative that connectivity is maintained along Edgars Creek. The road crossing over Edgars Creek at Scanlon Drive has been constructed in a manner compliant with the requirements to maintain habitat connectivity for GGF.

## 2.3.1 Scanlon Drive culverts

A bridge crossing of the creek corridor has been constructed at Scanlon Drive. The established culverts need to be maintained to facilitate movement of GGF under the road. Progress in the implementation of these actions is outlined in Table 3.

## **Actions**

- Culvert entrances will be kept clear of rubbish, hard litter and other debris at all times. The culverts
  will be briefly inspected on a monthly basis.
- Two-way access is required to allow frog movement along the creek, and any openings along the length of culverts must prevent frogs from accessing the road surface.



- Artificial lighting (e.g. street lights) near culvert entrances will be designed to avoid light spill from the road.
- No obstructions such as rocks or logs will be placed within culverts.
- Revegetation works for the ponds established up and downstream of the Scanlon Drive bridge
  crossing will be established using appropriate indigenous species. Revegetation will create suitable
  habitat for GGF in a manner which maintains habitat continuity under the bridge.

**Table 3 Maintenance actions** 

Actions	Status	Comments
The bridge crossing of the creek has been constructed in a manner compliant with the design specifications.	Complete	The bridge across the creek corridor at Scanlon Drive has been constructed in a manner compliant with design specifications. These works were completed in 2021.
Culvert entrances will be kept clear of rubbish, hard litter and other debris at all times.	In progress	This is an ongoing maintenance requirement. The culverts will be briefly inspected on a monthly basis.
Artificial lighting (e.g. street lights) near culvert entrances will be designed to avoid light spill from the road.	Complete	Local street lighting has been established and is considered compliant with this requirement.
No obstructions such as rocks or logs will be placed within culverts.	Complete	The bridge across the creek corridor at Scanlon Drive has been constructed in a manner compliant with design specifications.
Revegetation works for the ponds established up and downstream of the Scanlon Drive bridge crossing will be established using appropriate indigenous species. Revegetation will create suitable habitat for GGF in a manner which maintains habitat continuity under the bridge.	In progress	Ponds associated with the bridge across the creek corridor at Scanlon Drive have been constructed in a manner compliant with design specifications and have had suitable native species established. The margins of these ponds have been planted with indigenous trees and shrubs. However, the number of trees planted is considered excessive. No further action is currently required. This should be reviewed in 12 months to determine how many trees become established. If after 12 months more than three trees are established on either side of the bridge, it is recommend that the number of trees in the creek line is reduced (to three trees either side of the bridge) to minimise shading over the creek line.

# 2.3.2 Storm-water Ponds

A series of off-line storm-water management ponds have been established on the northern bank of Edgars Creek, near Edgars Road. The following actions will be adhered to so that this infrastructure provides habitat for GGF.

These wetlands will provide a focal point of frog activity, thereby increasing the likelihood that frogs will reside within these wetlands and potentially breed. These wetlands were designed and constructed in consultation with an appropriately qualified person/s. Progress for the implementation of these actions is outlined in Table 4.

These waterbodies will be maintained in a manner which supports:

- A variety of slope and water depth.
- A variety of edge types.
- Different microhabitats such as rocks and vegetation to create a diversity of habitats.



- Plantings of locally indigenous wetland plants with floristics, composition and structural characteristics and plant orientation resembling habitat used by GGF elsewhere. Vegetation is to be planted in three distinct zones: 1) shallow verge zone, located along the banks of wetlands; 2) emergent macrophyte zone dominated by emergent aquatic or semi-aquatic, and located within the waterbody; 3) submerged and floating vegetation zone (i.e. inundated up to 1.2 metres). A list of plants that can be used for wetland establishment is provided in Appendix 1.
- Bottom depths grading to a minimum of 1.5 metres containing shallower areas that will dry out periodically, and deeper sections, which will hold water permanently.
- A design, including the aquatic plants, to minimise suspension of particulates as this is important for tadpole development.
- No plantings of trees or large shrubs that will densely shade wetlands as this renders them unsuitable for GGF.
- Refuge sites such as rock piles and large woody debris around the edges of wetlands and the creek banks.

  The spaces between refugia and their orientation vary to optimise habitat variability.
- The capacity to drain them if unwanted fish or pollution enter the waterbody.
- Artificial lighting (e.g. street lights) near the storm-water ponds will be designed to avoid light spill from the road.
- No obstructions such as rocks or other debris will be placed within the creek during construction.

Table 4 Progress of actions: Construction of created wetlands

Actions	Status	Comments
Wetlands will be established either side (upstream and downstream) of Scanlon Drive to encourage the frogs to move under the road.	In progress	These wetlands have been constructed and planted with appropriate species. Trees and shrubs have been planted and are becoming established. However, too many trees have been planted and it is recommended that no more than three trees are retained on either side of the bridge.  No further action is currently required. This should be reviewed in 12 months to determine how many trees become established. If after 12 months more than three trees are established on either side of the bridge, it is recommend that the number of trees in the creek line is reduced (to three trees either side of the bridge) to minimise shading over the creek line.
New ponds along Edgars Creek will be designed to maximise habitat value for GGF.	Complete	These ponds have been established and revegetation works established.  This vegetation needs to be maintained in an appropriate condition.

# 2.3.3 Management of created wetlands

The created wetlands built in association with the bridge over Edgars Creek at Scanlon Drive are expected to be largely self-sustaining. However, the following actions will be undertaken to maintain the suitability of these wetlands for GGF. Progress for these actions is outlined in Table 5.

# **Actions**

- In the event that construction material or rubbish enters wetlands it will be removed promptly.
- Use of herbicides and pesticides within, or surrounding, wetlands and the creek will be avoided. If absolutely necessary, a 'frog-friendly' glyphosate product such as Roundup Bio-active will be used.
- Damage to aquatic vegetation by waterfowl, particularly immediately after planting will be minimised by using protective netting until vegetation is established.



- Mowing around constructed waterbodies should incorporate a mix of mown and unmown areas to allow provision of both foraging opportunities and cover for frogs.
- During the first 5 years after construction a suitably qualified consultant will be engaged to monitor
  the wetlands every 12 months. Vegetation condition and refuge/shelter sites around the perimeter
  of the wetlands will be checked to ensure habitat establishment and maintenance is suitable. The
  suitability of vegetation for the Growling Grass Frog will be determined and, if deemed necessary,
  supplementary plantings will be undertaken and/or additional refuge sites will be provided.
- Water quality in the wetlands will be monitored every six months for the first two years after wetland
  construction. The water quality monitoring program will be reviewed after two years. It is not
  possible to set water quality targets specific to GGF as there is little information available. Recent
  studies have indicated that bell frogs (including GGF) have relatively wide tolerances in relation to the
  water quality parameters above.

Table 5 Progress of actions: Management of created wetlands

Actions	Status	Comments
Wetlands will be established either side (upstream and downstream) of the road crossing to encourage the frogs to move under the road. These waterbodies will be designed in consultation with an appropriately qualified person/s.	Complete	
New ponds along Edgars Creek will be designed to maximise habitat value for GGF.	Complete	
In the event that construction material or rubbish enters wetlands it will be removed promptly.	In progress	This is an ongoing maintenance activity
Use of herbicides and pesticides within, or surrounding, wetlands and the creek will be avoided. If absolutely necessary, a 'frog-friendly' glyphosate product such as Roundup Bio-active will be used.	In progress	This is an ongoing maintenance activity
Damage to aquatic vegetation by waterfowl, particularly immediately after planting will be prevented by using protective netting until vegetation is established.	Complete	Revegetation works have been established
Mowing around constructed waterbodies should incorporate a mix of mown and unmown areas to allow provision of both foraging opportunities and cover for frogs.	In progress	This is an ongoing maintenance activity
During the first 5 years after construction a suitably qualified consultant will be engaged to monitor the wetlands every 12 months.	In progress	This is an ongoing maintenance activity
Water quality in the wetlands will be monitored every six months for the first two years after wetland construction. The water quality monitoring program will be reviewed after two years.	In progress	One water quality monitoring event has been conducted

# 2.4 Habitat management

## 2.4.2 Biomass control in terrestrial areas

A regular biomass control program will need to be implemented within the creek corridor to prevent any potential fire hazard and to maintain the habitat in this environment as suitable habitat for Golden Sun Moth (GSM). There is also evidence to suggest that GGF may avoid using areas of thick biomass as it impedes their ability to move and forage effectively (Heard, Robertson, & Scroggie 2008).

Much of the creek corridor is typified by infestations of grassy weeds such as Chilean Needle-grass *Nassella neesiana* and Toowoomba Canary-grass *Phalaris aquatica*. This is currently grazed by Kangaroos and these animals are effective in reducing biomass in years of average rainfall. However, grazing by Kangaroos alone may not be effective in preventing a dense grassy sword developing in the creek corridor. This will compromise the conservation values of the creek corridor through competitive exclusion.



Biomass reduction will benefit any GSM populations retained within the creek corridor, as this species requires the maintenance of relatively open grassland for successful reproduction. Maintenance of an open grassy sward will also assist with the control of weeds.

The reserve has an abundance of embedded rock, which makes slashing problematic. However, there are some areas that could conceivably be slashed. Other areas could be subjected to periodic controlled burning (subject to Council approval) or slashing with a brush cutter (or equivalent). Burning is the preferred method of biomass control.

There is some potential for biomass control to negatively affect individual GGF through direct mortality (killed during slashing or burning) or indirectly (increased predation from being exposed following removal of vegetation). However, this is likely to be relatively low risk and is more than offset by the increased improvements in habitat quality. To reduce this risk, no more than 50 percent of the creek reserve should be burnt or slashed in any one year. This will provide a protected area where biomass control has not been undertaken and hence be a fire a refuge for fauna such as GGF.

#### **Actions**

- A regime of annual biomass control will be undertaken within the creek corridor. While burning will
  be the preferred method of biomass control, areas adjacent existing infrastructure, such as fencing,
  revegetation plantings and the Scanlon Drive bridge, will be subject to regular slashing to provide fire
  breaks and protect this infrastructure from potential damage by fire. These areas will be delineated
  and mapped for slashing contractors.
- All slashing equipment used for biomass control will be free of weed seeds.
- Where possible, burning will be undertaken annually within the creek reserve, but burning will only be applied to 50 percent of the reserve in any given year.
- In particular burning will provide biomass control for vegetation associated with populations of threatened plant species in the east of the creek reserve (Figure 2).

Table 6 Progress of actions: Biomass control in terrestrial areas

Actions	Status	Comment
A regime of annual slashing will be undertaken in those parts of the creek reserve where slashing can be achieved. These areas will be delineated and mapped for slashing contractors.	In progress	Slashing to be the preferred method of biomass control in areas associated with existing infrastructure such as revegetation works, the Scanlon Drive bridge and perimeter fencing.
All slashing equipment used for biomass control will be free of weed seeds.	In progress	
Where possible, burning will be undertaken annually within the creek corridor, but burning will only be applied to 50 percent of the reserve in any given year.	In progress	The reserve will be burned prior to its handover to Council
In particular burning will provide biomass control for vegetation associated with populations of threatened plant species in the east of the creek reserve (Figure 2).	In progress	

## 2.4.3 Weed control

Weed levels in the reserve area are very high. Weeds include the highly invasive Chilean Needle-grass and other introduced perennial grasses including Toowoomba Canary-grass, Brown-top Bent *Agrostis capillaris* and potentially the State prohibited noxious weed Lobed Needle-grass *Nassella charruana*. Thistles (Spanish Artichoke *Cynara cardunculus* and Spear Thistle *Cirsium vulgare*) are also prominent in several areas. Eradicating and even controlling perennial grassy weeds within the reserve would prove



extremely difficult and prohibitively costly, although any occurrence of Lobed Needle-grass will be the target of State funded control measures. For this reason, and because Chilean Needle-grass is a food plant for GSM, a reduction in the extent of these grassy weeds (except for Lobed Needle-grass) in the reserve is not required as part of this plan.

However, more intensive weed control works around the remnant patch of Plains Grassland and associated threatened flora populations will occur in the west of the reserve (Figure 2). Vegetation management objectives for areas surrounding threatened plants (MFL and Tough Scurf-pea) and areas of NTGVVP will target maintenance of these values and a reduction in the cover of high threat perennial species within five metres of these values. This is expected to allow these values to maintain their presence and potentially expand into areas subject to more intensive weed control works.

Woody weeds such as Sweet Briar *Rosa rubiginosa*, Hawthorn *Crataegus monogyna*, and African Boxthorn *Lycium ferocissimum* within the reserve will be managed to eliminate their occurrence by 2025.

Progress in the implementation of these actions is outlined in Table 7.

#### **Actions**

- Weed levels within the reserve will be monitored every 2 years.
- All woody weeds will be promptly eradiated from the reserve.
- Spanish Artichoke and Spear Thistle will be targeted for works controlling all individuals observed.
   These species will be controlled to the extent where they will not be permitted to flower and set seed within the creek corridor.
- If monitoring shows the establishment of Lobed Needle-grass or other novel perennial grassy weeds then these will be promptly eradicated.
- Areas or individuals of threatened flora species will be pegged to ensure that weed control contractors avoid accidental damage to them during management works.
- Vegetation within five metres of threatened species and areas of NTGVVP (i.e. around Habitat Zone 7 in Figure 2) will be subject to more intensive weed control works to improve the existing habitat for threatened plant species and native vegetation.

# 2.4.4 Revegetation within the creek corridor

The creek corridor was treeless prior to the establishment of Alliance Business Park. This is not considered to be the natural structure for Edgars Creek. Some level of revegetation works are therefore appropriate for the creek corridor and may in future provide refuge areas for GGF within the movement corridor (i.e. by generating coarse woody debris). However, a dense contiguous cover of trees is inappropriate for the objectives of this corridor.

The broader creek environs supports scattered River Red-gums *Eucalyptus camaldulensis*, Swamp Gum *E. ovata* and Yellow Box *E. melliodora*. Trees to be established along the creek corridor will therefore be planted in the following proportions: 10% Yellow Box (dry areas only), 45% Swamp Gum and 45% River Red-gum. The total tree canopy cover will not exceed 10% of this environment.

In line with the original Edgars Creek Management Plan, 16 planting nodes were established within RES2 and RES3. These nodes were planted with River Red-gums and Swamp Gum, shrubs including Tree Violet *Melicytus dentatus* and Sweet Bursaria *Bursaria spinosa* and grasses and herbs such as Common Tussockgrass *Poa labillardierei* and Yellowish Bluebells *Wahlenbergia luteola*. Additional revegetation plantings of up to ten nodes (each being a maximum of 10 metres by 10 metres) can occur within RES1 to provide a similar level of revegetation planting to that conducted in RES2 and RES3. However, beyond this, no additional revegetation works are proposed as part of this plan.



Wetland revegetation works have been completed and appropriate species are becoming established. If additional revegetation works are required in these wetlands an appropriately qualified wetland ecologist will be consulted before any works are commenced.

A more intensive revegetation effort to establish indigenous grasses and herbs can be incorporated into the biomass and weed control program. However, this is not a requirement of this plan.

Revegetation works are also required in association with the establishment of bund walls and erosion rehabilitation works north of Jersey Drive. Bund walls and rehabilitation works will be revegetated with a relatively dense cover of suitable indigenous grasses dominated by Common Tussock-grass. Weed levels, particularly perennial grassy weeds, will be maintained at a low cover (less than 5%) of the area impacted by these works.

Table 7 Progress of actions: Weed control

Actions	Status	Comments
Weed levels within the reserve will be monitored every 2 years from the commencement date of this plan.	Incomplete	Weed monitoring needs to occur as proposed.
All woody weeds will be promptly eradiated from the reserve.	In progress	Most woody weeds have been removed from RES2 and RES3 while control works in RES1 are less advanced. Burning will assist in these control works.
Spanish Artichoke and Spear Thistle will be targeted for eradication by 2025.	In progress	Spanish Artichoke has a persistent seedbank which will likely express itself over the coming decades but preventing seedlings from maturing will provide effective control. Spear Thistle is wind dispersed but is likely to be confined to the creek corridor when the surrounding environment is fully developed.
If monitoring shows the establishment of Lobed Needle-grass or other novel perennial grassy weeds then these will be promptly eradicated.	In progress	Control of these species will be based on the results of monitoring.
Areas or individuals of threatened flora species will be pegged to ensure that weed control contractors avoid accidental damage to them during management works.	In progress	Locating these species will be possible in the spring/ summer period after the creek corridor has been burnt.
Land on the western bank of the reserve, south of the Scanlon Drive road crossing (Figure 12) will be subject to more intensive weed control works to improve the existing habitat for threatened plant species and native vegetation.	In progress	



# References

Biosis 2012. *275 O'Herns Road, Epping, Victoria: Flora, fauna and habitat hectare assessment*, Report to MAB. Mueck. S, Byrne. A. & Gilmore. D. Biosis Pty Ltd. Melbourne, VIC. Project no. 13806.

Biosis 2013. *Alliance Business Park, 275 O'Herns Road, Epping: Edgars Creek Management Plan*, Report for MAB. Author: Daniel Gilmore and Steve Mueck, Biosis Pty Ltd, Melbourne. Project No. 16630.

Biosis 2017a. *165-195 O'Herns Road Epping: Biodiversity Assessment*, Report for MAB Corporation. Authors: Mueck S, & Gilmore D Biosis Pty Ltd, Melbourne. Project no. 23682.

Biosis 2017b. *165 - 195 O'Herns Road, Epping: Edgars Creek Management Plan*, Report for Alliance Business Park. Author: Daniel Gilmore and Steve Mueck, Biosis Pty Ltd, Melbourne. Project No. 25346.

Heard G, Robertson P, & Scroggie M 2008. 'Microhabitat preferences of the endangered Growling Grass Frog Litoria raniformis in southern Victoria', *Australian Zoologist*, 34, 3: 414–425.

Heard G, Scroggie M, & Clemann N 2010. *Guidelines for managing the endangered Growling Grass Frog in urbanising landscapes*, Report prepared for Arthur Rylah Institute for Environmental Research. Heidelberg, VIC.



# Appendix 1 Annual management actions in the Edgars Creek Corridor

# Introduction

Appendix 1 summarises the management actions specified in the *Alliance Business Park, O'Herns Road, Epping: Edgars Creek Management Plan* (ECMP) (prepared by Biosis, dated 29 July 2022). These actions are required to be undertaken annually up until the expiry dates of the Alliance Business Park's approval conditions under the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act), as follows:

- The northern portion of the Edgars Creek corridor (RES2\PS724897 and RES3\PS724897) covered by EPBC 2012/6298 must be managed in accordance with the ECMP until 31 December 2027.
- The southern portion of the Edgars Creek corridor (RES1\PS814757) covered by EPBC 2017/7930 must be managed in accordance with the ECMP until 1 August 2038.

The management actions required in the northern and southern sections of the creek are summarised in Tables 8 and 9 respectively.

This document must be read in conjunction with the ECMP. Any updates or alterations to the ECMP must be reflected in this document.

# Consultation with MAB and the City of Whittlesea

MAB and the City of Whittlesea (CoW) are negotiating to hand over responsibilities for managing land in the Edgars Creek corridor from MAB to CoW in July 2022.

CoW are willing to consider taking over responsibilities for managing the northern section of Edgars Creek in the Alliance Business Park (RES2\ PS724897 and RES3\PS724897) from July 2022. All land proposed to be handed over to Cow from July 2022 is covered by EPBC 2012/6298.

Due to the post-construction flooding and erosion issues in RES1\PS814757, CoW has confirmed it will not accept responsibility for managing the southern section of the Edgars Creek Corridor (RES1\PS814757).

The next handover review period is December 2022, and further negotiations to hand over responsibilities for managing the southern section from MAB to CoW will occur at that time. Accordingly, management of the southern section of Edgars Creek (Table 9) remains the responsibility of MAB until the southern section is handed over to CoW. It is estimated that the erosion issues will be resolved before the next hand over period in December 2022. If the handover of the southern section is not successful in December 2022, this document will need to be updated

# Previous compliance undertaken by MAB in the Edgars Creek Corridor

Biosis was commissioned by MAB to undertake a review of the Alliance Business Park's compliance with EPBC 2012/6298 and 2017/7930 in July 2021. The subsequent compliance letter (prepared by Biosis, dated 16 June 2021) outlines the previous actions undertaken by MAB to ensure compliance with the relevant EPBC approvals. The compliance letter can be viewed via the following link:

https://www.biosis.com.au/projects/biosis-project-25346-alliance-business-park-epbcact-referral-20126298/



A summary of the actions previously undertaken by MAB (as specified in Biosis 2021) are as follows.

# Northern section of Edgars Creek (EPBC 2012/6296):

- Fencing was established along the length of the Edgars Creek corridor within Alliance Business Park in a manner consistent with the ECMP.
- Weed control works within the corridor have occurred, if only on an irregular basis, and have been
  effective in controlling woody weeds and some other noxious species (i.e. Spanish Artichoke Cynara
  cardunculus).
- Biomass levels are not known to be monitored regularly but irregular site inspections by Biosis have generally noted acceptable conditions for Golden Sun Moth *Synemon plana* (GSM) and Growling Grass Frogs *Litoria raniformis* (GGF).
- A single survey for GSM conducted in November 2020 detected a small number of individuals (two) within the creek corridor. This indicates the ongoing presence of the species at this location.
- Irregular informal monitoring of the condition of the creek corridor and compliance with the ECMP
  has occurred. More formal and regular monitoring was organised by MAB to provide clearer
  information on compliance with the requirements of the ECMP. This has resulted in the increased
  monitoring being undertaken by Biosis throughout 2022 (as specified in Actions 1.5, 1.7 and 1.8 in
  Tables 1 and 2 below).
- A total of 17 small planting cells were established as part of revegetation works within the northern section of the Edgars Creek Corridor. These areas were planted with a small number of trees propagated from locally collected material and other indigenous shrubs, grasses and herbs (Photo 2 in Alliance Business Park EPBC compliance letter). This was completed in consultation with Biosis and is consistent with the requirements of the ECMP. These plantings are well established and have had protective fencing removed. However, as a result, kangaroos have been trampling shrubs and have killed a small number of shrubs.

## Southern section of Edgars Creek (EPBC 2017/7930):

- Construction works around the Edgars Creek Corridor have been completed. As indicated in the response to Condition 1, prior to the commencement of the action, the creek corridor was delineated by a surveyor. However, temporary protective fencing and signage was not installed prior to the contractor accessing land adjacent to this protected area and the contractor ignored the surveyors peg markers. This resulted in disturbances within the designated no-go zone. Works included machinery entering the creek corridor and sections of Edgars Creek and the movement of sediment into the creek.
- Eventually soil stockpiled in the protected area was removed and protective temporary fencing established in the correct location with appropriate signage. The design of stormwater infrastructure established adjacent to the creek at Edgars Road is different to that outlined by Biosis (2017). While this was a Melbourne Water requirement, the footprint of these works was larger than that identified in the creek management plan and the approved project footprint identified by EPBC 2017/7930. While these works did not impact any patches of native vegetation, they are not in compliance with the conditions of approval and are yet to be resolved with the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).



- Construction works within 165 195 O'Herns Road are now complete. Works have included the installation of permanent fencing to protect the creek corridor no go zone. Alliance Business Park is therefore compliant with Condition 6(b).
- No documentation is available on any hygiene controls implemented by the contractor. Therefore compliance with Condition 6(c) could not be evaluated.
- Implementation of the approved Edgars Creek management plan (Biosis 2017) has commenced in the form of woody weed control works. The creek corridor within 165-195 O'Herns Road has had substantial woody weed works completed. However the cover of woody weeds is still apparent and more works are required to remove this element from the creek corridor.
- It is our understanding that works for the control of woody weeds is ongoing and the existing mature individuals will be removed in the near future.
- Infestations of other noxious weeds are also apparent. Species such as Spanish Artichoke are still present as scattered occurrences but these have clearly been subject to recent control works (Photo 2 in Alliance Business Park EPBC compliance letter).
- The creek corridor supports a substantial cover of Chilean Needle-grass *Nasella neesiana*. This significant weed is also a food plant for GSM. Management of this species can practically only be restricted to biomass control as the infestation is intractable.
- While the creek corridor supports scattered occurrences of Serrated Tussock Nassella trichotoma, control works have targeted this species and a minimal on-going effort should keep this species under control.
- The only other common noxious weed is Paterson's Curse Echium plantagineum. This species is
  dominant in areas of the creek corridor, predominantly where the contractor has disturbed the
  surface soil within the protected area. These areas will require ongoing control and revegetation
  works to mitigate the dominance of this noxious weed.
- Other noxious species such as Saffron Thistle *Carthamus lanatus*, still have scattered occurrences across the creek corridor.
- Other works outlined within the approved ECMP which was outstanding at the time of writing the
  compliance letter (Biosis 2021) include establishing a level of legal protection for the creek corridor
  (currently being organised by CoW), revegetation of stormwater infrastructure, biomass control,
  general revegetation works within the creek corridor and water quality monitoring. Alliance is
  ensuring all these matters are appropriately managed.
- Overall, Alliance Business Park is partially compliant with Condition 6. Alliance is initiating works to conduct the corrective actions required to respond to non-compliance with this condition.



# Management actions for the northern section of the Edgars Creek Corridor (EPBC 2012/6298)

Table 8 provides a breakdown of the annual actions required to ensure compliance with the ECMP and Conditions 9 and 10 of EPBC 2012/6298. Following the successful handover from MAB to CoW from July 2022, CoW will be responsible for implementing the actions in Table 8 up until 31 December 2027.

2022 is referred to as 'Year 1' below, as Table 8 provides a breakdown of the remaining actions required to be undertaken up until the end of 31 December 2027 in accordance with EPBC 2012/6298. 2022 is also the first year in which the ECMP has been consolidated into a single document. Prior to 2022, the northern and southern reaches of the Edgars Creek Corridor in the Alliance Business Park were managed via two separate management plans (Biosis 2013 and 2017).

Table 8 Management actions for the northern section of the Edgars Creek Corridor from July 2022 (in accordance with EPBC 2012/6298)

Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
Year 1 - 2	2022					
1.1	Rezone the creek corridor to provide a legal framework for ongoing management to maintain GGF habitat values.	MAB/ CoW		Table 1	<ul> <li>To be completed by CoW as part of a routine rezoning of land schedule in the near future.</li> </ul>	
1.2	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>MAB commissioned MZL Australia Pty Ltd in the first half of 2022 to undertake slashing and mowing in the buffer along either side of the Scanlon Drive Bridge</li> <li>Following the hand over, responsibility for undertaking biomass control will be the responsibility of CoW up until 31 December 2027.</li> </ul>	
1.3	Annual biomass control - burning	МАВ	50% of Edgars Creek to be burned annually	Table 6	<ul> <li>MAB commissioned Peter Wlodorczyk to undertake ecological burning of the Edgars Creek Corridor in 2022.</li> <li>As of July 2022, only the north-western (NW) section remains to be burned.</li> </ul>	North-eastern section of the Edgars Creek Corridor burned before May 2022. Burning of the NW



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes Date	te completed
						ction is to be viewed in October 22.
1.4	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	<ul> <li>MAB removed rubbish from the culvert following the site visit with Council in May 2022.</li> <li>CoW will be responsible for removing rubbish from July 2022. MAB will need to ensure there no litter within the culvert at the commencement of the hand over.</li> </ul>	ıy 2022
1.5	Monitor weed levels in creek reserve every 2 years.	MAB/ Biosis	4 times throughout 2022	Table 7	throughout 2022 to monitor the ecological values present in the creek corridor.  • As part of this, Biosis will monitor the weed levels within all reaches of the Edgars Creek.	st round completed March 2022. ditional monitoring inned for July, tober and cember 2022.
1.6	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	MAB/ Biosis	Following weed monitoring	Table 7	Control of these species will be based on the results of monitoring. The establishment of Lobed Needlegrass or other perennial grassy weeds was not observed during March 2022 monitoring.	arch 2022



	<u></u>					
Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
1.7	Bi-annual water quality monitoring for 2 years (including 2022 and 2023).	MAB/ Biosis	Every 6 months	Table 5	<ul> <li>First round of water quality monitoring will be completed in July 2022. Second round to be organised for December 2022.</li> </ul>	July 2022. Additional monitoring planned for December 2022.
1.8	Monitor wetlands every 12 months for 5 years (2022 to 2026)	MAB/ Biosis	Annually	Table 5	<ul> <li>MAB has commissioned Biosis to undertake four rounds of wetland monitoring throughout 2022.</li> </ul>	First round completed in March 2022. Additional monitoring planned for July, October and December.
Year 2 -	2023					
2.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
2.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>	
2.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
2.4	Monitor wetlands every 12 months for 5 years.	CoW	Annually	Table 5	• Wetlands to be monitored once in 2023.	
2.5	Bi-annual water quality monitoring for 2 years.	CoW	Every 6 months in 2023.	Table 5	Two rounds of water quality monitoring to be undertaken in 2023.	
2.6	Inspect the number of trees on either side of the Scanlon Drive Bridge. If more than three trees per either side of the bridge are established, it is recommended	МАВ	In the second half of 2023	Tables 3 & 4	<ul> <li>Assessment of tree numbers on either side of Scanlon Drive Bridge will remain the responsibility of MAB. The trees to be removed will be subject to assessment by a suitably qualified person.</li> </ul>	



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
	that the additional trees are removed.					
Year 3 - 2	024					
3.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
3.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>	
3.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
3.4	Monitor weed levels in creek reserve every 2 years.	CoW	One round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>	
3.5	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	CoW	Following weed monitoring	Table 7	Control of these species will be based on the results of monitoring.	
3.6	Monitor wetlands every 12 months for 5 years.	CoW	Annually	Table 5	Wetlands to be monitored once in 2024.	



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes Date completed
Year 4 - 2	025				
4.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.
4.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>
4.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.
4.4	Monitor wetlands every 12 months for 5 years.	CoW	Annually	Table 5	• Wetland monitoring to be undertaken once in 2025.
Year 5 - 2	2026				
5.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.
5.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>
5.3	Monitor weed levels in creek reserve every 2 years.	CoW	One round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>
5.4	If monitoring shows the establishment of Lobed	CoW	Following weed monitoring	Table 7	<ul> <li>Control of these species will be based on the results of monitoring.</li> </ul>



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes Date completed
	Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.				
5.5	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.
5.6	Monitor wetlands every 12 months for 5 years.	CoW	Annually	Table 5	<ul> <li>Wetland monitoring to be undertaken once in 2026. Note – this is the final round of wetland monitoring.</li> </ul>
Year 6 - 2	2027				
6.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>
6.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>
6.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.



# Management actions in the southern section of the Edgars Creek Corridor (EPBC 2017/7930)

Table 9 provides a breakdown of the annual actions required in the southern section of Edgars Creek within the Alliance Business Park to ensure compliance with the ECMP and Condition 6 of EPBC 2017/7930.

2022 is referred to as 'Year 1' in Table 9 below because 2022 is the first year in which the ECMP has been consolidated into a single document. Prior to 2022, the northern and southern reaches of the Edgars Creek Corridor in the Alliance Business Park were managed via two separate management plans (Biosis 2013 and 2017).

Note – Subject to resolving the erosion issues adjacent to Jersey Drive, Table 9 has assumed that responsibilities for managing the southern section of the Edgars Creek Corridor will be transferred from MAB to CoW at the beginning of 2023. If the erosion issues are not resolved before December 2022, the 'Responsibility' column of Table 9 below will need to be updated.

Table 9 Management actions for the northern section of the Edgars Creek Corridor from July 2022 (in accordance with EPBC 2017/7930)

Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
Year 1 - 2022						
1.1	Rezone the creek corridor to provide a legal framework for ongoing management to maintain GGF habitat values.	MAB/ CoW		Table 1	<ul> <li>To be completed by CoW as part of a routine rezoning of land schedule in the near future.</li> </ul>	
1.2	Annual biomass control - slashing and mowing	MAB	Every 2 months	Table 7	<ul> <li>MAB has commissioned MZL in the first half of 2022 to undertake slashing and mowing.</li> <li>MAB will be responsible for annual biomass control until the responsibilities for managing the southern section of the Edgars Creek Corridor are handed over to CoW.</li> </ul>	This is an ongoing maintenance activity



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
1.3	Annual biomass control - burning	МАВ	50% of Edgars Creek to be burned annually	Table 6	<ul> <li>MAB has commissioned Peter Wlodorczyk to undertake ecological burning of the Edgars Creek Corridor.</li> <li>As of July 2022, the majority of the southern section of Edgars Creek has been subject to ecological burning.</li> <li>One small section of land near the eroded section of Edgars Creek still requires burning and this will be reviewed in October 2022.</li> </ul>	Early 2022
1.4	Remove rubbish, hard litter and debris from culvert entrances and wetlands	МАВ	Monthly	Tables 3 & 5	<ul> <li>MAB removed hard rubbish from Edgars Creek in May 2022.</li> <li>MAB will be responsible for removing rubbish from the southern section of Edgars Creek until the management responsibilities are handed over to CoW.</li> </ul>	May 2022
1.5	Monitor weed levels in creek reserve every 2 years.	MAB/ Biosis	4 times throughout 2022	Table 7	<ul> <li>MAB has commissioned Biosis to undertake four rounds of wetland monitoring throughout 2022.</li> <li>As part of this, Biosis will also monitor the weed levels within all reaches of the Edgars Creek Corridor within Alliance Business Park.</li> </ul>	March 2022
1.6	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	MAB/ Biosis	Following weed monitoring	Table 7	<ul> <li>Control of these species will be based on the results of monitoring. The establishment of Lobed Needlegrass or other perennial grassy weeds was not observed during March 2022 monitoring.</li> </ul>	March 2022.



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
1.7	Bi-annual water quality monitoring for 2 years.	MAB/ Biosis	Every 6 months in 2022.	Table 5	<ul> <li>First round of water quality monitoring will be completed in July 2022. Second round to be organised for December 2022.</li> </ul>	First round completed in June/ July 2022. Second round proposed for December 2022.
1.8	Monitor wetlands every 12 months for 5 years (2022 to 2026)	MAB/ Biosis	Annually	Table 5	MAB has commissioned Biosis to undertake four rounds of wetland monitoring throughout 2022.	First round completed in March 2022. Additional monitoring planned for July, October and December 2022.
Year 2 - 2023						
2.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.	
2.2	Annual biomass control - burning	CoW	Annually	Table 6	50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.	
2.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
2.4	Monitor wetlands every 12 months for 5 years.	CoW	Annually	Table 5	• Wetland monitoring to be undertaken once in 2023.	
2.5	Bi-annual water quality monitoring for 2 years.	CoW	Every 6 months	Table 5	• Two rounds of water quality monitoring to be undertaken in 2023.	
2.6	Inspect the number of trees on either side of the Scanlon	MAB	In the second half of 2023	Tables 3 & 4	Assessment of tree numbers on either side of Scanlon Drive Bridge will remain the responsibility of MAB. The trees to	



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
	Drive Bridge. If more than three trees per either side of the bridge are established, it is recommended that the additional trees are removed.				removed will be subject to assessment by a suitably qualified person.	
Year 3 - 2024						
3.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
3.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>	
3.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
3.4	Monitor weed levels in creek reserve every 2 years.	CoW	One round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>	
3.5	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	CoW	Following weed monitoring	Table 7	<ul> <li>Control of these species will be based on the results of monitoring.</li> </ul>	



	<u> </u>					
Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
3.6	Monitor wetlands every 12 months for 5 years.	CoW	Annually	Table 5	• Wetland monitoring to be undertaken once in 2024.	
Year 4 - 2025						
4.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
4.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>	
4.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
4.4	Monitor wetlands every 12 months for 5 years.	CoW	Annually	Table 5	• Wetland monitoring to be undertaken once in 2025.	
Year 5 - 2026						
5.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
5.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>	
5.3	Monitor weed levels in creek reserve every 2 years.	CoW	One round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>	



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
5.4	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	CoW	Following weed monitoring	Table 7	<ul> <li>Control of these species will be based on the results of monitoring.</li> </ul>	
5.5	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
5.6	Monitor wetlands every 12 months for 5 years.	CoW	Annually	Table 5	<ul> <li>Wetland monitoring to be undertaken once in 2026. Note – this is the final round of wetland monitoring.</li> </ul>	
Year 6 - 2027						
6.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
6.2	Annual biomass control - burning	CoW	Annually	Table 6	<ul> <li>50% of the Edgars Creek Corridor to be burned annually to support habitat for GSM.</li> </ul>	
6.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
Year 7 - 2028						
7.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
7.2	Annual biomass control - burning	CoW	Annually	Table 6	• 50% of Edgars Creek to be burnt per year.	
7.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
7.4	Monitor weed levels in creek reserve every 2 years.	CoW	One round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>	
7.5	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	CoW	Following weed monitoring	Table 7	<ul> <li>Control of these species will be based on the results of monitoring.</li> </ul>	
Year 8 - 2029						
8.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Tables 6	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
8.2	Annual biomass control - burning	CoW	Annually	Table 6	• 50% of Edgars Creek to be burnt per year.	
8.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed			
Year 9 - 2030									
9.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Tables 6	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>				
9.2	Annual biomass control - burning	CoW	Annually	Table 6	• 50% of Edgars Creek to be burnt per year.				
9.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.				
9.4	Monitor weed levels in creek reserve every 2 years.	CoW	One round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>				
9.5	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	CoW	Following weed monitoring	Table 7	Control of these species will be based on the results of monitoring.				
Year 10 - 203									
10.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Tables 6	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>				
10.2	Annual biomass control - burning	CoW	Annually	Table 6	50% of Edgars Creek to be burnt per year				



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed			
10.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.				
Year 11 - 203	Year 11 - 2032								
11.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>				
11.2	Annual biomass control - burning	CoW	Annually	Table 6	• 50% of Edgars Creek to be burnt per year.				
11.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.				
11.4	Monitor weed levels in creek reserve every 2 years.	CoW	4 times throughout 2022	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>				
11.5	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	CoW	Following weed monitoring	Table 7	Control of these species will be based on the results of monitoring.				
Year 12 - 203	Year 12 – 2033								
12.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>				



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes Date completed
12.2	Annual biomass control - burning	CoW	Annually	Table 6	50% of Edgars Creek to be burnt per year.
12.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.
Year 13 – 203	34				
13.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>
13.2	Annual biomass control - burning	CoW	Annually	Table 6	• 50% of Edgars Creek to be burnt per year.
13.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>
13.4	Monitor weed levels in creek reserve every 2 years.	CoW	1 round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>
13.5	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	CoW	Following weed monitoring	Table 7	Control of these species will be based on the results of monitoring.



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
Year 14 – 203	35					
14.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
14.2	Annual biomass control - burning	CoW	Annually	Table 6	50% of Edgars Creek to be burnt per year	
14.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
Year 15 – 203	36					
15.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
15.2	Annual biomass control - burning	CoW	Annually	Table 6	• 50% of Edgars Creek to be burnt per year.	
15.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
15.4	Monitor weed levels in creek reserve every 2 years.	CoW	1 round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>	
15.5	If monitoring shows the establishment of Lobed	CoW	Following weed monitoring	Table 7	<ul> <li>Control of these species will be based on the results of monitoring.</li> </ul>	



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
	Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.					
Year 16 - 203	7					
16.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
16.2	Annual biomass control - burning	CoW	Annually	Table 6	50% of Edgars Creek to be burnt per year	
16.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
Year 17 - 203	8					
17.1	Annual biomass control - slashing and mowing	CoW	Every 2 months	Table 7	<ul> <li>Slashing and mowing to be undertaken on suitable land, including the buffer along either side of the Scanlon Drive Bridge.</li> </ul>	
17.2	Annual biomass control - burning	CoW	Annually	Table 6	• 50% of Edgars Creek to be burnt per year.	
17.3	Remove rubbish, hard litter and debris from culvert entrances and wetlands	CoW	Monthly	Tables 3 & 5	This is an ongoing maintenance activity.	
17.4	Monitor weed levels in creek reserve every 2 years.	CoW	1 round of weed monitoring to be conducted between Winter and early Spring	Table 7	<ul> <li>Weed monitoring should be undertaken between Winter and early Spring to identify the presence of weeds (particularly Artichoke Thistle) prior to the occurrence of seeding.</li> </ul>	



Action No.	Management action	Responsibility	Timing of action	ECMP reference	Notes	Date completed
17.5	If monitoring shows the establishment of Lobed Needlegrass or other novel perennial grassy weeds then these will be promptly eradicated.	CoW	Following weed monitoring	Table 7	Control of these species will be based on the results of monitoring.	