

Pipelines Alliance

Capital Delivery Program
Pipelines (Sewerage and Drainage) Program
Delivered for Melbourne Water

Native Vegetation Offset Management Plan

September 2010

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Planning Permit Number (ID)/Work: 266/2009/P

Authority No: n/a

Proponent: Melbourne Water Corporation / Pipelines Alliance

Address: 181 Victoria Parade, Collingwood, Vic 3066

Landowner and Permit (Work Authority) Holder Statement

Permit (Work Authority) Holder

Print Name:

Signature:

Date:

Landowner of Offset Site

Print Name:

Signature:

Date:

Referral Authority Statement

The native vegetation credits described in this plan provide an offset for the removal of native vegetation specified in this plan to the satisfaction of the Department of Sustainability and Environment.

Print Name:

Position:

Department of Sustainability and Environment

Signature:

Date:

Responsible Authority Approval

This Offset Plan has been approved by Frankston City Council. This Offset Plan is now endorsed and forms part of Planning Permit No: 266/2009/P

Print Name:

Position:

Responsible Authority:

Signature:

Date:

Date of Commencement:

No modification variation or amendment of this Offset Plan agreed upon by the parties shall be of any force or effect unless such modification, variation or amendment is in writing and has been executed by all parties.

EXECUTIVE SUMMARY

Melbourne Water propose to replace the final 60m of the Riviera Street Stormwater Outlet structure, located on the Seaford foreshore, due to the asset being at the end of its design life.

Work will include the demolition and removal of the existing structure, reconstruction of an equivalent outfall utilising cast in-situ or pre-cast concrete culvert units, to be founded on an appropriate foundation system. The reconstruction is to ensure neutral or better hydraulics, a 100 year design life of the structure and consideration of the ICCP of the upstream section; whilst incorporating and managing stakeholder amenity requirements. The outlet is to remain in operation for the duration of works due to its importance in flood control of Kananook Creek.

Mobilisation for construction is planned for January 2010, with an estimated construction timeframe of 12 months.

The clearance of vegetation associated with the works and access track construction will result in the removal of patches of the following EVCs:

- EVC 2 – Coastal Banksia Woodland (0.01 Habitat Hectares – High Conservation Significance);
- EVC 160 – Coastal Dune Scrub (0.01 Habitat Hectares – Medium Conservation Significance); and
- EVC 879 – Coastal Dune Grassland (0.03 Habitat Hectares – Medium Conservation Significance).

The offset requirement as specified in accordance with Table 3.4B, page 54 of the Port Phillip and Westernport Native Vegetation Plan (Port Phillip and Westernport CMA 2006) comprises:

- 0.02 HHa of High Conservation Significance Vegetation
- 0.04 HHa of Medium Conservation Significance Vegetation

All gain targets have been met by the proposed offset.

The offset site is located in the Seaford Foreshore Reserve, adjacent the Nepean Highway in Seaford. It is Crown Land (Crown Allotment 11A, Section A, Parish of Frankston), located in the Frankston City Council area. The area is zoned as a Public Conservation and Resource Zone under the Frankston City Council Planning Scheme, within an Environmental Significance overlay.

The land is located in the Gippsland Plain Bioregion, under the auspices of the Port Phillip and Westernport Catchment Management Authority.

The area consists of modified native vegetation, with areas of mature trees, medium to large shrubs and understorey, grading to grassland on the dunes next to the beach. The offset site contains all the required EVCs to meet the offset targets, as it is situated adjacent to the clearing site.

The offset zones are of the same Conservation Significance as the loss zones and meet all the Like-for-Like criteria as specified in Table 3.4B, page 54 of the Port Phillip and Westernport Native Vegetation Plan (Port Phillip and Westernport CMA 2006):

- vegetation type (EVC)
- bioregion
- landscape role
- quality objectives
- proportion of revegetation included in the offset

Offsets will be achieved by:

- weed control
- supplementary plantings

The following offset management options are not available, as they are part of the existing management program for the area:

- retaining fallen, logs fallen branches and leaf litter
- retaining all native vegetation, dead or alive including trees

- pest animal management

A ten-year management action plan is provided (Table 19), covering offset actions. The management actions are reviewed every three years to ensure they are contributing to successful achievement of the offset targets. Management actions are to be revised if they are not contributing to targets. At the end of ten years, a Final Assessment of site quality and review of management objectives to report on achievement of Gains and goals achieved.

Re-planting requirements for re-establishing EVCs in cleared areas are also outlined (**Section 8.3**)

Abbreviations

CaLP	<i>Catchment and Land Protection Act 1994</i>
DEWHA	Department of Environment, Water, Heritage and the Arts
DSE	Department of Sustainability and Environment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVC	Ecological Vegetation Class
FCC	Frankston City Council
FFG Act	Flora and Fauna Guarantee Act 1988
MW	Melbourne Water
NVMF	Native Vegetation Management Framework - A Framework for Action
PPWCMA	Port Phillip and Western Port Native Vegetation Plan
VROTS	Victorian Rare or Threatened Species List

Glossary

Bioregion	Biogeographic areas that capture the patterns of ecological characteristics in the landscape or seascape, providing a natural framework for recognising and responding to biodiversity values.
Bioregional Conservation Status (BCS of an EVC)	A state-wide classification of the degree of depletion in the extent and/or quality of an Ecological Conservation Class (EVC) within a bioregion in comparison to the State's estimation of its pre-1750 extent and condition.
Diameter at Breast Height (DBH)	The diameter of the trunk of a tree measured over bark at 1.3m above ground level.
Ecological Vegetation Class (EVC)	A type of native vegetation classification that is described through a combination of its floristic, life form and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC includes a collection of floristic communities (i.e. lower level in the classification that is based solely on groups of the same species) that occur across a biogeographic range, and although differing in species, have similar habitat and ecological processes operating.
EVC Benchmark	A standard vegetation-quality reference point relevant to the vegetation type that is applied in habitat hectare assessments. Represents the average characteristics of a mature and apparently long-undisturbed state of the same vegetation type.
Gain target	The amount of gain that needs to be achieved to offset a loss measured in habitat hectares.
Habitat Hectare	A site based measure of quality and quantity of native vegetation that is assessed in the context of the relevant native vegetation type.
Habitat score	The score assigned to a habitat zone that indicates the quality of the vegetation relative to the Ecological Vegetation Class (EVC) benchmark – sum of the site condition score and landscape context score usually expressed as a percentage or on a scale of zero to 1.
Habitat zone	A discrete area of native vegetation consisting of a single vegetation type (EVC) with an assumed similar quality. This is the base spatial unit for conducting a habitat hectare assessment.
High threat weed	Introduced plant species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term, assuming on-going current site characteristics and disturbance regime.
Improvement gain	This is gain resulting from management commitments beyond existing obligations under legislation to improve the current vegetation quality. Achieving improvement gain is predicated on maintenance commitments being already in place. For example, control of any threats such as grazing that could otherwise damage the native vegetation must already be agreed.
Large Old Tree (LOT)	A tree with a Diameter at Breast Height equal to or greater than the large tree diameter as specified in the relevant EVC benchmark.
Like-for-like	These are part of the criteria for the determination of an offset and provide a direct link between the loss and the offset gain, in terms of vegetation type or landscape function. There are more specific requirements for higher conservation significance vegetation and more flexible requirements for lower significance.

Maintenance gain	This is gain from commitments that contribute to the maintenance of the current vegetation quality over time (i.e. avoiding any decline). It includes foregoing certain entitled activities that could otherwise damage or remove native vegetation, such as grazing or firewood collection.
Medium Old Tree (MOT)	A tree with a Diameter at Breast Height (DBH) equal to or greater than 0.75 of the large tree diameter in the relevant EVC benchmark but less than the DBH for a large old tree.
Net outcome	The result of applying conservation significance criteria to protection, investment and offset decisions. This results in a range of outcomes from short-term losses for Low conservation significance to substantial net gain for Very High conservation significance. For offsets, the Framework (Table 6) specifies a multiplier on the calculated loss (in habitat hectares) to achieve the net outcome, graded according to conservation significance. Refer to Table 6 (pp. 54-55) of the Framework.
Offset Zone	An offset area of native vegetation consisting of a single vegetation type (EVC) with similar quality under the same proposed management regime.
Prior management gain	This gain acknowledges actions to manage vegetation since Statewide planning permit controls for native vegetation removal were introduced in 1989.
Protection (of a tree)	An area with twice the canopy diameter of the tree(s) fenced and protected from adverse impacts: grazing, burning and soil disturbance not permitted, fallen timber retained, weeds controlled, and other intervention and/or management if necessary to ensure adequate natural regeneration or planting can occur.
Recruitment	The production of new generations of plants, either by allowing natural ecological processes to occur (regeneration etc), by facilitating such processes such as regeneration to occur, or by actively revegetation (replanting, reseeding). See revegetation.
Remnant patch	An area of vegetation, with or without trees, where less than 75% of the total understorey plant cover is weeds or non-native plants (bare ground is not included). That is at least 25% of the understorey cover is native; or a group (i.e. three or more) of trees where the tree canopy cover is at least 20%.
Revegetation	Establishment of native vegetation to a minimum standard in formerly cleared areas, outside of a remnant patch.
Scattered trees	Canopy trees within an area where at least 75% of the total understorey plant cover is weeds or non-native plants and the overall canopy cover for a group (i.e. Three or more) of trees is less than 20%.
Security gain	This is gain from actions to enhance security of the on-going management and protection of native vegetation at the offset site, either by entering into an on-title agreement (for example under Section 173 of the Planning and Environment Act 1987), or by locating the offset on land that has greater security than the clearing site, or by transferring private land to a secure public conservation reserve.
Small Tree (ST)	A tree with a Diameter at Breast Height (DBH) equal to or greater than 0.25 of the large tree diameter in the relevant EVC benchmark but less than the DBH for a medium old tree.
Supplementary planting	Establishment of overstorey and/or understorey plants within a remnant patch. Typically includes the planting or direct-seeding of understorey life forms.
Very Large Old Trees (VLOT)	A tree with a Diameter at Breast Height (DBH) of at least 1.5 times that of the large tree DBH as specified in the relevant EVC benchmark.

1 INTRODUCTION

1.1 Project Overview

Melbourne Water propose to replace the final 60m of the Riviera Street Stormwater Outlet structure, located on the Seaford foreshore, due to the asset being at the end of its design life.

The Outlet Structure was built in 1960, a second outlet from Kananook Creek to Port Phillip Bay, to allow high flows to discharge to the Bay, rather than contributing to flooding in the Central Business District (CBD) of Frankston. The outlet structure from Kananook Creek to the Bay is approximately 240m long and consists of a rectangular concrete culvert with two cells, each 3.3m wide and 1.8m high. The final 60m section that extends into the bay is the section to be replaced.

A condition assessment was undertaken in 1999 and 2006 identified and confirmed that the final 60m of the structure (in the bay) must be replaced due to the severity of concrete cracking and spalling that had occurred.

The structure is situated on the Seaford Foreshore Reserve on a popular section of Port Phillip Bay shoreline, hence construction works will have to contend with works in close proximity to beach goers. To understand the values that the local community have of the beach, the foreshore, foreshore dunes and the structure itself community workshops were held to engage with key stakeholders to understand their concerns and values of any works the Alliance undertakes.

The proposed outlet design will achieve the designated design life requirements. The works replace the last 60m of the existing structure with:

- Twin 3.3m x 1.8m (internal dimensions) pre-cast culverts (equivalent capacity to existing);
- Reinforced cast in-situ concrete slab (notionally 300mm thick);
- Driven steel sheet pile (AZ50 sheet piles with 25mm web thickness) foundation;
- All concrete steel reinforcement to have 75mm cover;
- Stainless steel handrail with timber top rail; and
- A combination of exposed aggregate and sand-blasted patterns in the outlet top.

1.2 Background

The Riviera Street Stormwater Outlet was built in 1960 to provide an alternate outlet from Kananook Creek to Port Phillip Bay. It was designed to allow high flows (from flood events) to be discharged directly into Port Phillip Bay to mitigate downstream flooding of the Frankston Central Business District (CBD). Further upstream works at Patterson Lakes (a retarding basin) now means the structure operates infrequently.

The structure consists of:

- A regulated inlet at Kananook Creek;
- 240m of under-ground culvert (to the Bay side of the foreshore dunes); and
- 60m of above-ground culvert from the foreshore dunes out into the Bay.

The outlet structure extends approximately 30m to 40m into the Bay (depending on sand movement up and down the beach) and consists of a rectangular concrete culvert with two cells, each 3.3m wide and 1.8m high.

Melbourne Water (MW) proposes to replace the existing Riviera Outlet structure; located on the Seaford foreshore. The structure is an integral part of the Riviera Street Flood Control Complex, which allows high flows within the Kananook Creek catchment to be diverted directly into Port Phillip Bay and away from the Frankston CBD downstream. The Riviera Outlet passes beneath the Nepean Highway near the Riviera Hotel in Seaford and is shown in Figure 1.

1.3 Scope

The outlet structure has reached the end of its design life and is to be reconstructed under this project to provide neutral or better hydraulics and a 100 year design life whilst incorporating and managing stakeholders amenity requirements.

Work will include the demolition and removal of the existing structure, reconstruction of an equivalent outfall utilising cast in-situ or pre-cast concrete culvert units, to be founded on an appropriate foundation system. The reconstruction is to ensure neutral or better hydraulics, a 100 year design life of the structure and consideration of the ICCP of the upstream section; whilst incorporating and managing stakeholder amenity requirements. The outlet is to remain in operation for the duration of works due to its importance in flood control of Kananook Creek.

Mobilisation for construction is planned for January 2010, with an estimated construction timeframe of 12 months.

1.4 Vegetation Clearing

The clearance of vegetation associated with the works and access track construction will result in the removal of patches of the following EVCs:

- EVC 2 – Coastal Banksia Woodland (0.01 Habitat Hectares);
- EVC 160 – Coastal Dune Scrub (0.01 Habitat Hectares); and
- EVC 879 – Coastal Dune Grassland (0.03 Habitat Hectares).

2 OFFSET SUITABILITY

2.1 Clearing Site Details

2.1.1 Landowner of clearing site

Crown Land – DSE (land managed by the Committee of Management)

2.1.2 Location and address of clearing site

Crown Allotment 11A, Section A, Parish of Frankston (**Seaford Foreshore Reserve**)

Crown Allotment 1A1, Parish of Lyndhurst (**Keast Park**)

2.1.3 Local Government Area

Frankston City Council

2.1.4 Catchment Management Authority

Port Phillip and Westernport Catchment Management Authority

2.1.5 Responsible Authority

Frankston City Council

2.1.6 Permit applicant

Melbourne Water Corporation / Pipelines Alliance

2.1.7 Planning Permit Number (ID)/Work Authority Number

Permit Application Number – 266/2009/P

2.1.8 Date approved

14 January 2010

2.2 Vegetation Approved for Removal

Table 1: Approved losses of native vegetation

Habitat Zone		HZ1	HZ2	HZ3
Bioregion		Gippsland Plain	Gippsland Plain	Gippsland Plain
EVC #: Name		160: Coastal Dune Scrub	2: Coastal Banksia Woodland	879: Coastal Dune Grassland
EVC Bioregional Conservation Status		Depleted	Vulnerable	Depleted
Habitat Score		100	43	49
Habitat points = #/100		1.00	0.43	0.49
Habitat Zone area to be cleared (ha)		(#.##)	0.026	0.016
Habitat Hectares of loss		(#.##)	0.01	0.01
Conservation Significance	Conservation status x Habitat Score	Medium	High	Medium
	Threatened Species Rating	n/a	n/a	n/a
	Other Site Attribute Rating	n/a	n/a	n/a
	Overall Conservation Significance (highest rating)	Medium	High	Medium
Net Outcome		1x	1.5x	1x
Gain Target (Hha)		0.01	0.02	0.03
No. of Large Old Trees to be removed in each Habitat Zone		0	0	0
Tree protection multiplier				
Large Old Trees to be protected		0	0	0

Table 2: Approved losses of scattered trees

Bioregion	Pre-1750 EVC #: Name	Bioregional Conservation Status	Conservation Significance	Tree Size Class			
				VLOT	LOT	MOT	ST
Gippsland Plain	160: Coastal Dune Scrub			0	0	0	0
Gippsland Plain	2: Coastal Banksia Woodland			0	0	0	0
Gippsland Plain	879: Coastal Dune Scrub			0	0	0	0

3 GAIN TARGETS

The offset requirement as specified in accordance with Table 3.4B, page 54 of the Port Phillip and Westernport Native Vegetation Plan (Port Phillip and Westernport CMA 2006) comprises:

- 0.02 HHa of High Conservation Significance Vegetation
- 0.04 HHa of Medium Conservation Significance Vegetation (0.01 HHa of Coastal Dune Scrub and 0.03 HHa of Coastal Dune Grassland)

The Stage 1 Net Gain assessment and Habitat Hectare calculations were undertaken by Ecology Partners (2009).

All gain targets have been met by the proposed offset.

Table 3: Gain targets for clearing remnant patches

Target # [1]	Habitat Zones [2]	Bioregion	EVC #: Name	Conservation significance	Min. habitat score for target [3]	Other Like-for-Like reqts [4]	Habitat Hectares Target			Large Tree Protection Target [5]		
							Total Losses (Hha)	Net Outcome	Gain Target (Hha)	Total LOTs Lost	Protection Multiplier	LOTs to be protected
H1	1	GippP	2: Coastal Banksia Woodland	High	0.37	n/a	0.01	1.5	0.02	0	n/a	n/a
M1	2	GippP	160: Coastal Dune Scrub	Medium	0.22	n/a	0.01	1	0.01	0	n/a	n/a
M2	3	GippP	879: Coastal Dune Grassland	Medium	0.16	n/a	0.03	1	0.03	0	n/a	n/a

[1] For losses of very high or high conservation significance vegetation, the losses in different habitat zones can be added together into one Offset Target provided that they meet the same Like-for-Like criteria, e.g. losses are in the same EVC/habitat type etc. For losses of medium or low conservation significance vegetation, losses from different habitat zones can be added together into one Offset Target provided that the losses are in the same bioregion.

[2] Please specify the habitat zones that contribute to the target.

[3] Based on the quality objectives for the offset specified in Table 6 of *Victoria's Native Vegetation Management - A Framework for Action* (DNRE 2002).

[4] Please specify any other Like-for-Like requirements. These may include best/remaining habitat for threatened species, ecological function etc.

[5] Please note that by protecting a medium or large tree, either scattered or within a patch it is assumed five recruits will be generated. To be considered protected twice the canopy diameter of a tree must be fenced and protected from adverse impacts (see definition in *Guide for Assessment of Referred Planning Permit Applications* DSE 2007 for more information). It has therefore been assumed that protection of a tree will generate five recruits and no separate recruitment targets have been calculated.

4 DESCRIPTION OF OFFSET SITE

The offset site is located in the Seaford Foreshore Reserve, adjacent the Nepean Highway in Seaford. It is Crown Land (Crown Allotment 11A, Section A, Parish of Frankston), located in the Frankston City Council area. The area is zoned as a Public Conservation and Resource Zone under the Frankston City Council Planning Scheme, within an Environmental Significance overlay.

The land is located in the Gippsland Plain Bioregion, under the auspices of the Port Phillip and Westernport Catchment Management Authority.

The area is bound by the Nepean Highway on its eastern boundary and by the beach at Seaford on its western boundary. An access track between the Nepean Highway and the beach marks the southern boundary of the land, whilst the northern boundary is adjacent Keast Park.

The land is relatively flat for most of its area, with a drop-off at the dune on the western boundary. It is approximately 190m x 115 m in size.

The area consists of modified native vegetation, with areas of mature trees, medium to large shrubs and understorey, grading to grassland on the dunes next to the beach.

4.1 Flora

4.1.1 Vegetation

The offset site contains the same EVCs as the clearing site, being immediately adjacent to that site. A survey undertaken on 26 November 2009 identified the same species as identified in the flora and fauna survey that accompanied the Stage 1 Net Gain assessment.

EVC 160 - Coastal Dune Scrub

Dominated by Coast Teatree (*Leptospermum laevigatum*) and Coast Wattle (*Acacia longifolia* subsp. *sopharae*) and the scramblers Bower Spinach (*Tetragonia implexicoma*) and Seaberry Saltbush (*Rhagodia candolleana*).

This EVC is listed as Depleted in the Gippsland Plain bioregion. Of the ten flora species listed in the DSE Benchmark as typical of at least part of the EVC range, six species are present at the offset site, including medium shrubs, small herbs and scramblers.

This EVC at the offset site contains a number of weed species that are considered highly invasive and/or high impact weeds. Of most concern are the large numbers of African Box-thorn (*Lycium ferocissimum*), many of which are greater than 3 m tall and occupy a significant amount of space.

Organic litter is greater than 50% of the EVC Benchmark, but is dominated by non-native organic litter.

The condition of the vegetation in this EVC at the offset site is similar to that at the clearing site, with a habitat score of 49/100, compared to 43/100 at the clearing site.

The EVC occurs in the southern third of the offset site, adjacent the access track being cleared, and west of the pedestrian path that runs north-south through the site.

EVC 2 - Coastal Banksia Woodland

Dominated by Coast Banksia (*Banksia integrifolia*) and large indigenous shrubs.

This EVC is listed as Vulnerable in the Gippsland Plain bioregion. Of the 16 flora species listed in the DSE Benchmark as typical of at least part of the EVC range, five species are present at the offset site, including canopy Banksias, 3 medium shrubs and scrambling Small-leaved Clematis (*Clematis microphylla*).

This EVC at the offset site contains a number of weed species that are considered highly invasive and/or high impact weeds, though the two weed species listed in the Benchmark as typical are not

present. Again, of most concern are the large numbers of African Box-thorn (*Lycium ferocissimum*), which encroach on the western side of this EVC.

Canopy health at the site is good and is greater than 50% of the benchmark cover, with the number of trees per hectare around 40% of the benchmark, across the site, while recruitment and understorey diversity are reasonable. Organic litter is greater than 50% of the EVC Benchmark, and is dominated by native organic litter.

The condition of the vegetation in this EVC at the offset site is similar to that at the clearing site, with a habitat score of 47/100, compared to 49/100 at the clearing site.

The EVC occurs along the eastern boundary of the offset site, adjacent to the Nepean Highway. It spans from north to south along this boundary and extends in to the pedestrian path, becoming thinner on the western side of that path before giving way to Coastal Dune Grassland at the sand dunes above the beach. The EVC covers approximately half of the offset site.

EVC 879 - Coastal Dune Grassland

Dominated by Hairy Spinifex (*Spinifex sericeus*) and introduced species Marram Grass (*Ammophila arenaria*).

This EVC is listed as Depleted in the Gippsland Plain bioregion. Of the 14 flora species listed in the DSE Benchmark as typical of at least part of the EVC range, six species are present at the offset site, including the medium shrub, Coast Saltbush (*Atriplex cinerea*), small herbs, medium non-tufted graminoids and a scrambler. Additionally, the medium tufted graminoid, Black-anther Flax-lily (*Dianella admixta*) is present, where the EVC Benchmark lists Small-flower Flax-lily (*Dianella brevicaulis*) as typical.

The EVC at the offset site contains a number of introduced species, most notably Marram Grass and Gazania (*Gazania linearis*). Organic litter is dominated by non-native litter at the site, whilst recruitment is good.

The condition of the vegetation in this EVC at the offset site is similar to that at the clearing site, with a habitat score of 37/100, compared to 31/100 at the clearing site.

The EVC occurs along the western boundary of the offset site, from its northern to its southern boundary. Its eastern boundary is the extent of the sand-dune along the beachfront, and it covers around a third of the area of the offset site.

4.1.2 Flora species

Flora species recorded

A total of 47 taxa of plants (22 indigenous, 25 exotics) were recorded in the study area.

Threatened flora species

Thirty-four additional flora species have been recorded within the local area (i.e. within a 10 kilometre radius of the study area), or recorded as potentially occurring, or their habitats as potentially occurring, within the local area (FIS 2007; DEWHA Protected Matters Search Tool).

Of these 34 species, all but one are unlikely to occur in the offset site, due to unsuitable habitat. Suitable habitat for one species, *Austrofestuca littoralis* (Coast Fescue), occurs in the offset site, but the species was not recorded as present during the site visit.

Seven of the 34 species identified from the database search are listed under the EPBC Act, with 2 of those seven species recorded in the FIS. No habitat for any of these EPBC-listed species is present at the offset site

Best or remaining 50% habitat for rare and threatened flora species

It is considered that suitable habitat for Coast Fescue is present at the site. Coast Fescue is listed as rare in the DSE list of Victorian Rare or Threatened Species. However, it is considered unlikely that the species would be expected to use the site in the medium term, due to the presence of competing exotic species and the condition of the site, despite the coastal dune habitat being conducive to the species.

Table 4: Determination of best/remaining habitat for rare or threatened flora species

Habitat Zone:					
Species	Conservation status	Steps [1]	Determination of Best 50% / Remaining 50% [2]	Conservation significance [3]	Notes
<i>Austrofestuca littoralis</i>	rare	A-D-No	No further consideration	No change	CBW – High CDG – Medium CDS – Medium

[1] From Table 2 in the *Guide for Assessment of Referred Planning Permit Applications* (DSE 2007) specify steps taken in habitat assessment to determine best 50% or remaining 50% of habitat.

[2] Specify 'best' or 'remaining'.

[3] Conservation significance of the habitat zone based on consideration of threatened species.

4.2 Fauna

4.2.1 Fauna habitats

The study area supports three broad habitat types: paved areas and footpaths, coastal dune grassland, and coastal scrubland. The foreshore reserve contains remnant vegetation that forms part of an important habitat corridor along the Port Phillip Bay coast for a range of ground dwelling reptiles, arboreal mammals and more mobile species such as birds.

4.2.2 Fauna species

Fauna species recorded

The Stage 1 Net Gain assessment for the clearing site identified 20 fauna species – 18 birds (five introduced and 13 native) and 2 native reptiles.

Threatened fauna species

All of the species identified during that survey were considered common throughout the local area. The database search conducted for the Stage 1 Net Gain assessment identified 26 species listed under the EPBC Act as possibly occurring in the area or having habitat possibly occurring in the area. However it was considered unlikely that any of these species would occur in the clearing/offset site or have suitable habitat at the site.

Of 37 species identified in the database search as listed under the state FFG Act, three were considered to be potentially rare visitors, whilst the remainder were considered to be potential vagrant visitors or unlikely, with no suitable habitat.

Of the 19 species identified in the database search as regionally significant, two were considered potential occasional visitors to the site, five considered rare visitors, eleven considered vagrant visitors or unlikely, with no suitable habitat. One species, the Pacific Gull (*Larus pacificus pacificus*) a known resident.

Best or remaining 50% habitat for threatened fauna species

Table 5: Determination of best/remaining habitat for threatened fauna species

Habitat Zone					
Species	Conservation status	Steps [1]	Determination of Best 50% / Remaining 50% [2]	Conservation significance [3]	Notes
<i>Larus pacificus pacificus</i>	Near Threatened	A-B-E-F-No	Remaining	No change	CBW – High CDG – Medium CDS - Medium
<i>Phalacrocorax fuscescens</i>	Near Threatened	A-D-No	No further consideration	No change	CBW – High CDG – Medium CDS - Medium
<i>Phalacrocorax varius</i>	Near Threatened	A-D-No	No further consideration	No change	

[1] From Table 2 in the *Guide for Assessment of Referred Planning Permit Applications* (DSE 2007) specify steps taken in habitat assessment to determine best 50% or remaining 50% of habitat.

[2] Specify 'best' or 'remaining'.

[3] Conservation significance of the habitat zone based on consideration of threatened species.

4.3 Management Issues (threats)

There are a number of threats to the offset site, to be considered in the management of the site. These include:

- Weeds. A number of high threat weeds occur in the area. The most significant of these is African Box-thorn (*Lycium ferocissimum*), which covers significant areas of the site, with a number of large individuals. Also of concern are Bridal Creeper (*Asparagus asparagoides*), Kikuyu (*Pennisetum clandestinum*), Veldt-grass (*Ehrharta* spp.), Onion Grass (*Romulea rosea*) and other species.
- Pest animals. Although not recorded during the Stage 1 Net Gain assessment, African Box-thorn is considered to be ideal habitat for the European Rabbit.
- Recruitment. In general, recruitment at the site is considered low in the Coastal Banksia Woodland and Coastal Dune Scrub sections and above-average in the Coastal Dune Grassland section. Banksia trees in the Coastal Banksia Woodland are not observably recruiting.

5 LIKE FOR LIKE CRITERIA

The offset is located in the Gippsland Plain bioregion and comprises areas of:

- EVC 160 – Coastal Dune Scrub;
- EVC 2 – Coastal Banksia Woodland; and
- EVC 879 – Coastal Dune Grassland.

The offset zones are of the same Conservation Significance as the loss zones and meet all the Like-for-Like criteria as specified in Table 3.4B, page 54 of the Port Phillip and Westernport Native Vegetation Plan (Port Phillip and Westernport CMA 2006):

- vegetation type (EVC)
- bioregion
- landscape role
- quality objectives
- proportion of revegetation included in the offset

Table 6: Meeting Like-for-Like criteria for clearing a remnant patch

Clearing site							Offset site						
Target # [1]	Habitat Zones [2]	Bioregion	EVC #: Name	Conservation significance	Min. habitat score for target [3]	Other Like-for-Like reqts [4]	Trading up [5]	Offset Zones [6]	Bioregion	EVC #: Name	Conservation significance	Habitat score	Other Like-for-Like attributes
H1	1 and 2	GippsP	2: Coastal Banksia Woodland	High	37	none	no	1	GippsP	2: Coastal Banksia Woodland	High	47	none
M1	1 and 2	GippsP	160: Coastal Dune Scrub	Medium	22	none	no	2	GippsP	160: Coastal Dune Scrub	Medium	49	none
M2	3	GippsP	879: Coastal Dune Grassland	Medium	16	none	no	3	GippsP	879: Coastal Dune Grassland	Medium	37	none

[1] For losses of very high or high conservation significance vegetation, the losses in different habitat zones can be added together into one Offset Target provided that they must match the same Like-for-Like criteria, e.g. losses are in the same EVC/habitat type etc. For losses of medium or low conservation significance vegetation, losses from different habitat zones can be added together into one Offset Target provided that the losses are in the same bioregion.

[2] Please specify the habitat zones that contribute to the target.

[3] Based on the quality objectives for the offset specified in Table 6 of Victoria's Native Vegetation Management - A Framework for Action (DNRE 2002)

[4] Please specify any other Like-for-Like requirements. These may include best/remaining habitat for threatened species, ecological function etc.

[5] Please specify whether trading up

[6] Please specify the offset zones allocated to the target.

6 QUALIFICATIONS OF GAINS AVAILABLE ON OFFSET SITE

This section outlines the areas where the offset gains are proposed to occur, refer to Figure 1 to identify the location of the offset zones graphically. Offset gains were calculated using DSE's Net Gain Calculator, which incorporates a standardisation factor for each of the treeless vegetation types.

Table 7: Quantified offset gains available – protection & management of OZ1

Offset Zone		OZ1			
Land tenure		Crown Land			
Overlays applying to zone		ESO			
Property size [1]		<10ha			
Patch size		0.53 ha			
Security arrangement		Permit Condition			
Bioregion		Gippsland Plain			
EVC #: Name		2: Coastal Banksia Woodland			
EVC standardiser [2]					
EVC Bioregional Conservation Status		Vulnerable			
		Max Possible Score	Current Site Condition	Maintenance	Improvement
Scores	Large Old Trees	10	0	n/a	n/a
	Tree Canopy Cover	5	2	n/a	0
	Understorey	25	15	n/a	0
	Lack of Weeds	15	6	n/a	2
	Recruitment	10	10	n/a	0
	Organic Matter	5	4	n/a	0
	Logs	5	4	n/a	0
	Standardised Site Condition [3]				
	Landscape Context	25	8	n/a	8
	Current habitat score of zone	100	49	n/a	48
Conservation Significance	Conservation status x Habitat Score		High	n/a	High
	Threatened Species Rating		n/a	n/a	n/a
	Other Site Attribute Rating		n/a	n/a	n/a
	Overall Conservation Significance		High	n/a	High
Subtotals of maintenance & improvement gains		##			
Standardised sum of maintenance and improvement gain/ha [4]		##	2.0		
Prior management gain/ha		##	0.0		
Security gain/ha		##	0.0		
Total Gain points per hectare		##	2		
Habitat Score gained per hectare (gain points/100)		0.##	0.02		
Size of the offset zone (ha)		##	0.8		
Total Gain (Hha) [5]		##	0.02		
Very large old trees available for protection		#			
Large old trees available for protection		#	2		
Medium old trees available for protection		#			

Table 8: Quantified offset gains available – protection & management of OZ2

Offset Zone		OZ2			
Land tenure		Crown Land			
Overlays applying to zone		ESO			
Property size [1]		<10ha			
Patch size		0.41 ha			
Security arrangement		Permit Condition			
Bioregion		Gippsland Plain			
EVC #: Name		160: Coastal Dune Scrub			
EVC standardiser [2]					
EVC Bioregional Conservation Status		Depleted			
		Max Possible Score	Current Site Condition	Maintenance	Improvement
Scores	Large Old Trees	10	n/a	n/a	n/a
	Tree Canopy Cover	5	n/a	n/a	n/a
	Understorey	25	10	n/a	0
	Lack of Weeds	15	2	n/a	2
	Recruitment	10	10	n/a	0
	Organic Matter	5	4	n/a	0
	Logs	5	n/a	n/a	n/a
	Standardised Site Condition [3]				
	Landscape Context	25	8	n/a	8
	Current habitat score of zone	100	43	n/a	64
Conservation Significance	Conservation status x Habitat Score		High	n/a	High
	Threatened Species Rating		n/a	n/a	n/a
	Other Site Attribute Rating		n/a	n/a	n/a
	Overall Conservation Significance		Med.	n/a	High
Subtotals of maintenance & improvement gains		##			
Standardised sum of maintenance and improvement gain/ha [4]		##	6.12		
Prior management gain/ha		##	0.0		
Security gain/ha		##	0.0		
Total Gain points per hectare		##	6.12		
Habitat Score gained per hectare (gain points/100)		0.##	0.0612		
Size of the offset zone (ha)		##	0.2		
Total Gain (Hha) [5]		###	0.01		
Very large old trees available for protection		#		n/a	
Large old trees available for protection		#		n/a	
Medium old trees available for protection		#		n/a	

Table 9: Quantified offset gains available – protection & management of OZ3

Offset Zone		OZ3			
Land tenure		Crown Land			
Overlays applying to zone		ESO			
Property size [1]		<10ha			
Patch size		0.51 ha			
Security arrangement		Permit Condition			
Bioregion		Gippsland Plain			
EVC #: Name		879: Coastal Dune Grassland			
EVC standardiser [2]					
EVC Bioregional Conservation Status		Depleted			
		Max Possible Score	Current Site Condition	Maintenance	Improvement
Scores	Large Old Trees	10	n/a	n/a	n/a
	Tree Canopy Cover	5	n/a	n/a	n/a
	Understorey	25	10	n/a	1.25
	Lack of Weeds	15	0	n/a	1
	Recruitment	10	3	n/a	1
	Organic Matter	5	4	n/a	1
	Logs	5	n/a	n/a	n/a
	Standardised Site Condition [3]				
	Landscape Context	25	8	n/a	8
	Current habitat score of zone	100	31	n/a	68
Conservation Significance	Conservation status x Habitat Score		High	n/a	High
	Threatened Species Rating		n/a	n/a	n/a
	Other Site Attribute Rating		n/a	n/a	n/a
	Overall Conservation Significance		Med.	n/a	High
Subtotals of maintenance & improvement gains		##			
Standardised sum of maintenance and improvement gain/ha [4]		##	5.78		
Prior management gain/ha		##	0.0		
Security gain/ha		##	0.0		
Total Gain points per hectare		##	5.78		
Habitat Score gained per hectare (gain points/100)		0.##	0.0578		
Size of the offset zone (ha)		##	0.5		
Total Gain (Hha) [5]		##	0.03		
Very large old trees available for protection		#		n/a	
Large old trees available for protection		#		n/a	
Medium old trees available for protection		#		n/a	

Table 10: Quantified offset gains available – revegetating a patch of native vegetation

Offset Revegetation Zone		Potential revegetation gain score	ORZ1	ORZ2	ORZ3	
Bioregion				GippsP	GippsP	GippsP
EVC #: Name				2:CBW	160:CDS	879:CDG
Bioregional Conservation Status				Vulnerable	Depleted	Depleted
Conservation Significance			High	Medium	Medium	
Maintenance Gain	Large Old Trees	0 - 3	n/a – no revegetation occurring	n/a	n/a	
	Logs [1]	0 - 5	n/a	n/a	n/a	
Actions to Improve Site Condition	Revegetation [2]	7 - 10	n/a	n/a	n/a	
	Introduction of Logs [1]	0 - 5	n/a	n/a	n/a	
Landscape Context [3]	Patch Size	3 - 10	n/a	n/a	n/a	
	Neighbourhood					
	Distance to Core					
Security Gain		##	n/a	n/a	n/a	
Total Gain points per hectare		100	n/a	n/a	n/a	
Habitat Score gained per hectare (gain points/100)		0.##	n/a	n/a	n/a	
Area of the revegetation zone (ha)		##	n/a	n/a	n/a	
Total Gain points in offset zone [4]		###	n/a	n/a	n/a	
Very Large Old Trees available for protection			n/a	n/a	n/a	
Large Old Trees available for protection			n/a	n/a	n/a	
Medium Old Trees available for protection			n/a	n/a	n/a	

[1] The combined gain claimed for the maintenance of logs and the introduction of logs cannot exceed 5.

[2] Please note that the default gain for revegetation is 7. For revegetation of a very high standard an additional 3 gain points may be available.

[3] The default score for landscape context gain is 3 points per hectare but additional landscape context gain may be achieved under some circumstances up to a maximum of 10.

[4] Round to two decimal places.

Figure 1: Offset Zones

7 ALLOCATION OF NATIVE VEGETATION GAINS

Table 11: Allocation of native vegetation gains for clearing a remnant patch

Gain Target		Trading up	Source of gains to meet the target [3]				Outcome	
Target No.[1]	Target (Hha)	Discount [2]	Offset Zone	Gain (Hha)	Offset Zone	Gain (Hha)	Total gains (Hha)	Surplus/ Deficit (Hha)
HZ1 (CBW)	0.02		OZ1	0.02			0.02	0.00
HZ2 (CDS)	0.01		OZ2	0.02			0.01	0.00
HZ3 (CDG)	0.03		OZ3	0.03			0.03	0.00

[1] Provide unique identifier for target and list habitat zone(s) that contribute to target

[2] If applicable, specify the trading up discount that applies.

[3] Add or delete columns as necessary

In each of the three Habitat Zones, after supplementary plantings and other measures, net gain of habitat hectares is predicted to be achieved.

8 OFFSET IMPLEMENTATION

8.1.1 Offset Site Details

Landowner of offset site – Crown Land - DSE (land managed by the Committee of Management)

Type of offset – onsite.

Location and address of offset site – Seaford Foreshore Reserve, adjacent Nepean Highway, Seaford

Area of offset site (ha) – 1.8

Volume - nil

Folio - nil

Parish - Frankston

Allotment – Crown Allotment 11A, Section A

Local Government Area – Frankston City Council

Responsible Authority – Frankston City Council

Bioregion – Gippsland Plain

8.2 Strategy for Offset Site

The offset site is to be secured and managed for the purposes of conservation in perpetuity.

8.2.1 Offset Security and Management Responsibility

Who is liable/responsible for meeting offset requirements? Melbourne Water Corporation / Pipelines Alliance

Type of security (i.e. Agreement under Section 69 of the Conservation, Forest and Lands Act 1987, Agreement under Section 173 of the Planning and Environment Act 1987 or Covenant under the Victorian Conservation Trust Act 1972) - tbc

Date 10-year offset management to commence – at end of construction works (approx Dec 2010)

Date 10-year offset management expires – approx Dec 2020

Date agreement registered on-title – n/a

Offset site management responsibility (i.e. Landowner, Authority Name) – Seaford Foreshore Reserve Committee of Management

Offset Monitoring Responsibility – Seaford Foreshore Reserve Committee of Management

Ongoing Land-use Commitments

Offsets will be achieved by:

- Weed management in the offset area; and
- Supplementary planting (see Tables 16, 17 and 18)

The landowner will continue to manage the offset site after the completion of Year 10 as specified in this Offset Plan, such that:

- weed cover does not increase beyond the level attained at the completion of Year 10

Any proposed uses or development of the site that conflict with the landowner commitments are not allowed under this plan.

8.3 Reinstatement of Cleared Areas

Three specific areas of native vegetation will be cleared for the purposes of this project. These areas are defined as Habitat Zones as described below (refer to Figure 2 for a graphical representation of the location of each Habitat Zone):

- Habitat Zone 1 - 194m² of Coastal Dune Scrub adjacent the toilet block on the Nepean Highway;
- Habitat Zone 2 - 220m² of Coastal Dune Scrub and Coastal Banksia Woodland adjacent the existing track to the beach; and
- Habitat Zone 3 - 840m² of Coastal Dune Grassland adjacent the beach.

These areas will be re-planted using plant stock of local provenance, in accordance with the DSE Benchmarks for these EVCs, following completion of the project and at an appropriate time of year for optimal survival. The Benchmarks indicate species that would be expected to occur in particular EVCs for the Bioregion and the densities of those species that indicate good quality vegetation.

Using these benchmarks, and the species list of plants present at the site prior to the project, replanting numbers to be established and species are outlined in **Table 12, Table 13 and Table 14**.

The Pipelines Alliance will plant and maintain the reinstatement area for a maximum of 2 years. At the end of the 2 years a handover process will be implemented whereby the area is jointly assessed by the Alliance and Frankston City Council to confirm that it is in sufficient a condition to be handed over the council for all ongoing maintenance works. Upon successful handover of the areas the Alliance will have no further obligation or requirement to fund future maintenance works are the areas.

The handover process assessment will be undertaken in early Spring of year 2 so that if additional planting is required supplementary planting can be undertaken immediately at this time of year, and then handed over to council in a condition deemed acceptable.

It has been agreed between The Pipelines Alliance and Frankston City Council that the Habitat zones will be reinstated in a configuration to be agreed at a later date. This agreement makes provision for reinstating the area into a configuration that may remove a straight access track and potentially create a zig-zag track to help council manage sand migration. Once agreed (and construction has been completed) the areas will be reinstated to their final form. It should be noted that material excavated during construction will be stockpiled and replaced at the completion of the works as part of the reinstatement of cleared areas.

Revegetation within the reinstatement area will be based on densities outlined in Table 12, Table 13 and Table 14, along with the workplan outlined in Table 19. It was agreed between the Pipelines Alliance and FCC that the topography, contours, stockpiling, fencing and signage are to be resolved at a later date.

It is noted that a track of similar dimension and with similar extent of fencing will form part of the reinstatement works.

A suitably qualified bushland regeneration contractor, appointed by The Pipelines Alliance, will undertake reinstatement, as well as supplementary plantings required for Net Gain offsets. The contractor will be responsible for:

- Collection of seed and vegetative propagation source material (cuttings), sourced locally from the Foreshore Reserve and collected at the earliest suitable time, during construction, prior to completion and immediately following completion of works
- Provision of advice on any requirement to source plant stock from outside the Foreshore Reserve, if necessary (the preference being for local provenance material)
- Propagation of sufficient numbers of individual plants to fully satisfy the requirements of reinstatement in the construction zones and supplementary plantings in the offset zones
- Undertaking planting in the reinstatement and offset zones

- Provision of advice on monitoring and replacement of dead plants, watering regime and other requirements.

Revegetation works will be undertaken within two months of completion of construction works or, should construction works completion occur at an unsuitable time for revegetation works, by no later than the end of the following May.

Table 12: Species and densities to be replanted in Habitat Zone 1

Habitat Zone	Habitat Zone 1			
Area of Zone	194 m ²			
Bioregion	Gippsland Plain			
EVC#:Name	160: Coastal Dune Scrub			
Category	Common Name	Scientific name [2]	Survival Targets[1]	
			Density/ha	Number of Plants
Medium Shrub	Coast Tea-tree	<i>Leptospermum laevigatum</i>	70	20
Medium Shrub	Coast Wattle	<i>Acacia longifolia</i> var. <i>sophræ</i>	30	10
Medium Shrub	Seaberry Saltbush	<i>Rhagodia candolleana</i>	70	20
Small Herb	Karkalla	<i>Carpobrotus rossii</i>	150	40
Scrambler	Bower Spinach	<i>Tetragonia implexicoma</i>	150	40

[1] The number of plants specified in this column for each category are in excess of those currently in existence and provides for the potential loss of plants due to unsuccessful establishment.

[2] The minimum number of plants in each category can be achieved by a combination of recommended species. If multiple species are listed, a minimum of two species should be established.

Table 13: Species and densities to be replanted in Habitat Zone 2

Habitat Zone	Habitat Zone 2			
Area of Zone	220 m ²			
Bioregion	Gippsland Plain			
EVC#:Name	160: Coastal Dune Scrub/2: Coastal Banksia Woodland			
Category	Common Name	Scientific name [2]	Survival Targets[1]	
			Density/ha	Number of Plants
Tree	Coast Banksia	<i>Banksia integrifolia</i>	20	6
Medium Shrub	Coast Tea-tree	<i>Leptospermum laevigatum</i>	35	10
Medium Shrub	Coast Wattle	<i>Acacia longifolia</i> var. <i>sophræ</i>	35	10
Medium Shrub	Seaberry Saltbush	<i>Rhagodia candolleana</i>	70	6
Medium Shrub	Coast Beard-heath	<i>Leucopogon parviflorus</i>	100	15
Scrambler	Small-leaved Clematis	<i>Clematis microphylla</i>	150	30
Small Herb	Karkalla	<i>Carpobrotus rossii</i>	150	30
Scrambler	Bower Spinach	<i>Tetragonia implexicoma</i>	150	30

[1] The number of plants specified in this column for each category are in excess of those currently in existence and provides for the potential loss of plants due to unsuccessful establishment.

[2] The minimum number of plants in each category can be achieved by a combination of recommended species. If multiple species are listed, a minimum of two species should be established.

Table 14: Species and densities to be replanted in Habitat Zone 3

Habitat Zone	Habitat Zone 3			
Area of Zone	840 m ²			
Bioregion	Gippsland Plain			
EVC#:Name	879: Coastal Dune Grassland			
Category	Common Name	Scientific name [2]	Survival Targets[1]	
			Density/ha	Number of Plants
Medium Shrub	Coast Saltbush	<i>Atriplex cinerea</i>	30	20
	Sticky Daisy-bush	<i>Oleria glutinosa</i>	30	10
Small Herb	Karkalla	<i>Carpobrotus rossii</i>	150	40
Medium Non-tufted graminoid	Hairy Spinifex	<i>Spinifex sericeus</i>	150	120
Medium Non-tufted graminoid	Knobby Club-sedge	<i>Ficinia nodosa</i>	150	80
Scrambler	Small-leaved Clematis	<i>Clematis microphylla</i>	150	40

[1] The number of plants specified in this column for each category are in excess of those currently in existence and provides for the potential loss of plants due to unsuccessful establishment.

[2] The minimum number of plants in each category can be achieved by a combination of recommended species. If multiple species are listed, a minimum of two species should be established.

The plant species established will be required to survive, as per those species established under the net gain requirements for other areas. It would be expected that after establishment and survival of these plants, management of the revegetated areas would be assumed by the Committee of Management, as per standard agreements for managing the Seaford Foreshore.

Figure 2: Habitat Zones

8.4 Management Actions

Net Gain Offsets will be achieved by:

- ensuring that weed cover does not increase beyond current levels
- eliminating all high threat environmental weeds (<1% cover)
- undertaking supplementary planting

In the event of a bushfire through the area any additional requirements for replanting (beyond what is stated in this document) falls outside the commitments that the Pipelines Alliance is responsible for. It will be the responsibility of the party for the overall management of the area to reinstate the offset zones and the habitat zones; with this OMP's contribution assisting to the extent documented within.

8.4.1 Weed control

A total of 25 exotic species of plants was identified at the clearing and offset site. Of these, ten species were identified on the DSE Benchmarks for the EVCs present as of high invasiveness, high impact or both. Three species of declared weed species were identified at the site, and one genus that includes species that are declared, though the species was unable to be determined.

Landowners have a responsibility to take all reasonable steps to prevent the growth and spread of Regionally Controlled weeds, whilst trade in the plants or propagules of Restricted weeds is prohibited.

It is proposed that, at the offset site, declared weeds and weeds listed on the DSE Benchmark for the EVCs will be controlled to negligible levels (to 1% or less of current levels) over the period of the offset management. The species to be controlled are listed in Table 15.

African Box-thorn Management

The major weed occurring in the Coastal Dune Scrub / Coast Banksia Woodland area is African Box-thorn (*Lycium ferocissimum*). There are a number of individuals of African Boxthorn in the area that are over 3 metres tall and occupy a significant amount of ground.

Removal of around five large African Box-thorn plants in the area will significantly reduce the weed load in these areas, improve access for further weed management activities and create bare ground, which should continue to be monitored for weed re-growth, but can also be re-planted with supplementary plantings for Net Gain offsets.

Control of African Box-thorn is difficult, due to its propensity to regrow after removal. Physical removal of larger plants is recommended, and this can be done using heavy machinery or, where access is difficult, manual cutting and removal.

Smaller plants can be dug up or controlled using herbicides. Herbicide treatment may consist of foliar application, basal treatment (thickly painting herbicide mixture around the lower 300mm of all stems) or cut stump treatment (cutting down the bush and painting the stump with herbicide mixture). Spotgun treatment (treating the soil around the plant) would not be considered an appropriate method in this setting, due to the possibility of chemical leaching damaging non-target species.

Plant material should be removed from site and disposed of or destroyed.

A suitably qualified weed management practitioner will be appointed by the Pipelines Alliance to undertake these works. Any contractor will be required to be suitably trained and experienced and undertake any herbicide use within the strictures of the herbicide label and guidelines.

Table 15: Weed species to be controlled

Species Name	Common Name	Declared Noxious in PPWCMA	Invasive (DSE Benchmark)	Impact (DSE Benchmark)
<i>Allium triquetrum</i>	Angled Onion	Restricted Weed		
<i>Asparagus asparagoides</i>	Bridal Creeper	Restricted Weed	high	high
<i>Bromus diandrus</i>	Great Brome		high	low
<i>Coprosma repens</i>	Mirror Bush		low	high
<i>Ehrharta erecta</i>	Panic Veldt-grass		high	high
<i>Ehrharta longiflora</i>	Annual Veldt-grass		high	low
<i>Lagurus ovatus</i>	Hare's-tail Grass		high	low
<i>Lycium ferocissimum</i>	African Box-thorn	Regionally Controlled Weed	low	high
<i>Pennisetum clandestinum</i>	Kikuyu		high	high
<i>Romulea rosea</i>	Onion Grass		high	low
<i>Sonchus oleraceus</i>	Common Sow-thistle		high	low
<i>Watsonia</i> spp.	Watsonia	Some species regionally controlled weed		

8.4.2 Supplementary planting of Offset Zones (OZs)

Table 16, Table 17 and Table 18 outline the proposed replanting and survival rates expected for each of the Offset Zones, using DSE Benchmarks and the species list of plants present at the site (Ecology Partners 2009). The DSE Benchmarks indicate species that would be expected to occur in particular EVCs for the Bioregion and the densities of those species that indicate good quality vegetation.

A suitably qualified bushland regeneration contractor, appointed by The Pipelines Alliance, will undertake reinstatement, as well as supplementary plantings required for Net Gain offsets. The contractor will be responsible for:

- Collection of seed and vegetative propagation source material (cuttings), sourced locally from the Foreshore Reserve and collected at the earliest suitable time, during construction, prior to completion and immediately following completion of works
- Provision of advice on any requirement to source plant stock from outside the Foreshore Reserve, if necessary (the preference being for local provenance material)
- Propagation of sufficient numbers of individual plants to fully satisfy the requirements of reinstatement in the construction zones and supplementary plantings in the offset zones
- Undertaking planting in the reinstatement and offset zones
- Provision of advice on monitoring and replacement of dead plants, watering regime and other requirements.

Table 16: Plantings & survival numbers for OZ1

Offset Zone:	OZ1			
Area of Zone:	0.8 ha			
Bioregion:	Gippsland Plain			
EVC #: Name	2: Coastal Banksia Woodland			
Category	Common name	Scientific name [2]	Survival Targets[1]	
			Density /ha	Number of plants/zone
Overstorey	Coast Banksia	<i>Banksia integrifolia</i>	10/ha	8
Understorey Trees and Large Shrubs (> 5m tall)				
Medium Shrubs (1-5 m tall)	Coast Beard-heath, Seaberry Saltbush, Coast Tea-tree	<i>Leucopogon parviflorus</i> , <i>Rhagodia candolleana</i> , <i>Leptospermum laevigatum</i>	15	12
Small Shrubs (<1 m tall)				
Groundcovers	Small-leaved Clematis	<i>Clematis microphylla</i>	20	16
Total Survival Targets			45	36

Table 17: Plantings & survival numbers for OZ2

Offset Zone:	OZ2			
Area of Zone:	0.2 ha			
Bioregion:	Gippsland Plain			
EVC #: Name	160: Coastal Dune Scrub			
Category	Common name	Scientific name [2]	Survival Targets[1]	
			Density /ha	Number of plants/zone
Overstorey				
Understorey Trees and Large Shrubs (> 5m tall)				
Medium Shrubs (1-5 m tall)	Coast Wattle, Coast Tea-tree, Coast Beard-heath, Seaberry Saltbush	<i>Acacia longifolia</i> var. <i>sophræ</i> , <i>Leptospermum laevigatum</i> , <i>Leucopogon parviflorus</i> , <i>Rhagodia candolleana</i>	16	5
Small Shrubs (<1 m tall)				
Groundcovers	Karkalla, Bower Spinach	<i>Carpobrotus rossii</i> , <i>Tetragonia implexicoma</i>	20	6
Total Survival Targets			36	11

Table 18: Plantings & survival numbers for OZ3

Offset Zone:	OZ3			
Area of Zone:	0.5 ha			
Bioregion:	Gippsland Plain			
EVC #: Name	879: Coastal Dune Grassland			
Category	Common name	Scientific name [2]	Survival Targets[1]	
			Density /ha	Number of plants/zone
Overstorey				
Understorey Trees and Large Shrubs (> 5m tall)				
Medium Shrubs (1-5 m tall)	Coast Saltbush, Sticky Daisy-bush	<i>Atriplex cinerea</i> , <i>Oleria glutinosa</i>	20,	10
			20	10
Small Shrubs (<1 m tall)	Knobby Club-Sedge, Hairy Spinifex	<i>Ficinia nodosa</i> , <i>Spinifex sericeus</i>	20	10
Groundcovers	Karkalla, Small-leaved Clematis, Sieber Crassula	<i>Carpobrotus rossii</i> , <i>Clematis microphylla</i> , <i>Crassula sieberiana</i>	40	20
Total Survival Targets			100	50

[1] The minimum number of plants specified in this column for each category are the minimum numbers required to fulfil the gain target requirement.

[2] The minimum number of plants in each category can be achieved by a combination of recommended species. If multiple species are listed, a minimum of two species should be established.

Table 19: Ten-Year Management Actions

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
0	0.1	1, 2, 3 and reveg zone	Sourcing of plant stock	Collection of source seed and plant stock from Foreshore Reserve, not restricted to offset zones, and propagation of seed and stock sources for revegetation and OFZ supplementary planting	Pipelines Alliance	At appropriate times of the year prior to and during the construction period and in the year after, on advice from suitably qualified bushland contractor			Suitably qualified bushland contractor, appointed by the Pipelines Alliance.	Establishment of sufficient seedlings to service requirements of the revegetation and supplementary planting works				
1	1.1	n/a	Revegetation of construction zones (ie areas cleared)	Revegetation of cleared areas, using species and densities as specified in Tables 12, 13 and 14 , above.	Pipelines Alliance	Within two months of completion of works or, should works completion occur at an unsuitable time for reveg. works, by no later than the end of the following May			Suitably qualified bushland contractor, appointed by the Pipelines Alliance.	Establishment of numbers of plant species, as indicated in Tables 12, 13 and 14 , above				
1	1.2	2	Weed Control (initial focus on African Boxthorn)	Removal of existing large African Boxthorn <i>via</i> cutting and removal of stems and branches and cut-stump herbicide treatment, or on advice from suitably qualified weed control contractor.	Pipelines Alliance	Prior to flowering and seeding – August-September			Suitably qualified weed control contractor, appointed by the Pipelines Alliance.	Removal of all existing African Boxthorn individuals. 5 very large individuals, greater than 3 m tall to be removed, treated and disposed of.				
1	1.3	1, 2, 3	Weed Control (initial focus on African Boxthorn)	Removal of existing medium to small African Boxthorn <i>via</i> foliar application, basal treatment or hand excavation, on advice from suitably qualified weed control contractor	Pipelines Alliance	Prior to flowering and seeding – August-September			Suitably qualified weed control contractor, appointed by the Pipelines Alliance.	Removal of all existing African Boxthorn individuals				
1	1.4	1, 2, 3 and reveg areas	Weed Control	Control of weed species listed in Table 15 , <i>via</i> herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Pipelines Alliance	Prior to Spring-Summer growth and flowering – August-September			Suitably qualified weed control contractor, appointed by the Pipelines Alliance.	Reduction of high threat weed population to 30% of current levels, with the aim of reducing to 1% of current levels within 5 years				
1	1.5	1, 2, 3	Weed Control	Monitor and control weeds on site	Pipelines Alliance	Ongoing			Suitably qualified weed control contractor, appointed by the Pipelines Alliance.	Maintain high threat weed population to 30% of current levels, with the aim of reducing to 1% of current levels within 5 years				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
2	2.1	1, 2, 3 and reveg areas	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Pipelines Alliance	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by the Pipelines Alliance.	Maintain high threat weed population to 20% of current levels, noting the possibility that up to 30% re-establishment may occur following the first year's management				
2	2.2	1, 2, 3	Recruitment	Supplementary plantings of native species, as per Tables 16, 17 and 18 , above	Pipelines Alliance	Early spring, August to September. Undertaking this activity in the 2 nd year allows for control of weeds in offset zones prior to supplementary planting.			Suitably qualified bushland contractor, appointed by the Pipelines Alliance.	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 , above				
2	2.3	n/a	Revegetation	Monitoring of survival rates of plantings in construction zone, re-planting dead plants where necessary, where survival does not meet the densities in Tables 12, 13 and 14 , above	Pipelines Alliance	August to September, when undertaking supplementary planting in OFZs			Suitably qualified bushland contractor, appointed by the Pipelines Alliance.	Establish numbers of plant species, as indicated in Tables 12, 13 and 14 , above				
2	2.4		Revegetation	Appropriate watering of construction zone revegetation and offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Pipelines Alliance	ongoing			Suitably qualified bushland contractor, appointed by the Pipelines Alliance.	Establish and maintain plants species numbers, as indicated Tables 12, 13, 14, 16, 17, and 18				
2	2.5	1, 2, 3	Fencing	Maintain fencing around site	Pipelines Alliance	Ongoing			Frankston City Council	Maintain restricted site access				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
3	3.1	1, 2, 3	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Frankston City Council	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by Frankston City Council	Maintain high threat weed population to 10% of current levels, noting the possibility that up to 30% re-establishment of the previous year's population may occur following the second year's management				
3	3.3	1,2,3 and reveg areas	Recruitment	Monitoring in early spring to ensure survival of plantings is sufficient to satisfy Net Gain requirement in OFZs. If not, undertake further supplementary planting. At the beginning of Year 3 inspect reveg areas and undertake any supplementary planning prior to handover of all future management of areas to FCC.	Frankston City Council and Pipelines Alliance	Early spring, August to September			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 (OFZs). Survival to be monitored and supplemented where necessary				
3	3.4		Revegetation	Appropriate watering of construction zone revegetation and offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Frankston City Council	ongoing			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish and maintain plants species numbers, as indicated Tables 16, 17, and 18				
3	3.5	1,2,3	Fencing	Maintain fencing around site	Frankston City Council	Ongoing			Frankston City Council	Maintain restricted site access				
3	3.6	1,2,3	Management review and reporting	Review management options and add additional actions if required. Report on actions of last 3 years, their success and further management actions to be adopted to make any required improvements.	Seaford Foreshore Committee of Management	End of 3 year period			COM	Revised management actions table (this table)				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
4	4.1	1, 2, 3	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Frankston City Council	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by Frankston City Council	Maintain high threat weed population to 5% of current levels, noting the possibility that up to 30% re-establishment of the previous year's population may occur following the third year's management				
4	4.2	1, 2, 3	Recruitment	Monitoring in early spring to ensure survival of plantings is sufficient to satisfy Net Gain requirement in OFZs. If not, undertake further supplementary planting.	Frankston City Council	Early spring, August to September			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 (OFZs). Survival to be monitored and supplemented where necessary				
4	4.3		Revegetation	Appropriate watering of offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Frankston City Council	ongoing			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish and maintain plants species numbers, as indicated Tables 16, 17, and 18				
4	4.4	1,2,3	Fencing	Maintain fencing around site	Frankston City Council	Ongoing			Frankston City Council	Maintain restricted site access				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
5	5.1	1, 2, 3	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Frankston City Council	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by Frankston City Council	Maintain high threat weed population to 1% of current levels, noting the possibility that up to 30% re-establishment of the previous year's population may occur following the fourth year's management				
5	5.2	1, 2, 3	Recruitment	Monitoring in early spring to ensure survival of plantings is sufficient to satisfy Net Gain requirement in OFZs. If not, undertake further supplementary planting.	Frankston City Council	Early spring, August to September			Suitably qualified bushland contractor, appointed by Frankston City Council.	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 (OFZs). Survival to be monitored and supplemented where necessary				
5	5.3		Revegetation	Appropriate watering of offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Frankston City Council	ongoing			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish and maintain plants species numbers, as indicated Tables 16, 17, and 18				
5	5.4	1, 2, 3	Fencing	Maintain fencing around site	Frankston City Council	Ongoing			Frankston City Council	Maintain restricted site access				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
6	6.1	1, 2, 3	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Frankston City Council	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by Frankston City Council	Maintain high threat weed population to 1% of current levels				
6	6.3	1, 2, 3	Recruitment	Monitoring in early spring to ensure survival of plantings is sufficient to satisfy Net Gain requirement in OFZs. If not, undertake further supplementary planting.	Frankston City Council	Early spring, August to September			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 (OFZs). Survival to be monitored and supplemented where necessary				
6	6.3		Revegetation	Appropriate watering of offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Frankston City Council	ongoing			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish and maintain plants species numbers, as indicated Tables 16, 17, and 18				
6	6.4	1,2,3	Fencing	Maintain fencing around site	Frankston City Council	Ongoing			Frankston City Council	Maintain restricted site access				
6	6.5	1,2,3	Management review	Review management options and add additional actions if required. Report on actions of last 3 years, their success and further management actions to be adopted to make any required improvements.	Seaford Foreshore Committee of Management	End of 6 year period			COM	Revised management actions table				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
7	7.1	1, 2, 3	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Frankston City Council	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by Frankston City Council	Maintain high threat weed population to 1% of current levels				
7	7.2	1, 2, 3	Recruitment	Monitoring in early spring to ensure survival of plantings is sufficient to satisfy Net Gain requirement in OFZs. If not, undertake further supplementary planting.	Frankston City Council	Early spring, August to September			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 (OFZs. Survival to be monitored and supplemented where necessary				
7	7.3		Revegetation	Appropriate watering of offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Frankston City Council	ongoing			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish and maintain plants species numbers, as indicated Tables 16, 17, and 18				
7	7.4	1,2,3	Fencing	Maintain fencing around site	Frankston City Council	Ongoing			Frankston City Council	Maintain restricted site access				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
8	8.1	1, 2, 3	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Frankston City Council	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by Frankston City Council	Maintain high threat weed population to 1% of current levels				
8	8.2	1, 2, 3	Recruitment	Monitoring in early spring to ensure survival of plantings is sufficient to satisfy Net Gain requirement in OFZs. If not, undertake further supplementary planting.	Frankston City Council	Early spring, August to September			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 (OFZs). Survival to be monitored and supplemented where necessary				
8	8.3		Revegetation	Appropriate watering of offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Frankston City Council	ongoing			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish and maintain plants species numbers, as indicated Tables 16, 17, and 18				
8	8.4	1,2,3	Fencing	Maintain fencing around site	Frankston City Council	Ongoing			Frankston City Council	Maintain restricted site access				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
9	9.1	1, 2, 3	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Frankston City Council	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by Frankston City Council	Maintain high threat weed population to 1% of current levels				
9	9.2	1, 2, 3	Recruitment	Monitoring in early spring to ensure survival of plantings is sufficient to satisfy Net Gain requirement in OFZs. If not, undertake further supplementary planting.	Frankston City Council	Early spring, August to September			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 (OFZs). Survival to be monitored and supplemented where necessary				
9	9.3		Revegetation	Appropriate watering of offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Frankston City Council	ongoing			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish and maintain plants species numbers, as indicated Tables 16, 17, and 18				
9	9.4	1,2,3	Fencing	Maintain fencing around site	Frankston City Council	Ongoing			Frankston City Council	Maintain restricted site access				
9	9.5	1,2,3	Management review	Review management options and add additional actions if required. Report on actions of last 3 years, their success and further management actions to be adopted to make any required improvements.	Seaford Foreshore Committee of Management	End of 9 year period			COM	Revised management actions table				

Year #	Action #	Offset Zone [1]	Management action	Description of action	Responsibility	Timing	Quantity	Units	Who will undertake this action?	Standard to be achieved	Monitoring and Reporting	Completed (Yes/No)	Month and Year Completed	Cost (\$)
10	10.1	1, 2, 3	Weed Management	Monitor populations and control of weed species listed in Table 15 , via herbicide treatment and hand-removal. Control methods on the advice of suitably qualified weed control contractor	Frankston City Council	Prior to flowering and seeding – August-September and ongoing			Suitably qualified weed control contractor, appointed by Frankston City Council	Maintain high threat weed population to 1% of current levels				
10	10.2	1, 2, 3	Recruitment	Monitoring in early spring to ensure survival of plantings is sufficient to satisfy Net Gain requirement in OFZs. If not, undertake further supplementary planting.	Frankston City Council	Early spring, August to September			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish numbers of plant species, as indicated in Tables 16, 17 and 18 (OFZs). Survival to be monitored and supplemented where necessary				
10	10.3		Revegetation	Appropriate watering of offset zone supplementary planting to ensure survival of plants. Advice from suitably qualified bushland contractor on required watering regime	Frankston City Council	ongoing			Suitably qualified bushland contractor, appointed by Frankston City Council	Establish and maintain plants species numbers, as indicated Tables 16, 17, and 18				
10	10.4	1,2,3	Fencing	Maintain fencing around site	Frankston City Council	Ongoing			Frankston City Council	Maintain restricted site access				
10	10.5	1,2,3	Final Assessment	Final assessment of site quality and review of management objectives to report on achievement of Gains and goals achieved	Seaford Foreshore Committee of Management	End of ten years			COM	Thoroughly assessed offset works				

[1] As indicated on map of offset site.

9 MONITORING AND REPORTING

The Landowner agrees to submit the Landowner Monitoring and Report Form to the (enter responsible authority and/or DSE) as specified in Table 20.

Table 20: Landowner Monitoring and Reporting Schedule

Year	Year from commencement	Time of year	Monitoring Method	Person Responsible	Report due to DSE by:
2012	2	December	Landowner Monitoring Form	COM	
2015	5				
2020	10				
Post 2020	As requested in writing by DSE within a maximum 3 months of the date of issue				

Appendix A
Landowner Monitoring and Reporting
Form

Landowner of offset site	
Location and address of offset site [1]	
Offset site number (if applicable)	
Offset plan reference number (if applicable)	
Responsible Authority	
Report #	
Signature	
Date	

Please attach a copy of Management Action Table from the Offset Plan with information on which actions have been completed for year/s of this reporting period.

Describe specific monitoring results from surveys undertaken, survival rates of revegetation works, fencing work, success of weed and pest animal control work, successful management tools (i.e. techniques used to control weed species, protection of new plants, monitoring techniques...) and any problems or issues experienced (i.e. new infestation of weed species, storm damage to fencing...).

Provide photographs showing evidence of works.

If any agreed management actions or commitments are incomplete or have not been undertaken in the times specified explain the reasons why and what program of action/s will be undertaken to implement the action. If no action is to be undertaken please explain the reason/s and how the targets specified will be met.

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Document Status

Function	Position	Name	Signature	Date
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Approval Record (This Revision)

Prepared by	Botanist	Giles Flower	<i>GF</i>	21/01/2010
Reviewed by				
Approved by				

Rev No.	Amendment Description	By	Initials	Date
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Amendment Record

0	Draft	Giles Flower	GF	9/12/09
1	Final	Giles Flower	GF	13/1/10
2	Final Rev 2	Giles Flower	GF	21/1/10
4	Final Rev 4	M King	MK	13/09/10