

# Foreshore and Hinterland Vegetation Management Plan City of Port Phillip



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**Draft Foreshore and Hinterland Vegetation Management Plan – City of Port Phillip**

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## 1. INTRODUCTION

Practical Ecology Pty Ltd was commissioned by the City of Port Phillip to prepare a Foreshore and Hinterland Vegetation Management Plan. While this current project initially included a primary focus upon eleven foreshore reserves, it was confirmed as the project progressed that five hinterland reserves were to also be included. The majority of these sites are also covered by the Natural Heritage Management Program previously prepared for the municipality. They all occur between Elwood and Port Melbourne.

The City of Port Phillip has a well established and effective management regime to deliver positive ecological outcomes whilst also meeting a number of other management considerations in relation to safety and access. These considerations include in particular the establishment of:

- safer reserves, by ensuring that native vegetation within reserves contributes to a safe environment for reserve users, and
- appropriate access, given that in some cases residents and reserve users require adequate access within the reserves to key locations or through the reserves. The number and type of access need to be balanced against other management objectives. In many cases, tracks are regularly being made through bushland areas or people are trampling vegetation in higher use areas (such as near carparks).

This Foreshore and Hinterland Vegetation Management Plan aims to provide some further structure and documentation to complement the current management occurring within the reserves assessed as part of this study. It also aims to address Council issues regarding some key management challenges, particularly regarding native vegetation within the reserves. This includes:

- ageing coastal vegetation, which is considered to be in decline
- maintaining/establishing shade along the foreshore
- stabilising the sand dunes and beachfront areas
- enhancing habitat including providing for locally rare and/or threatened species

Considerations regarding public safety, as well as improving the ease of maintenance of the reserves are also important aspects of reserve management, and are hence discussed within this Plan.

Included with this Foreshore and Hinterland Vegetation Management Plan is a fully costed works/maintenance action plan for each of the seventeen reserves. Each of these covers a five year period and includes a breakdown of costs in relation to both materials and labour for the rehabilitation of the reserves through various means, including revegetation.

This Foreshore and Hinterland Vegetation Management Plan has been completed to provide background information that will assist Port Phillip Council in producing a Natural Heritage Area Management Plan that will ensure the protection and enhancement of natural heritage areas within the City of Port Phillip. It is intended that the resultant Management Plan will provide:

- a framework and guidelines for all ongoing maintenance and works activities undertaken within and in proximity to natural heritage areas
- a framework and guidelines for renewal and upgrade works, and
- a plan to address immediate and future threats to the natural heritage areas including climate change.

## 1.1 Study Site Locations and Description

A total of seventeen natural areas are included in this Foreshore and Hinterland Vegetation Management Plan. This includes twelve foreshore reserves and five hinterland reserves. These reserves contain predominantly planted, indigenous vegetation. Minimal remnant vegetation from pre-European settlement remains.

The **Foreshore** sites assessed included the following:

- **Sandridge Beach** (from the Life Saving Victoria building to Beacon Road; corner of Todd Road to Beacon Road)
- **First Point** (the area around First Point, generally to the west of Princes Pier)
- **Princes Street Dunes** (on the sanded beach area adjacent to Princes Street)
- **Pickle Street Dunes** (on the sanded beach area between Dow Street and Foote Street)
- **Middle Park Dunes** (on the sanded beach area adjacent to Armstrong Street)
- **Fraser Street Dunes** (on the sanded beach area adjacent to Fraser Street)
- **West Beach** (on the sanded beach area near the corner of Beaconsfield Parade and Pier Road)
- **MO Moran Reserve** (all garden area of MO Moran Reserve; Elwood Canal to Marina carpark)
- **Point Ormond Park** (from Elwood Canal south along foreshore to point Ormond carpark)
- **Elwood Tea Tree** (from Point Ormond Road entrance along Marine Pde/Ormond Esplanade to Elwood carpark excluding Elwood Playspace)
- **Elwood Park and Foreshore** (areas located between Elwood carpark and Head Street including surrounds of the tennis club, playground and sports ovals)

The **Hinterland** sites assessed included the following:

- **Lagoon Reserve** (located on Liardet Street, Port Melbourne)
- **Canterbury Road Urban Forest** (from Kerferd Road to Fraser Street)
- **HR Johnson Reserve** (along Cowderoy Street, St Kilda West)
- **Balaclava Rail Reserve** (from Grosvenor Street to)
- **Elwood Canal** (from the Bay to St Kilda Street)

These location of these sites is shown in Figure 1.

All areas assessed were located in the Gippsland Plains Bioregion (DSE 2012).

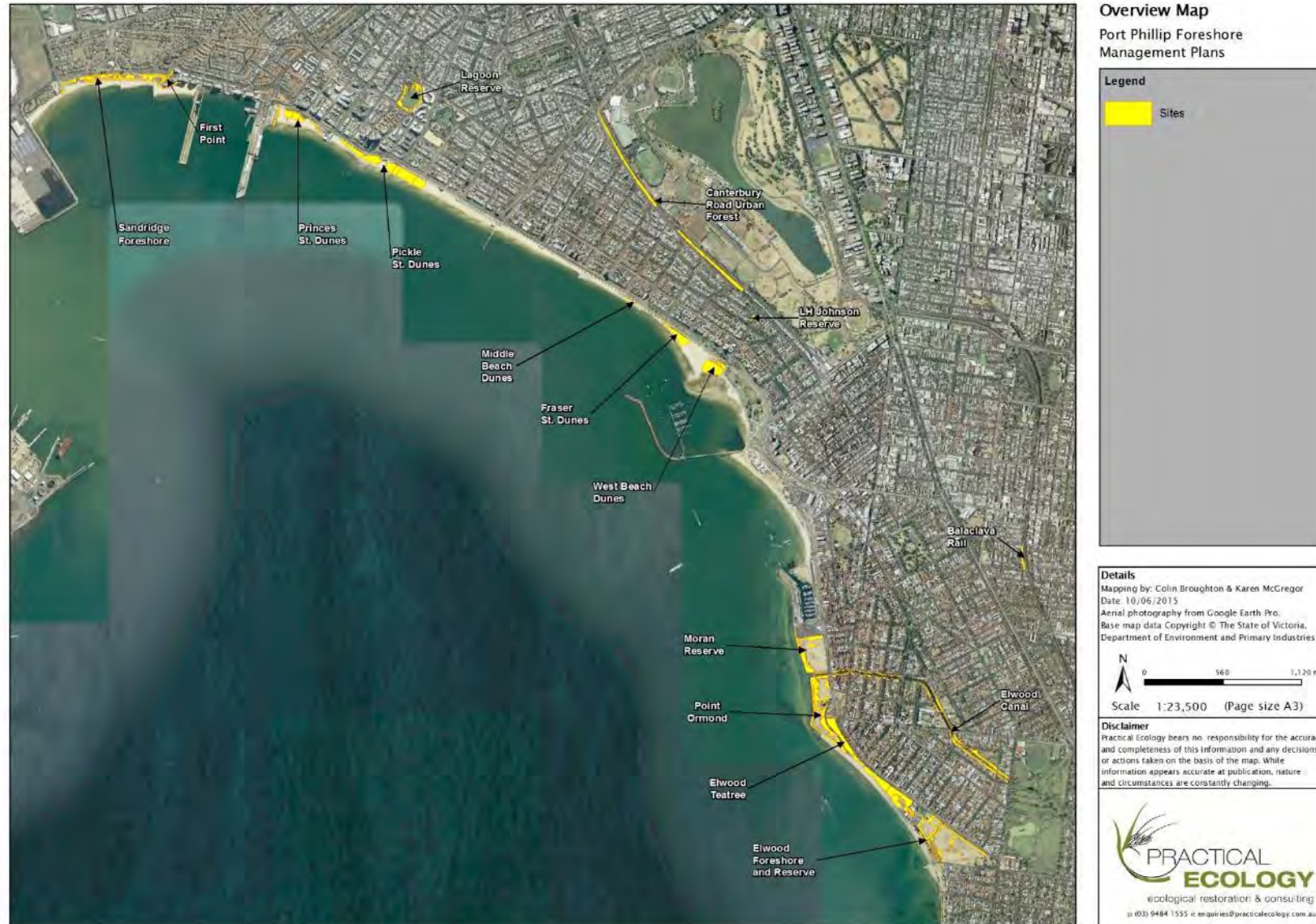


Figure 1. Location of Natural Heritage Sites addressed by this Vegetation Management Plan within the City of Port Phillip

## 2. METHODS

### 2.1 Review of Existing Information

A background review was undertaken as the initial stage for this project. This background review included reviewing the following information sources:

- Previous reports and assessments of NHA sites within the City of Port Phillip:
  - Wills *et. al.* (2003) *Natural Heritage assessment of sites within the City of Port Phillip*, Biosis, Port Melbourne
  - Nance and Cavallaro (2013) *Assessment of Natural Heritage sites within the City of Port Phillip*, Practical Ecology, Preston
- Resources for vegetation assessment and identification:
  - Oates and Taranto (2001) *Vegetation Mapping of the Port Phillip and Westernport Region*
  - Bull, M. (2014) *Flora of Melbourne – 4<sup>th</sup> Edition*, CSIRO Publishing
- Council documents and reports including:
  - the City of Port Phillip Foreshore Management Plan (2012) and the associated Background Review (2011)
  - City of Port Phillip (2013) *Public Toilet Plan 2013 – 2023*, City of Port Phillip.
  - City of Port Phillip (2013) *Lagoon Reserve Management Plan*, City of Port Phillip.
  - City of Port Phillip (2010) *Climate Adaption Plan*, City of Port Phillip.
- Databases and resources including:
  - The Department of Environment, Land, Water & Planning (DELWP) Victorian Biodiversity Atlas (VBA) data
  - DELWP's Biodiversity Interactive Mapping
  - Vicveg online

### 2.2 Fieldwork

Each of the reserves were visited at least two times as part of the fieldwork undertaken for this study, with most visited three times. The first two days of site visits were conducted on 18<sup>th</sup> March and 25 March 2015 with staff from the City of Port Phillip, Citywide Pty Ltd, and Practical Ecology in attendance.

Follow up fieldwork was then undertaken on 1<sup>st</sup> April, 2<sup>nd</sup> April, 9<sup>th</sup> April, 10<sup>th</sup> April and 13<sup>th</sup> April 2015.

Each site was visually inspected and photographs taken. In some cases plant samples were also collected for identification purposes at a later time.

During the site visits, the existing conditions on site were recorded to enhance any information that was already available. This included:

- information on current weed infestations

- documentation of the areas of native vegetation that appear to be lacking certain lifeforms (such as shrubs or trees) that are generally synonymous with the EVC that was once known to occur in a particular locality
- consideration of likely former EVCs that may have existed at the site
- identification of areas that are currently devoid of native vegetation that may be suitable for enhancement through revegetation
- noting access and use of the site including the ways in which people enter each reserve and move around
- opportunities for the establishment of shade for park users
- opportunities for habitat enhancement
- requirements for dune stabilisation
- identifying locations where Crime Prevention through Environmental Design (CPTED) is relevant and needing to be considered
- determination of appropriate Vegetation Management Zones (VMZ's) and mapping these on hardcopy field maps
- documentation of current plant species located within each NHA, and VMZ

## **2.3 Flora**

### **2.3.1 Plant taxonomy**

Plant taxonomy used in this report are generally in accordance with Walsh and Stajsic (2008) and/or Victorian Biodiversity Atlas (DELWP 2015a).

### **2.3.2 Existing information**

Existing database records on the Victorian Biodiversity Atlas for a one kilometre buffered area from the coastline the study area were obtained (DELWP 2015a).

### **2.3.3 Flora survey**

During the assessment, the study area was inspected on foot and all indigenous and naturalised vascular flora species were recorded. Some non-indigenous planted species were also noted, but a definitive list not developed.

### **2.3.4 Plant identification**

Species that could not be identified in the field were recorded to the nearest possible family or genera. These were then collected as per the protocols associated with Practical Ecology's *Flora and Fauna Guarantee (FFG) Act 1988* permit (No. 10006484) for the collection of plant material. In order to assist in the identification of some flora, major features of the specimens were collected where possible, including leaves, parts of branches, fruit and/or flowers.

### **2.3.5 Limitations of flora survey**

The assessments were undertaken over seven days in late March and early April. While each site was visited on multiple occasions, with extra time and extra visits during other seasons, it is likely that more information relative to the management of each reserve may have been gleaned. Furthermore, the assessments were all undertaken mid-week and visits on weekends may also have provided extra information particularly in relation to visitor habits and utilisation of each NHA.

As the assessments were undertaken during Autumn, the conditions for plant identification were not optimal. Most grasses had finished seeding and there were few plants flowering.

Council provided some plantings lists from recent years which were useful in guiding some plant identification but not in every case.

As the objective of this assessment is to advise on more general vegetation management rather than undertake a detailed floristic assessment, flora species have been identified to genus level where species could not be easily determined. This was particularly relevant for some grasses, particularly Spear Grasses *Austrostipa* spp. There was also some difficulty in distinguishing the various rhizomatous native grasses from each other, particularly where there were no fruits visible as there were some locations where they were growing together.

Different species may appear in the environment during different seasons, depending on the optimal growth and reproduction conditions required for each species. Different species may be present or absent in the environment throughout the year. For this reason, the best results are obtained from a number of surveys throughout the year.

However for the purposes of this assessment, and upon review of previous reports, the majority of species were identified, including important locally rare species.



### 3. RESULTS

#### 3.1 Review of Historic Landscapes and Vegetation

The City of Port Phillip contains a diverse range of landscapes, many of which have been extensively modified in a manner that has affected the native vegetation present.

The majority of Natural Heritage Areas contain little in the way of remnant or regenerated indigenous vegetation, however this assessment identified that there are some sites which still do. The majority of sites have however been revegetated using various indigenous species, that in many cases reflect an approximation of the likely former vegetation or else a suitable adaption. Where the landscape has been completely altered, a new but generally appropriate floristic mix has been used.

A review of former landscapes and vegetation types that were located within the City of Port Phillip was undertaken using historical references including paintings, maps, reports and database records. A summary is provided below.



Figure 2. Geological Survey of Victoria Map of Melbourne, 1874

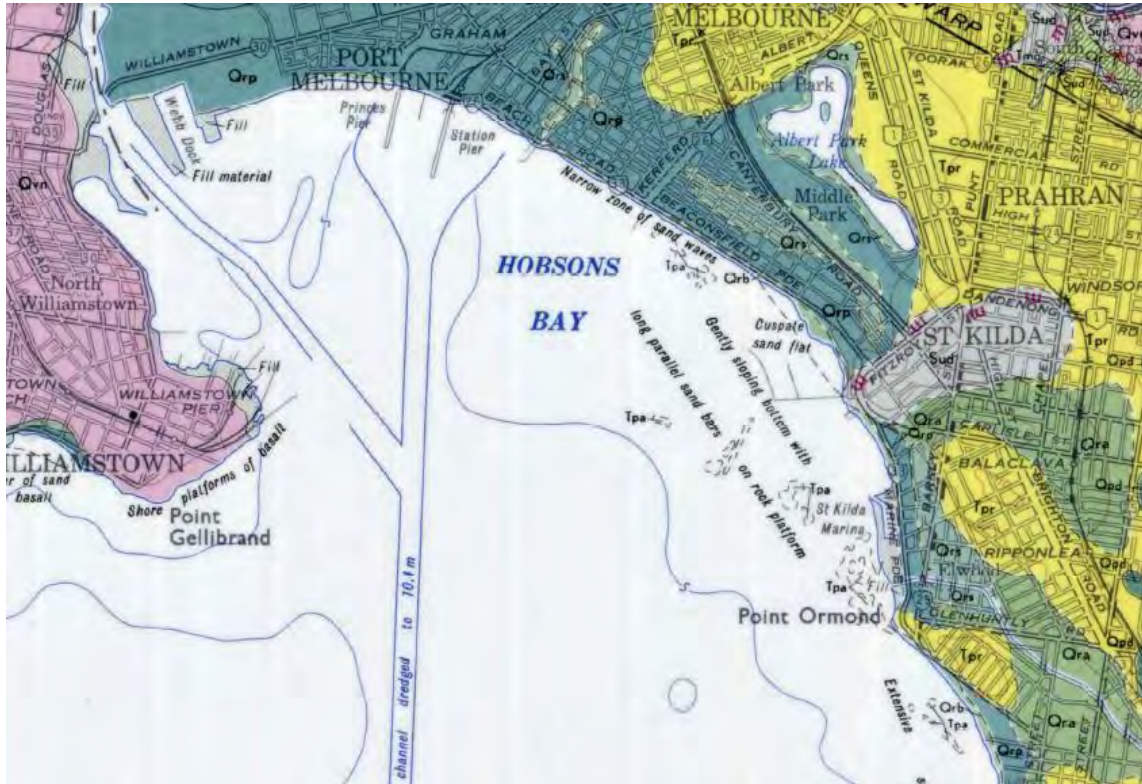


Figure 3. Geological Survey of Victoria, 1974. Melbourne. 1 mile to 1 inch, geological map. Department of Mines, Victoria

Comparison of an historic map from 1876 with the 1:63,000 Geological Survey of Melbourne Map (GSV 1974) shows that there has been extensive alterations within the landscape that have changed the type of environments that exist across the municipality.

Alterations include:

- the addition of fill material around the coastline, particularly in the vicinity of Webb Dock and to the west of Point Ormond
- infilling of significant areas of lagoons and swamps
  - this is particularly relevant to Lagoon Reserve and also for the Elwood Canal which now lies within a former swamp which was fed by Elster Creek and Canterbury Road Urban Forest and possibly HR Johnson Reserve which are identified as occurring in areas that were formerly part of large shallow wetland system that formerly sat to the south-east of the current location of Albert Park Lake.
- drainage and channelling works, as in the works affecting Elwood Canal
- urbanisation, including increasing the cover of hard surfaces and increasing runoff

Additionally the fact that many of the foreshore locations formerly supported beachfront infrastructure such as houses, jetties, stockyards and storehouses means that these sites may also be affected by fill material and debris of varying types (see below for an example of former buildings along Sandridge Foreshore).



**Figure 4. Photograph by C. D. Pratt, Title: State Bank Houses, Airspy series.  
Source State Library of Victoria**

### **3.2 Former Vegetation**

A review of the pre-1750 EVC mapping by DELWP (2011) shows the City of Port Phillip municipal area as supporting a range of EVCs. Some of these vegetation types, such as wetland vegetation associated with the former swamps that were extensive in the region, are now no longer present. This mapping is shown in Figure 5.

Discussions with the main compositor of this mapping, Doug Froud, a wetland and botanical expert confirmed that he was able to base the mapping for this portion of Melbourne upon a number of good information sources. He is therefore confident that it provides a good representation of the former distribution of vegetation within the region (Doug Froud (pers comm) 2015).

Since European settlement, land management practices have dramatically changed the landform and drainage of the local landscape, and consequently the ecological dynamics have influenced the species that are current present. More recent works including revegetation projects and active management of existing vegetation such as removing naturally senescing trees, thinning shrub-layer for social outcomes, and enhancement plantings, have also further sculptured the vegetation currently existing across the NHAs assessed as part of this study.



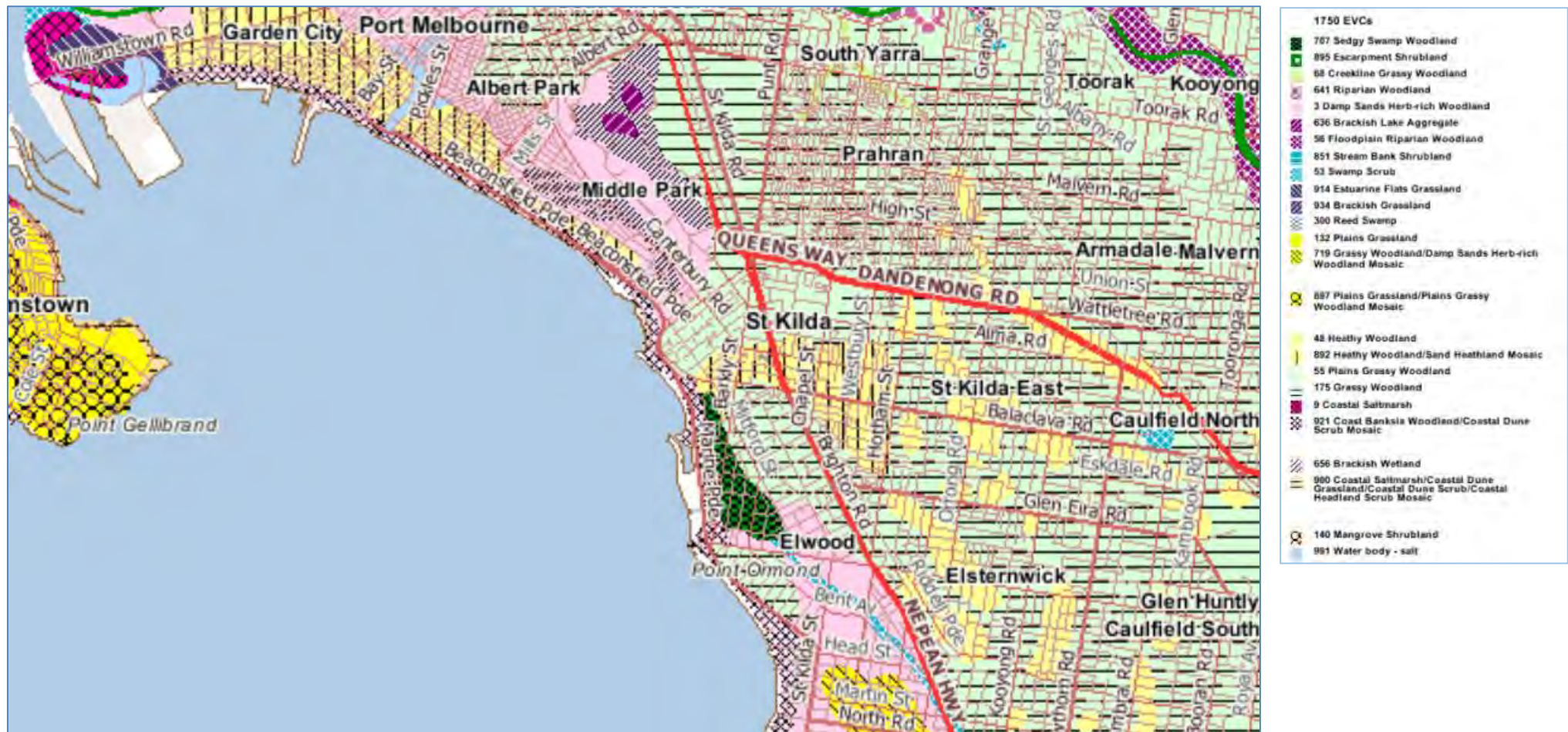
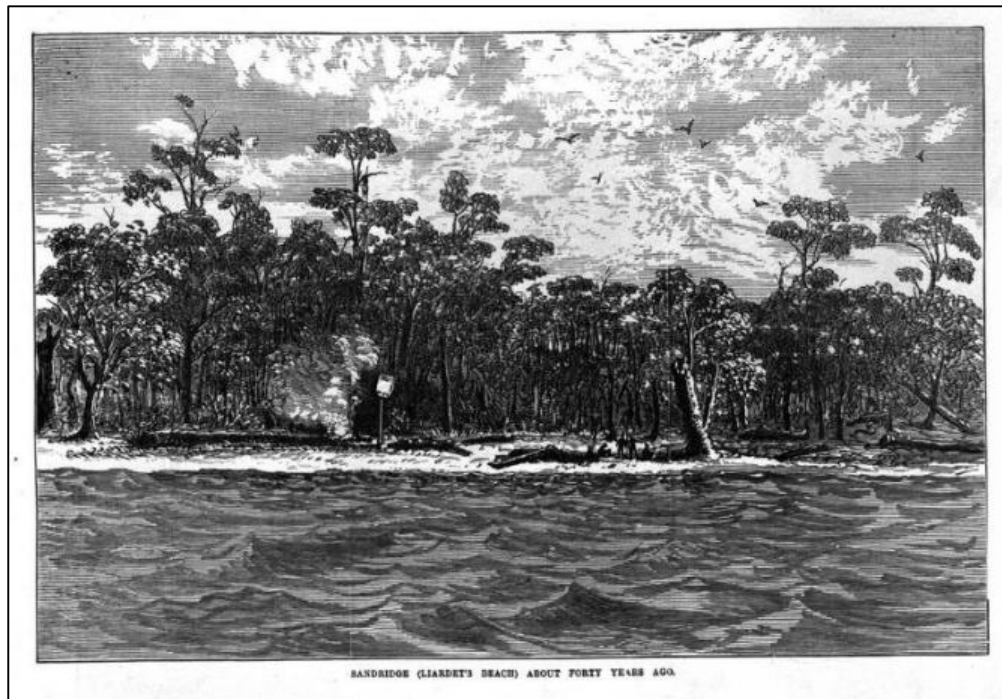


Figure 5. Pre-1750 EVC's within the City of Port Phillip region. Sourced from DELWP (2015b)

Former vegetation types that dominated the immediate foreshore (to Beaconsfield Parade/Marine Parade extent) included Coast Banksia Woodland/Coastal Dune Scrub Mosaic. This vegetation was primarily associated with recent dune deposits directly associated with Port Phillip.

The artwork below shows a scene at Sandridge Beach (Sandridge Foreshore) at the point where the former track to Melbourne/Bearbrass began (signified by a barrel on a pole). It shows Eucalypts and shrubby vegetation right on the shoreline. If this is accurate, this vegetation would accord more strongly with Coast Banksia Woodland or even Heathy Woodland. This is in contrast to the current vegetation in these areas, which is now dominated by Coastal Dune Scrub vegetation. It is also possible that this is not an accurate reflection of the former situation as it was reportedly painted 40 years later than the scene it was depicting and in this location there was a huge amount of activity in the early years.



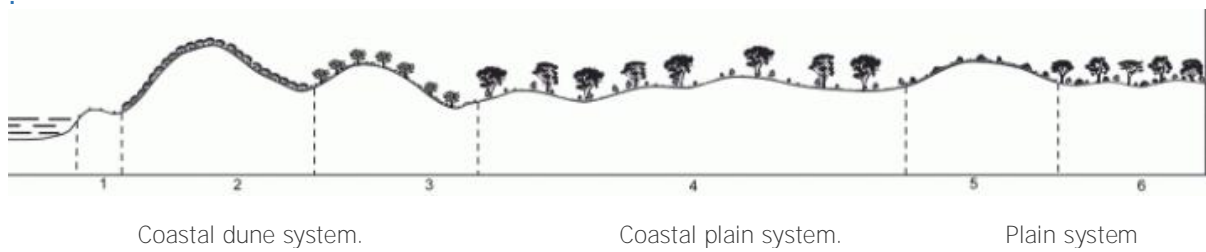
**Figure 6. Painting: Sandridge (Liardet's Beach) About Forty Years Ago by Alfred Martin Ebsworth, 1880. Source: State Library of Victoria**

In summary, it is likely that the foreshore areas previously supported a higher cover of Coast Banksia Woodland. However as the result of past disturbance, such as clearing, it now more closely reflects Coastal Dune Scrub. This is due to opportunistic and hardy species such as Coast Wattle *Acacia longifolia* var. *sophorae*, Coast Tea-tree *Leptospermum laevigatum* and Common Boobialla *Myoporum insulare* being more dominant in degraded sites.

While such species are useful in re-establishing coastal vegetation, in some cases they have become over-represented, and in others are providing environments that represent issues from a safety perspective by reducing sightlines. On this basis, it is recommended throughout this Plan that where such vegetation occurs in a hinderdune location and is now well established, a transition to Coast Banksia Woodland species occur through its ongoing management.

A landscape profile diagram and table from VicVeg Online (Figure 7 shows a typical cross-section for Victorian coasts and foreshore areas within the Gippsland Plain Bioregion. Whilst this is a very generalised view of the distribution of EVC's close to coastal areas it provides some guidance as to typical EVC's, their location in the landscape and some of the justification for the presence of each EVC in the landscape. In relation to the City of Port Phillip region, this landscape profile is useful and

provides a good representation of the situation. However, it is missing one element which was specific to this region, being the large number of various swamps and wetlands.



Zone	EVC	Ecological Determinants
1	Coastal Dune Grassland	Primary dune unconsolidated sand.
2	Coastal Dune Scrub	Secondary dune unconsolidated sand.
3	Coast Banksia Woodland	Tertiary sand dune. Higher humic level. On calcareous soils EVC would be Coastal Alkaline Scrub.
4	Damp Sands Herb-rich Woodland	Deflated flats. Well drained but damp, uniform, sandy loam soil.
5	Sand Heathland	Higher on dune profile. Deep infertile, extremely well drained soil on drought stressed sites.
6	Heathy Woodland	Lower on dune profile. Deep uniform textured, nutrient poor sand. Damp Heathy Woodland if on deep duplex sands over clay.

Figure 7. Vicveg Online Plantscapes, Port Phillip CMA, Gippsland Plain, Coastal Dunes and Foreshore

Based on the Pre-1750 EVC map, it is apparent that the areas immediately behind the foreshore prior to European settlement comprised of heathier vegetation (Heathy Woodland and/or Sand Heathland) in the western portion of the municipality from Sandridge through to Mills Street in Albert Park. This region may have also included Lagoon Reserve.

East of Mills Street there were large areas of Damp-sands Herb-rich Woodland which was formerly associated with Quaternary-aged sediments (marine deposits). With the exception of the Elster Creek Catchment area, east of St Kilda areas of Grassy Woodland extended across a wider plain which largely occurred on Tertiary-aged sandstone deposits.

Swampland formerly extended across the region but this has largely been altered. In particular, Canterbury Road Urban forest area occurred on an area that was covered by an extent of Brackish Wetland.

Table 1 provides an indication of the Ecological Vegetation Classes (EVCs) applicable to each reserve or Natural Heritage Area (NHA) prior to European settlement. It also includes a summary of the indigenous species that are typical and commonly encountered within each EVC.

Table 1. Ecological Vegetation Classes (EVCs) within the study area

EVC No.	EVC	Bioregion Conservation Status	Distribution throughout Study Area	General Description	Species within EVC (Bull 2015)
2	Coast Banksia Woodland	Vulnerable	Sandridge Foreshore, MO Moran Reserve, Point Ormond Reserve, Elwood Tea Tree, Elwood Foreshore. Part of Elwood Canal	Restricted to near coastal localities on secondary or tertiary dunes behind Coastal Dune Scrub. Usually dominated by a woodland overstorey of Coast Banksia integrifolia to 15 m tall over a medium shrub layer. The understorey consists of a number of herbs and sedges, including scramblers.	<p>Typical species:</p> <p>Dicots: <i>Actites megalocarpus</i>, <i>Apium prostratum</i> ssp. <i>prostratum</i> var. <i>filiforme</i>, <i>Atriplex cinerea</i>, <i>Carpobrotus rossii</i>, <i>Clematis microphylla</i>, <i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>, <i>Sarcocornia quinqueflora</i> spp. <i>quinqueflora</i>, <i>Suaeda australis</i></p> <p>Grasses: <i>Spinifex sericeus</i></p> <p>Lilies: <i>Dianella brevicaulis</i></p> <p>Sedges: <i>Ficinia nodosa</i></p> <p>Often Encountered Species:</p> <p>Dicots: <i>Acaena novae-zelandiae</i>, <i>Apium annuum</i>, <i>Crassula sieberiana</i>, <i>Helichrysum luteoalbum</i>, <i>Rhagodia candolleana</i>, <i>Salsola tragus</i> ssp. <i>pontica</i>, <i>Senecio pinnatifolius</i> var. <i>lanceolatus</i>, <i>Tetragonia implexicoma</i></p> <p>Grasses: <i>Distichlis distichophylla</i>, <i>Poa poiformis</i> var. <i>poiformis</i>, <i>Sporobolus virginicus</i>, <i>Zoysia macrantha</i></p> <p>Sedges: <i>Carex pumila</i>, <i>Lepidosperma gladiatum</i></p>
160	Coastal Dune Scrub (Depleted)		Sandridge Foreshore, Fraser Street Dunes, West Beach, MO Moran Reserve, Point Ormond Reserve, Elwood Tea Tree, Elwood Foreshore. Part of Elwood Canal	Closed scrub to 5 m tall with occasional emergent's occurring on secondary dunes along ocean and bay beaches and lake shores. Occupies siliceous and calcareous sands that are subject to high levels of salt spray and continuous disturbance from onshore winds.	<p>Typical Species:</p> <p>Dicots – Front of dunes: <i>Acacia longifolia</i> ssp. <i>sophorae</i>, <i>Alyxia buxifolia</i>, <i>Carpobrotus rossii</i>, <i>Correa alba</i>, <i>Leptospermum laevigatum</i>, <i>Leucophyta brownie</i>, <i>Leucopogon parviflorus</i>, <i>Myoporum insulare</i>, <i>Olearia axillaris</i>, <i>Ozothamnus turbinatus</i>, <i>Rhagodia candolleana</i>, <i>Tetragonia implexicoma</i></p> <p>Grasses: <i>Austrostipa flavescens</i>, <i>A. mollis</i>, <i>Rytidosperma geniculatum</i></p> <p>Lilies: <i>Lomandra longifolia</i> var. <i>longifolia</i></p> <p>Sedges: <i>Lepidosperma concavum</i>, <i>L. gladiatum</i></p> <p>Often Encountered species:</p> <p>Dicots: <i>Acacia mearnsii</i>, <i>Acaena novae-zelandiae</i>, <i>Actites megalocarpus</i>, <i>Apium prostratum</i> ssp. <i>prostratum</i> var. <i>filiforme</i>, <i>Atriplex cinerea</i>, <i>Banksia integrifolia</i>, <i>B. marginata</i>, <i>Cassytha melantha</i>, <i>C. pubescens</i>, <i>Dichondra repens</i>, <i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>, <i>Einadia nutans</i>, <i>Eucalyptus viminalis</i> ssp. <i>pryoriana</i>, <i>Goodenia ovata</i>, <i>Kennedia prostrate</i>, <i>Muehlenbeckia australis</i>, <i>Olearia glutinosa</i>, <i>O. ramulosa</i> var. <i>ramulosa</i>, <i>Podotheca angustifolia</i> (very rare), <i>Pomaderris paniculosa</i> ssp. <i>paralia</i>, <i>Senecio biserratus</i>, <i>S. odoratus</i>, <i>Solanum laciniatum</i>, <i>Suaeda australis</i>, <i>Tetragonia tetragonioides</i>, <i>Threlkeldia diffusa</i>, <i>Zygophyllum billardierei</i></p>

EVC No.	EVC	Bioregion Conservation Status	Distribution throughout Study Area	General Description	Species within EVC (Bull 2015)
					Grasses: <i>Distichlis distichophylla</i> , <i>Lachnagrostis billardierei</i> , <i>L. filiformis</i> , <i>Poa billardierei</i> , <i>P. poiformis</i> var. <i>poiformis</i> , <i>Rytidosperma caespitosum</i> , <i>Spinifex sericeus</i> , <i>Sporobolus virginicus</i> Lilies: <i>Dianella brevicaulis</i> , <i>D. sp. Aff. Revolute</i> (Coastal) Rushes: <i>Juncus pallidus</i> Sedges: <i>Ficinia nodosa</i>
879	Coastal Dune Grassland	Depleted	Sandridge Foreshore, Princes Street Dunes, Pickle Street Dunes, Middle Park Dunes, Fraser Street Dunes, West Beach	Consists of grasses and halophytes (succulents) that colonise the foredunes of ocean beaches. Soils are siliceous sands that have very low humus content.	Typical species: Dicots: <i>Actites megalocarpus</i> , <i>Apium prostratum</i> spp. <i>Prostratum</i> var. <i>filiforme</i> , <i>Atriplex cinerea</i> , <i>Carpobrotus rossii</i> , <i>Clematis microphylla</i> , <i>Disphyma crassifolium</i> ssp. <i>clavellatum</i> , <i>Sarcocornia quinqueflora</i> ssp. <i>quinqueflora</i> , <i>Suaeda australis</i> Grasses: <i>Spinifex sericeus</i> Lilies and irises: <i>Dianella brevicaulis</i> Sedges: <i>Ficinia nodosa</i> Often encountered species: Dicots: <i>Acaena novae-zelandiae</i> , <i>Apium Annum</i> , <i>Crassula sieberiana</i> , <i>Helichrysum luteoalbum</i> , <i>Rhagodia candolleana</i> , <i>Salsola tragus</i> ssp. <i>pontica</i> , <i>Senecio pinnatifolius</i> var. <i>lanceolatus</i> , <i>Tetragonia implexicoma</i> Grasses: <i>Distichlis distichophylla</i> , <i>Poa poiformis</i> var. <i>poiformis</i> , <i>Sporobolus virginicus</i> , <i>Zoysia macrantha</i> Sedges: <i>Carex pumila</i> , <i>Lepidosperma gladiatum</i>
914	Estuarine Flats Grassland	Endangered	West Beach, small areas within MO Moran, Princes Street Dunes and approximated in stormwater treatment swales in Elwood Reserve	Closed to open grassland to 1.5 m tall with occasional shrubs occurring on estuarine flats often associated with current or old beach berms or sand sheets that are occasionally inundated by high tides. Occupies areas on marginally higher ground inland from Coastal Saltmarsh.	Typical species: Dicots: <i>Atriplex cinerea</i> , <i>Disphyma crassifolium</i> ssp. <i>clavellatum</i> , <i>Samolus repens</i> , <i>Suaeda australis</i> Grasses: <i>Austrostipa stipoides</i> , <i>Poa poiformis</i> ar. <i>Poiformis</i> , <i>Spinifex sericeus</i> Sedges: <i>Ficinia nodosa</i> Often encountered species: Dicots: <i>Apium annuum</i> , <i>A. prostratum</i> ssp. <i>prostratum</i> var. <i>filiforme</i> , <i>Carpobrotus rossii</i> , <i>Chenopodium glaucum</i> , <i>Cotula coronopifolia</i> , <i>Frankenia pauciflora</i> var. <i>gunnii</i> , <i>Rhagodia candolleana</i> , <i>Sarcocornia quinqueflora</i> ssp. <i>quinqueflora</i> , <i>Senecio pinnatifolius</i> var. <i>lanceolatus</i> Grasses: <i>Distichlis distichophylla</i> , <i>Lachnagrostis billardierei</i> Rushes, aquatics and semi-aquatics: <i>Triglochin striata</i> Sedges: <i>Gahnia filum</i>



EVC No.	EVC	Bioregion Conservation Status	Distribution throughout Study Area	General Description	Species within EVC (Bull 2015)
3	Damp Sands Herb-rich Woodland	Vulnerable	Canterbury Road, HR Johnson and parts of Elwood Canal	A woodland with a grassy or bracken-dominated understorey and a ground layer rich in herbs, grasses and orchids. A component of heathy shrubs may be present. Occurs mainly on flat or undulating areas extending inland from the coast on moderately fertile, relatively well-drained deep sand or sandy loam.	<p>Typical species:</p> <p>Dicots: <i>Acacia longifolia</i> ssp. <i>sophorae</i>, <i>Acrotriche serrulata</i>, <i>Amperea xiphoclada</i>, <i>Astroloma humifusum</i>, <i>Banksia marginata</i>, <i>Billardiera mutabilis</i>, <i>Bossiaea cinerea</i>, <i>Clematis microphylla</i>, <i>Dichondra repens</i>, <i>Dillwynia glaberrima</i>, <i>Drosera auriculata</i>, <i>Epacris impressa</i>, <i>Eucalyptus viminalis</i> ssp. <i>pryoriana</i>, <i>Gonocarpus tetragynus</i>, <i>Hydrocotyle laxiflora</i>, <i>Leptospermum continentale</i>, <i>L. myrsinoides</i>, <i>Leucopogon virgatus</i>, <i>Opercularia varia</i>, <i>Poranthera microphylla</i>, <i>Viola hederacea</i></p> <p>Grasses: <i>Austrostipa mollis</i>, <i>Microlaena stipoides</i>, <i>Poa labillardierei</i>, <i>P. sieberiana</i> var. <i>sieberiana</i>, <i>Rytidosperma setaceum</i>, <i>Tetrarrhena juncea</i></p> <p>Lilies and irises: <i>Lomandra longifolia</i> var. <i>longifolia</i></p> <p>Sedges: <i>Lepidosperma concavum</i></p> <p>Ferns: <i>Pteridium esculentum</i></p>
175	Grassy Woodland	Endangered	Parts of Elwood Canal	A variable open eucalypt (or occasionally sheoak) woodland over a diverse ground layer of grasses and herbs. The shrub component is usually sparse. It occurs on sites with moderate fertility on plains or undulating hills on a range of geology. Previously widespread and locally extensive but now largely cleared for agriculture. Remnants are generally heavily grazed or altered by fire regimes.	<p>Typical species:</p> <p>Dicots: <i>Acacia dealbata</i>, <i>A. mearnsii</i>, <i>A. melanoxylon</i>, <i>A. paradoxa</i>, <i>Acrotriche serrulata</i>, <i>Allocasuarina littoralis</i>, <i>A. verticillata</i>, <i>Astroloma humifusum</i>, <i>Banksia marginata</i> (tree), <i>Billardiera mutabilis</i>, <i>Bossiaea prostrata</i>, <i>Cassinia aculeata</i>, <i>Comesperma volubile</i>, <i>Crassula sieberiana</i>, <i>Daviesia ulicifolia</i> spp. <i>ulicifolia</i>, <i>Dichondra repens</i>, <i>Drosera aberrans</i>, <i>D. auriculata</i>, <i>Epacris impresa</i>, <i>Eucalyptus goniocalyx</i>, <i>E. melliodora</i>, <i>E. pauciflora</i>, <i>E. radiata</i>, <i>E. rubida</i>, <i>E. viminalis</i> ssp. <i>viminalis</i>, <i>Exocarpos cupressiformis</i>, <i>Gonocarpus tetragynus</i>, <i>Hardenbergia violacea</i>, <i>Hibbertia riparia</i>, <i>Hovea heterophylla</i>, <i>Leptorhynchos squamatus</i>, <i>Leptospermum continentale</i>, <i>Opercularia varia</i>, <i>Pimelea humilis</i>, <i>Senecio prenanthoides</i>, <i>Stylidium armeria graminifolium</i></p> <p>Grasses: <i>Austrostipa mollis</i>, <i>Deyeuxia quadriseta</i>, <i>Microlaena stipoides</i>, <i>Poa labillardierei</i>, <i>P. morrisii</i>, <i>P. sieberiana</i> var. <i>sieberiana</i>, <i>Themeda triandra</i></p> <p>Lilies and irises: <i>Lomandra filiformis</i> (both ssp.), <i>L. Longifolia</i> var. <i>longifolia</i>, <i>Tricoryne elatior</i>, <i>Xanthorrhoea minor</i> ssp. <i>lutea</i></p> <p>Orchids: <i>Pterostylis melagramma</i></p> <p>Sedges: <i>Carex breviculmis</i>, <i>Gahnia radula</i>, <i>Lepidosperma laterale</i>, <i>Schoenus apogon</i></p> <p>Ferns: <i>Pteridium esculentum</i></p>

### 3.3 Flora Species

A total of 316 vascular plant taxa were recorded in the study area during this survey, of which 165 (52 %) were indigenous and 151 (48 %) were introduced species or naturalised outside their natural range. It is worth noting that many of the indigenous species have been planted and the actual remnant indigenous species is significantly lower. Species recorded during this study are provided within the species lists for each NHA.

#### 3.3.1 Significant Species Recorded Within the Study Area

Of the 165 indigenous species recorded within the site, no species are of State or National significance.

Fifteen species that are present onsite however are regionally significant according to Wills *et al.* (2003). Of these, those that are in bold below are present in some sites in remnant form. These species are:

- |  |                              |
|--|------------------------------|
| • <b><i>Allocasuarina verticillata</i></b>             | <b>Drooping Sheoak</b>       |
| • <i>Alyxia buxifolia</i>                              | Sea Box                      |
| • <b><i>Atriplex cinerea</i></b>                       | <b>Coast Saltbush</b>        |
| • <i>Atriplex semibaccata</i>                          | Berry Saltbush               |
| • <b><i>Banksia integrifolia ssp. integrifolia</i></b> | <b>Coast Banksia</b>         |
| • <i>Correa alba</i>                                   | White Correa                 |
| • <b><i>Distichlis distichophylla</i></b>              | <b>Australian Salt Grass</b> |
| • <i>Myoporum insulare</i>                             | Common Boobialla             |
| • <i>Olearia axillaris</i>                             | Coast Daisy-bush             |
| • <b><i>Pseudognaphalium luteoalbum</i></b>            | <b>Jersey Cudweed</b>        |
| • <b><i>Spinifex sericeus</i></b>                      | <b>Hairy Spinifex</b>        |
| • <b><i>Sporobolus virginicus</i></b>                  | <b>Salt Couch</b>            |
| • <i>Suaeda australis</i>                              | <i>Austral Seablite</i>      |
| • <b><i>Zoysia macrantha</i></b>                       | <b>Prickly Couch</b>         |

The salt tolerant grasses listed above, including Australian Salt Grass *Distichlis distichophylla*, Salt Couch *Sporobolus virginicus* and Prickly Couch *Zoysia macrantha* occur in patches in Fraser Street Dunes, West Beach, MO Moran, Point Ormond and in one area on Elwood Canal.

Hairy Spinifex *Spinifex sericeus* is actively regenerating on the foredunes, providing stability to otherwise bare and mobile sand areas. Drooping Sheoak *Allocasuarina verticillata* may be present as remnant individuals at West Beach and Elwood Foreshore and Reserve near the playground, and possibly also at Sandridge Foreshore. Coast Banksia *Banksia integrifolia* occurs as a remnant at Pickles Street Dunes and possibly other sites.

Karkalla *Carpobrotus rossii* is another locally significant species that has been included in revegetation plantings. However the use of this species is being phased due to its propensity to hybridise with a similar South African garden plant. A similar indigenous groundcover species Rounded Noon-flower *Disphyma crassifolium subsp. clavellatum* will continue to be planted.

#### 3.3.2 Significant Species from Literature and Database Searches

Literature and database searches for significant flora species that have been recorded within 1km from the foreshore were undertaken utilising the Victorian Biodiversity Atlas (DELWP 2015a).

This search resulted in no threatened species records for any species of National or State significance since 1850.

### 3.3.3 Significant weed species recorded within the study area

Only one weed species found within the reserves (Sandridge Foreshore and First Point) is listed as a noxious weed under the Catchment and Land Protection Act 1994 (CaLP Act 94), Soursop *Oxalis pes-caprae*. It is categorised as a Regionally Restricted weed within the Port Phillip and Westernport Region. This means that trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited.

Other species that are particularly threatening to the values of the reserves and should be prioritised for management include *Thinopyrum junceiforme* Sea Wheat grass, Couch *Cynodon dactylon var. dactylon* and to a lesser extent Dune Fescue *Vulpia fasciculata*. These weed species are directly impacting on regionally significant species within foreshore areas.

## 3.4 Fauna

A detailed fauna survey was beyond the scope of this report. The study site was instead inspected for potential habitat values for significant fauna species identified during database searches. This approach aims to provide further guidance in relation to the management of the NHAs, given that it can also potentially to enhance the habitat available for such species.

Habitat values within the various NHA's include:

- leaf litter and fallen logs in the understorey
- indigenous and non-indigenous trees and shrubs
- remnant patches, namely foredune vegetation
- dense shrubby vegetation
- wet depressions
- areas of sand within the littoral marine zone
- some connectivity to existing land reserves and other remnant vegetation, and
- connectivity with Port Phillip Bay

The connectivity of the site of the bay ensures any vegetation provides the potential to be important to a significant suite of avi-fauna.

A possum dray was observed in the canopy of a Drooping Sheoak in Elwood Foreshore and Reserve. Superb Fairy-wrens were consistently observed foraging at Sandridge Foreshore.

Retention and improvement of a significant shrub layer is important for bird habitat. It may also provide habitat for bats and possums. This is also the case for the planted trees.

Dense ground-storey vegetation with leaf-litter and sticks provides important habitat for insects and small reptiles, which will also give a potential food source for birds. The rocks and littoral zone provide habitat for molluscs and potentially other littoral zone fauna such as crabs.

Some evidence of rabbits (old scats) was observed at West Beach and it was also reported that Black Rats are present across all NHA's, particularly foreshore sites.

Cats and foxes are also likely to utilise each NHA and in January 2015 fox scats were collected in Elwood Teatree Reserve.

### 3.4.1 Significant Fauna Species from Literature and Database Searches

Literature and database searches for significant fauna species that have been recorded within 1km from the foreshore were undertaken utilising the Victorian Biodiversity Atlas (DELWP 2015a).

Six species of National and/or State significance (terrestrial and/or wetland dependent) have been recorded within the local area according to the VBA. It was determined that of these species only one, the Grey-headed Flying Fox *Pteropus poliocephalus* was moderately likely to utilise the site. This species is nationally vulnerable and listed as vulnerable in Victoria as well as FFG listed.

Other species, including Nankeen Night Heron *Nycticorax caledonicus* (State-near threatened), Common Bent-wing Bat *Miniopterus schreibersii* (FFG listed), Powerful Owl *Ninox strenua*, Eastern Great Egret *Ardea modesta* (FFG listed and State-vulnerable also JAMBA, CAMBA listed), Glossy Grass Skink *Pseudemoia rawlinsoni* (State-vulnerable) were considered to have a low likelihood of utilising the site. This is mainly due to the fact that they have only one recent record each and in some cases there is not a high amount of suitable habitat.

## 4. VEGETATION MANAGEMENT PLANNING

In order to provide a logical basis for prioritising the management activities that are to occur over the next five years, a prioritisation process was determined. This process has two steps:

- firstly each of the Natural Heritage Areas (NHA's) were prioritised using a method described in Section 4.1.1, below. This method also builds upon previous work undertaken by Wills et. al. 2003 and Nance and Cavallero, 2012 who each either assigned a level of significance (Wills) to each reserve or applied a ranking (Nance and Cavallero).
- secondly a process of prioritisation was applied to the management activities that could occur within each NHA

A summary table detailing the outcomes of this process is provided in Table 5 and Table 6 and the resultant Schedule of Works provided as Table 7.

A section for each of the seventeen Natural Heritage Areas (NHA's) is provided as within APPENDIX 1 to this Plan.

Within each reserve or NHA each planting or patch of native vegetation has been provided with a unique identifier. For the purposes of the management plan, these patches are Vegetation Management Zones (VMZ's) and the unique identifier for each VMZ includes letters that reflect the name of the NHA along with a number. For example VMZ's in Princes Street Dunes are PRD1, PRD2 and so forth.

Each section contains a description of the NHA, accompanied by a summary table detailing the vegetation present within each VMZ and the relevant management issues and proposed management activities for each. Also included is a map showing the location of each VMZ and the proposed management actions for each as well as photos and a vegetation species list.

### 4.1 Prioritisation of sites and activities

A method with which to prioritise each NHA was determined and implemented post-fieldwork. This has enabled us to rank each NHA in terms of their priority for implementation of management activities.

#### 4.1.1 Prioritisation of Reserves:

Reserves were prioritised based on categories such as size of site, importance as part of a corridor, habitat value indicators (some taken from Nance and Cavallero 2012) and assistance from community groups and other agencies in weed management. As detailed below:

**Table 2. Indicators and measures used to prioritise each reserve (NHA)**

Item	Measure
Size of reserve (ha)	Reserve > 4 ha = 3 >2 ha = 2 <2 ha = 1
Shape of reserve (W/L ratio)	>0.5=3 0.4–0.2=2 <0.2=1
Presence or likelihood of remnant vegetation	Remnant vegetation or likely remnant vegetation present = 1 No likelihood of remnant vegetation = 0
% cover of indigenous vegetation within reserve (planted and/or remnant)	>70%=4 50–69%=3

Item	Measure
	30–49%=2 10–29%=1
Is there some community support for activities at this reserve?	Friends group or interest/activity from another group e.g. St Kilda Earthcare? Y = 1, N = 0
Community Concern?	Namely determined by presence of adjoining / across the road residents and levels of past complaints. Y=1, N=0
Vegetation area (ha)	>2ha=3 1–2ha=2 <1ha=1
Vegetation Condition  A combination of Structure, Weediness and Conservation Significance	Structure All life forms present = 5 1 life form absent = 4 2 life forms absent= 3 3 life forms absent = 2 4 or more life forms absent = 1  Weediness Very low (<5% cover of introduced species) = 5 Low (5<25% cover of introduced species) = 3 Moderate (25<50% cover of introduced species) = 1 High (50–100% cover of introduced species) = 0  Conservation Significance Very High = 5 High = 3 Medium = 1 Low = 0
Habitat Diversity	Presence of different EVCs 2 per EVC
Unique Values	1–15 significant species = 1 15–30 significant species = 2 30+ significant species = 3
Connectivity	Connected by a corridor with another heritage site = 5 Less than 100m from another heritage site = 3 100–500m from another heritage site = 1 Greater than 500m from another heritage site = 0

The results from the NHA prioritisation process are provided below.

Table 3. Results of reserve (NHA) prioritisation

Site	Site area score	Width/length ratio (Edge effects)	Veg Cover	Veg Area	Presence/likelihood of remnant veg	Veg Condition	Habitat Diversity	Unique Values	Connectivity	Community support	Community Concern	Overall Score
<b>Sandridge Foreshore</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>11</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>31</b>
<b>First Point</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>30</b>
Princes St Dunes	2	2	2	1	1	7	2	1	1	0	0	19
Pickle St Dunes	3	1	3	3	1	9	2	1	1	0	0	24
Middle Park Dunes	1	1	2	1	1	7	2	1	1	0	0	17
Fraser St Dunes	1	2	4	1	1	8	4	1	3	0	0	25
<b>West Beach</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>15</b>	<b>6</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>37</b>
Moran Reserve	3	3	1	2	0	9	6	1	3	0	0	28
<b>Point Ormond</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>34</b>
<b>Elwood Teatree</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>10</b>	<b>4</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>34</b>
<b>Elwood Foreshore and Reserve</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>11</b>	<b>4</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>31</b>
Lagoon Reserve	2	3	1	1	0	9	2	1	1	1	1	22
Canterbury Road Urban Forest	2	1	4	2	0	6	2	3	0	0	1	21
LH Johnson Reserve	1	3	4	1	0	10	2	2	1	1	1	26
Balaclava Rail	1	1	4	1	0	6	2	2	0	0	0	17
Elwood Canal	3	1	1	2	0	6	2	3	3	1	1	23

	Higher priority NHA
	Medium priority NHA
	Lower priority NHA

#### 4.1.2 Management activity prioritisation

Similarly to the prioritisation of sites, a value is assigned to each management activity based on a number of criteria as follows:

- Is the activity a priority within the City of Port Phillip Foreshore Management Plan or another CoPP plan? For example provision of shade on the foreshore, protection of foreshore vegetation.
- Is the activity a key priority identified within the project brief and/or specifically identified during discussions with City of Port Phillip staff? Crime prevention considerations; cycle safety, reduction in maintenance activity, eg. Pruning.
- If the activity does not occur will the situation worsen? For example, spreading of high threat weed species; trampling and incursions into vegetation.

**Table 4. Results of activity prioritisation process**

Management Activity	Priority (H, M, L)
Reduce trampling and informal paths via introduction of fencing/barriers	H
Shade provision via appropriate plantings	H
CPED considerations, namely reduction in shrub layer to ensure better sightlines are maintained	H
Ensure bike safety guidelines are met by ensuring species adjacent to paths meet criteria (also low pruning species)	H
Manage High Threat Weeds	H
Protect dune vegetation in accordance for climate change resilience	H
Provide more rubbish bins/increase rubbish removal	H
Provide safer toilets (siting, vegetation cover and design considerations) to reduce vegetation impacts	H
Rationing of paths	M
Improve vegetation structure – reduce shrubbiness	M
Increase diversity	M
Increase and join fragmented garden beds	M
Infill gaps in vegetation	M
Introduce interpretation signs/education tools	L

This Foreshore and Hinterland Management Plan has been constructed in a manner that facilitates the completion of high priority activities within higher priority NHA's as a first step, where the secondary priorities are high priority activities that will occur within medium priority NHA's.

This is shown in Table 5 (high priority activities) and Table 6 (medium and low priority activities), below.

The five-year action plan or Schedule of Works (Table 7) has been costed to approximately 80% of the current NHA budget, as explained in Section 4.3.1 and the activities included within the first years of the plan are high priority activities within the higher priority NHA's. Actions were allocated according to priority from Year 1 to 5 until the approximate budget for the five years was allocated. This did not cover all of the potential activities that are recommended for each reserve. ***However there is still some budget allocation available, particularly within Year 5 and it is proposed that this is allocated in conversation with CoPP and Citywide staff.***

In particular activities such as increasing diversity, reducing fragmentation and widening plantings have not been costed within the 5 year Schedule of Works. Additionally activities such as improvements to the placement/numbers of rubbish bins and collection schedules have not been costed as they require decisions to



be made by other areas of council. Similarly toilet safety and redesign is a recommendation but not costed as is interpretation signage. These are discussed in more detail in Section 4.2.

Lagoon Reserve has not had costings provided for ‘reducing trampling of vegetation’ as this is associated with a management recommendation from the Lagoon Reserve Management Plan which involves removing fencing and replacing it with dense understorey plantings. Council reports that these plans may be some time in eventuating so this activity has been held off until the fencing removal occurs so that it can occur in a coordinated manner.

There are some issues and activities that are highlighted within this Plan which will be addressed within the planned activities for 2015. In particular this includes:

- removal of dead/senescing vegetation within the eastern portion of Canterbury Road Urban Forest and replanting 4678 plants
- similar activity within Lagoon Reserve including planting 3900 plants
- planting at Pickle Street Dunes (4080 plants);
- Sandridge Foreshore (3404 plants)
- Elwood Tea Tree (2820 plants (which may include some to infill a gap created at the eastern end of ET4 following works on some water infrastructure)
- Elwood Park & Foreshore (2366 plants)

Other smaller allocations of plants for 2015 include:

- First Point (1400 plants)
- Princess St Dunes (500 plants)
- West Beach (960 plants)
- Point Ormond (951 plants)

**Table 5. Prioritisation of activities within NHA Reserves – High priority activities**

Activities shown in **bold** have been costed in the 5 year plan

\* Denotes activities that are planned for 2015 works schedule so are not costed into the 5 year Schedule of works

Site	NHA priority	High Priority Activities								
		Reduce trampling/ paths	Shade plantings	CPED considerations, manage vegetation structure	Bike path safety	Protect Dune Vegetation (climate change resilience)	Manage High Threat Weeds	Remove Dead/ unsafe trees	Rubbish bin management	Toilet improvements
Sandridge Foreshore	H	Y	Y	Y	Y	Y			Y	Y
First Point	H		Y	Y	Y				Y	
Princes St Dunes	L	Y					Y			
Pickle St Dunes	M	Y					Y			
Middle Park Dunes	L	Y				Y				
Fraser St Dunes	M	Y		Y		Y				
West Beach	H	Y				Y	Y			
MO Moran Reserve	M	Y	Y	Y						
Point Ormond	H	Y	Y	Y	Y				Y	Y
Elwood Teatree	H	Y		Y	Y		Y		Y	
Elwood Foreshore and Reserve	H	Y	Y		Y					
Lagoon Reserve	M	Y	Y	Y	Y					
Canterbury Road Urban Forest	M	Y						Y*		
LH Johnson Reserve	M									
Balaclava Rail	L									
Elwood Canal	M				Y		Y	Y		

**Table 6. Prioritisation of activities within NHA Reserves – Medium and low priority activities**Activities shown in **bold** have been costed in the 5 year plan

\* Denotes activities that are planned for 2015 works schedule so are not costed into the 5 year Schedule of works

Site	NHA priority	Medium Priority Activities								Low Priority Activities
		Ration paths	Improve veg structure/ reduce shrubb-ness	Remove dead/ senescing shrubs and replant	Increase diversity	Treat Woody Weeds	Join fragmented VMZ's	Expand (widen/ lengthen) VMZ	Infill gaps in veg within VMZ's	Interpretation signs/ education
Sandridge Foreshore	H		Y	Y	Y		Y	Y	Y	Y
First Point	H		Y	Y			Y	Y	Y	
Princes St Dunes	L	Y						Y	Y	Y
Pickle St Dunes	M	Y						Y	Y*	Y
Middle Park Dunes	L							Y	Y	Y
Fraser St Dunes	M			Y				Y	Y	Y
West Beach	H	Y						Y		Y
MO Moran Reserve	M		Y	Y	Y		Y	Y		
Point Ormond	H		Y	Y	Y		Y	Y	Y	Y
Elwood Teatree	H	Y	Y	Y	Y			Y	Y	Y
Elwood Foreshore and Reserve	H		Y	Y	Y	Y	Y		Y	
Lagoon Reserve	M	Y	Y*	Y*	Y*		Y		Y*	Y
Canterbury Road Urban Forest	M	Y	Y*	Y*	Y*	Y			Y*	Y
LH Johnson Reserve	M				Y					Y
Balaclava Rail	L			Y	Y				Y	
Elwood Canal	M	Y	Y	Y	Y	Y	Y	Y	Y	Y

## 4.2 Management objectives and guidelines

On the basis of the priorities, a series of management objectives and guidelines have been developed to guide future management. These are outlined below (Sections 4.2.1 to 4.2.11).

### 4.2.1 Fence priority areas

The majority of reserves are affected by people traversing through the vegetation. This reduces vegetation quality and extent, increases erosion potential and restricts opportunities for regeneration of native flora. Paths also create vectors for weeds and pest animals.

Many of the higher priority NHA's are also those that are subject to the highest occurrences of trampling and incursions. On this basis a regime of fencing and introduction of barriers within these priority areas is proposed as one of the highest priorities of this plan.

For the purposes of restricting human access, a permanent post and wire fence is proposed for establishment as a staged process in the first three years of this program, with Elwood Teatree being the highest priority.

The proposed fence construction is as follows:

- Fences within primary dunes would be similar to those existing fences located in foreshore NHA's. Our costings provide for a 2.1 m high pine posts and ringlock wire fence and two plain top wires with access gates and appropriate strainer assemblies. The posts for these foreshore fences would be tapered.
- For any fences that are not located within the primary beach dunes a slightly different fence is proposed. This being a pine post and wire fence using sightline wire for the top wire. Our costings provide for 1.8 m high pine posts, one sightline wire and three plain wires with access gates and appropriate strainer assemblies.

NHA's which have the highest priority for fencing and are included within the Schedule of Works in Years 1–3 are:

- Elwood Teatree (entire extent) – Year 1
- Point Ormond (PO 4, 8, 9 and 10) – Year 2, and
- West Beach (WB8) – Year 3.

Fencing for medium priority reserves should also be undertaken with extra budget allocation and they have been included within the Schedule of works in Years 4 and 5. These reserves include:

- Sandridge Foreshore (S3)
- Princes Street Dunes (PRD4 and extensions to PRD3),
- Middle Park Dunes,
- Fraser Street Dunes, and
- MO Moran Reserve

Other options to reduce trampling include the introduction of barriers, bollards or similar. A system of barriers which feature along the Sandridge Foreshore appears to be very effective at stopping trampling (refer to Figure 8).



**Figure 8. Wooden barriers along Sandridge Foreshore**

It is proposed that barriers to trampling are introduced in higher and medium priority NHA's in year 4. They include.

Higher priority reserves:

- Sandridge Foreshore
- Point Ormond Reserve, and
- Elwood Foreshore and Reserve

Medium priority reserves:

- Canterbury Road Urban Forest, and
- MO Moran Reserve

Other restrictive mechanisms include the use of barriers or vegetation. At present there has not been any allocation for the use of vegetation– only to dissuade access.

#### **4.2.2 Treat Weeds**

Whilst weed cover is generally low, there are some significant infestations of High Threat weeds present within some of the reserves.

High Threat weeds are mainly limited to Sea Wheat Grass and Couch which are present within only a few reserves. However, in a couple of reserves the infestations are significant and will require an intensive and ongoing effort. These reserves are namely Pickles Street Dunes and West Beach. Although there is some occurrence of Sea Wheat Grass also along a small length of Elwood Tea Tree Reserve and Couch in Princes Street Dunes.

Other infestations comprise some occurrences of woody weeds (Irish Strawberry, Desert Ash and White Poplar) as well as a couple of instances of environmental weeds (Ivy, Agapanthas and South African Daisy). Minor grassy herbaceous weeds also occur at the edges of plantings.

**Weeds requiring treatment:**

High Threat priority grassy and gerbaceous weeds to treat every year:

- Sea Wheat Grass
- Couch
- Kikuyu
- Gazanias

Woody weeds and environmental for immediate removal and ongoing management include:

- Irish Strawberry
- Desert Ash
- White Poplar
- Agapanthus
- South African Daisy

Other weeds for treatment as required include:

- Panic Veldt Grass
- Other grassy and herbaceous weeds in disturbed areas and edges of garden beds (Trifolium spp., Capeweed, Purslane and others).

Some guiding principles for weed treatment are provided below.

#### **Emphasis on low disturbance:**

As some of the NHA's are located within fragile dune systems, an emphasis on minimal disturbance during weed treatment is imperative. This will also reduce the potential for more seed germination due to disturbance.

Where possible, manual, low-impact weed treatment such as hand weeding (for small easy-to-pull plants) is encouraged. It may be prudent to do a small-seedling run on days after rain when the soil is moist and softer.

For large woody weeds, that is, larger shrubs and trees, minimal disturbance techniques such as drill and fill or frill and fill are recommended.

#### **Staggered treatments for large infestations:**

Where large infestations of ground-covering weeds are to be managed, these should be tackled sensitively and in a staged process. For example, patches of Sea Wheat Grass and to a lesser extent Couch within foreshore reserves (Princes Street Dunes, Pickles Street Dunes, West Beach and Elwood Teatree) should be tackled using a mosaic approach possibly in association with some revegetation or niche seeding should it be deemed unlikely that natural regeneration will occur.

In regard to Sea Wheat Grass, it is recommended that a reduction in cover of 10% per year be achieved. This may mean that 20% of the Sea Wheat Grass is treated annually. In the Pickles Street Dunes, Estuarine Flats Grassland should be re-established in the swale area as Sea Wheat Grass is reduced.

A reduction in Couch cover of 30% annually in year's 1–3 is recommended.

#### **Time treatments to avoid seed set on plants.**

Early response to new weed incursions and timing annual weed treatments to occur prior to weed seed set is very important.

As most weeds put on new growth and flower in Spring, it is important to ensure that fruit/seed production is minimised around this time by treating the entire plant or working to minimise its spread (for example slashing or whipper snipping perennial grasses prior to them reaching seed maturity).

#### **Practice good weed hygiene and remove weed material that has the potential to regrow.**

Most of the key weed species identified within the study site are known to easily spread via seed.

Depending on the method of treatment, there may be a requirement to carefully remove plant material from a site or to establish a 'safe area' onsite for solarisation of the plant material.

Care should also be taken to ensure that weed seed/fruits, nor detrimental pathogens (such as *Phytophthora cinnamomi*) are not introduced nor transported within or from the any reserve.

#### **Work with adjoining land managers**

Any actions that are undertaken within the NHA's have the potential to be undermined if there are not similar activities occurring on adjoining land. For example different areas of council that are maintaining plantings of Gazanias adjacent to Princes Street Dunes or adjoining landowners on the Elwood Canal.

While it is acknowledged that positive steps have already been taken, a longer term process to engage with neighbours will be necessary. While City of Port Phillip and Citywide staff are actively and positively engaged in this activity already it will need to continue on an ongoing basis.

#### **4.2.3 Increase the long-term provision of shade by native vegetation**

There are ample opportunities to increase the amount of shade provided within each reserve.

In general, there is currently a low level of Eucalypt plantings. Plantings of Eucalypts may however be appropriate near the coast especially as vegetation establishes. However within all foreshore areas the establishment of Coast Banksia and/or Drooping Sheoak would provide shade and be a little more salt and wind tolerant.

As the establishment of small plantings within potentially exposed areas of foreshore will be difficult, it is proposed that the shade plantings 'add on' to existing VMZ's as much as is possible with patches of Drooping Sheoak protected initially by large tree guards with shade cloth to guard against wind.

Where there are no opportunities to capitalise on already existing plantings for shade, a staggered planting will sometimes be required. For example, planting hardy salt tolerant shrubby species as a shield in an arc shape around the shade planting species.

Shade provision plantings have been factored into years 3 and 4 of this Plan in within Higher and Medium Priority NHA's as follows:

- Sandridge Foreshore (3 plantings)
- First Point (one planting)
- MO Moran Reserve (four plantings)
- Point Ormond (three plantings)
- Elwood Foreshore and Reserve (four plantings), and
- Lagoon Reserve (three plantings)

#### **4.2.4 Remove dead trees**

There are a few dead trees (Eucalypts and large wattles) that were observed during site visits. These included a few locations within the Elwood Canal (EC2, EC35) and Canterbury Road Urban Forest (UF6, UF9).

In one location within the EC35, a dead tall Lightwood is currently touching some powerlines. It is understood that the City of Port Phillip will be addressing these issues and pruning all trees in accordance with the appropriate guidelines.

In each location these trees should be either lopped or felled to ensure that they are made safe. Our preference is that trees are lopped and that the felled material is left within the reserve if possible.

It is understood that the removal of the dead trees within Canterbury Road Urban Forest is part of the 2015 schedule of works and so this has not been factored into the 5 year plan.

In the future it is advised avoiding planting Black Wattles which have a shorter life span and are likely to require removal in the future.

#### 4.2.5 Remove senescing vegetation

The presence of dead shrubs and senescing vegetation is a source of many community complaints. Whilst this vegetation may still provide habitat value especially for small woodland birds, it is also occupying a niche which could otherwise contain a range of strata and potentially more habitat values. Furthermore, the gaps that are created when each plant dies are more likely to be occupied by weeds or opportunistic (and possibly less desirable) species.

There is senescing vegetation present within most NHA's. However, particular cases include: Sandridge Foreshore (S19); Fraser Street Dunes (FS2); Point Ormond (PO4 and PO5); Canterbury Road Urban Forest (UF8 and UF9) and Balaclava Rail (BR1).

In each of these cases in particular as well as other less serious locations, the removal of senescing vegetation is recommended. It should be replaced with species suitable to that location but avoiding certain species that are more prone to early senescing. This includes species such as: Kangaroo Apples (*Solanum aviculare* or *Solanum laciniatum*), Boobialla *Myoporum insulare* (although not in all cases as it is a good foreshore shielding plant), Seaberry Saltbush *Rhagodia candolleana* and Black Wattle *Acacia mearnsii*.

#### 4.2.6 Reduce shrubby vegetation for crime prevention and cycle safety

Most plantings within all of the NHA's are dominated by shrubs. The planting of shrubs is very useful for establishing vegetation and can be an important part of vegetation succession, especially in coastal areas where salt-tolerant shrubs are required along the foredune edges. In many cases shrubbiness is caused by opportunistic species such as Coast Wattle, Coast Tea-tree, Seaberry Saltbush and Bower Spinach.

In some locations, overly shrubby vegetation is a hinderance to maintaining a safe public environment. This is especially the case in some NHA's where people may choose to congregate or meet with the intention of potentially unsavoury activity.

The City of Port Phillip also aims to maintain safe cycle pathways which require a 2m distance from shrubs and trees. As such shrubby vegetation along cycle paths should be reduced and lower groundcover species planted within 1m of cycle paths.

#### 4.2.7 Supplementary planting

Supplementary planting is required within all NHA's for a number of reasons:

- to infill existing gaps within current Vegetation Management Zone's (VMZ's)
- to fill niches once shrubby or senescing vegetation is removed or when weed cover is reduced
- to increase the diversity of the native vegetation
- to link or widen patches of vegetation

In the short term (5 years), it is proposed that supplementary planting focus firstly on infilling existing gaps within VMZ's and making small additions. In the longer term a more ambitious program of linking and expansion should be planned.

Within the Vegetation Management Plans for each NHA (APPENDIX 1), suggested EVC's are provided for each VMZ to guide the plant selection for each purpose. Potential species lists may be drawn from the species listed within Table 1 also.

Whilst this plan provides suggestions around the lifeforms or strata that should be planted as well as suggested EVC's it is outside the scope of the project brief to provide actual revegetation lists and schedules. Furthermore it is proposed that the accumulated local knowledge of City of Port Phillip staff, contractors and local indigenous



nursery staff will be more valuable for determining annual and adaptive planting lists. An adaptive approach is important for undertaking revegetation and it may be counter-productive to have prescriptive planting lists that are locked in for 5 years.

#### **4.2.8 Decrease fragmentation and widen vegetation areas**

The assessment found that there are many reserves which comprise numerous small patches of revegetation. Particular examples include Sandridge Foreshore and Elwood Canal. There are also many patches that are irregularly shaped. Sandridge Foreshore also contains the most examples of this.

This fragmentation of revegetation is inefficient in regards to the ongoing maintenance works required between patches, such as lawn mowing.

These fragmented patches of revegetation are also poor ecologically. Fragmentation leads to increased edge effects through an increased perimeter area for weed, insect or fungal incursions. It also leaves vegetation more prone to climatic impacts such as wind and salt-spray or even high tides and flooding.

With maintenance works and ecological enhancement in mind, where possible patches of vegetation should be linked up and widened.

In the shorter term revegetation should occur in instances where:

- isolated patches of revegetation can be linked to larger patches that are adjacent to them
- it is possible/logical to extend current patches of revegetation and fill in irregular shapes of revegetation.

In the longer term in key reserves that still contain a high cover of open grassed space should be utilised to widen plantings, creating an area of higher habitat values and increasing the resistance of the overall vegetation.

#### **4.2.9 Update or install new toilet amenities that limit the options for unsavoury behaviour**

There are three key locations within the reserves where issues affecting native vegetation are arising due to the location of toilets and also restrictions on toilet availability at night. These reserves are Sandridge Foreshore and Point Ormond which each contain amenities blocks that attract overnight campers with resultant management issues.

Issues include:

- unsavoury activity occurring within and around toilet blocks
- human waste and associated debris in nearby vegetation; and
- incursions into nearby vegetation to seek cover required for sexual activity or ablutions
- runoff from showers and dish-washing

These issues are especially prevalent at Point Ormond and are affecting the Point Ormond vegetation and Elwood Teatree vegetation (both sides of Point Ormond Road).

Issues associated with toilet use appear to be part of a larger issue associated with higher numbers of itinerant travellers staying overnight at Port Ormond and to a lesser extent at Sandridge Foreshore.

In order to address these issues a range of management approaches are available. Including restricting access to the native vegetation surrounding the amenities blocks.

Conversations with City of Port Phillip contractors encountered in the field suggests however that since itinerant travellers have increased in numbers in the abovementioned locations, other activities such as injecting drug use and sexual activity associated with the toilets and surrounding vegetation has reduced.

In the longer term, alternative amenities block designs should be explored and implemented. Some Australian councils have already considered methods of designing and building safer amenities blocks. For example, Brisbane City Council has released guidelines that would be very instructive in ensuring that any new amenities are appropriately designed to allow them to remain open at night but to also be considered safe to access at night and at other times.

The following details the current conditions in relation to the amenities blocks present within the reserves assessed:

- Sandridge
  - The two amenities blocks to the west of the Sandridge Beach carpark are relatively old currently tucked away behind vegetation and also have shielded entrances. There are only two toilets in the ladies, a huge changing area and two enclosed showers with hot water, all with a high degree of privacy. It is assumed that the men's has a similar layout.



**Figure 9. Womens amenities block at Sandridge Foreshore**

- This small amenities block to the east of the Sandridge Beach carpark is relatively new and has modern, low-maintenance fixtures. There are two unisex cubicles which are each very large and have hand-washing facilities inside. A water point and cold water showers are located outside.



**Figure 10. Sandridge Foreshore amenities block**

- Point Ormond:
  - This is an older style amenities block which possibly has heritage values associated with both its age and links with community bathing, but also with its unique circular design. Whilst this amenities block is of medium size, it only has two cubicles in the women’s toilet area and it is assumed that it is similar on the men’s side. There are outdoor showers on the side of the wall facing the beach.



**Figure 11. Point Ormond amenities block looking from the east**



**Figure 12. Showers on the outside wall of the Point Ormond amenities block**

In each case, resiting or redesigning the amenities blocks is recommended so that they are out in the open as much as is possible. In the case of Sandridge this may also include reducing the vegetation that is located close to the facilities.

An alternative scenario could be to keep the current block and close it at night but to have a large sign advertising this fact at the road’s edge. The second toilet block, closer to the barbeques could be left open at night.

Some suggested design features for any toilet upgrades or new facilities include:

- toilet cubicles that open directly to the outside
- unisex toilets
- hand-washing facilities outside

- doors that have large gaps at the bottom and top
- other safety and vandal-proof features including enclosed eaves, and
- adequate natural lighting during the day and electrical lighting at night within the facilities and externally.

The figures below demonstrate some of these design features.



**Figure 13. An example of an amenities block with good design features to promote safety (Brisbane City Council 2013).**



**Figure 14. The new Middle Park Amenities block. Also demonstrating good design features (City of Port Phillip 2013)**

In the case of the amenities block to the east of the carpark at Sandridge Foreshore, where the facility is new and it is unlikely that upgrades will be approved, a useful addition would be to reduce the door size so that each cubicle offers less privacy.

#### **4.2.10 Review the placement and number of rubbish bins and rubbish collection schedules**

Although during the field visits only low levels of rubbish were observed within the NHA's it is reported by CoPP staff and contractors that there are very high volumes of rubbish generated at rubbish bin sites and also discarded within vegetation areas, particularly at certain times of the year and in particular locations. It is understood also that rubbish collection comprises a moderate portion of the time allocation of contract staff within the NHA's.

Whilst rubbish disposal issues are present across all reserves, key locations where they are greatest are:

- Sandridge Foreshore and First Point combined, and
- Point Ormond Reserve and Elwood Teatree in the vicinity of Point Ormond Road.

These two locations are places where itinerant travellers congregate and stay overnight. The Sandridge-First Point area is also a place favoured by culturally and linguistically diverse communities for whom exposure to a consistent culture of responsible rubbish disposal may not have occurred in the past. The result being that the rubbish bins in the reserves are not used and there is rubbish being left within the reserves, impacting upon the vegetation and potentially wildlife as well as generating complaints.

It is recommended that a review is undertaken by CoPP of the numbers of rubbish bins, locations and rubbish collection schedules to ensure that litter is less likely to impact upon natural values within the reserves. This

activity has not been costed or included directly in the Schedule of Works as it involves decision-making and analysis by CoPP staff, including liaison with other departments.

#### **4.2.11 Introduce appropriate interpretation signage at key locations**

Interpretation signage may provide a very useful tool in addressing key management issues within some NHA's. Some examples include:

- Appropriate signs that would assist in encouraging rubbish bin use at Sandridge Foreshore and First Point.
  - These signs may need to incorporate a variety of appropriate languages for key community groups that frequent this part of the foreshore.
- Signage at all other foreshore NHA's which have remnant foredune vegetation.
  - These signs would explain the importance of the dunes and dune systems.

In the future the introduction of a nature trail along the foreshore is recommended. This would involve use of signage that may incorporate history combined with information about the former landscape and vegetation as well as information about current features and community involvement.

This activity has not yet been costed or included directly in the Schedule of Works as it involves decision-making and analysis by CoPP staff, including liaison with other departments.

#### **4.2.12 Trial ecological burn**

An optional activity that is recommended is to undertake a small trial burn with one of the widest sections of the Elwood Teatree Reserve, ET6. The purpose of the burn would be to discover whether there is any remnant seed left in the soil that will regenerate some potentially 'lost' species. It may also be effective for reducing the shrubby weed cover and increasing diversity.

Ecological burns have been undertaken in Bayside and Frankston council areas and liaison with staff from these municipalities is recommended should this option be explored.

If a burn is undertaken it would need to occur following a detailed planning process. It would also require an ecological monitoring plan to identify if it was useful in generating any positive ecological outcomes.

As this is only an optional activity, this has not been costed and a detailed investigation process would need to inform the plans for a trial burn in the future.

#### **4.2.13 Landscape and Access Plan for Elwood Foreshore and Reserve**

The Elwood Foreshore and Reserve NHA is a very high use area with multiple carparks and multiple sporting and recreation facilities and infrastructure present throughout. In addition to this there are food businesses and a Kindergarten. From a vegetation management perspective it is recommended that areas of vegetation throughout the reserve be expanded, linked and the quality of vegetation be improved over time. However in some locations, for example around the recently constructed Pavillion and Multi-use complex, where it is possible to extend current VMZ's or to create new ones due to other competing objectives. These objectives include access for spectators to view events and staging areas for events amongst others. Another issue identified in this NHA was associated with the current configuration of the southern carpark whereby native vegetation within small 'traffic islands' is vulnerable to trampling and requires relatively high management. In this area it is recommended that this carpark be redesigned so that any planted traffic island areas are larger and have defined pathways throughout placed in such a way that they are less prone to trampling.

On this basis it is recommended that a Landscape and Access Plan be developed for Elwood Foreshore and Reserve in order to guide and improve future vegetation management and enhancement effort. Again, this recommendation is optional and has not been included within the Schedule of Works as part of this Plan.

## 4.3 Management Actions by Natural Heritage Area

### 4.3.1 Budget allocations for management actions

The City of Port Phillip allocates approximately \$220,000 per year for its NHA management program. On an annual basis this budget achieves general maintenance of existing vegetation (including pruning along pathways, weed management, some mulching, removal of some senescing vegetation) as well as some infill plantings and establishment of new plantings.

Each year approximately 25,000 plants are planted within the NHA's with both contractor labour as well as the use of volunteers and Conservation Volunteer's Australia teams.

The following breakdown of budgetary costs are proposed for the five year plan:

- 10% Maintenance activities across all reserves (pruning, mulching, general weeding) (\$22,000)
- 10% Responding to resident issues and other urgent matters (\$22,000)
- 80% Strategic works with consideration to priorities outlined in this Vegetation Management Plan (\$176,000)

The 5 year management plan has been costed with these allocations in mind and is focussed on the provision of priority actions within priority reserves.

Note that there are a number of activities that are described either within Section 4.2 above or within the relevant sections detailing each NHA that will require a larger financial commitment and/or are longer term recommendations. These would need to be costed separately and require a detailed design phase prior to costing. Examples include:

- Redesigning toilet and amenities facilities (Section 4.2.9)
- Rationing pathways along Elwood Canal (Section 16)
- Developing a nature and history trail (Section 4.2.11)
- Undertaking a trial burn within Elwood Teatree (ET6)

### 4.3.2 Management Action Plan

A costed Schedule of Works for the next five years is presented in Table 7. This schedule contains all of the proposed management actions across all of the NHA's for the coming five years (2016 – 2020). ***It is also possible that in the Final version of this Plan, once the Schedule of Works is confirmed in association with City of Port Phillip staff and with input also from Citywide staff that the Schedule of Works is divided into the relevant sections for each NHA.***

The intent of the Schedule is to show the progression of the different management actions and how works will flow into maintenance regimes over time. The land use and management commitments proposed are essentially in the order in which they are to take place. Reference must be made to the sections above for specific instructions and guidelines.

Estimated costs for the majority of the management activities proposed within the Schedule of Works have been included. These costs however are estimates only and they are intended as only a guide to the funds required.

Where activities have been costed in the Schedule of Works, this includes a three per cent Consumer Price Index (CPI) increase each year for the five years of the plan. Costs are based on current contracting rates for the implementation of activities associated with bushland management such as fencing, weed control, and planting.

Any management activities should be adaptive to the conditions that are present on site and changed where necessary based on observed site conditions over time. Management is an iterative process and not a static one.

As mentioned above the approximated cost for each year's works is budgeted at approximately \$220,000 with \$176,000 allocated to priority management actions within the NHA's. Although this is not consistent across the years and Year 1 has higher costs, whilst this is reconciled by lower costs later years, particularly Year 5 resulting in an average annual budget across the five years of \$161,230.

There is room in the current Schedule of Works to add further activities. It is anticipated that this will be determined in discussion with CoPP staff and other relevant stakeholders during the process to finalise this document.

The activities covered in the current proposed management plan are indicated in bold in Table 5 and Table 6.

Details for all management issues and potential activities for each NHA are provided in APPENDIX 1.



Table 7. Five Year Management Action Plan

Year	Management Actions		Applicable Zone(s)	Responsibility for Implementation	Annual Standard to be Achieved	Activity Description	Timing of activity	Units	QTY	Rate	Cost (ex GST)
1	Bush Regeneration works	Weed Control	Princes Street Dunes	COPP Ecological contractor	Reduce current coverage of Couch by 30%	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage	Spring / Summer	Hour	8	\$80.00	\$640.00
			Pickles Street Dunes		Reduce current coverage of Couch by 30% and current cover of Sea Wheat Grass by 10% (by treating 20%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage	Spring / Summer	Hour	64	\$80.00	\$5,120.00
			West Beach		Reduce current coverage of Couch by 30% and current cover of Sea Wheat Grass by 10% (by treating 20%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage	Spring / Summer	Hour	64	\$80.00	\$5,120.00
			Elwood Teatree		Reduce current coverage of Sea Wheat Grass by 30% (by treating 40%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage	Spring / Summer	Hour	8	\$80.00	\$640.00
			Elwood Foreshore and Reserve		Remove all Irish Strawberry and Desert Ash occurrences.	Control primarily using cut and paint methods or drill and fill if larger plants are encountered.	n/a	Hour	8	\$80.00	\$640.00
			Canterbury Road Urban Forest		Remove all occurrences of Agapanthus and Canary Island Palm	Treat Agapanthus with appropriate herbicide. Remove all palms from garden beds	n/a	Hour	8	\$75.00	\$600.00
			Elwood Canal		Remove all occurrences of Agapanthus and South African Daisy Treat all suckers of White Poplar	Treat Agapanthus with appropriate herbicide. Remove South African Daisy from garden beds. Treat White Poplar using cut and paint methods.	n/a	Hour	16	\$75.00	\$1,200.00
		Fence construction	Elwood Teatree	COPP Ecological contractor or council staff	Enclose the Elwood Teatree Reserve to restrict pedestrian access and various damage to vegetation.	Construct a pine post and wire fence using white sightline wire as the top strand.	n/a	Lineal Metre	2489	\$40.50	\$100,804.50
		Removal of Senescing or shrubby vegetation (CPED consideration and habitat improvement)	Point Ormond	COPP Ecological contractor or council staff	Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ. This will include reducing shrubbiness in particular around the toilet facilities.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from PO4, PO5, PO8, PO9, PO10 and PO11	n/a	Hour	160	\$75.00	\$12,000.00
			Elwood Teatree		Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from ET1-ET4	n/a	Hour	100	\$75.00	\$7,500.00

Year	Management Actions		Applicable Zone(s)	Responsibility for Implementation	Annual Standard to be Achieved	Activity Description	Timing of activity	Units	QTY	Rate	Cost (ex GST)	
1	Remove shrubby vegetation along cycle paths		Sandridge Foreshore	COPP Ecological contractor or council staff	Shrubby revegetation to be removed within 2m of the cycle path in preparation for plantings of grasses/groundstorey vegetation.	Remove shrubs from S13D and S13E	n/a	Hour	8	\$75.00	\$600.00	
			First Point		Shrubby revegetation to be removed within 2m of the cycle path in preparation for plantings of grasses/groundstorey vegetation.	Remove shrubs from FP5	n/a	Hour	4	\$75.00	\$300.00	
			Point Ormond		Shrubby revegetation to be removed within 2m of the cycle path in preparation for plantings of grasses/groundstorey vegetation.	Remove shrubs from PO4 and eastern side of PO6 (facing cycle path)	n/a	Hour	12	\$75.00	\$900.00	
			Elwood Teatree		Shrubby revegetation to be removed within 2m of the cycle path in preparation for plantings of grasses/groundstorey vegetation.	Remove shrubs from ET5 and ET6	n/a	Hour	16	\$75.00	\$1,200.00	
			Elwood Foreshore and Reserve		Shrubby revegetation to be removed within 2m of the cycle path in preparation for plantings of grasses/groundstorey vegetation.	Remove shrubs from ER10	n/a	Hour	6	\$75.00	\$450.00	
	Removal of dead vegetation		Elwood Canal	COPP Ecological contractor or council staff	Lop or remove trees so that they are made safe in EC2 and EC37.	Lop or remove trees so that they are made safe in EC2 and EC37.	n/a	Hour	2	\$80.00	\$160.00	
	Revegetation	Supplementary planting		Sandridge Foreshore	COPP Ecological contractor & community	Plant installation of low growing Coastal Dune Scrub species adjacent to cycle path.	Plant 200 tube stock at a rate of 4 plants per square metre in S13	Winter and Spring	Plant & Guard	200	\$10.00	\$2,000.00
				Point Ormond		Plant installation of low growing Coastal Dune Scrub species adjacent to cycle path. Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 400 tube stock at a rate of 4 plants per square metre in PO6 and along the edge of PO4 for cycle safety and 2600 tubestock at 4 plants per metre to infill PO4, 8, 9, 10 and 11. All plants are to be staked and guarded	Winter and Spring	Plant & Guard	3000	\$10.00	\$30,000.00
				Elwood Teatree		Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 3000 tube stock at a rate of 4 plants per metre to infill ET1-4. All plants are to be staked and guarded	Winter and Spring	Plant & Guard	3000	\$10.00	\$30,000.00
				Elwood Foreshore and Reserve		Plant installation of low growing Coastal Dune Scrub species adjacent to cycle path.	Plant 200 tube stock at a rate of 4 plants per square metre in ER10	Winter and Spring	Plant & Guard	200	\$10.00	\$2,000.00
											<b>\$201,874.50</b>	

Year	Management Actions		Applicable Zone(s)	Responsibility for Implementation	Annual Standard to be Achieved	Activity Description	Timing of activity	Units	QTY	Rate	Cost (ex GST)	
2	Bush Regeneration works	Weed Control	Princes Street Dunes	COPP Ecological contractor	Reduce coverage of Couch by 30%	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage	Spring / Summer	Hour	8	\$82.40	\$659.20	
			Pickles Street Dunes		Reduce coverage of Couch by 30% and cover of Sea Wheat Grass by 10% (by treating 20%)				64	\$82.40	\$5,273.60	
			West Beach		Reduce coverage of Couch by 30% and cover of Sea Wheat Grass by 10% (by treating 20%)				64	\$82.40	\$5,273.60	
			Elwood Teatree		Reduce coverage of Sea Wheat Grass by 30% (by treating 40%)				8	\$82.40	\$659.20	
		Fence construction	Point Ormond	COPP Ecological contractor or council staff	Enclose two locations in the Point Ormond Reserve (PO4 and PO9) to restrict pedestrian access and various damage to vegetation.	Construct a pine post and wire fence using white sightline wire as the top strand.	n/a	Lineal Metre	1110	\$41.75	\$46,343.61	
		Removal of Senescing or shrubby vegetation (CPED considerations and habitat improvement)	Sandridge Foreshore	COPP Ecological contractor or council staff	Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ. This will include reducing shrubbiness in particular around the toilet facilities.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from S8, S14, S18, S19 and S20	n/a	Hour	64	\$77.25	\$4,944.00	
			First Point		Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from FP1 and FP2	n/a	Hour	16	\$77.25	\$1,236.00	
			Elwood Teatree		Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from ET5-ET10	n/a	Hour	100	\$77.25	\$7,725.00	
		Revegetation	Supplementary planting	Sandridge Foreshore	COPP Ecological contractor & community	Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 2000 tubestock at 4 plants per metre to infill S8, S14, S18, S19 and S20. All plants are to be staked and guarded	Winter and Spring	Plant & Guard	2000	\$10.30	\$20,600.00
				First Point		Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 500 tube stock at a rate of 4 plants per square metre to infill FP1 and 2. All plants are to be staked and guarded			500	\$10.30	\$5,150.00
	Point Ormond			Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.		Plant 400 tube stock at a rate of 4 plants per square metre in PO6 and along the edge of PO4 for cycle safety and 2800 tubestock at 4 plants per metre to infill PO4, 8, 9, 10 and 11. All plants are to be staked and guarded	3000			\$10.30	\$30,900.00	
	Elwood Teatree			Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.		Plant 3000 tube stock at a rate of 4 plants per metre to infill ET5-10. All plants are to be staked and guarded	3000			\$10.30	\$30,900.00	
											<b>\$159,664.21</b>	

Year	Management Actions		Applicable Zone(s)	Responsibility for Implementation	Annual Standard to be Achieved	Activity Description	Timing of activity	Units	QTY	Rate	Cost (ex GST)	
3	Bush Regeneration works	Weed Control	Princes Street Dunes	COPP Ecological contractor	Reduce coverage of Couch by 30%	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage	Spring / Summer	Hour	8	\$84.87	\$678.96	
			Pickles Street Dunes		Reduce coverage of Couch by 30% and cover of Sea Wheat Grass by 10% (by treating 20%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage		Hour	64	\$84.87	\$5,431.68	
			West Beach		Reduce coverage of Couch by 30% and cover of Sea Wheat Grass by 10% (by treating 20%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage		Hour	64	\$84.87	\$5,431.68	
			Elwood Teatree		Reduce coverage of Sea Wheat Grass by 30% (by treating 40%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage		Hour	8	\$84.87	\$678.96	
		Fence construction	West Beach	COPP Ecological contractor or council staff	Enclose WB8 (foreshore dunes) to restrict pedestrian access and various damage to vegetation.	Construct a pine post and ringlock wire fence similar to those located on other foreshore NHA's.	n/a	Lineal Metre	402	\$57.29	\$23,029.78	
			Fraser Street Dunes		Enclose Fraser Street Dunes (FS1-3) to restrict pedestrian access and various damage to vegetation.		n/a	Lineal Metre	319	\$57.29	\$18,274.87	
			Sandridge Foreshore		Enclose S3 at Sandridge Foreshore to restrict pedestrian access and various damage to vegetation.		n/a	Lineal Metre	250	\$57.29	\$14,322.00	
			Middle Park Dunes		Enclose Middle Park Dunes to restrict pedestrian access and various damage to vegetation.		n/a	Lineal Metre	136	\$57.29	\$7,791.17	
		Removal of Senescing or shrubby vegetation (CPED considerations and habitat improvement)	Fraser Street Dunes	COPP Ecological contractor or council staff	Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ. This will include reducing shrubbiness in particular around the toilet facilities.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from FS2	n/a	Hour	32	\$79.57	\$2,546.24	
			MO Moran Reserve		Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ. This will include reducing shrubbiness in particular around the toilet facilities.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from MO4 and MO5	n/a	Hour	32	\$79.57	\$2,546.24	
			Lagoon Reserve		Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from LR2 and LR4-11	n/a	Hour	48	\$79.57	\$3,819.36	
		Revegetation	Supplementary planting	Fraser Street Dunes	COPP Ecological contractor and community	Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 1500 tubestock at 4 plants per metre to infill FS3. All plants are to be staked and guarded	Winter and Spring	Plant & Guard	1500	\$10.61	\$15,915.00
				MO Moran Reserve		Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 2000 tubestock at 4 plants per metre to infill MO4 and 5. All plants are to be staked and guarded			2000	\$10.61	\$21,220.00
				Point Ormond		Plant installation of Coast Teatree and understorey species to infill gaps and enhance habitat values.	Plant 1000 tubestock at 4 plants per metre to infill and extend around PO1, PO2 and PO3. All plants are to be staked and guarded			1000	\$10.61	\$10,610.00

Year	Management Actions		Applicable Zone(s)	Responsibility for Implementation	Annual Standard to be Achieved	Activity Description	Timing of activity	Units	QTY	Rate	Cost (ex GST)
3		Shade Planting	Lagoon Reserve	COPP Ecological contractor and community	Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 1500 tube stock at a rate of 4 plants per square metre to infill LR2 and LR4-11. All plants are to be staked and guarded	Winter and Spring	Plant & Guard	1500	\$10.61	\$15,915.00
			Sandridge Foreshore		Plant installation of three plantings suitable to provide shade in 10 years time, comprising Coastal Dune Scrub and Coast Banksia Woodland species.	Prepare site and plant 300 tube stock in three locations at a rate of 4 plants per square metre in open space for the provision of shade. All plants are to be staked and guarded including wind protection.			300	\$10.61	\$3,183.00
			First Point		One plant installation suitable to provide shade in 10 years time, comprising Coastal Dune Scrub and Coast Banksia Woodland species.	Prepare site and plant 100 tube stock in one location at a rate of 4 plants per square metre in open space for the provision of shade. All plants are to be staked and guarded, including wind protection.			100	\$10.61	\$1,061.00
			MO Moran Reserve		Plant installation of four plantings suitable to provide shade in 10 years time, comprising Coastal Dune Scrub and Coast Banksia Woodland species.	Prepare site and plant 400 tube stock in four locations at a rate of 4 plants per square metre in open space for the provision of shade. All plants are to be staked and guarded including wind protection.			400	\$10.61	\$4,244.00
			Point Ormond		Plant installation of three plantings suitable to provide shade in 10 years time, comprising Coastal Dune Scrub and Coast Banksia Woodland species.	Prepare site and plant 300 tube stock in three locations at a rate of 3 plants per square metre in open space for the provision of shade. All plants are to be staked and guarded including wind protection.			300	\$10.61	\$3,183.00
			Elwood Foreshore and Reserve		Plant installation of four plantings suitable to provide shade in 10 years time, comprising Coastal Dune Scrub and Coast Banksia Woodland species.	Prepare site and plant 400 tube stock in four locations at a rate of 4 plants per square metre in open space for the provision of shade. All plants are to be staked and guarded including wind protection.			400	\$10.61	\$4,244.00
			Lagoon Reserve		Plant installation of three plantings suitable to provide shade in 10 years time, comprising Coastal Dune Scrub and Coast Banksia Woodland species.	Prepare site and plant 300 tube stock in three locations at a rate of 4 plants per square metre in open space for the provision of shade. All plants are to be staked and guarded including wind protection.			300	\$10.61	\$3,183.00

Year	Management Actions		Applicable Zone(s)	Responsibility for Implementation	Annual Standard to be Achieved	Activity Description	Timing of activity	Units	QTY	Rate	Cost (ex GST)
4	Bush Regeneration works	Weed Control	Princes Street Dunes	COPP Ecological contractor	Reduce coverage of Couch to <2%	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage	Spring / Summer	Hour	4	\$87.42	\$349.68
			Pickles Street Dunes		Reduce coverage of Couch to <2% and cover of Sea Wheat Grass by 10% (by treating 20%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage			64	\$87.42	\$5,594.88
			West Beach		Reduce coverage of Couch to <2% and cover of Sea Wheat Grass by 10% (by treating 20%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage			64	\$87.42	\$5,594.88
			Elwood Teatree		Reduce coverage of Sea Wheat Grass to <2%	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage			4	\$87.42	\$349.68
		Barrier construction	Canterbury Road Urban Forest	COPP Ecological contractor or council staff	Erect barrier along Canterbury Road with strategically placed entrance paths suitable for deterring pedestrian access to vegetated areas.	Construct a low wooden post barrier with timber or thick rope across top. Or similar.	n/a	Lineal Metre	1294	\$50.00	\$64,700.00
			Elwood Foreshore and Reserve		Erect barrier along ER 20 and ER24 with strategically placed entrance paths suitable for deterring pedestrian access to vegetated areas.	Construct a low wooden post barrier with timber or thick rope across top. Or similar.	n/a	Lineal Metre	290	\$50.00	\$14,500.00
			Sandridge Foreshore		Erect barrier within S13 at strategic locations to deterring pedestrian crossings across vegetated areas.	Extend the low wooden double layered wooden sleeper style barrier like those that already exist in S13.	n/a	Lineal Metre	70	\$50.00	\$3,500.00
			MO Moran Reserve		Erect barrier within MO 8 at strategic locations to deterring pedestrian crossings across vegetated areas.	Construct a low wooden double layered wooden sleeper style barrier like those within Port Melbourne Foreshore (S13) in strategic locations where people are naturally crossing.	n/a	Lineal Metre	70	\$50.00	\$3,500.00
			Point Ormond Reserve		Erect barrier within PO 6 at strategic locations to deterring pedestrian crossings across vegetated areas.	Construct a low wooden double layered wooden sleeper style barrier like those within Port Melbourne Foreshore (S13) in strategic locations where people are naturally crossing.	n/a	Lineal Metre	100	\$50.00	\$5,000.00
		Removal of Senescing or shrubby vegetation (CPED considerations and habitat improvement)	Sandridge Foreshore	COPP Ecological contractor or council staff	Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ. This will include reducing shrubbiness in particular around the toilet facilities.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from S4 and S5	n/a	Hour	12	\$81.96	\$983.52
			Elwood Foreshore and Reserve		Senescing vegetation removed. Shrubby vegetation reduced so that sight lines are possible through VMZ. This will include reducing shrubbiness in particular around the toilet facilities.	Removal of any senescing shrubs and/or reduction in shrubby vegetation from ER 1, 2, 3, 4, 6, 24, 26, 32, 33 and 35	n/a	Hour	80	\$81.96	\$6,556.80

Year	Management Actions		Applicable Zone(s)	Responsibility for Implementation	Annual Standard to be Achieved	Activity Description	Timing of activity	Units	QTY	Rate	Cost (ex GST)
4	Revegetation	Supplementary planting	Sandridge Foreshore	COPP Ecological contractor & community	Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 400 tubestock at 4 plants per metre to infill S4 and 5. All plants are to be staked and guarded	Winter and Spring	Plant & Guard	400	\$10.93	\$4,372.00
			Elwood Foreshore and Reserve		Plant installation of low growing Coast Banksia Woodland species to infill gaps and enhance habitat values.	Plant 5000 tubestock at 4 plants per metre to infill from ER 1, 2, 3, 4, 6, 24, 26, 32, 33 and 35. All plants are to be staked and guarded			5000	\$10.93	\$54,650.00
											<b>\$169,651.44</b>

Year	Management Actions		Applicable Zone(s)	Responsibility for Implementation	Annual Standard to be Achieved	Activity Description	Timing of activity	Units	QTY	Rate	Cost (ex GST)	
5	Bush Regeneration works	Weed Control	Princes Street Dunes	COPP Ecological contractor	Maintain coverage of Couch at <2%	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage	Spring / Summer	Hour	4	\$90.04	\$360.16	
			Pickles Street Dunes		Maintain coverage of Couch at <2% and reduce cover of Sea Wheat Grass by 10% (by treating 20%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage		Hour	64	\$90.04	\$5,762.56	
			West Beach		Maintain coverage of Couch at <2% and reduce cover of Sea Wheat Grass by 10% (by treating 20%)	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage		Hour	64	\$90.04	\$5,762.56	
			Elwood Teatree		Maintain coverage of Sea Wheat Grass at <2%	Control by methods of hand removal, weed wiper or spot spraying with minimal off target damage		Hour	4	\$90.04	\$360.16	
		Fence construction	MO Moran Reserve	COPP Ecological contractor	Enclose the existing patches MO2, 3, 4, 5, 6 and 7 as well as infill and extension planting areas to restrict pedestrian access and various damage to vegetation.	Construct a pine post and wire fence using white sightline wire as the top strand.	n/a	Lineal Metre	637	\$45.59	\$29,037.65	
	Revegetation	Supplementary planting	MO Moran Reserve	COPP Ecological contractor & community	Plant installation of Coast Banksia Woodland species to expand current revegetation areas, to infill gaps and enhance habitat values.	Plant 5000 tubestock at 4 plants per metre to expand current revegetation areas. All plants are to be staked and guarded	Winter and Spring	Plant & Guard	5000	\$11.25	\$56,250.00	
			HR Johnson Reserve		Plant installation of high diversity understorey Grassy Woodland species to increase diversity, provide an example and enhance habitat values.	Plant 400 tubestock at 4 plants per metre to infill S4 and 5. All plants are to be staked and guarded			400	\$11.25	\$4,500.00	
			Pickles Street Dunes		Plant installation of low growing Coastal Dune Grassland species to infill gaps and enhance habitat values.	Plant 500 tubestock at 4 plants per metre to infill the extension area of PRD3 and PRD4. All plants are to be staked and guarded			500	\$11.25	\$5,625.00	
												<b>\$107,658.09</b>



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## **APPENDIX 1. – VEGETATION MANAGEMENT PLANS FOR NATURAL HERITAGE AREAS**

## 1. SANDRIDGE FORESHORE

**Location:** Todd Road, Port Melbourne. To the east of the Life Saving Victoria building through to the walking path opposite the end of Barak Road, Port Melbourne.

**Description:**

The Sandridge Foreshore area comprises a stretch of primary and secondary dunes in a highly altered state. The beachfront area is largely devoid of vegetation with the exception of a number of small patches of native vegetation which are establishing on the eastern side of the groynes and at the westernmost end of the beach. The site comprises approximately 22 patches of revegetated vegetation that approximate Coastal Dune Grassland Coastal Dune Scrub and Coast Banksia Woodland.

The beach is cleaned regularly.

This area contains many public use facilities including a men's and women's toilet block to the west of the Sandridge Beach carpark that contain showers and change rooms and a smaller amenities block to the east of the carpark. There are also BBQ facilities, and tables adjacent to the western-most toilet blocks, to the east of the carpark and also in the eastern portion of this reserve. The Sandridge Lifesaving Club is also located within the same cluster of buildings. A playground facility is also located centrally within the reserve.

There is planted vegetation around the facilities, facing Todd Road.

There are also numerous pathways and paved areas throughout the reserve, chiefly two pathways that run parallel to the beach, one for pedestrians and the other for cyclists. Intermittently along the foreshore between the two paths are a number of seats as well as water points and showers.

**NHA Priority:** Higher priority NHA

### **Management Issues within this NHA**

**General Issues:**

- Backpackers staying overnight, campers, homeless (rubbish, vegetation impact, human waste)
- Safety – has been crime in the area and sightlines are important
- Rubbish, including that beach frequently used by culturally and linguistically diverse communities for whom a culture involving rubbish disposal may not be so well entrained
- Erosion of paths/revegetation beds with rain/high tide
- Lack of shade in some locations

**Issues Associated with Vegetation Management:**

- Shrubbiness and Rhagodia dominating
- Trampling and erosion
- Senescing vegetation
- Low diversity vegetation
- Sightlines
- Vegetation that requires pruning along paths

### **Activities to Improve Reserve Management**

**General activities:**

- Rationing of paths

- Reduce trampling via the introduction of barriers
- Rubbish management
- Toilets – install or redesign toilets that will be safer for night time use.

**Vegetation management:**

- Diversity
- Shade
- Reduction in shrub layer
- Increase and join fragmented garden beds
- Fencing, particularly of S3
- Plantings for shade/shelter
- Reduction in shrub layer (CPED)

**Management priorities and activities:**

There are a mixture of vegetation management activities to be undertaken within the Sandridge Foreshore NHA.

The highest priority issue is introducing some fencing around S3 to prevent further trampling and loss of vegetation.

As this reserve is relatively wide and has quite a high proportion of open space there is an opportunity to increase the native vegetation and potentially develop a cohesive and integrated area of vegetation and habitat. Whilst this is the case, this objective would need to be balanced against other council and community objectives regarding opportunities for recreation, safety and access.

On this basis, the recommendations contained in this plan represent a mid–point between the current status and working some way towards what may be the ideal from an ecological perspective.

This reserve should become a focus for expanding and slowly diversifying the plantings within the VMZ's. Particularly associated with S14, S19 and S20. Also for the considered provision of more shaded areas.

A general reduction in shrubbiness is required across the majority of the VMZ's in this reserve and in some cases, particularly S4, S5, S8 and S19 removal and replacement of senescing vegetation should be undertaken as a priority.

Barbeque areas, chairs and tables are provided but for some of these facilities there is a general lack of shade. This could be improved, and plantings for shade and wind protection are therefore suggested as a priority in this reserve.

There is a high level of use of some portions of this reserve by itinerant travellers who mainly focus on the toilets, water points near the toilets and the barbeques and tables in the western portion of the reserve. The vegetation particularly to the west of the toilet block in particular is affected by trampling.

It is suggested that better fencing be provided along the Todd Road edge to deter human impacts. Also that a revision of the toilet facilities be undertaken, as discussed in Section 4.1.

Table 8. Sandridge Foreshore VMZ descriptions and future management actions

Vegetation Management Zone	Description	EVCs	Management Issues	Management Actions	Priority
S1	A revegetation bed which has a retaining wall along its southern side fronting a barbeque area. Contains a mix of shrubs and tussocky grasses.	Coastal Dune Scrub	Gaps in vegetation	Infill the gaps	Low-medium
S2	A small planting comprising just two species. There is a small amount of Oxalis present.	Coastal Dune Scrub	Weed management Lack of diversity	Treat Oxalis Maintain this VMZ as required	Low
S3	A small natural remnant comprising Coast Dune Grassland.	Coastal Dune Grassland	Trampling Weeds (incl. Galenia)	Fence this VMZ as a priority	High
S4	A planting to the north of the mens toilet block and an undercover area approximating Coastal Dune Scrub.	Coast Banksia Woodland	Rhagodia dominating	Reduce Rhagodia cover	Low-medium
S5	A planting to the north of the womens toilet block and Sandridge Lifesaving Club approximating Coastal Dune Scrub/Banksia Woodland including some large Drooping Sheoak.	Coast Banksia Woodland	Rhagodia dominating Senescing vegetation Gaps in vegetation	Continue to monitor shrub cover and reduce as required	Medium
S6	An area of planted vegetation comprising Coast Banksia over a shrubby understorey. The shrubs have been managed by pruning in the past. This VMZ is located between Todd Road and the Sandridge Beach Carpark and it is important that sightlines for police patrols are maintained.	Coastal Dune Scrub/Coast Banksia Woodland	Rhagodia dominating Maintenance of sightlines	Reduce shrubbiness Replant using species representative of Coast Banksia Woodland	Medium
S7	This is a small area on the east side of the Sandridge Beach Car Park comprising two small patches of revegetation. The species composition of this VMZ is higher than many other patches.	Coastal Dune Scrub	No significant issues	Maintain as required	Low
S8	This planting is located between one of the barbeque areas and Todd Road. It is very, very shrubby and includes some senescing vegetation. Although there are some medium-aged Coast Banksias close to the road side, this patch is missing taller overstorey species.	Coast Banksia Woodland	Rhagodia dominating Maintenance of sightlines Senescing vegetation Gaps in vegetation Missing overstorey	Reduce shrubbiness and remove senescing vegetation Replant using species representative of Coast Banksia Woodland including overstorey	Medium

Vegetation Management Zone	Description	EVCs	Management Issues	Management Actions	Priority
S9	This planting contains some mature Moonah and little in the way of mid-storey beneath, although it has been combined with an area that has been more recently planted in the western portion.	Coastal Dune Scrub/ Coast Banksia Woodland	No significant issues	Maintain as required	Low-medium
S10	This patch comprises a small relatively linear planting dominated by Prickly Spear-Grass	-	No significant issues	Maintain as required	Low-medium
S11	A linear patch of recently planted grasses and tussocks to the west of a concrete path.	-	No significant issues	Maintain as required	Low-medium
S12	A small patch of vegetation comprising of a few shrubs and some limited understorey planting.	Coastal Dune Scrub/ Coast Banksia Woodland	Fragmented	Link with S14	Medium
S13A, 13B, 13C, 13D, 13E	Segments of a linear series of plantings between the cycle path and pedestrian path. Intersected by seats and water points.	Coastal Dune Grassland/Coastal Dune Scrub	Tracks through Pruning required particularly in 9?	Replace shrubby vegetation with lower maintenance vegetation for pathway edges over time	Medium-high
S14	A patch of shrubby vegetation that approximates Coastal Dune Scrub. It is irregularly shaped and has a number of gaps.	Coastal Dune Scrub/ Coast Banksia Woodland	Fragmented Gaps in vegetation Rhagodia dominating Maintenance of sightlines Senescing vegetation CPED considerations near toilet	Reduce shrubbiness and remove senescing vegetation and reduce vegetation adjacent to toilet Replant using species representative of Coast Banksia Woodland including overstorey	High
S15	This patch is dominated by several large Moonah along the Todd road edge. There is little in the way of understorey.	Coastal Dune Scrub/ Coast Banksia Woodland	Fragmented Gaps in vegetation	Reduce vegetation adjacent to toilet Supplementary plantings using species representative of Coast Banksia Woodland	High
S16	This patch comprises a small relatively linear planting dominated by Prickly Spear-Grass	-	No significant issues	Maintain as required	Low

Vegetation Management Zone	Description	EVCs	Management Issues	Management Actions	Priority
S17	This comprises a recent planting that surrounds a new playground. Austral Hollyhock has regenerated naturally in this area.	Coastal Dune Scrub/ Coast Banksia Woodland	Suitable plants around playground	Maintain as required	Medium
S18	A patch of shrubby vegetation that approximates Coastal Dune Scrub. It is irregularly shaped and has a number of gaps.	Coastal Dune Scrub/ Coast Banksia Woodland	Fragmented Gaps in vegetation Maintenance of sightlines	Convert slowly to Coast Banksia Woodland on hinterland side	Medium-high
S19	A patch of shrubby vegetation that approximates Coastal Dune Scrub. It is irregularly shaped and has a number of gaps that should be reduced. <u>This patch in particular has a lot of senescing vegetation.</u>	Coastal Dune Scrub/ Coast Banksia Woodland	Fragmented Gaps in vegetation Maintenance of sightlines Senescing vegetation	Convert slowly to Coast Banksia Woodland on hinterland side	Medium-high
S20	Shrubby vegetation	Coastal Dune Scrub/ Coast Banksia Woodland	Gaps in vegetation Maintenance of sightlines Senescing vegetation	Convert slowly to Coast Banksia Woodland on hinterland side. Infill central gap to reduce edge effects.	Medium-high
S21	A small triangular patch of shrubby vegetation that sits between the two paths.	Coastal Dune Grassland/Coastal Dune Scrub	No significant issues	Maintain as required	Low
S22	A small patch of recently planted vegetation that sits just to the west of a barbeque area and S20.	Coastal Dune Scrub	No significant issues	Maintain as required	Low



S1 looking east



S2 looking south across garden bed



S3 looking east



S4 looking west







S5 looking east



S5 looking west



 <p>S6</p>	 <p>S7</p>
 <p>S8</p>	 <p>S8</p>
 <p>S9</p>	 <p>S10</p>
 <p>S11</p>	 <p>S12</p>



 <p>01/04/2015 12:47</p>	
S13	S13
 <p>01/04/2015 12:35</p>	 <p>01/04/2015 12:48</p>
S14	S14
 <p>01/04/2015 12:52</p>	 <p>01/04/2015 13:01</p>
S15	S16
 <p>13/06/2015 07:45</p>	 <p>01/04/2015 13:01</p>
S17	S18









	
<p>S19</p>	<p>S19</p>
	
<p>S20</p>	<p>S20</p>
	
<p>S21</p>	<p>S22</p>



Figure 15. Vegetation Management Zones at Sandridge Foreshore





Map 1a.  
Sandridge Foreshore

**Legend**

- Parcel boundaries
- Vegetation Management Zones
- BBQ
- Playground
- Toilet

**Proposed Management Actions**

- Shrub reduction and infill plantings
- Reduce shrubbiness/serotinous vegetation and replant
- Supplementary planting zone
- Cycle friendly replacement plantings
- Proposed barrier

**Details**

Mapping by: Colin Broughton & Karen McGregor  
 Date: 27/05/2015  
 Aerial photography from Google Earth Pro.  
 Base map data Copyright © The State of Victoria,  
 Department of Environment and Primary Industries

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 0 40 80m  
 Scale 1:1,800 (Page size A3)

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Table 9. Vegetation List for Sandridge Foreshore

Origin	Scientific Name	Common Name	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
	<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle			✓		✓	✓	✓	✓				
	<i>Allocasuarina verticillata</i>	Drooping Sheoak					✓		✓	✓				✓
	<i>Alyxia buxifolia</i>	Sea Box												
*	<i>Arctotheca calendula</i>	Capeweed												
	<i>Atriplex cinerea</i>	Coast Saltbush			✓		✓			✓				
	<i>Atriplex paludosa</i> spp. <i>paludosa</i>	Marsh Saltbush						✓		✓				
	<i>Atriplex semibaccata</i>	Berry Saltbush								✓	✓			
	<i>Austrostipa mollis</i>	Spear Grass												
	<i>Austrostipa</i> spp.	Spear Grass												
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	✓			✓	✓	✓	✓		✓	✓	✓	✓
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia					✓	✓		✓	✓			
	<i>Banksia marginata</i>	Silver Banksia					✓							
*	<i>Bromus catharticus</i>	Prairie Grass				✓								
	<i>Bursaria spinosa</i>	Sweet Bursaria												
	<i>Carpobrotus rossii</i>	Karkalla												
	<i>Cassytha pubescens</i>	Dodder					✓							
	<i>Correa alba</i>	White Correa	✓			✓	✓	✓						
	<i>Correa reflexa</i>	Common Correa												
*	<i>Cynodon dactylon</i>	Couch			✓									
	<i>Dianella admixta</i>	Black-anther Flax-lily												
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily											✓	
	<i>Dianella longifolia</i> s.l.	Pale Flax-lily									✓		☐	
	<i>Dichelachne crinita</i>	Long-hair Plume-grass										✓		
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	Rounded Noon-flower												
	<i>Distichlis distichophylla</i>	Australian Salt-grass							✓					
	<i>Einadia nutans</i>	Nodding Saltbush												
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush									✓			
*	<i>Erharta erecta</i> var. <i>erecta</i>	Panic Veldt-grass												
	<i>Eucalyptus</i> spp.	Eucalyptus				✓								
	<i>Ficinia nodosa</i>	Knobby Club-sedge			✓	✓	✓	✓	✓		✓	✓	✓	
	<i>Gahnia filim</i>	Chaffy Saw-sedge											✓	
*	<i>Galenia pubescens</i>	Coast Galenia			✓									

Origin	Scientific Name	Common Name	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
#	<i>Hakea drupacea</i>	Sweet Hakea												
	<i>Helichrysum luteoalbum</i>	Jersey Cudweed												
*	<i>Hypochaeris radicata</i>	Flatweed			✓									
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush				✓							✓	
	<i>Leptospermum laevigatum</i>	Coast Tea-tree			✓		✓	✓		✓				✓
	<i>Leucophyta brownii</i>	Cushion Bush	✓						✓	✓	✓		✓	
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓			✓	✓	✓					✓	
	<i>Malva australis</i>	Native Hollyhock	✓											
*	<i>Malva parviflora</i>	Small-flower Mallow												
#	<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Giant Honey-myrtle					✓				✓			
	<i>Melaleuca lanceolata</i>	Moonah					✓			✓				
	<i>Myoporum insulare</i>	Common Boobialla						✓	✓	✓				
	<i>Myoporum parvifolium</i>	Creeping Myoporum									✓			
	<i>Myoporum viscosum</i>	Sticky Boobialla												
	<i>Olearia axillaris</i>	Coastal Daisy-bush												
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush												
*	<i>Oxalis</i> spp.	Wood Sorrel		✓										
	<i>Ozothamnus turbinatus</i>	Coast Everlasting					✓							
	<i>Pelargonium australe</i>	Austral Stork's-bill							✓		✓			
	<i>Poa labillardieri</i>	Common Tussock-grass	✓	✓										
	<i>Poa poiiformis</i>	Coast Tussock-grass	✓			✓							✓	
	<i>Pomaderris paniculosa</i>	Coast Pomaderris												
	<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	Seaberry Saltbush	✓			✓	✓	✓	✓	✓	✓		✓	✓
	<i>Rhagodia spinescens</i>	Hedge Saltbush					✓							
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass												
	<i>Rytidosperma racemosum</i>	Slender Wallaby-grass												
	<i>Rytidosperma</i> spp.	Wallaby Grass												
	<i>Solanum aviculare</i>	Kangaroo Apple												
	<i>Solanum laciniatum</i>	Large Kangaroo Apple								✓				
*	<i>Sonchus oleraceus</i>	Common Sow-thistle												
	<i>Spinifex sericeus</i>	Hairy Spinifex			✓			✓	✓					
	<i>Tetragonia implexicoma</i>	Bower Spinach												
	<i>Themeda triandra</i>	Kangaroo Grass												
	<i>Wahlenbergia</i> spp.	Bluebell												

Origin	Scientific Name	Common Name	S13A	S13B	S13C	S13D	S13E	S14	S15	S16	S17	S18	S19	S20	S21	S22
	<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle						✓			✓	✓	✓	✓		
	<i>Allocasuarina verticillata</i>	Drooping Sheoak			✓			✓			✓	✓	✓	✓		
	<i>Alyxia buxifolia</i>	Sea Box											✓			
*	<i>Arctotheca calendula</i>	Capeweed					✓									
	<i>Atriplex cinerea</i>	Coast Saltbush		✓			✓	✓				✓		✓	✓	
	<i>Atriplex paludosa</i> spp. <i>paludosa</i>	Marsh Saltbush									✓					
	<i>Atriplex semibaccata</i>	Berry Saltbush						✓			✓		✓	✓		
	<i>Austrostipa mollis</i>	Spear Grass								✓						
	<i>Austrostipa</i> spp.	Spear Grass		✓						✓		✓	✓	✓		
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia						✓		✓	✓	✓	✓	✓		✓
	<i>Banksia marginata</i>	Silver Banksia						✓					✓	✓		
*	<i>Bromus catharticus</i>	Prairie Grass														
	<i>Bursaria spinosa</i>	Sweet Bursaria											✓			
	<i>Carpobrotus rossii</i>	Karkalla													✓	
	<i>Cassytha pubescens</i>	Dodder														
	<i>Correa alba</i>	White Correa			✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
	<i>Correa reflexa</i>	Common Correa											✓			
*	<i>Cynodon dactylon</i>	Couch					✓									
	<i>Dianella admixta</i>	Black-anther Flax-lily			✓											
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily		✓	✓		✓	✓	✓			✓	✓	✓		✓
	<i>Dianella longifolia</i> s.l.	Pale Flax-lily						✓						✓		✓
	<i>Dichelachne crinita</i>	Long-hair Plume-grass						✓		✓						
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	Rounded Noon-flower		✓			✓	✓	✓		✓			✓		
	<i>Distichlis distichophylla</i>	Australian Salt-grass		✓			✓						✓			
	<i>Einadia nutans</i>	Nodding Saltbush														
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush												✓		
*	<i>Erharta erecta</i> var. <i>erecta</i>	Panic Veldt-grass														
	<i>Eucalyptus</i> spp.	Eucalyptus														
	<i>Ficinia nodosa</i>	Knobby Club-sedge	✓	✓	✓		✓		✓					✓		✓
	<i>Gahnia filim</i>	Chaffy Saw-sedge														
*	<i>Galenia pubescens</i>	Coast Galenia					✓									
#	<i>Hakea drupacea</i>	Sweet Hakea							✓					✓		

Origin	Scientific Name	Common Name	S13A	S13B	S13C	S13D	S13E	S14	S15	S16	S17	S18	S19	S20	S21	S22
	<i>Helichrysum luteoalbum</i>	Jersey Cudweed														
*	<i>Hypochaeris radicata</i>	Flatweed														
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush		✓				✓								
	<i>Leptospermum laevigatum</i>	Coast Tea-tree						✓	✓		✓	✓	✓			
	<i>Leucophyta brownii</i>	Cushion Bush	✓	✓	✓	✓	✓						✓	✓	✓	
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush		✓	✓							✓	✓			
	<i>Malva australis</i>	Native Hollyhock									✓			✓		
*	<i>Malva parviflora</i>	Small-flower Mallow		✓			✓							✓		
#	<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Giant Honey-myrtle														
	<i>Melaleuca lanceolata</i>	Moonah							✓				✓			
	<i>Myoporum insulare</i>	Common Boobialla			✓	✓					✓	✓	✓	✓	✓	
	<i>Myoporum parvifolium</i>	Creeping Myoporum												✓		
	<i>Myoporum viscosum</i>	Sticky Boobialla										✓				
	<i>Olearia axillaris</i>	Coastal Daisy-bush										✓	✓	✓		
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush												✓		
*	<i>Oxalis</i> spp.	Wood Sorrel														
	<i>Ozothamnus turbinatus</i>	Coast Everlasting														
	<i>Pelargonium australe</i>	Austral Stork's-bill														
	<i>Poa labillardieri</i>	Common Tussock-grass						✓	✓	✓			✓	✓		
	<i>Poa poiformis</i>	Coast Tussock-grass		✓	✓		✓	✓								
	<i>Pomaderris paniculosa</i>	Coast Pomaderris						✓				✓	✓	✓		
	<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	Seaberry Saltbush	✓					✓			✓	✓		✓		
	<i>Rhagodia spinescens</i>	Hedge Saltbush														
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass											✓	✓		
	<i>Rytidosperma racemosum</i>	Slender Wallaby-grass						✓								
	<i>Rytidosperma</i> spp.	Wallaby Grass						✓					✓			
	<i>Solanum aviculare</i>	Kangaroo Apple														
	<i>Solanum laciniatum</i>	Large Kangaroo Apple						✓								
*	<i>Sonchus oleraceus</i>	Common Sow-thistle		✓												
	<i>Spinifex sericeus</i>	Hairy Spinifex		✓			✓									
	<i>Tetragonia implexicoma</i>	Bower Spinach		✓	✓	✓	✓	✓	✓					✓		
	<i>Themeda triandra</i>	Kangaroo Grass						✓								
	<i>Wahlenbergia</i> spp.	Bluebell														



## 2. FIRST POINT

**Location:** Todd Road, Port Melbourne. From the walking path opposite the end of Barak Road to Beach Road, Port Melbourne and on the south side of the large apartment complex to the old Princes Pier.

**Description:**

The First Point Foreshore comprises a variety of landscapes including a short stretch of primary and secondary dunes, some garden areas associated with an apartment complex along the Todd Road frontage. Also a landscaped area to the south of the apartment complex on the beachward side. Each of these environments require a slightly different management approach.

The dune/hinterdune area includes five patches of planted native vegetation that approximate Coastal Dune Scrub and Coast Banksia Woodland and mainly extend around the edges of this roughly triangle-shaped reserve. In most cases these patches are separated either by formal or informal paths.

The garden area that faces Todd Road is managed by the City of Port Phillip as part of an agreement that followed on after the apartment development was completed and the developer handed certain revegetated areas over to council. The area is managed with multiple objectives in mind. These include maintaining sightlines for cars exiting an underground carpark and including species that are cohesive with the look/feel of the development as well as aiming to have a majority of indigenous plants that provide habitat value. A small area has also been given over to a garden of South African plants that is maintained by a resident.

The garden area that faces the foreshore to the south of the apartments includes a terraced landscaping arrangement and low-growing indigenous plants. Key considerations here are the provision of suitable amenity plantings for residents, as well as maintenance of indigenous plantings with habitat values. There is some seating at the base of the garden area and pathways throughout which lead to resident's gates.

There are two main pathways within the reserve: a gravel path that runs diagonally across the reserve and a concrete walkway around the edge of the foreshore.

**NHA Priority:** Higher priority NHA

**Management Issues within this NHA**

**General Issues:**

- Rubbish including that the beach is used by culturally and linguistically diverse communities for whom a rubbish disposal culture may not be so well entrenched
- Erosion of paths/revegetation beds with rain/high tide
- Lack of shade in some locations
- Informal paths through vegetation

**Issues Associated with Vegetation Management:**

- Some gaps in planting areas
- Senescing vegetation
- Low diversity vegetation
- Sightlines
- Vegetation that requires pruning along paths

### **Activities to Improve Reserve Management**

#### **General activities:**

- Reduce trampling via the introduction of barriers
- Rubbish bins

#### **Vegetation management:**

- Shade
- Reduction in shrub layer
- Increase and join fragmented garden beds
- Aim to increase diversity

#### **Management priorities and activities:**

Like Sandridge Foreshore, this reserve is relatively wide and has quite a high proportion of open space. There is an opportunity to increase the native vegetation and potentially develop a cohesive and integrated area of vegetation and habitat. Whilst this is the case, this objective would need to be balanced against other council and community objectives regarding opportunities for recreation, safety and access.

On this basis, the recommendations contained in this plan represent a mid-point between the current status and working some way towards what may be the ideal from an ecological perspective.

This reserve should become a focus for expanding and slowly diversifying the plantings within the VMZ's. Initial works would be infilling the space within FP3, linking FP5 and FP6 and reducing the gap between FP1 and FP2.

Table 10. First Point VMZ descriptions and future management actions

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
FP1	This VMZ dominated by Drooping Sheoak with a relatively sparse understorey, becoming shrubbier closer to Todd Road.	Coastal Dune Scrub	Maintenance of sightlines Gaps particularly under Sheoaks	Reduce shrubby vegetation, closer to Todd Road. Expand to link with FP2.	Medium
FP2	This is a smaller area to the east of FP1. It is planted with particularly shrubby Coastal Dune Scrub vegetation and has an edge of Prickly Spear Grass along its northern edge.  This area formerly had high levels of Soursop * <i>Oxalis pes-caprae</i> and still suffers from higher than average grassy and herbaceous weed incursions.	Coastal Dune Scrub	Maintenance of sightlines / shrubby vegetation Grassy and herbaceous weeds	Reduce shrubby vegetation. Expand to link with FP1. Manage weeds as required Mulch	Medium
FP3	This planting located in the north eastern portion of the NHA, comprises a long garden bed curves to the east to run along a parking area associated with the apartments.  It contains a mix of vegetation including shrubs and grasses and is not overly shrubby. Some residents have planted Olives along the eastern edge of this VMZ but they are not a priority for the council for removal.	Coast Banksia Woodland	No significant issues	Infill the lawned area in the centre of FP3. Maintain this VMZ as necessary	Low
FP4	A garden area containing low-growing indigenous vegetation managed with multiple objectives in mind. These include maintaining sightlines for cars exiting an underground carpark and including species that are cohesive with the look of the development as well as habitat value. A small area contains some exotic plants that are maintained by a resident.	Coastal Dune Scrub/ Coast Banksia Woodland	Species which require pruning ( <i>Correa alba</i> ) located in eastern portion	Replace high maintenance species that require pruning Maintain this VMZ as necessary	Medium-high
FP5	This is a revegetated patch of Coastal Dune Scrub that is in a very exposed location. It is suffering from wind exposure and contains some senescing and dead shrubs.	Coast Banksia Woodland	Senescing vegetation	Replace senescing vegetation Extend planting to incorporate FP6	Medium
FP6	A very small and isolated patch comprising of some young Drooping Sheoak with some small shrubs underneath. This planting is suffering from exposure.	-	Fragmentation	Increase resilience by linking to FP5	Medium
FP7	A terraced garden area featuring low-growing indigenous plants. There is some seating at the base of the garden area and pathways throughout which lead to resident's back gates. A resident also maintains a small area of exotic garden within this VMZ.	Coastal Dune Grassland/Coastal Dune Scrub	Species which require pruning ( <i>Correa alba</i> ) located in western portion	Replace high maintenance species that require pruning	Medium-high



Figure 16. Vegetation Management Zones at First Point



<p>FP1</p>	<p>FP1</p>
<p>FP2</p>	
<p>FP3</p>	<p>FP3</p>

<p>FP4</p>  <p>01/04/2015 14:42</p>	<p>FP5</p>
<p>FP6</p>  <p>01/04/2015 14:47</p>	 <p>01/04/2015 14:56</p>
<p>FP7 looking east from western end</p>	<p>FP7 looking east</p>

Table 11. Vegetation List for First Point

Origin	Scientific Name	Common Name	FP1	FP2	FP3	FP4	FP5	FP6	FP7	FP8
	<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle			✓		✓			
	<i>Allocasuarina littoralis</i>	Black Sheoak			✓					
	<i>Allocasuarina verticillata</i>	Drooping Sheoak	✓	✓	✓		✓	✓	✓	
	<i>Atriplex cinerea</i>	Coast Saltbush		✓	✓		✓		✓	
	<i>Austrostipa</i> spp.	Spear Grass								
	<i>Austrostipa flavescens</i>	Coast Spear-grass				✓				
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	✓	✓	✓	✓	✓	✓	✓	✓
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia	✓	✓						
	<i>Banksia marginata</i>	Silver Banksia							✓	
	<i>Carpobrotus rossii</i>	Karkalla			✓	✓				
	<i>Correa alba</i>	White Correa	✓		✓	✓	✓		✓	
	<i>Correa reflexa</i>	Common Correa	✓						✓	
*	<i>Cynodon dactylon</i>	Couch								
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily							✓	
	<i>Dianella longifolia</i> s.l.	Pale Flax-lily	✓	✓	✓	✓			✓	
	<i>Dichelachne crinita</i>	Long-hair Plume-grass				✓				
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	Rounded Noon-flower	✓						✓	
	<i>Distichlis distichophylla</i>	Australian Salt-grass								
	<i>Ficinia nodosa</i>	Knobby Club-sedge	✓							
*	<i>Galenia pubescens</i>	Coast Galenia								
	<i>Goodenia ovata</i>	Hop Goodenia			✓					
	<i>Leptospermum laevigatum</i>	Coast Tea-tree								
	<i>Leucophyta brownii</i>	Cushion Bush				✓	✓		✓	
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓	✓	✓		✓		✓	
	<i>Melaleuca ericifolia</i>	Swamp Paperbark								
	<i>Melaleuca styphelioides</i>	Prickly-leaved Paperbark		✓						
	<i>Myoporum insulare</i>	Common Boobialla	✓		✓					

Origin	Scientific Name	Common Name	FP1	FP2	FP3	FP4	FP5	FP6	FP7	FP8
	<i>Myoporum parvifolium</i>	Creeping Myoporum				✓				
*	<i>Olea europaea</i>	Olive			✓					
	<i>Olearia axillaris</i>	Coastal Daisy-bush	✓							
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush	✓							
	<i>Pennisetum clandestinum</i>	Kikuyu	✓							
	<i>Poa poiformis</i>	Coast Tussock-grass	✓		✓				✓	
	<i>Poa labillardieri</i>	Common Tussock-grass			✓				✓	
	<i>Pomaderris paniculosa</i>	Coast Pomaderris	✓		✓					
	<i>Rhagodia candolleana subsp. candolleana</i>	Seaberry Saltbush		✓	✓		✓			
	<i>Rytidosperma racemosum</i>	Slender Wallaby-grass							✓	
	<i>Rytidosperma spp.</i>	Wallaby Grass			✓					
						✓				

\* denotes an introduced non-indigenous species



### 3. PRINCES STREET DUNES

**Location:** Beachfront dunes adjoining Beach Street and a small portion of Waterfront Place that extend to the Station Pier Carpark in the west through to the Port Melbourne Yacht Club to the east.

**Description:**

The Princes Street Dunes comprise a stretch of primary dune system that is located on the beachfront. They are intersected by a number of paths and there is a large cleared area to the west of the main dune patch which is used for volleyball. A drainage outfall runs into the bay to the south of the dunes and there are a number of smaller areas of Coast Dune Grassland vegetation that have regenerated to the east and west of the main dune patch.

**NHA Priority:** Lower priority NHA

**Management Issues within this NHA**

**General Issues:**

- Fragmentation
- Informal paths through vegetation and trampling
- Erosion

**Issues Associated with Vegetation Management:**

- Gaps in vegetation cover
- Low diversity vegetation
- Small amounts of High Threat Weed: Couch

**Activities to Improve Reserve Management**

**General activities:**

- Install locks onto gates
- Revise fencing strategy and reduce number of pathways if possible
- Investigate fencing options along northern boundary

**Vegetation management:**

- Treat Couch. Aim for a reduction in Couch cover of 30% in year's 1–3.
- Consider opportunity to establish Estuarine Flats Grassland in swale as Sea Wheat Grass is reduced
- Consider increasing diversity

**Management priorities and activities:**

The Coast Dune Grassland vegetation within this reserve has a relatively high cover of Hairy Spinifex across the main vegetation patch (PRD 1–3). There have also been other portions of the reserve which have seen some natural regeneration (PRD 4, 6 and 7). Whilst four of the VMZ's are fenced there is still a relatively high amount of pedestrian (and dog) access occurring within these important areas. This is in part due to the fact that people are using access gates which are located usually to the southern ends of each VMZ. Sand buildup in some areas also means that it's easy to step over the fence and also at other times to step down into the vegetation area over the low bluestone wall along the esplanade. It is recommended as a minimum that padlocks be added to the gates.

There is a small amount of the High Threat Weed, Couch within PRD3.

Within PRD4 there are a number of Dune Thistle plants which are of local significance.

As there is evidence that natural regeneration can readily occur within this NHA, there is the potential to decrease the amount of fragmentation present and expand the extent of the regeneration incrementally. For example PRD6 could be expanded to the south and west to join with PRD7 and PRD3. Also the patches within PRD4 could also be encouraged to join up via fencing whilst still providing beach tractor access. However, in association with this a pathway plan would need to be confirmed to ensure that there are an appropriate number of pathways were provided and the regeneration could be planned around this.

It is also recommended that should PRD6 be expanded to the west, a pathway be established between PRD6 and PRD3.

**Table 12. Princes Street Dunes VMZ descriptions and future management actions**

Vegetation Management Zone	Description	Approximate EVC	Management Issues	Management Actions	Priority
PRD1, 2 and 3	These three VMZ's constitute the main patch of Coastal Dune Grassland in this reserve.	Coastal Dune Grassland	Small amounts of Sea Wheat Grass. High Threat Weed: Couch Trampling and inappropriate access. Gaps in vegetation cover and erosion	Treat High Threat Weeds Address access issues via addition of padlocks on gates. Interpretation signage.	Medium-high
PRD4	This VMZ comprises three small patches of Coastal Dune Grassland that have regenerated naturally on the western side of the volleyball court.	Coastal Dune Grassland	Two occurrences of juvenile Canary Island Palms.	Remove Canary Island Palms. Fencing of regenerated vegetation.	Low-medium
PRD5	This VMZ comprises a strip of revegetation along the jetty that extends along the western edge of this NHA.	Coastal Dune Grassland/ Coastal Dune Scrub	No significant issues	Monitor undertake any urgent maintenance and review in 5 years	Low-medium
PRD6	This patch comprises a relatively narrow stretch of regenerated Coast Dune Grassland. It is fenced and has two access gates.	Coastal Dune Grassland	Gaps in vegetation cover and erosion	Address access issues via gate removal and review of fencing options. Interpretation signage.	Low-medium
PRD7	A patch of regenerated Coast Dune Grassland that has established opportunistically. This area is not fenced but is also located in an area that does not see a large amount of foot traffic.	Coastal Dune Grassland	No significant issues	Monitor and review in 5 years	Low-medium



Figure 17. Vegetation Management Zones at Princes Street Dunes





PRD1



PRD2



PRD3

 <p>01/04/2015 15:38</p>	 <p>01/04/2015 15:38</p>
<p>PRD4</p>	<p>PRD4</p>
 <p>01/04/2015 15:52</p>	
<p>PRD6</p>	
 <p>01/04/2015 15:52</p>	 <p>01/04/2015 15:52</p>
<p>PRD7 looking east from corner of carpark</p>	<p>PRD7 looking south-east</p>

Table 13. Vegetation List for Princes Street Dunes

Origin	Scientific Name	Common Name	PRD 1	PRD 2	PRD 3	PRD 4	PRD 5	PRD 6	PRD 7
	<i>Actites megalocarpus</i>	Dune Thistle						✓	
	<i>Atriplex cinerea</i>	Coast Saltbush	✓		✓	✓	✓		✓
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia	✓			✓			
*	<i>Cakile maritima</i>	Sea Rocket		✓	✓	✓			
	<i>Carpobrotus rossii</i>	Karkalla		✓					
	<i>Correa alba</i>	White Correa				✓	✓		
*	<i>Cynodon dactylon</i>	Couch			✓				
	<i>Ficinia nodosa</i>	Knobby Club-sedge	✓	✓					
*	<i>Gazania linearis</i>	Gazania	✓	✓					
*	<i>Hypochaeris radicata</i>	Flatweed	✓						
	<i>Leucophyta brownii</i>	Cushion Bush		✓	✓			✓	✓
	<i>Myoporum insulare</i>	Common Boobialla					✓		
*	<i>Phoenix canariensis</i>	Canary Island Palm				✓			
	<i>Rhagodia spinescens</i>	Hedge Saltbush					✓		
	<i>Spinifex sericeus</i>	Hairy Spinifex	✓	✓	✓	✓		✓	✓
	<i>Stellaria</i> spp.	Starwort							
*	<i>Thinopyrum junceiforme</i>	Sea Wheat-grass		✓					
*	<i>Lotus</i> spp				✓				
	<i>Zoysia macrantha</i>	Prickly Couch	✓	✓	✓				

## 4. PICKLES STREET DUNES

**Location:** Beachfront dunes adjoining Beach Street/Beaconsfield Parade between Bay Street and extending just past Foote Street to the east.

**Description:**

The Pickles Street Dunes comprise a stretch of primary dune system that is located on the beachfront. They are intersected by a number of pathways through and are fenced using post and plain wire strands with access gates at key locations. A large gap associated with the front of the Port Melbourne Lifesaving Club intersects the vegetation and the Lagoon Pier also commences within the dune system.

The dunes here have apparently changed in recent years in the fact that they now contain wet swales, particularly in the eastern portion that was not previously so evident.

In addition to this, during field work it was observed that the Pickles Street Dunes appeared to be affected by erosion at the beachfront side. Shifting sands depositing at the front and rear of the dunes was observed. This is problematic in that it increases the opportunity for people to access the VMZs as they can easily step over fences. Similarly to the Princes Street Dunes people are also using the access gates to enter the fenced areas.

This site has one of the highest covers of High Threat Weeds: Sea Wheat Grass and Couch.

It was also observed to contain a very old Coast Banksia located within PIS4, which is possibly a remnant and should be a priority for management.

**NHA Priority:** Medium priority NHA

### **Management Issues within this NHA**

**General Issues:**

- Fragmentation
- Informal paths through vegetation and trampling
- Erosion

**Issues Associated with Vegetation Management:**

- Large amounts of High Threat Weeds: Sea Wheat Grass and Couch
- Large gaps in vegetation cover
- Low diversity vegetation
- Large possibly remnant Coast Banksia

### **Activities to Improve Reserve Management**

**General activities:**

- Install locks onto the gates
- Revise fencing strategy and reduce number of pathways if possible
- Investigate fencing options along northern boundary

**Vegetation management:**

- Treat Sea Wheat Grass and Couch. Aim for a reduction in Sea Wheat Grass cover of 10% per year and a reduction in Couch cover of 30% in year's 1–3.
- Consider opportunity to establish Estuarine Flats Grassland in swale as Sea Wheat Grass is reduced
- Consider increasing diversity

**Management priorities and activities:**

The Coast Dune Grassland vegetation within this reserve has a moderate cover of Hairy Spinifex across NHA (PIS1–7). There are also some small patches of emergent shrubby species that accord with Coastal Dune Scrub and one large potentially remnant Coast Banksia, perhaps reminding us of where the Coast Banksia Woodland used to exist (PIS3 and 4).

This NHA is fairly wide in places, presenting the opportunity to potentially undertake more succession plantings to include a wider range of species at rear of the dune system that would include Coastal Dune Scrubland vegetation. Potentially in the future (longer term) to include Coast Banksia Woodland species.

The wet swale that exists behind the primary dune contains a mix of indigenous rushes and sedges as well as some herbs and is also an area where the occurrences of High Threat Weeds: Sea Wheat Grass and Couch occur.

Whilst all of the VMZ's are fenced there is still a relatively high amount of pedestrian (and dog) access occurring within these important areas. This is in part due to the fact that people are using access gates which are located usually to the southern ends of each VMZ. Also that sand buildup in some areas means that it's easy to step over the fence and also at other times to step down into the vegetation area over the low bluestone wall along the esplanade. On this basis, it is recommended as a minimum that padlocks be added to the gates.

Within PIS5 one occurrence of Dune Thistle was recorded.

Couch and Sea Wheat Grass occurrences along with access issues are the two highest priorities within this NHA.

The Sea Wheat Grass infestation in particular is extensive. A program is proposed that results in a 10% reduction in extent be undertaken annually. This may mean that 20% of the infestation is treated annually. Complimentary revegetation works will be required.

Ultimately the swale area which contains the Sea Wheat Grass infestation provides a good opportunity to recreate a Estuarine Flats Grassland similar to that which has been established at West Beach. However this will need to be incremental and coordinate with the weed treatment here.

**Table 14. Pickles Street Dunes VMZ descriptions and future management actions**

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
PIS1–7	See below	Coastal Dune Grassland	Trampling and inappropriate access.	Address access issues via introduction of locks and review of fencing options. Interpretation signage.	High
PIS1	A small patch of Coastal Dune Grassland at the western end of this NHA.	Coastal Dune Grassland	Gaps in vegetation cover and erosion	Encourage regeneration and undertake supplementary planting as required.	High
PIS2	A larger patch of vegetation to the east of PIS1 containing a small patch of Sea Wheat Grass. Gate at the north-east corner	Coastal Dune Grassland	High Threat Weed: Sea Wheat Grass	Treat High Threat Weeds. Encourage regeneration and undertake supplementary planting as required.	High



VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
	can be easily opened resulting in a lot of foot traffic.		Gaps in vegetation cover and erosion		
PIS3	A wider patch of vegetation to the east of PIS2 and west of the lifesaving club. Contains swale area behind the foredunes with high cover of Couch. Sea Wheat Grass is also present along the northern edge of this patch. There is a small patch of opportunistic Coastal Dune Scrub establishing in the eastern portion of this zone.	Coastal Dune Grassland	High Threat Weed: Sea Wheat Grass and Couch Gaps in vegetation cover and erosion	Treat High Threat Weeds. Encourage regeneration and undertake supplementary planting as required.	High
PIS4	A triangular shaped patch east of the lifesaving club. A high level of foot traffic and access is evident especially closest to the lifesaving club. This area contains a small swale and wet area with rushes and herbs. There is also a large possibly remnant Coast Banksia and some Coastal Dune Scrub also located in the north of the site. A small patch of Couch is present in the north-eastern corner.	Coastal Dune Grassland	High Threat Weed: Couch Gaps in vegetation cover and erosion Large remnant Coast Banksia	Treat High Threat Weeds. Encourage regeneration and undertake supplementary planting as required.	High
PIS5	A smaller patch of vegetation that is dominated by a swale area. This VMZ contains a relatively low vegetation cover but this does include some herbs and at least one occurrence of Dune Thistle. It also includes a high cover of Sea Wheat Grass and a patch of Couch.	Coastal Dune Grassland/ Coastal Dune Scrub	High Threat Weed: Sea Wheat Grass and Couch Gaps in vegetation cover and erosion	Treat High Threat Weeds It is highly recommended that consideration is given to the removal of the pathway along the western boundary. Encourage regeneration and undertake supplementary planting as required.	High
PIS6	This patch comprises a long and relatively wide stretch of regenerated Coast Dune Grassland. The swale from PIS5 extends eastward through this VMZ and Sea Wheat Grass is present throughout this swale area.	Coastal Dune Grassland	High Threat Weed: Sea Wheat Grass Gaps in vegetation cover and erosion	Treat High Threat Weeds. Encourage regeneration and undertake supplementary planting as required.	High
PRD7	A patch of that is basically an extension of PIS6, with all of the same characteristics although perhaps with more access and trampling issues.	Coastal Dune Grassland	High Threat Weed: Sea Wheat Grass Gaps in vegetation cover and erosion	Treat High Threat Weeds. Encourage regeneration and undertake supplementary planting as required.	High



Figure 18. Vegetation Management Zones at Pickles Street Dunes



 <p>01/04/2015 15:57</p>	
<p>PIS1</p>	
 <p>01/04/2015 16:00</p>	 <p>01/04/2015 16:15</p>
<p>PIS2</p>	<p>PIS2</p>
 <p>01/04/2015 16:17</p>	 <p>01/04/2015 16:22</p>
<p>PIS3</p>	<p>PIS3</p>

	
PIS4	PIS5
	
PIS6 Looking east from western edge	
	
PIS7 looking east from western edge	PIS7 looking south

Table 15. Vegetation List for Pickles Street Dunes

Origin	Scientific Name	Common Name	PIS1	PIS2	PIS3	PIS4	PIS5	PIS6	PIS7
	<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle			✓				
	<i>Actites megalocarpus</i>	Dune Thistle				✓			
	<i>Atriplex cinerea</i>	Coast Saltbush	✓	✓	✓	✓		✓	✓
	<i>Austrostipa stipoides</i>	Prickly Spear-grass				✓			
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia		✓	✓	✓			
*	<i>Cakile maritima</i>	Sea Rocket				✓			
	<i>Carpobrotus rossii</i>	Karkalla		✓	✓	✓	✓	✓	
	<i>Correa alba</i>	White Correa				✓			
*	<i>Cynodon dactylon</i>	Couch			✓	✓	✓		
	<i>Ficinia nodosa</i>	Knobby Club-sedge	✓	✓	✓	✓	✓		
	<i>Gahnia filim</i>	Chaffy Saw-sedge					✓		
*	<i>Gazania linearis</i>	Gazania						✓	
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush				✓	✓		
	<i>Leptospermum laevigatum</i>	Coast Tea-tree			✓				
	<i>Leucophyta brownii</i>	Cushion Bush				✓			
	<i>Ozothamnus turbinatus</i>	Coast Everlasting				✓			
*	<i>Plantago coronopus</i>	Buck's-horn Plantain					✓		
	<i>Selliera radicans</i>	Shiny Swamp-mat					✓		
*	<i>Sonchus oleraceus</i>	Common Sow-thistle			✓				
	<i>Spinifex sericeus</i>	Hairy Spinifex	✓	✓	✓	✓	✓	✓	✓
	<i>Stellaria</i> spp.	Starwort							
*	<i>Thinopyrum junceiforme</i>	Sea Wheat-grass		✓	✓		✓	✓	✓
*	<i>Vicia sativa</i>	Vetch			✓				
	<i>Lotus/medic</i>			✓	✓				

\* denotes an introduced non-indigenous species

## 5. MIDDLE PARK DUNES

**Location:** Beachfront dunes adjoining Beaconsfield Parade between Armstrong Street almost extending to McGregor Street to the east.

**Description:**

The Middle Park Dunes comprise a short stretch of primary dune system that is located on the beachfront. The dune system is approximately 5 metres wide.

This dune system is intersected by a number of informal pathways through the vegetation and it is unfenced.

This section of artificially made beach has washed away in the past and been reconstructed twice in the past ten years. Extra groynes have been added and stormwater drain extensions have been added in the process.

These dunes have been eroded by high tides but still contain a relatively high cover of vegetation and may have the potential to expand in extent to the east and further onto the beach if fenced.

**NHA Priority:** Lower priority NHA

**Management Issues within this NHA**

**General Issues:**

- Fragmentation
- Informal paths through vegetation and trampling
- Erosion

**Activities to Improve Reserve Management**

**General activities:**

- Reduce trampling via the introduction of barriers
- Supplementary planting to address erosion and increase resilience

**Management priorities and activities:**

These dunes have been eroded by high tides but still contain a relatively high cover of vegetation and may have the potential to expand in extent to the east and further onto the beach if fenced. The fence should be placed to allow this to occur. Supplementary planting is also recommended address the erosion and to increase the resilience of this dune system.

**Table 16. Middle Park Dunes VMZ descriptions and future management actions**

Vegetation Management Zone	Description	Approximate EVC	Management Issues	Management Actions	Priority
MP1	A small patch of Coastal Dune Grassland that has naturally regenerated. It is currently around 5 metres in width but has been affected by high tides in recent years.	Coastal Dune Grassland	Trampling and inappropriate access. Gaps in vegetation cover and erosion	Install fencing to allow more regeneration to the south and east (at least to the next stairway). Investigate fencing options for the northern edge. Interpretive signage. Supplementary planting.	Medium-high



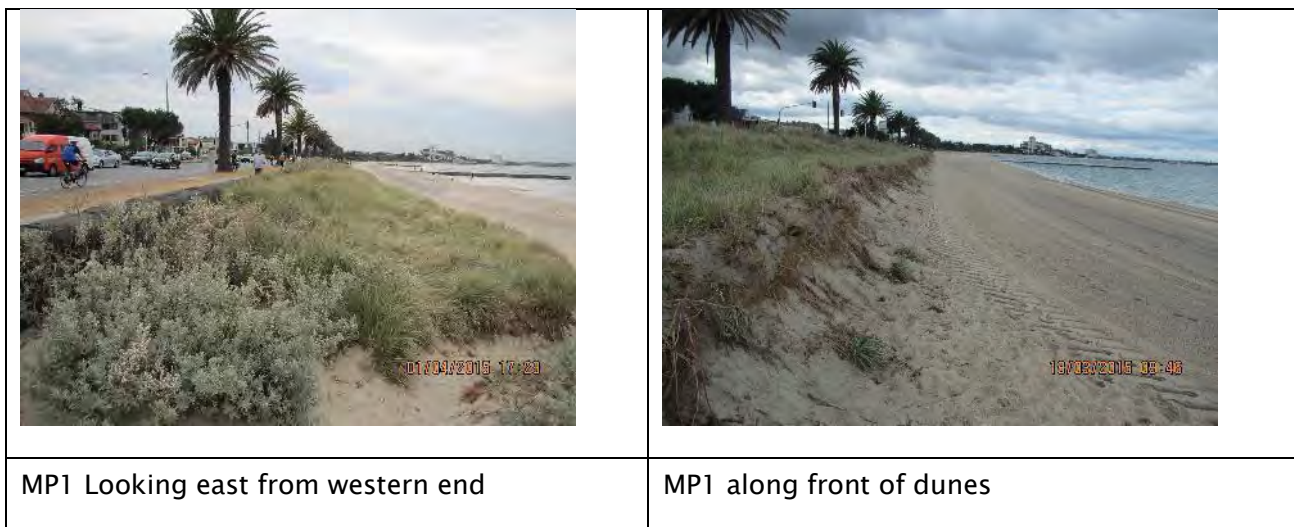


Table 17. Vegetation List for Middle Park Dunes

Origin	Scientific Name	Common Name	MPD1
	<i>Atriplex cinerea</i>	Coast Saltbush	✓
	<i>Ficinia nodosa</i>	Knobby Club-sedge	✓
	<i>Leptospermum laevigatum</i>	Coast Tea-tree	✓
	<i>Spinifex sericeus</i>	Hairy Spinifex	✓





Figure 19. Vegetation Management Zones at Middle Park Dunes

## 6. FRASER STREET DUNES

**Location:** Beachfront dunes adjoining Beaconsfield Parade between Langridge Street in the west and extending just past Fraser Street in the east.

**Description:**

The Fraser Street Dune system comprises a triangular piece of primary dune system that is located on the beachfront. It includes Coastal Dune Grassland to the west and east as well as a small buffer along the southern edge. The remainder of the area comprises of vegetation that approximates Coastal Dune Scrub.

This NHA is significantly affected by pathways and incursions caused by people walking across the Grassland areas and also reportedly seeking shelter and accommodation at times within the Scrub areas. At some times homeless people have lived within this area of bushland, sometimes resulting in management issues including an increase in rubbish and other wastes, as well as damage to vegetation.

This NHA also has a high degree of senescing vegetation, particularly along the southern, bayside facing portion as well as many gaps and areas of bare sand.

**NHA Priority:** Medium priority NHA

**Management Issues within this NHA**

**General Issues:**

- Fragmentation
- Informal paths through vegetation and trampling
- Erosion
- High tides (particularly FS2)

**Issues Associated with Vegetation Management:**

- Many gaps in vegetation cover
- Senescing vegetation
- Shrubby vegetation
- Low diversity vegetation

**Activities to Improve Reserve Management**

**General activities:**

- Reduce trampling via the introduction of barriers

**Vegetation management:**

- Fencing
- Reduce shrubbiness
- Replacement planting to address gaps
- Remove senescing and dead vegetation
- Aim to increase diversity

**Management priorities and activities:**

The Coastal Dune Grassland vegetation within this reserve has a moderate cover of Hairy Spinifex across NHA (FS1 and 3).

This NHA is greatly affected by trampling and pathways throughout the vegetation. There are many pathways from the esplanade directly to the beachfront across the thin section of FS1 and longer stretches through and across a stairway through FS3, both patches of Coastal Dune Grassland.

FS2, comprising Coastal Dune Scrub has been used as a place of shelter by the homeless and much of the vegetation is missing understorey and large gaps and pathways have been created throughout.

The entire extent of this NHA is recommended for fencing with one pathway to be provided from the stairs in the north-eastern portion of the reserve across to the east.

FS2 also has a very high cover of senescing vegetation particularly along its southern (shore-facing) edge. The vegetation throughout is also densely shrubby and diversity is relatively low. However across the front of this NHA is a relatively high cover of Salt Couch and possibly Australian Salt Grass which is assisting in binding the sand along this edge in the face of erosive high tides which have taken an evident toll on the dune system here.

It is recommended that the senescing vegetation be removed and shrubbiness reduced with a more diverse suite of species planted that will increase diversity in this NHA also.

**Table 18. Fraser Street Dunes VMZ descriptions and future management actions**

Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
FS1	A patch of Coastal Dune Grassland at the western end of this NHA. Many access paths have been made through this portion of the site.	Coastal Dune Grassland	Trampling and inappropriate access. Gaps in vegetation cover and erosion	Fence this VMZ as part of a fence around the whole of the NHA. Interpretive signage.	High
FS2	A patch of Coastal Dune Scrub vegetation with many incursions and pathways throughout and a high degree of senescing vegetation, particularly along the southern, bayside facing edge.	Coastal Dune Scrub	Trampling and inappropriate access. Gaps in vegetation cover and erosion	Fence this VMZ as part of a fence around the whole of the NHA. Interpretive signage.	High
FS3	A larger patch of Coastal Dune Grassland at the eastern end of this NHA. Affected by indiscriminate access and large amounts of erosion and bare sand.	Coastal Dune Grassland	Trampling and inappropriate access. Gaps in vegetation cover and erosion	Fence this VMZ as part of a fence around the whole of the NHA. Interpretive signage.	High





Figure 20. Vegetation Management Zones at Fraser Street Dunes




	
FS1	FS1
	
FS2	FS2
	
FS3	FS3

Table 19. Vegetation List for Fraser Street Dunes

Origin	Scientific Name	Common Name	FS1	FS2	FS3
	<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle		✓	
	<i>Allocasuarina verticillata</i>	Drooping Sheoak		✓	
*	<i>Arctotheca calendula</i>	Capeweed			✓
	<i>Atriplex cinerea</i>	Coast Saltbush	✓	✓	✓
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia		✓	
*	<i>Cakile maritima</i>	Sea Rocket		✓	✓
	<i>Carpobrotus rossii</i>	Karkalla	✓	✓	
	<i>Correa alba</i>	White Correa		✓	
	<i>Distichlis distichophylla</i>	Australian Salt-grass		✓	✓
	<i>Ficinia nodosa</i>	Knobby Club-sedge	✓	✓	✓
*	<i>Hypochaeris radicata</i>	Flatweed		✓	✓
	<i>Leptospermum laevigatum</i>	Coast Tea-tree		✓	✓
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush		✓	
	<i>Myoporum insulare</i>	Common Boobialla	✓	✓	✓
*	<i>Pennisetum clandestinum</i>	Kikuyu			✓
	<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	Seaberry Saltbush		✓	
*	<i>Sonchus oleraceus</i>	Smooth Sow-thistle		✓	
	<i>Spinifex sericeus</i>	Hairy Spinifex	✓	✓	✓
	<i>Sporobolus virginicus</i>	Salt Couch		✓	



## 7. WEST BEACH

**Location:** Beachfront area located to the southwest of the intersection of Beaconsfield Parade and Pier Road, St Kilda.

**Description:**

West Beach is an area of reconstructed Estuarine Flats Grassland that has been re-established to the west of the Cowderoy Street Drain. This NHA also includes both sides of the drain outlet as well as some land to the north that has been recently revegetated.

The main wetland area is traversed by a raised boardwalk that loops from the north to the south-west and then back to a bridge across the drain in the east.

There are sections of Coastal Dune Grasslands that edge this NHA to the west and patches of Coastal Dune Scrub in the west and an approximation of Coast Banksia Woodland in the north-eastern corner. This NHA contains some mature specimens of Drooping Sheoak and Coast Banksia within these Woodland and Scrub areas.

**NHA Priority:** Higher priority NHA

**Management Issues within this NHA**

**General Issues:**

- Fragmentation
- Informal paths through vegetation and trampling
- Erosion
- Vandalism of vegetation within the foreshore reserve (possibly by residents wanting to access a sea-view)

**Issues Associated with Vegetation Management:**

- High cover of High Threat Weeds: Sea Wheat Grass and Couch
- Mature Drooping Sheoak and Coast Banksia

**Activities to Improve Reserve Management**

**General activities:**

- Introduce fencing around western and southern edges
- Reintroduce and maintain vegetation in locations where it was removed. Take other action as necessary against vandalism

**Vegetation management:**

- Treat Sea Wheat Grass and Couch. Aim for a reduction in Sea Wheat Grass cover of 10% per year and a reduction in Couch cover of 30% in year's 1–3.

**Management priorities and activities:**

The two key management priorities are outlined above: fencing of the dune system and treating the High Threat Weeds.

The Sea Wheat Grass infestation in particular is extensive. A program is proposed that results in a 10% reduction in extent be undertaken annually. This may mean that 20% of the infestation is treated annually.

Other activities that are recommended include extending both WB2 and 3 to infill more of the flat ground in the northern section.

Table 20. West Beach VMZ descriptions and future management actions

Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
WB1	A patch of vegetation in the north–east corner of the NHA that has been planted to resemble Coast Banksia Woodland. It contains a sparse cover of shrubs and some grasses of reasonable diversity including native rhizomatous grasses. There are some mature Drooping Sheoaks in the corner of this patch. The southern portion of this patch is fenced and a gravel path passes through this area.	Coast Banksia Woodland	No significant issues	Maintain fencing on southern patch and maintain plantings as necessary	Low
WB2	A recently revegetated rectangular shaped area to the west of WB1 containing a relatively high diversity of species. Although this is unfenced, it is not likely to be subject to much foot traffic. This site could be extended to the south, leaving only a small path between the two stairways to the east and west of this VMZ.	Coastal Dune Grassland	No significant issues	Maintain plantings as necessary Extend to the south leaving only a small path	Medium–high
WB3	Another recently revegetated rectangular shaped area to the west of WB1 containing a relatively high diversity of species and a high cover of including native rhizomatous grasses. This patch is fenced and could be extended to the east.	Coastal Dune Grassland	No significant issues	Maintain plantings as necessary Extend to the east and north leaving only a small path	Medium–high
WB4	This VMZ comprises both sides of the Cowderoy Street Drain. It includes Coastal Saltmarsh vegetation that is of relatively high cover. There are some small incursions of Couch here.	Coastal Saltmarsh	High Threat Weed: Couch Some trampling and inappropriate access	Treat High Threat Weeds. Aim to eradicate Couch within 2 years. Address access issues via fencing Interpretive signage explaining drain, catchment issues and vegetation	Medium–high
WB5	A patch of Coastal Dune Scrub that has been planted in the north–western corner of the NHA. This patch is used as a shelter by people which has impacted upon the vegetation.	Coastal Dune Scrub	Some incursions	Fencing or planting protective vegetation to reduce likelihood of sheltering.	Medium

Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
	This vegetation also provides shelter from the wind for a seat which is positioned to the north-west of this vegetation.				
WB6	This patch comprises the majority of the West Beach site. It comprises Estuarine Flats Grassland and is dominated by Knobby Club Rush and rhizomatous grasses, particularly Australian Salt Grass. There are also small swales throughout which harbour native herbs such as Shiny Swamp-mat. This VMZ comprises significant infestations of Sea Wheat Grass and Couch.	Estuarine Flats Grassland	High Threat Weed: Sea Wheat Grass Trampling and inappropriate access. Gaps in vegetation cover and erosion	Treat High Threat Weeds. Aim for 10% reduction in Sea Wheat Grass annually and 30% reduction in Couch annually. Interpretation signage	High
WB7	A patch of Coastal Dune Scrub that has been planted in the north-western corner of the NHA. This patch contains some medium aged large Drooping Sheoaks and Coast Banksias and some shrubs. In general it has a relatively open mid-storey. Understorey is dominated by native rhizomatous grasses but also some Sea Wheat Grass and Couch.	Coastal Dune Scrub	High Threat Weed: Sea Wheat Grass, some Couch Senescing and dead vegetation. Gaps in vegetation cover and erosion	Treat High Threat Weeds in association with WB5 as described above. Address access issues via gate removal and review of fencing options. Interpretation signage	Medium-high
WB8	An area of Coastal Dunes Grassland that fringes the NHA to the west and south. This area is significantly trampled with large patches of open sand.	Coastal Dune Grassland	Trampling Gaps in vegetation cover and erosion	Fencing	Medium-high
WB9	A newly revegetated area which adjoins the kiteboarding shop and café complex. This planting mainly comprises grasses and is planted into sand. Some river pebbles have been added in the north-west corner of the site. There is a relatively high diversity of grasses here but significant infestation of Sea Wheat Grass particularly to the south. As the Sea Wheat Grass is treated, more plantings should be planted to extend south.	Coastal Dune Grassland	High Threat Weed: Sea Wheat Grass	Treat High Threat Weeds. Aim for 10% reduction in Sea Wheat Grass annually	High




Figure 21. Vegetation Management Zones at West Beach



<p>WB1</p>	<p>WB1</p>
<p>WB2</p>	<p>WB2</p>
<p>WB3</p>	<p>PIS3</p>
<p>WB4</p>	<p>WB4</p>



	
<p>WB5</p>	
	
<p>WB6 Looking south</p>	<p>WB6 looking north-west</p>
	
<p>WB7 looking west from boardwalk</p>	<p>WB7 looking north-east</p>
	
<p>WB8</p>	





WB9



WB9

Table 21. Vegetation List for West Beach

Origin	Scientific Name	Common Name	WB1A&B	WB2	WB3	WB4	WB5	WB6	WB7	WB8	WB9
	<i>Actites megalocarpus</i>	Dune Thistle							✓		
	<i>Allocasuarina verticillata</i>	Drooping Sheoak	✓	✓			✓				
	<i>Alyxia buxifolia</i>	Sea Box		✓							
	<i>Atriplex cinerea</i>	Coast Saltbush	✓	✓		✓	✓	✓		✓	
	<i>Atriplex semibaccata</i>	Berry Saltbush				✓					
	<i>Austrostipa</i> spp.	Spear Grass	✓	✓	✓	✓					✓
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	✓	✓	✓			✓			
	<i>Banksia integrifolia</i>	Coast Banksia	✓		✓				✓		✓
	<i>Carpobrotus rossii</i>	Karkalla		✓		✓		✓	✓		
	<i>Chenopodium</i> spp.	Goosefoot						✓			
*	<i>Conyza</i> spp.	Fleabane				✓					
	<i>Correa alba</i>	White Correa	✓	✓		✓	✓				
*	<i>Cynodon dactylon</i>	Couch			✓			✓	✓	✓	✓
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily	✓	✓	✓						
	<i>Dichondra repens</i>	Kidney Weed	✓								
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	Rounded Noon-flower						✓			
	<i>Distichlis distichophylla</i>	Australian Salt-grass	✓	✓	✓	✓	✓	✓	✓		✓
	<i>Ficinia nodosa</i>	Knobby Club-sedge			✓	✓	✓	✓	✓	✓	✓
	<i>Frankenia pauciflora</i> var. <i>gunnii</i>	Southern Sea-heath									
	<i>Gahnia filum</i>	Chaffy Saw-Sedge						✓			
	<i>Helichrysum luteoalbum</i>	Jersey Cudweed	✓					✓	✓		
*	<i>Hypochaeris radicata</i>	Flatweed						✓	✓		
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush						✓			
	<i>Juncus</i> spp.	Rush spp.									
	<i>Kennedia prostrata</i>	Running Postman									
*	<i>Lagurus ovatus</i>	Hares-tail Grass							✓		
	<i>Lasiopetalum</i> spp.	Velvet Bush	✓	✓							

Origin	Scientific Name	Common Name	WB1A&B	WB2	WB3	WB4	WB5	WB6	WB7	WB8	WB9
	<i>Leptospermum laevigatum</i>	Coast Tea-tree			✓			✓	✓	✓	
	<i>Leucophyta brownii</i>	Cushion Bush	✓	✓	✓		✓	✓		✓	✓
*	<i>Lolium spp.</i>	Rye Grass									
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush					✓		✓		✓
	<i>Muehlenbeckia florulenta</i>	Tangled Lignum		✓	✓						
	<i>Myoporum parvifolium</i>	Creeping Boobialla			✓						
	<i>Olearia axillaris</i>	Coastal Daisybush	✓	✓		✓	✓				
*	<i>Pennisetum clandestinum</i>	Kikuyu									
	<i>Phragmites australis</i>	Common Reed						✓			
	<i>Plantago gaudichaudii</i>	Narrow Plantain						✓			
	<i>Poa labillardieri</i>	Common Tussock-grass		✓							
	<i>Poa poiformis</i>	Coast Tussock-grass		✓	✓						
	<i>Rhagodia candolleana subsp. candolleana</i>	Seaberry Saltbush	✓		✓	✓	✓		✓		
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass		✓							
	<i>Samolus repens</i>	Creeping Brookweed						✓			
	<i>Sarcocornia quinqueflora</i>	Beaded Glasswort						✓			
	<i>Selliera radicans</i>	Shiny Swamp-mat						✓			
*	<i>Sonchus asper s.l.</i>	Rough Sow-thistle									
*	<i>Sonchus oleraceus</i>	Common Sow-thistle	✓					✓	✓		
	<i>Spinifex sericeus</i>	Hairy Spinifex			✓		✓		✓	✓	✓
	<i>Sporobolus virginicus</i>	Salt Couch									
	<i>Suaeda australis</i>	Austral Seablite				✓		✓			
*	<i>Thinopyrum junceiforme</i>	Sea Wheat-grass						✓			✓
	<i>Triglochin spp.</i>	Water Ribbons						✓			
	<i>Zoysia macrantha</i>	Prickly Couch						✓			

## 8. MO MORAN RESERVE

**Location:** Reserve and parkland area located to the west of Marine Parade, located between the St Kilda Marina and Elwood Canal.

**Description:**

MO Moran Reserve comprises a large flat area of lawn/oval across most of its extent becoming a little undulating in the north and north-west. Its edges are planted with indigenous and native vegetation and there is one isolated patch of planted vegetation located centrally in the northern third of the site.

Two paved pathways run along its western edge. One for pedestrians, the other for cyclists. Another path traverses the reserve from the north-eastern corner to the west. There is a small exercise area in the south-western portion.

Geology maps, historic paintings (see below) and photographs for this region show that this reserve and this portion of the shoreline have been greatly affected by infilling and landscape alteration, particularly along the coastal edge which has been subject to much infilling as well as significant alterations associated with the cutting of the Elwood Canal.



Painting by W.F.D. Liardet, *St Kilda Foreshore and Point Ormond*, 1862. Source: State Library of Victoria

**NHA Priority:** Medium priority NHA

**Management Issues within this NHA**

**General Issues:**

- Fragmentation, particularly of patches in the northern portion of the reserve
- Informal paths through vegetation and trampling

- Introduced fill material particularly closer to the coast including rock, bricks and rubble makes vegetation establishment and management difficult

**Issues Associated with Vegetation Management:**

- CPED considerations especially associated with MO1 and MO2 due to shrubbiness of vegetation
- Species requiring high maintenance, pruning
- Some gaps in plantings
- Some weed issues associated with wet area in MO8
- Some High Threat Weed: Couch in MO8

**Activities to Improve Reserve Management**

**Vegetation management:**

- Reduce the shrubbiness of vegetation in MO4 and MO5 and replant
- Reduce fragmentation and significantly increase linkages in the northern portion of the reserve
- Replace shrubs adjacent to cycle path with grasses

**Management priorities and activities:**

This reserve is mainly used for recreation and transit, i.e. pedestrians and cyclists passing through. Recreation activities are mainly undertaken on the flat grassed oval area and include team sports and exercising. This location is also used as a skydiving landing site and a helicopter landing pad.

The shrubby nature of the two VMZs in the north-eastern portion of the reserve have attracted homeless people that shelter within the vegetation. It is a priority to reduce the amount of shrubbiness and replant with other species that are consistent with Damp Heathy Woodland/ Coast Banksia Woodland to enhance both the habitat values of this site, also assist with crime prevention objectives for these two patches.

The vegetation within MO8 and MO9 will generally need to be cycle-path friendly, meeting council's requirements of a 2 metre buffer from trees and shrubs and a 1 metre buffer from grasses to the edge of the bike path. As a portion of the cycleway within this VMZ comprises shrubby vegetation along approximately one third of its length a systematic process of reducing the shrubs adjacent to the path and replacing them with more appropriate species.

There is quite a bit of fragmentation within this reserve and whilst the southern portion of the site may need to be kept open for skydiving and helicopter purposes, the northern portion would benefit from further considered revegetation. As this is such a large area, it is not recommended that the whole site be revegetated within this five-year management cycle, rather undertake an initial stage of infill planting and linking and then evaluate the outcome with the potential of completing the process as part of a future plan in five years time.

Table 22. MO Moran Reserve VMZ descriptions and future management actions

Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
MO1	A linear strip of Coast Saltbush, planted along the foreshore side of the cycle path at the edge of the St Kilda Marina Carpark. It is approximately 3 metres wide.	Coastal Dune Scrub	No significant issues	Maintain plantings as necessary.	Low
MO2	A revegetated triangular shaped area that adjoins the carpark in the north-west corner of the reserve. The vegetation approximates Coastal Dune Scrub. This VMZ also adjoins the cycle path.	Coastal Dune Scrub	Fragmentation	Maintain plantings as necessary Extend to the south and east as part of a larger planting project.	Low-medium
MO3	Another revegetated linear strip along the northern boundary of the reserve linking MO2 and MO4. There are a number of pathways through this VMZ and this area should be widened by extending to the south.	Coastal Dune Grassland	No significant issues	Maintain plantings as necessary Extend to the south and east as part of a larger planting project.	Low-medium
MO4	This VMZ comprises a relatively large patch of revegetation which has been planted to approximate Damp Heathy Woodland with a Eucalypt overstorey but also containing a densely shrubby understorey dominated by Coastal Dune Scrub species. This VMZ is a priority for reduction in shrubbiness and removal of senescing vegetation for ecological and crime prevention purposes.	Coast Banksia Woodland / Damp Heathy Woodland	Shrubby vegetation / crime prevention issues Some trampling and inappropriate access Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Damp Heathy Woodland/Coast Banksia Woodland Extend to the west and south and east as part of a larger planting project.	High
MO5	Similarly to MO4 this patch comprises a Eucalypt overstorey and shrubby midstorey. Whilst this VMZ contains a few more non-indigenous species, similar issues and management treatments apply. There is an opportunity to extend this VMZ to the east and west to join with MO4 and/or MO7, reducing fragmentation.	Coast Banksia Woodland / Damp Heathy Woodland	Shrubby vegetation / crime prevention issues Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Damp Heathy Woodland/Coast Banksia Woodland.	Medium



Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
				Extend to the north-east and west as part of a larger planting project.	
MO6	This is a small patch of vegetation comprising just a few shrubs and grasses approximating Coastal Dune Scrub. This patch needs to be linked to MO7.	Coastal Dune Scrub	Fragmentation/isolation	Extend to link with MO7	High
MO7	A larger patch of planted vegetation approximating Coastal Dune Scrub. Again, it is isolated and is located at the junction of a walking path and cycle path.	Coastal Dune Scrub	Fragmentation/isolation Gaps in vegetation	Supplementary planting to infill gaps. Extend to the east to MO5 as part of a larger planting project.	Medium-high
MO8	An area of revegetation that has been established surrounding the pedestrian and cycle path that extends along the western extent of the reserve. The vegetation here contains a mixture of Coastal Dune Scrub and Coastal Dune Grassland species.	Coastal Dune Grassland/ Coastal Dune Scrub	Trampling Gaps in vegetation cover Minor weed issues in wet swale High maintenance vegetation – pruning	Introduce tussocky grasses to block areas of trampling. Treat minor weeds as required Mulch in the wet swale area Replace portion of the shrubby vegetation adjacent to the path	High
MO9	A larger patch of planted vegetation approximating Coastal Dune Scrub located on a small hill to the east of the cycle path and to the west of the exercise area. This VMZ experiences quite a lot of trampling and there are gaps in vegetation. There have been low wooden fences built here in the past possibly to curb foot traffic.	Coastal Dune Scrub	Trampling Gaps in vegetation cover	Introduce tussocky grasses to block areas of trampling. Supplementary planting to infill gaps	High
MO10	A linear patch of Coastal Dune Scrub which comprises of shrubs with a low diversity and no overstorey.	Coastal Dune Scrub	Lack of diversity Some trampling	Increase diversity Plant with Coastal Dune Scrub/Coast Banksia Woodland Vegetation	Medium



Figure 22. Vegetation Management Zones at MO Moran Reserve





MO1 looking north



MO1 looking south



MO2



MO3



MO4



MO4





MO6 Looking east



MO8 looking north from the southern portion



MO8 showing the wet swale area



MO9



MO9



MO10

Table 23. Vegetation List for MO Moran

Origin	Scientific Name	Common Name	MO1	MO2	MO3	MO4	MO5	MO6	MO7	MO8	MO9	MO10
	<i>Acacia longifolia</i> var. <i>sophorae</i>	Coast Wattle				✓	✓					
	<i>Acacia melanoxylon</i>	Blackwood				✓						
	<i>Allocasuarina littoralis</i>	Black Sheoak				✓						
	<i>Allocasuarina verticillata</i>	Drooping Sheoak		✓	✓	✓	✓		✓		✓	
*	<i>Araucaria heterophylla</i>	Norfolk Island Pine										✓
	<i>Atriplex cinerea</i>	Coast Saltbush	✓	✓	✓	✓		✓	✓	✓	✓	✓
	<i>Atriplex paludosa</i> spp. <i>paludosa</i>	Marsh Saltbush				✓						✓
	<i>Austrostipa stipoides</i>	Prickly Spear-grass			✓			✓	✓	✓	✓	✓
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia				✓				✓		
	<i>Carpobrotus rossii</i>	Karkalla							✓		✓	
*	<i>Conyza</i> spp.	Fleabane								✓		
	<i>Correa alba</i>	White Correa				✓	✓		✓	✓	✓	
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily		✓						✓	✓	✓
	<i>Dianella longifolia</i> s.l.	Pale Flax-lily										
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	Rounded Noon-flower								✓		
	<i>Distichlis distichophylla</i>	Australian Salt-grass								✓		
	<i>Eucalyptus lehmannii</i>	Bushy Yate					✓					
	<i>Eucalyptus ovata</i>	Swamp Gum				✓	✓					
	<i>Eucalyptus viminalis</i> subsp. <i>pyoriana</i>	Coast Manna-gum				✓						
	<i>Ficinia nodosa</i>	Knobby Club-sedge							✓	✓		
*	<i>Ficus macrophylla</i>	Moreton Bay Fig				✓						
	<i>Gahnia filim</i>	Chaffy Saw-sedge						✓	✓	✓		
	<i>Goodenia ovata</i>	Hop Goodenia			✓	✓				✓		
	<i>Hakea nodosa</i>	Yellow Hakea										
	<i>Hardenbergia violacea</i>	Purple Coral-pea				✓						
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush								✓		
	<i>Juncus pallidus</i>	Pale Rush								✓		



Origin	Scientific Name	Common Name	MO1	MO2	MO3	MO4	MO5	MO6	MO7	MO8	MO9	MO10
	<i>Lasiopetalum spp.</i>	Velvet Bush					✓					
	<i>Leptospermum laevigatum</i>	Coast Tea-tree				✓	✓	✓	✓		✓	
	<i>Leucophyta brownii</i>	Cushion Bush									✓	
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush			✓							
*	<i>Malva parviflora</i>	Small-flowered Mallow								✓		
	<i>Melaleuca ericifolia</i>	Swamp Paperbark				✓						
	<i>Myoporum insulare</i>	Common Boobialla		✓		✓	✓			✓		
	<i>Olearia axillaris</i>	Coast Daisy-Bush			✓	✓		✓	✓			
	<i>Poa labillardieri</i>	Common Tussock-grass				✓						
	<i>Poa poiformis</i>	Coast Tussock-grass				✓						
	<i>Portulaca oleracea</i>	Common Purslane								✓		
	<i>Rhagodia candolleana ssp. Candolleana</i>	Seaberry Saltbush		✓		✓	✓			✓	✓	
*	<i>Sonchus oleraceae</i>	Smooth Sow-thistle								✓		
	<i>Sporobolus virginicus</i>	Sand Couch								✓		
	<i>Suaeda australis</i>	Austral Seablite								✓		
	<i>Tetragonia implexicoma</i>	Bower Spinach	✓	✓		✓						
	<i>Tetragonia tetragonioides</i>	New Zealand Spinach								✓		
*	<i>Trifolium arvense</i>	Haresfoot Clover								✓		
*	<i>Trifolium repens var. repens</i>	White Clover								✓		
*	<i>Trifolium spp. (s)</i>	Clover (s)								✓		
	<i>Zoysia macrantha</i>	Prickly Couch								✓		

## 9. POINT ORMOND RESERVE

**Location:** Reserve and parkland area located to the west of Marine Parade and Point Ormond Road, south of the Elwood Canal and extending to the end of the Point Ormond Road carpark.

**Description:**

Point Ormond Reserve comprises a mixture of open lawned areas and planted vegetation identified in 12 VMZ's.

Two paved pathways run along its western edge. One for pedestrians, the other for cyclists. Another pathway approaches the Point Ormond trig point and lookout from the south and north.

There is a playground and barbeque area in the northern portion of the reserve.

Geology maps, historic paintings and photographs (see below) for this region show that this reserve and this portion of the shoreline have been greatly affected by infilling and landscape alteration, particularly along the coastal edge which has been subject to much infilling. Point Ormond was part of a 'beautification' process which commenced in St Kilda in the late 1800's and extended through to Elwood. Point Ormond, formerly known as Red Bluff was a key target of the beautification process. The early photograph shown below, circa 1929, shows that the majority of alterations had been completed by that time, also that there were roads, a tramline and houses that were formerly located within the reserve area (northern portion) that no longer exist.



Figure 23. Photograph: C. D. Pratt *Elwood Area On Port Phillip Bay* ca1929 Source: State Library of Victoria

**NHA Priority:** Higher priority NHA

**Management Issues within this NHA**

**General Issues:**

- Fragmentation of VMZ's
- Informal paths through vegetation and trampling, particularly relevant to PO4 and PO9
- Vegetation being used for toilet areas
- High volumes of rubbish
- Excess nutrients from dishwashing and food preparation
- Runoff from showering and dishwashing at the amenities block

**Issues Associated with Vegetation Management:**

- CPED considerations especially associated with PO4, PO5 and PO9 due to shrubbiness of vegetation
- Senescing vegetation, particularly in PO4
- Species requiring high maintenance, pruning, particularly within PO4, PO6 and PO7
- Some gaps in plantings, particularly within PO4
- Panic Veldt-grass within PO4
- Some weed issues associated with wet area in MO8

**Activities to Improve Reserve Management**

**General Management Activities:**

- Increase the number of rubbish bins (including recycling bins) and the collection schedule especially during summer months.
- Interpretation signs and possibly education materials that are posted in the toilets with a message to travellers to inform them of the local values and ask them to use the facilities and keep out of the vegetation.

**Vegetation management:**

- Expand and undertake supplementary planting using Coast Teatree for PO1, PO2 and PO3
- Fencing, particularly of PO4, PO8, 9, 10 and 11
- Rationalise pathways: PO4, PO9
- Replace shrubs adjacent to cycle path with grasses
- Reduce shrubbiness of vegetation in PO4, PO5 and PO9 and replant including Coast Teatree as part of the planting list
- Reduce fragmentation: PO9, PO10, PO12 and
- Manage weeds as required

**Management priorities and activities:**

This reserve has a variety of uses including active and passive recreation, sightseeing and transit i.e. pedestrians and cyclists passing through.

There is also a significant use being made of Point Ormond Road by itinerant travellers who are camping overnight mainly in their cars, but are making a significant incremental impact upon the surrounding vegetation which has been deemed to be of a high priority using our prioritisation methods.

Whilst this reserve is very much altered, there is the potential to link and extend the current network of vegetation patches. For the first five years of management however the highest priorities will be to rehabilitate

the vegetation patches that are already in place. This includes fencing VMZ's as a priority PO4 and PO9 as well as others.

Management over the next five years will also need to include removing dead and/or senescing vegetation within PO4 and 5 and replanting. It would also be prudent to reduce the *Rhagodia* cover in PO's 4, 8 and 9 in particular and undertake enhancement plantings.

The vegetation within PO4 and PO6B will need to be made cycle-path friendly, meeting council's requirements of a 2 metre buffer from trees and shrubs and a 1 metre buffer from grasses to the edge of the bike path. A systematic process of reducing the shrubs adjacent to the path and replacing them with more appropriate species.

Table 24. Point Ormond Reserve VMZ descriptions and future management actions

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
PO1	A group of three plantings that surround a barbeque area.	Coastal Dune Scrub	Fragmentation No other significant issues	Increase size of planting and supplementary plant with Coast Teatree and other understorey plants.	Low
PO2	A very small patch of only three Drooping Sheoaks adjacent to the playground.	Coast Banksia Woodland	Fragmentation No other significant issues	Increase size of planting and supplementary plant with Coast Teatree and other understorey plants. Link to PO1 in the east.	Low
PO3	Another very small patch comprising some young Drooping Sheoaks and a Eucalypt adjacent to the playground.	Coast Banksia Woodland	Fragmentation No other significant issues	Increase size of planting and supplementary plant with Coast Teatree and other understorey plants.	Low-medium
PO4	This VMZ comprises a larger patch of revegetation which has been planted to approximate Coastal Dune Scrub. It is now very shrubby in parts and also missing some key lifeforms, namely larger shrubs such as Coast Banksia, Drooping Sheoak.  This VMZ is a priority for reduction in shrubbiness and removal of senescing vegetation for ecological and crime prevention purposes.	Coastal Dune Scrub/Coast Banksia Woodland	Shrubby vegetation, Rhagodia dominating / crime prevention issues High rates of trampling and inappropriate access Senescing vegetation Shrubby vegetation along cycle path	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Coastal Dune Scrub/Coast Banksia Woodland. Fence to restrict pedestrian access	High
PO5	Vegetation adjacent to Marine Parade that contains a dense shrubby mid-storey and some senescing vegetation. This patch impacts upon the walkway along Marine Parade and needs to be pruned regularly. It is also an isolated patch and could be extended to the south and potentially the west.	Coast Banksia Woodland / Damp-sands Herb-rich Woodland	Shrubby vegetation / crime prevention issues Senescing vegetation Pruning along Marine Pde Frontage	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Damp Heathy Woodland/Coast Banksia Woodland. Also replace species along Marine Pde frontage with lower maintenance species	Medium-high
	This is a long linear strip of planted vegetation that runs between the pedestrian pathway and the cycle path. It has been planted with vegetation comprising a mix between species from Coastal Dune Grassland and Coastal Dune Scrub. In particular 6B comprises shrubbier vegetation and some of these shrubs should be replaced with grasses to meet council's cycle path requirements and reduce maintenance pruning also.	Coastal Dune Grassland/ Coastal Dune Scrub	Trampling Gaps in vegetation cover High maintenance vegetation – pruning	Introduce tussocky grasses to block areas of trampling. Replace portion of the shrubby vegetation adjacent to the path	High




VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
PO7	Another linear strip of planted vegetation to the west between the pedestrian pathway and bay. It has been planted with vegetation comprising a mix between species from Coastal Dune Grassland and Coastal Dune Scrub, with a high cover of Coast Saltbush.	Coastal Dune Grassland/ Coastal Dune Scrub	No significant issues	Maintain plantings as necessary	Low
PO8	A small patch of shrubby vegetation adjacent to Point Ormond Road which includes a number of disjunct plantings. It is dominated by larger shrubs Boobiolla and Coast Wattle and also Rhagodia. It is separated from PO9 by a walkway near a barbeque area. It has many incursions and pathways throughout.	Coastal Dune Scrub/Coast Banksia Woodland	Shrubby vegetation, Rhagodia dominating / crime prevention issues High rates of trampling and inappropriate access	Reduce shrubbiness Replant with species appropriate to Coastal Dune Scrub/Coast Banksia Woodland Fence to restrict pedestrian access	High
PO9	A large patch of shrubby vegetation adjacent to Point Ormond Road. This patch presents as a relatively intact unit considering the high rates of use and pressure particularly caused by the high numbers of travellers who are camping overnight in vehicles along Point Ormond Road and utilising this patch for shelter, and other domestic uses. It has an overstorey of Drooping Sheoak and a high percentage of large shrubs but Rhagodia is dominant in the understorey. It has many incursions and pathways throughout.	Coastal Dune Scrub/Coast Banksia Woodland	Shrubby vegetation, Rhagodia dominating / Crime prevention issues High rates of trampling and inappropriate access	Reduce shrubbiness Replant with species appropriate to Coastal Dune Scrub/Coast Banksia Woodland Fence to restrict pedestrian access	High
PO10	A small isolated patch of Coastal Dune Scrub vegetation that sits to the south of PO9. This patch should be linked to PO9 and potentially to PO11.	Coastal Dune Scrub	Fragmentation	Link to PO9	Medium
PO11	A medium patch of Coastal Dune Scrub that sits to the west of Point Ormond Road and to the north and south of the amenities block. The patch is fragmented by the path to the amenities and also another concrete path from the top of the carpark near the southern end. There is also now a large gap in the southern portion of this patch due to recent water infrastructure works. This area receives a lot of exposure to wind and requires very hardy vegetation to be planted. Also, surrounding the amenities block, the vegetation should be kept low so that a high level of visibility is maintained.	Coastal Dune Grassland/ Coastal Dune Scrub	Gaps in vegetation cover Crime prevention issues Trampling and incursions	Replant to infill gaps Ensure vegetation surrounding amenities block is kept low. Replant larger shrubs with smaller plants. Fence to reduce trampling	
PO12	A series of linear plantings along the foreshore around Point Ormond itself. Including a high cover of Australian Salt Grass and other rhizomatous native grasses. Other dominant species include Coast Saltbush.	Coastal Dune Grassland	Fragmentation	Link plantings and manage to ensure cycle safe pathway is maintained	Medium
PO13 and PO13A	A linear patch of Coastal Dune Scrub which comprises of shrubs with a low diversity and no overstorey. PO23 has been recently planted with a variety of shrubs, grasses sedges and lilies. PO13A comprises shrubbier vegetation and no overstorey.	Coastal Dune Scrub	Minor weed incursions	Treat minor weed incursions and mulch as required	Medium



Figure 24. Vegetation Management Zones at Point Ormond Reserve



	
<p>PO1 looking north</p>	<p>PO2</p>
	
<p>PO3</p>	<p>PO4 looking north-east</p>
	
<p>PO4</p>	<p>PO5</p>



PO6A looking north and part of PO4 in the background



PO6B looking north



PO8 looking north from the southern portion



PO9 view from Point Ormond lookout



PO9 Along Point Ormond Road



PO10 looking east



	
<p>PO11 looking north from southern edge</p>	<p>PO11 looking south including amenities block</p>
	
<p>PO12</p>	<p>PO13</p>
	
<p>PO13</p>	<p>PO13A</p>



Table 25. Vegetation List for Point Ormond Reserve

Origin	Scientific Name	Common Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO13A
	<i>Acacia implexa</i>	Lightwood														
	<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle				✓	✓			✓			✓			
	<i>Acacia mearnsii</i>	Black Wattle				✓						✓				
	<i>Acacia paradoxa</i>	Hedge Wattle	✓													
	<i>Allocasuarina littoralis</i>	Black Sheoak														
	<i>Allocasuarina verticillata</i>	Drooping Sheoak	✓	✓	✓	✓	✓	✓		✓		✓	✓			
	<i>Alyxia buxifolia</i>	Sea Box														✓
*	<i>Anagallis arvensis</i>	Scarlet Pimpernel													✓	
*	<i>Araucaria heterophylla</i>	Norfolk Island Pine										✓				
*	<i>Arctotheca calendula</i>	Capeweed													✓	
	<i>Atriplex cinerea</i>	Coast Saltbush						✓	✓		✓	✓	✓	✓	✓	✓
	<i>Atriplex paludosa</i> spp. <i>paludosa</i>	Marsh Saltbush													✓	
	<i>Atriplex semibaccata</i>	Berry Saltbush						✓							✓	
	<i>Austrostipa mollis</i>	Supple Spear-grass						✓								
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	✓		✓							✓	✓			✓
	<i>Austrostipa</i> spp.	Spear Grass													✓	
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia	✓				✓									
	<i>Bromus catharticus</i>	Prairie Grass				✓										
	<i>Bursaria spinosa</i>	Sweet Bursaria														
*	<i>Capsella</i> spp.	Shepherd's Purse													✓	
	<i>Carpobrotus rossii</i>	Karkalla										✓		✓		
	<i>Clematis microphylla</i> s.l.	Small-leaved Clematis				✓										
	<i>Conyza</i> spp.	Fleabane						✓								
	<i>Correa alba</i>	White Correa	✓	✓		✓		✓	✓						✓	
*	<i>Cynodon dactylon</i>	Couch												✓		
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily	✓		✓			✓				✓		✓		
*	<i>Digitaria sanguinalis</i>	Summer Grass													✓	

Origin	Scientific Name	Common Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO13A
	<i>Disphyma crassifolium subsp. clavellatum</i>	Rounded Noon-flower						✓	✓					✓	✓	
	<i>Distichlis distichophylla</i>	Australian Salt-grass														
*	<i>Eleusine indica</i>	Crow's-foot Grass													✓	
*	<i>Ehrharta erecta var. erecta</i>	Panic Veldt-grass				✓						✓				
	<i>Eucalyptus viminalis subsp. pryoriana</i>	Coast Manna-gum			✓							✓				
	<i>Ficinia nodosa</i>	Knobby Club-sedge							✓			✓	✓		✓	
	<i>Frankenia pauciflora var. gunnii</i>	Southern Sea-heath														
*	<i>Fraxinus angustifolia subsp. Angustifolia</i>	Desert Ash													✓	
	<i>Gahnia filim</i>	Chaffy Saw-sedge												✓		
*	<i>Galenia pubescens</i>	Carpet Weed													✓	
	<i>Goodenia ovata</i>	Hop Goodenia	✓			✓										
	<i>Juncus pallidus</i>	Pale Rush							✓							
	<i>Lasiopetalum baueri</i>	Slender Velvet-bush								✓		✓			✓	✓
	<i>Lepidosperma gladiatum</i>	Coast Sword-sedge					✓	✓	✓			✓			✓	
	<i>Leptospermum laevigatum</i>	Coast Tea-tree					✓	✓		✓	✓					
	<i>Leucophyta brownii</i>	Cushion Bush						✓				✓	✓	✓	✓	✓
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush			✓	✓	✓									
*	<i>Malva parviflora</i>	Small-flower Mallow													✓	
	<i>Melaleuca ericifolia</i>	Swamp Paperbark														
	<i>Melaleuca lanceolata subsp. lanceolata</i>	Moonah				✓	✓					✓				
	<i>Melaleuca nesophila</i>						✓									
*	<i>Modiola caroliniana</i>	Red-flower Mallow													✓	
	<i>Muehlenbeckia adpressa</i>	Climbing Lignum													✓	
	<i>Myoporum insulare</i>	Common Boobialla	✓			✓	✓		✓	✓	✓	✓			✓	
*	<i>Olea europaea</i>	Olive														
	<i>Olearia axillaris</i>	Coast Daisy-Bush				✓					✓	✓	✓	✓	✓	
	<i>Olearia glutinosa</i>	Sticky Daisy-bush					✓	✓								
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush													✓	
	<i>Oxalis spp</i>	Wood Sorrel													✓	
*	<i>Pinus spp.</i>	Pine														

Origin	Scientific Name	Common Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PO13A
	<i>Pelargonium australe</i>	Austral Stork's-bill													✓	
*	<i>Plantago coronopus</i>	Buck's-horn Plantain													✓	
	<i>Poa billardieri</i>	Coast Fescue													✓	
	<i>Poa poiformis</i>	Coast Tussock-grass														
	<i>Pomaderris paniculosa</i>	Coast Pomaderris													✓	
*	<i>Portulaca oleracea</i>	Common Purslane													✓	
	<i>Rhagodia candolleana subsp. candolleana</i>	Seaberry Saltbush	✓			✓	✓			✓	✓	✓		✓	✓	
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass													✓	
	<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass													✓	
	<i>Samolus repens</i>	Creeping Brookweed				✓										
	<i>Sarcocornia spp.</i>	Glasswort														
	<i>Solanum laciniatum</i>	Large Kangaroo Apple	✓													
*	<i>Sonchus asper</i>	Rough Sow-thistle													✓	
*	<i>Sonchus oleraceus</i>	Smooth Sow-thistle														
	<i>Sporobolus virginicus</i>	Salt Couch						✓								
	<i>Suaeda australis</i>	Austral Seablite							✓							
	<i>Tetragonia tetragonioides</i>	New Zealand Spinach														
	<i>Tetragonia implexicoma</i>	Bower Spinach				✓		✓	✓	✓	✓		✓			
*	<i>Trifolium spp (s)</i>	Clover													✓	
	<i>Wahlenbergia spp.</i>	Bluebell													✓	

## 10. ELWOOD TEATREE RESERVE

### Location:

Reserve and parkland area located to the west of Marine Parade and east of Point Ormond Road. The north-south extent is from the end of Glenhuntly Road to Beach Avenue in the south. Also including the garden areas between the Sailing and lifesaving clubs and the Lady Forster Kindergarten.

### Description:

The Elwood Teatree Reserve comprises a long stretch of planted and possibly remnant vegetation reflecting a highly modified version of Coast Banksia Woodland in the north and south where it is wider, and Coastal Dune Scrub where it narrows around the centre. It is affected by numerous pathways and walkways throughout and in the south-east there are lawned areas within the patches of vegetation. At its eastern end, this reserve also includes a series of small garden beds located behind some of the clubrooms and the Lady Forster Kindergarten. There is one Water Sensitive Urban Design swale in the far eastern portion of this reserve.

Geology maps, historic paintings and photographs (see below) for this region show that this reserve and this portion of the shoreline have been greatly affected landscape alteration, particularly affecting the shoreline. However in the photograph below taken circa 1929, it shows that whilst a former tramline ran along the northern edge of this NHA and it was bisected by two former roads, it is possible that remnant vegetation existed to the east of the Point Ormond Road carpark (also visible in the photo) and then just to the south of the location of the kiosk. Much of the vegetation shown below is now covered by Ormond Esplanade and houses.



Photograph: C. D. Pratt *Elwood Area On Port Phillip Bay* ca1929 Source: State Library of Victoria

**NHA Priority:** Higher priority NHA

**Management Issues within this NHA**

**General Issues:**

- Informal paths through vegetation and trampling, particularly relevant to ET1–5.

**Issues Associated with Vegetation Management:**

- CPED considerations especially associated with ET1–3 but also to a lesser extent for ET5–9 due to shrubbiness of vegetation
- Senescing vegetation throughout
- Species requiring pruning along Ormond Esplanade
- Many gaps vegetation, particularly within ET1–4
- A small amount of Sea Wheat Grass along the western edge of ET5
- Panic Veldt Grass throughout

**Activities to Improve Reserve Management**

**Vegetation management:**

- Fence all VMZ's giving priority to ET1–4
- Rationalise pathways prior to fencing.
- Reduce shrubbiness of vegetation in ET1–3 as a priority and ET5–9 as a secondary priority replant
- Replace shrubs adjacent to Ormond esplanade with low pruning options
- Treat Sea Wheat Grass as a priority
- Treat Panic Veldt Grass as required
- Incorporate Boobialla and Coast Banksia into plantings surrounding the Clubhouse buildings (ER16–19) as appropriate

**Management priorities and activities:**

This reserve contains a relatively large and relatively intact stretch of native vegetation with little in the way of significant disruptions. It also likely harbours some patches of remnant native vegetation or regenerated plants from original plants and may still have the potential to harbour a seed source.

The biggest issues within this reserve arise from the human impacts associated with high numbers of campers and visitors who are venturing into and through the vegetation. As mentioned above, travellers who are camping on Point Ormond Road in large numbers are impacting significantly on the adjoining vegetation with the adjacent Elwood Teatree site in a number of ways.

The key response to this is to restrict access to the vegetation by fencing and to rationalise the pathway network whilst also to undertaking complimentary activities such as upgrading the toilets to ensure that they are safe enough to be left open at night, thus reducing the need for people to seek toilet areas in the vegetation. Increased rubbish removal services are also recommended.





**Figure 25. An area within ET3 that is used as a toilet area (opposite the location of the amenities block)**

The cycle path passes within ET5 requires cycle-path friendly vegetation that meets council's requirements of a 2 metre buffer from trees and shrubs and a 1 metre buffer from grasses to the edge of the bike path. A systematic process of reducing the shrubs adjacent to the path and replacing them with more appropriate species is recommended.

There is a high level of shrubiness throughout this reserve and it is recommended that this be reduced with the priority being the VMZ's in the north and those in the south as a secondary priority.

Panic Veldt-grass throughout this NHA will require management to prevent its impact upon regenerating vegetation or revegetation efforts.

An optional activity which is recommended is to undertake a small trial burn within ET6. This would be to discover whether there is any remnant seed left in the soil. It may also be effective for reducing the shrubby weed cover.

This NHA has been deemed the highest priority for activity.

Table 26. Elwood Teatree Reserve VMZ descriptions and future management actions

Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
ET1	A wide section of vegetation approximating Coast Banksia Woodland. This patch includes some Coast Manna-gum and a variety of Wattles. Also some mature Drooping Sheoak. It is significantly affected by informal pathways which need rationalising. Rhagodia also dominates and there is a reasonable cover of the weed Panic Veldt Grass. A water fountain is also located within this VMZ close to Point Ormond Road. It is being used by travellers as a water source and for domestic activities such as dish-washing and teeth cleaning etc.	Coast Banksia Woodland	Multiple tracks and trampling Shrubbiness and crime prevention issues Non-high threat weed: Panic Veldt Grass throughout Water point encouraging high use, nutrients, runoff and food fragments Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Coast Banksia Woodland Fence to restrict pedestrian access Remove water point Treat weeds	High
ET2	The section of vegetation to the south of ET1. Slightly narrower and with less canopy cover. This patch is very shrubby with the vegetation dominated by Boobialla and Coast Wattle as well as Rhagodia. Again there are numerous pathways throughout.	Coast Banksia Woodland	Multiple tracks and trampling Shrubbiness and crime prevention issues Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Coast Banksia Woodland Fence to restrict pedestrian access	High
ET3	The next section of vegetation to the south, his patch is again narrower than ET2. Whilst it contains some canopy provided by Drooping Sheoak, it mainly presents as Coastal Dune Scrub vegetation. This patch receives a lot more impact from the wind and it is also affected by incursions including toilet areas, trampling and rubbish. The vegetation also has a high degree of shrubbiness, namely Coast Wattle and Rhagodia.	Coast Banksia Woodland	Multiple tracks and trampling Shrubbiness and crime prevention issues Senescing vegetation Toilet areas	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Coastal Dune Scrub Fence to restrict pedestrian access	High
ET4	This VMZ comprises a relatively narrow section of Coastal Dune Scrub vegetation. Whilst it has slightly less impact from trampling it still suffers from multiple pathways as well as a large area of disturbance associated with works on some water infrastructure. This area is due to be planted out this season.	Coastal Dune Scrub	Multiple tracks and trampling Shrubbiness and crime prevention issues Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Coast Banksia Woodland	High

Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
	The vegetation is dominated by Coast Wattle and there is a lot of senescing and overly shrubby vegetation throughout. It has a series of old wooden structures such as barriers and retaining walls throughout that should be removed.			Fence to restrict pedestrian access	
ET5	Section to the south of the kiosk incorporating vegetation approximating Coast Banksia Woodland on both sides of the cycle pathway. This section has multiple tracks leading in from Ormond Esplanade and also issues associated with maintaining a cycle safe pathway.	Coast Banksia Woodland	Multiple tracks Shrubby vegetation / crime prevention issues Pruning along cycle path frontage	Reduce shrubbiness Replant with species appropriate to Coast Banksia Woodland Fence to restrict pedestrian access Also replace species along cycle path frontage with lower maintenance species.	Medium-high
ET6, E7, E9	These sections all front Ormond Esplanade and comprise revegetated Coast Banksia Woodland vegetation that is overly shrubby and is dominated by Rhagodia. There was also senescing vegetation observed throughout.	Coastal Dune Grassland/ Coastal Dune Scrub	Multiple tracks and trampling Shrubbiness and crime prevention issues Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Coast Banksia Woodland Fence to restrict pedestrian access	High
ET8	A patch of shrubby Coastal Dune Scrub/Coast Banksia Woodland vegetation that sits to the west of the Elwood Sailing Club on a hill. This vegetation is dominated by large shrubs and there are many tracks throughout.	Coastal Dune Scrub/ Coast Banksia Woodland	Shrubby vegetation, Rhagodia dominating / crime prevention issues High rates of trampling and inappropriate access	Reduce shrubbiness Replant with species appropriate to Coastal Dune Scrub/Coast Banksia Woodland Fence to restrict pedestrian access	High
ET10	A small isolated patch of Coast Banksia Woodland vegetation that sits to the west of ET9. This patch should be linked to ET9.	Coast Banksia Woodland	Fragmentation	Link to ET9	High

Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
ET16, ET17, ET11, ET18 and ET19	Small garden plantings that approximate Coastal Dune Scrub located to the back of buildings along the foreshore. ET16 is larger and comprises shrubby vegetation that is smothered by Rhagodia and Bower Spinach. The other four patches are small and have a low diversity. Some medium Coast Banksias grow throughout. The main management issues are associated with reducing the scrambling shrubs in ET16.	Coastal Dune Scrub	Shrubbiness ET16 Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Coastal Dune Scrub including the consideration of Boobialla and Coast Banksia where appropriate.	Medium
ET12	This is a small garden bed adjacent to the Kindergarten planted with a high diversity of Grassy Woodland species. This adds some colour and a different texture to the landscape outside the Kinder. The plantings are new and still guarded. There has been a small number of losses that will need to be replaced and a low cover of grassy and herbaceous weeds.	Grassy Woodland	Small cover of Low-threat Weeds. Some dead plants	Treat weeds as required Replace dead plantings Remove guards	Medium-high
ET13	Another patch outside the Kindergarten which comprises vegetation that grows within damp conditions including Swamp Paperbark. The approximated EVC here is consistent with Coastal Dune Scrub but the WSUD swale that is incorporated approximates Estuarine Flats Grassland. There are some grassy/herbaceous weeds at the edges of the swale area and Bower Spinach growth is fairly prolific within the remainder of the site.	Coastal Dune Scrub	Small cover of Low-threat Weeds. Shrubbiness/scramblers	Treat weeds as required Reduce shrubbiness	Medium-high
ET14	These patches lie to the south of ET13 and adjacent to a café. They comprise drier and less shrubby vegetation featuring medium-aged Coast Banksia and largely low-growing tussocky understorey with some shrubs.	Coastal Dune Scrub	No significant issues	Maintain as required	Low
ET15	These two small patches sit alongside a table and seats. They comprise just medium-aged Coast Banksias over a very low understorey.	Coastal Dune Scrub	No significant issues	Maintain as required	Low













Figure 26. Vegetation Management Zones at Elwood Teatree Reserve





Figure 27. Vegetation Management Zones at Elwood Teatree Reserve



	
<p>ET1 waterpoint</p>	<p>ET2</p>
	
<p>ET3</p>	<p>ET3</p>
	
<p>ET4 looking north-west</p>	<p>ET4 looking south-east</p>
	
<p>ET5</p>	<p>ET5 looking north from the south</p>



	
<p>ET6 looking south-east from northern edge</p>	<p>ET6 looking north from southern edge showing table within clearing along concrete path</p>
	
<p>ET7 looking south from gap near path and table</p>	<p>ET8 looking north from the foreshore edge</p>
	
<p>ET9</p>	<p>ET10 looking south</p>
	
<p>ET11</p>	<p>ET12 looking east</p>



 <p>08/04/2015 10:30</p>	 <p>08/04/2015 10:22</p>
<p>ET13</p>	<p>ET13</p>
 <p>08/04/2015 10:34</p>	
<p>ET15</p>	
 <p>08/04/2015 09:49</p>	
<p>ET16</p>	<p>ET17</p>
 <p>08/04/2015 10:31</p>	 <p>08/04/2015 10:30</p>
<p>ET18</p>	<p>ET19</p>

Table 27. Vegetation List for Elwood Teatree

Origin	Scientific Name	Common Name	ET1	ET2	ET3	ET4	ET5	ET6	ET7	ET8	ET9	ET10	ET11	ET12	ET13	ET14	ET15	ET16	ET17	ET18	ET19
	<i>Acacia implexa</i>	Lightwood	✓							✓											
	<i>Acacia longifolia</i> var. <i>sophorae</i>	Coast Wattle	✓	✓	✓	✓		✓		✓	✓	✓						✓		✓	
	<i>Acacia mearnsii</i>	Black Wattle	✓								✓										
	<i>Acacia melanoxylon</i>	Blackwood	✓																		
	<i>Acacia paradoxa</i>	Hedge Wattle	✓					✓	✓	✓	✓	✓									
	<i>Acacia</i> spp.	Wattle																✓			
	<i>Allocasuarina verticillata</i>	Drooping Sheoak	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			
	<i>Alyxia buxifolia</i>	Sea Box	✓		✓											✓					
*	<i>Arctotheca calendula</i>	Capeweed													✓						
*	<i>Araucaria heterophylla</i>	Norfolk Island Pine	✓	✓	✓	✓															
*	<i>Aster subulatus</i>	Aster Weed													✓						
	<i>Atriplex cinerea</i>	Coast Saltbush		✓	✓	✓	✓	✓							✓						
	<i>Atriplex semibaccata</i>	Berry Saltbush							✓		✓										
	<i>Austrostipa</i> spp	Spear-grass		✓	✓									✓							
	<i>Austrostipa stipoides</i>	Prickly Spear-grass			✓	✓	✓	✓		✓				✓	✓	✓		✓			
	<i>Calocephalus citreus</i>	Lemon Beauty-heads												✓							
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia			✓								✓		✓	✓	✓		✓		✓
	<i>Bursaria spinosa</i>	Sweet Bursaria	✓																		
	<i>Carex appressa</i>	Tall Sedge													✓						
	<i>Carpobrotus rossii</i>	Karkalla			✓	✓	✓	✓													
*	<i>Chenopodium</i> spp.	Goosefoot													✓						
	<i>Chloris truncata</i>	Windmill Grass												✓							
	<i>Chrysocephalum apiculatum</i>	Common Everlasting												✓							
	<i>Correa alba</i>	White Correa			✓		✓	✓	✓		✓	✓	✓	✓		✓		✓			
*	<i>Cotula australis</i>	Common Cotula													✓						
*	<i>Cynodon dactylon</i>	Couch					✓							✓	✓						
*	<i>Cyperus eragrostis</i>	Drain Sedge													✓						



Origin	Scientific Name	Common Name	ET1	ET2	ET3	ET4	ET5	ET6	ET7	ET8	ET9	ET10	ET11	ET12	ET13	ET14	ET15	ET16	ET17	ET18	ET19	
	<i>Dianella admixta</i>	Black-anther Flax-lily			✓									✓								
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily		✓		✓	✓	✓	✓			✓		✓	✓	✓	✓	✓				
	<i>Dianella longifolia</i> s.l.	Pale Flax-lily													✓	✓						
	<i>Dichelachne crinita</i>	Long-hair Plume-grass												✓								
	<i>Dichondra repens</i>	Kidney-weed													✓							
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	Rounded Noon-flower				✓		✓	✓	✓		✓										
*	<i>Ehrharta erecta</i> var. <i>erecta</i>	Panic Veldgrass	✓				✓	✓			✓			✓				✓	✓	✓		
	<i>Einadia nutans</i> ssp. <i>nutans</i>	Nodding Saltbush				✓								✓								
	<i>Eriogonum ovatum</i>	Blue Devil												✓								
	<i>Eucalyptus cephalocarpa</i> s.l.	Silver-leaf Stringybark							✓													
	<i>Eucalyptus obliqua</i>	Messmate Stringybark							✓		✓											
	<i>Eucalyptus ovata</i>	Swamp Gum					✓		✓						✓							
	<i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i>	Coast Manna-gum	✓	✓					✓	✓												
	<i>Ficinia nodosa</i>	Knobby Club-sedge						✓							✓							
	<i>Fumitory muralis</i> subsp. <i>muralis</i>	Wall Fumitory													✓							
	<i>Goodenia ovata</i>	Hop Goodenia	✓				✓		✓						✓							
	<i>Hardenbergia violacea</i>	Purple Coral-pea												✓								
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush													✓							
	<i>Juncus</i> spp.	Rush													✓						✓	✓
*	<i>Lagunaria patersonia</i> subsp. <i>patersonia</i>	Norfolk Island Hibiscus																				
	<i>Lasiopetalum baueri</i>	Slender Velvet-bush	✓		✓		✓		✓	✓	✓					✓	✓					
	<i>Lepidosperma gladiatum</i>	Coast Sword-sedge			✓											✓						
	<i>Leptospermum laevigatum</i>	Coast Tea-tree	✓		✓		✓	✓										✓				
	<i>Leucophyta brownii</i>	Cushion Bush			✓		✓	✓	✓	✓												
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush		✓			✓		✓		✓				✓							
*	<i>Malva parviflora</i>	Small-flowered Mallow														✓						
	<i>Melaleuca ericifolia</i>	Swamp Paperbark							✓	✓	✓				✓						✓	
	<i>Melaleuca lanceolata</i> subsp. <i>lanceolata</i>	Moonah	✓	✓	✓																	
	<i>Melaleuca styphelioides</i>	Prickly-leaved Paperbark			✓																	

Origin	Scientific Name	Common Name	ET1	ET2	ET3	ET4	ET5	ET6	ET7	ET8	ET9	ET10	ET11	ET12	ET13	ET14	ET15	ET16	ET17	ET18	ET19
	<i>Myoporum insulare</i>	Common Boobialla	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓			✓		✓	
	<i>Myoporum viscosum</i>	Sticky Boobialla			✓																
	<i>Olearia axillaris</i>	Coast Daisy-Bush	✓		✓		✓	✓	✓		✓										
	<i>Olearia glutinosa</i>	Sticky Daisy-bush												✓							
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush			✓																
	<i>Ozothamnus turbinatus</i>	Coast Everlasting					✓	✓			✓										
	<i>Pelargonium australe</i>	Austral Stork's-bill												✓		✓					
*	<i>Phoenix canariensis</i>	Canary Island Palm	✓																		
	<i>Pimelea curviflora</i>	Curved Rice-flower												✓							
	<i>Poa poiformis</i>	Coast Tussock-grass													✓						
	<i>Poa spp.</i>	Tussock Grass								✓	✓										
*	<i>Polygonum aviculare</i>	Wireweed													✓						
	<i>Pomaderris paniculosa</i> <i>ssp. Paralia</i>	Coast Pomaderris																✓			
	<i>Portulaca oleracea</i>	Common Purslane													✓	✓					
	<i>Rhagodia candolleana</i> <i>ssp. Candolleana</i>	Seaberry Saltbush	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
	<i>Solanum aviculare</i>	Kangaroo Apple												✓	✓	✓					
*	<i>Sonchus oleraceus</i>	Smooth Sow-thistle												✓							
	<i>Tetragonia implexicoma</i>	Bower Spinach	✓	✓	✓	✓	✓				✓				✓			✓			✓
	<i>Tetragonia tetragonioides</i>	New Zealand Spinach				✓								✓							
	<i>Wahlenbergia spp</i>	Bluebell												✓							
	<i>Zygophyllum billardierei</i>	Coast Twin-leaf														✓					

\* Denotes an introduced non-indigenous species

## 11. ELWOOD FORESHORE AND RESERVE

### **Location:**

Reserve and parkland area located to the south of Ormond Esplanade, extending to the east of Beach Avenue to Head Street in the east.

### **Description:**

The Elwood Foreshore and Reserve is a high use recreation facility which receives high-use for a multitude of sporting events. A number of water-based clubs have their buildings located along the foreshore and there are two restaurant facilities within the reserve. Other infrastructure includes tennis courts and clubhouse, a small council depot, a croquet club in the eastern corner and a large sports pavilion situated centrally in the reserve. There is also a playground located in the western portion of the reserve adjacent to the tennis courts and two main carparking areas.

There are two Water Sensitive Urban Design swales and associated plantings within the reserve.

Native vegetation has been planted throughout the reserve for habitat and amenity values and also to provide screening and section off the various sporting fields and locations. Therefore most of the vegetation within this reserve comprises of linear patches or else small and fragmented patches.

**NHA Priority:** Higher priority NHA

### **Management Issues within this NHA**

#### **General Issues:**

- Informal paths through vegetation and trampling, particularly relevant close to sports ovals adjacent to carparks.

#### **Issues Associated with Vegetation Management:**

- Low diversity vegetation
- Shrubbiness and Rhagodia dominating
- Some trampling especially around sports ovals and between carparks
- Some minor woody weed incursions: Irish Strawberry and Desert Ash

### **Activities to Improve Reserve Management**

#### **Vegetation management:**

- Reduce shrubbiness of vegetation, particularly Rhagodia and replant with less shrubby species
- Install barriers and plant vegetation that will reduce the likelihood of trampling and paths

#### **Management priorities and activities:**

The vegetation within this reserve is provided only partially for habitat value but mainly for other purposes. Key issues are associated with low diversity vegetation, shrubby vegetation and Rhagodia dominating.

Informal paths through vegetation and trampling, particularly relevant close to sports ovals adjacent to carparks are also an issue.

There are also a few occurrences of woody weeds that should be addressed.

The cycle path passes next to ER10, and cycle-path friendly vegetation is required here that meets council's requirements of a 2 metre buffer from trees and shrubs and a 1 metre buffer from grasses to the edge of the bike path. A systematic process of reducing the shrubs adjacent to the path and replacing them with more appropriate species is recommended.

In the vicinity of the new sporting pavilion it is suggested that an access and landscaping plan be developed for the area around the pavilion and amongst the sporting facilities (ovals, open areas, cricket nets and seating) to ensure that plantings can be expanded and that pathways, access and other facilities such as extra seating, wind protection and shade are provided for in a strategic way.

The grassed areas along the foreshore section of the reserve provides an opportunity to establish more plantings for habitat and shade. These areas could also be established with tables for picnicking. This would be an optional activity in the future and has not been costed at this stage.

Table 28. Elwood Foreshore and Reserve VMZ descriptions and future management actions

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
ER1	A narrow rectangular patch of Coastal Dune Scrub/Coast Banksia Woodland located between the cycle path and the carpark. It is also bisected by a small building which acts as the kitchen for the beachfront restaurant to the west (across the cycle path). This patch is very shrubby and scramblers dominate. Cycle safety guidelines for vegetation also need to apply.	Coastal Dune Scrub/Coast Banksia Woodland	Shrubiness/scramblers Cycle safety vegetation considerations	Reduce shrubiness Replant with species appropriate to Coast Banksia Woodland Also replace species along cycle path frontage with lower maintenance/safer species	Medium-high
ER 2, 3, 6, 32 and 33	These VMZ's are all located around the edges of sports grounds in the north and comprise very similar vegetation with very similar issues. They comprise a Coastal Dune Scrub/Coast Banksia Woodland mix, have low diversity and have Rhagodia dominating. They are also affected by a medium level of pathways (with the exception of ER32 and ER33).	Coastal Dune Scrub/Coast Banksia Woodland	Shrubiness/scramblers Senescing vegetation Tracks and trampling	Reduce shrubiness Remove senescing vegetation Replant with species appropriate to Coast Banksia Woodland Rationalise access points and then fence to restrict pedestrian access in other areas	Medium
ER4	A linear strip along the southern edge of the tennis courts comprising planted Coastal Dune Scrub/Coast Banksia Woodland vegetation. This patch is adjacent to a pathway and the carpark also therefore pruning considerations are high.	Coastal Dune Scrub/Coast Banksia Woodland	High maintenance/pruning	Replace species with lower maintenance species	Medium
ER5	Three small patches of Coast Banksia Woodland vegetation adjacent to the playground comprising only Coast Banksia and a low diversity understorey dominated by Bower Spinach. As two of these patches are isolated by pathways they can't be linked but possibly ER14A could be expanded to the north, but this is not a high priority.	Coast Banksia Woodland	No significant issues	Increase understorey diversity Fence after planting Possibly expand ER5A to the north	Low
ER7	This patch comprises a relatively recent planting that was established across an area that formerly comprised a portion of the carpark as part of the creation of the council depot area. A patch of shrubs from the former garden bed still remain. The newly planted vegetation comprises grasses and shrubs but does not appear to be growing vigorously.	Coastal Dune Scrub/Coast Banksia Woodland	Gaps in vegetation cover Possibly low success in plantings	Infil gaps with hardy species appropriate to Coast Banksia Woodland/Coastal Dune Scrub	Medium
ER 9-17	These areas comprise a series of small, disjunct garden areas located within the southern carpark. Some of these areas are at the	Coastal Dune Scrub/Coast	High rates of trampling and inappropriate access	Replant with species appropriate to Coastal Dune Scrub/Coast Banksia	Medium




VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
	edges of the carpark, the others form small 'traffic islands' which receive a high volume of foot traffic and pressure. In particular the smaller 'diamond' shapes are prone to damage. There are some mature Coast Banksia that have established in these areas.	Banksia Woodland		Woodland Rationalise carpark layout to remove isolated patches and consolidated into longer, wider patches.	
ER18	A stretch of vegetation along the north of the southern carpark. This patch is planted with a mix of Coastal Dune Scrub and Coast Banksia Woodland.	Coast Banksia Woodland	No significant issues	Maintain as required	Medium
ER19	A WSUD swale planted to approximate Estuarine Flats Grassland. It has a gravel mulch and some minor grassy/herbaceous weed incursions.	Estuarine Flats Grassland	Minor weed incursions	Treat weeds as required	Medium
ER20	A long and very narrow patch of shrubby and grassy revegetation along the north of the southern carpark. This patch is subject to much trampling and also has a couple of infestations of Desert Ash throughout.	Coastal Dune Scrub/Coast Banksia Woodland	High rates of trampling and inappropriate access Woody weed: Desert Ash	Introduce fencing on the carpark edge Replant with species appropriate to Coastal Dune Scrub/Coast Banksia Woodland Remove all Desert Ash	High
ER 22, 23	Two small patches of shrubby revegetation that sit to the west of ER32 and the east of a barbeque area.	Coastal Dune Scrub/Coast Banksia Woodland	Fragmentation	Link to each other.	Medium
ER24	A long stretch of planted vegetation along the western edge of the main sports oval. This vegetation is planted to Coastal Dune Scrub/Coast Banksia Woodland. There are numerous pathways through and especially in the northern section, Rhagodia and Bower Spinach dominate and overstorey species are missing	Coastal Dune Scrub/Coast Banksia Woodland	Shrubbiness/scramblers Senescing vegetation Tracks and trampling	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Coast Banksia Woodland, especially overstorey species Rationalise access points and then fence to restrict pedestrian access in other areas	High
ER26	A long narrow stretch of vegetation along Ormond Esplanade. Vegetation comprises a high cover of Prickly Spear-grass and some sections with higher cover of Rhagodia in the west. Drooping	Coast Banksia Woodland	No significant issues	Reduce Rhagodia as required	Low

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
	Sheoak have been planted at intervals as have Norfolk Island Hibiscus * <i>Lagunaria patersonia</i> subsp. <i>Patersonia</i> .				
ER27 and 28	Two patches of vegetation that approximate Coast Banksia Woodland with a Eucalypt overstorey and an overly shrubby mid-storey. Some gaps are present around the edges and these two patches could be linked.	Coast Banksia Woodland	Gaps	Infill gaps by planting with species appropriate to Coast Banksia Woodland	Medium
ER29	A very small triangular planting at on the north side of the sports pavilion dominated by Prickly Spear-grass. This area would best be represented by Coast Banksia Woodland vegetation. This patch could be expanded in time but it is not currently a priority. A landscaping and access plan may need to be provided for the area around this pavilion and sporting facilities to ensure that plantings can be expanded and that pathways and access are provided for.	Coast Banksia Woodland	No significant issues	Maintain as required	Low
ER30	A triangular shaped patch of revegetation on a small hillock to the east of the new pavilion. This patch should be better linked to a Drooping Sheoak that lies just to the east.	Coast Banksia Woodland	Fragmentation	Expand to incorporate Drooping Sheoak to the east	Medium-high
ER31	A new planting dominated by Prickly Spear-grass and Drooping Sheoak. This planting appears to have been designed with amenity in mind, but the spacings and location of the Sheoak may cause problems in the future as they reach their full height.	Coast Banksia Woodland	No significant issues	Maintain as required Monitor Sheoak growth over time, potentially thin	Low
ER34	A series of plantings surrounding the playground area. These plantings are consistent with Coast Banksia Woodland and comprise some Coast Banksias and Drooping Sheoaks with grasses and some Bower Spinach beneath. This area is subject to a high degree of foot traffic and vegetation in this area needs to be appropriate to have around the playground. There are also a number of large rocks that are located on the southern end of the playground. These rocks may be contributing to an unsafe environment and should be considered for removal.	Coast Banksia Woodland	Trampling and foot traffic	Replanting of replacement plants required at two-yearly intervals. Remove rocks from the southern end of the playground	Medium-high
ER35	A linear strip along the eastern edge of the tennis courts comprising planted Coastal Dune Scrub/Coast Banksia Woodland vegetation. This patch is adjacent to a pathway and close to the playground also therefore pruning considerations are high.	Coastal Dune Scrub/Coast Banksia Woodland	Shrubbiness/scramblers High maintenance/pruning	Reduce shrubbiness Replant with species appropriate to Coast Banksia Woodland and with species that have lower maintenance requirements	Medium



Figure 28. Vegetation Management Zones at Elwood Foreshore and Reserve








	
<p>ER1</p>	<p>ER2</p>
	
<p>ER3</p>	<p>ER4</p>
	
<p>ER5A</p>	<p>ER5B&amp;C</p>
	
<p>ER6</p>	<p>ER6</p>









	
ER7	ER8
	
ER9	ER10
	
ER11A&B	ER12A&B
	
ER13B	ER14



	
<p>ER15, 16</p>	<p>ER15, 16</p>
	
<p>ER17</p>	<p>ER18</p>
	
<p>ER19</p>	<p>ER20</p>
	
<p>ER21</p>	<p>ER22(right) and ER23 (left)</p>



	
ER24	ER24
	
ER25	
	
ER26	ER26
	
ER27	ER28











	
ER29	ER30
	
ER31	ER32
	
ER33	ER34
	
ER34	ER35

Table 29. Vegetation List for Elwood Foreshore and Reserve

Origin	Scientific Name	Common Name	ER 1	ER 2	ER 3	ER 4	ER 4	ER 6	ER 7	ER 8	ER 9	ER10A &B	ER11 A&B	ER 12A	ER 12B	EF 12C	ER13
	<i>Acacia implexa</i>	Lightwood															
	<i>Acacia longifolia</i> var. <i>sophorae</i>	Coast Wattle															
	<i>Acacia mearnsii</i>	Black Wattle															
	<i>Acacia paradoxa</i>	Hedge Wattle															
	<i>Acacia</i> spp.	Wattle															
	<i>Allocasuarina paludosa</i>	Swamp Sheoak															
	<i>Allocasuarina littoralis</i>	Black Sheoak															✓
	<i>Allocasuarina verticillata</i>	Drooping Sheoak		✓	✓		✓	✓	✓			✓					
	<i>Alyxia buxifolia</i>	Sea Box															
	<i>Araujia hortorum</i>	Moth Vine															
	<i>Arbutus unedo</i>	Irish Strawberry Tree															
*	<i>Arctotheca calendula</i>	Capeweed												✓			
*	<i>Aster subulatus</i>	Aster Weed															
	<i>Atriplex cinerea</i>	Coast Saltbush							✓								
	<i>Atriplex semibaccata</i>	Berry Saltbush											✓				
	<i>Austrostipa</i> spp																
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓			✓
	<i>Calocephalus citreus</i>	Lemon Beauty-heads															
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓		✓
	<i>Banksia marginata</i>	Silver Banksia															
	<i>Bursaria spinosa</i>	Sweet Bursaria															
	<i>Carex appressa</i>	Tall Sedge															
	<i>Carpobrotus rossii</i>	Karkalla							✓								
	<i>Callistemon</i> spp.	Bottlebrush															
*	<i>Chenopodium</i> spp.	Goosefoot															
	<i>Chloris truncata</i>	Windmill Grass															
	<i>Chrysocephalum apiculatum</i>	Common Everlasting															



Origin	Scientific Name	Common Name	ER 1	ER 2	ER 3	ER 4	ER 4	ER 6	ER 7	ER 8	ER 9	ER10A & B	ER11 A&B	ER 12A	ER 12B	EF 12C	ER13
	<i>Clematis microphylla s.l.</i>	Small-leaved Clematis															
*	<i>Coprosma repens</i>	Mirror Bush															
	<i>Correa alba</i>	White Correa				✓			✓			✓					✓
	<i>Correa reflexa</i>	Common Correa							✓								
*	<i>Cotula australis</i>	Common Cotula															
*	<i>Cynodon dactylon</i>	Couch															
*	<i>Cyperus eragrostis</i>	Drain Sedge															
	<i>Dianella admixta</i>	Black-anther Flax-lily															
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily										✓					✓
	<i>Dianella longifolia s.l.</i>	Pale Flax-lily							✓								
	<i>Dianella revoluta s.l.</i>	Black-anther Flax-lily															
	<i>Dichelachne crinita</i>	Long-hair Plume-grass															
	<i>Dichondra repens</i>	Kidney-weed															
	<i>Disphyma crassifolium subsp. clavellatum</i>	Rounded Noon-flower							✓	□	✓	✓				✓	✓
*	<i>Ehrharta erecta var. erecta</i>	Panic Veldgrass															
	<i>Einadia nutans ssp. nutans</i>	Nodding Saltbush															
	<i>Eriogonum ovatum</i>	Blue Devil															
	<i>Enchylaena tomentosa</i>	Ruby Saltbush															
	<i>Eucalyptus camaldulensis</i>	River Red-gum						✓									
	<i>Eucalyptus cephalocarpa s.l.</i>	Silver-leaf Stringybark															
	<i>Eucalyptus leucoxylon</i>	Yellow Gum															
	<i>Eucalyptus ovata</i>	Swamp Gum							✓								
	<i>Eucalyptus viminalis subsp. pryoriana</i>	Coast Manna-gum															
	<i>Ficinia nodosa</i>	Knobby Club-sedge										✓	✓	✓		✓	
*	<i>Ficus macrophylla</i>	Moreton Bay Fig															
*	<i>Fraxinus angustifolia subsp. Angustifolia</i>	Desert Ash															
	<i>Fumitory muralis subsp. muralis</i>	Wall Fumitory															
	<i>Goodenia ovata</i>	Hop Goodenia							✓								
	<i>Hardenbergia violacea</i>	Purple Coral-pea															

Origin	Scientific Name	Common Name	ER 1	ER 2	ER 3	ER 4	ER 4	ER 6	ER 7	ER 8	ER 9	ER10A &B	ER11 A&B	ER 12A	ER 12B	EF 12C	ER13
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush															
	<i>Juncus</i> spp.	Rush							✓								
*	<i>Lagunaria patersonia</i> subsp. <i>patersonia</i>	Norfolk Island Hibiscus											✓				
	<i>Lasiopetalum baueri</i>	Slender Velvet-bush															
	<i>Lepidosperma gladiatum</i>	Coast Sword-sedge															
	<i>Leptospermum laevigatum</i>	Coast Tea-tree	✓		✓	✓											
	<i>Leucophyta brownii</i>	Cushion Bush						✓		✓	✓		✓				
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush							✓						✓		
*	<i>Malva parviflora</i>	Small-flowered Mallow															
*	<i>Medicago polymorpha</i>	Burr Medic											✓				
	<i>Melaleuca ericifolia</i>	Swamp Paperbark															
	<i>Myoporum insulare</i>	Common Boobialla	✓		✓	✓	✓	✓	✓		✓	✓					✓
	<i>Myoporum parvifolium</i>	Creeping Myoporum															
	<i>Olearia axillaris</i>	Coast Daisy-Bush															
	<i>Olearia glutinosa</i>	Sticky Daisy-bush															
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush															
	<i>Pelargonium australe</i>	Austral Stork's-bill															
	<i>Pimelea curviflora</i>	Curved Rice-flower															
	<i>Pittosporum undulatum</i>	Sweet Pittosporum															
	<i>Poa poiformis</i>	Coast Tussock-grass							✓		✓						
*	<i>Polygonum aviculare</i>	Wireweed															
	<i>Pomaderris paniculosa</i> ssp. <i>Paralia</i>	Coast Pomaderris															
	<i>Portulaca oleracea</i>	Common Purslane												✓			
	<i>Rhagodia candolleana</i> ssp. <i>Candolleana</i>	Seaberry Saltbush	✓	✓		✓	✓	✓	✓	✓		✓					✓
	<i>Solanum aviculare</i>	Kangaroo Apple															
	<i>Solanum laciniatum</i>	Large Kangaroo Apple															
*	<i>Sonchus oleraceus</i>	Smooth Sow-thistle							✓								
	<i>Tetragonia tetragonioides</i>	New Zealand Spinach															
	<i>Tetragonia implexicoma</i>	Bower Spinach	✓			✓	✓			✓		✓					
*	<i>Trifolium repens</i> var. <i>repens</i>	White Clover							✓								
	<i>Wahlenbergia</i> spp.	Bluebell															
	<i>Zygophyllum billardierei</i>	Coast Twin-leaf															

\* Denotes an introduced non-indigenous species

Origin	Scientific Name	Common Name	ER 14 A-D	ER 15 A-D	ER 16 A-D	ER 17	ER 18	ER 19	ER 20	ER 21	ER 22	ER 23	ER 24	ER 25	ER 26	ER 27	ER 28	ER 29	ER 30	ER 31	ER 32	ER 33	ER 34	ER 35
	<i>Acacia implexa</i>	Lightwood																						
	<i>Acacia longifolia</i> var. <i>sophorae</i>	Coast Wattle															✓							✓
	<i>Acacia mearnsii</i>	Black Wattle																			✓			
	<i>Acacia paradoxa</i>	Hedge Wattle																						
	<i>Acacia</i> spp.	Wattle																						
	<i>Allocasuarina paludosa</i>	Swamp Sheoak																				✓		
	<i>Allocasuarina littoralis</i>	Black Sheoak					✓										✓					✓		
	<i>Allocasuarina verticillata</i>	Drooping Sheoak								✓			✓		✓				✓	✓	✓	✓	✓	
	<i>Alyxia buxifolia</i>	Sea Box																						
	<i>Araujia hortorum</i>	Moth Vine							✓															✓
	<i>Arbutus unedo</i>	Irish Strawberry Tree											✓											
*	<i>Arctotheca calendula</i>	Capeweed																						
*	<i>Aster subulatus</i>	Aster Weed																						
	<i>Atriplex cinerea</i>	Coast Saltbush					✓										✓		✓			✓		
	<i>Atriplex semibaccata</i>	Berry Saltbush					✓								✓	✓								
	<i>Austrostipa</i> spp																							
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	✓	✓	✓	✓									✓			✓		✓				✓
	<i>Calocephalus citreus</i>	Lemon Beauty-heads																						
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia	✓	✓	✓	✓		✓	✓		✓		✓		✓		✓				✓		✓	✓
	<i>Banksia marginata</i>	Silver Banksia																						
	<i>Bursaria spinosa</i>	Sweet Bursaria																						
	<i>Carex appressa</i>	Tall Sedge						✓																
	<i>Carpobrotus rossii</i>	Karkalla							✓															
	<i>Callistemon</i> spp.	Bottlebrush																						✓
*	<i>Chenopodium</i> spp.	Goosefoot																						
	<i>Chloris truncata</i>	Windmill Grass																						

Origin	Scientific Name	Common Name	ER 14 A-D	ER 15 A-D	ER 16 A-D	ER 17	ER 18	ER 19	ER 20	ER 21	ER 22	ER 23	ER 24	ER 25	ER 26	ER 27	ER 28	ER 29	ER 30	ER 31	ER 32	ER 33	ER 34	ER 35
	<i>Chrysocephalum apiculatum</i>	Common Everlasting																						
	<i>Clematis microphylla s.l.</i>	Small-leaved Clematis																				✓		
*	<i>Coprosma repens</i>	Mirror Bush																						✓
	<i>Correa alba</i>	White Correa					✓	✓		✓		✓	✓	✓			✓		✓					✓
	<i>Correa reflexa</i>	Common Correa				✓																		
*	<i>Cotula australis</i>	Common Cotula																						
*	<i>Cynodon dactylon</i>	Couch																						
*	<i>Cyperus eragrostis</i>	Drain Sedge																						
	<i>Dianella admixta</i>	Black-anther Flax-lily																						
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily		✓											✓		✓				✓	✓		✓
	<i>Dianella longifolia s.l.</i>	Pale Flax-lily						✓																
	<i>Dianella revoluta s.l.</i>	Black-anther Flax-lily																						
	<i>Dichelachne crinita</i>	Long-hair Plume-grass																						
	<i>Dichondra repens</i>	Kidney-weed																						
	<i>Disphyma crassifolium subsp. clavellatum</i>	Rounded Noon-flower	✓	✓	✓	✓																		
*	<i>Ehrharta erecta var. erecta</i>	Panic Veldgrass																						
	<i>Einadia nutans ssp. nutans</i>	Nodding Saltbush																						
	<i>Eriogonum ovinum</i>	Blue Devil																						
	<i>Enchylaena tomentosa</i>	Ruby Saltbush													✓									
	<i>Eucalyptus camaldulensis</i>	River Red-gum															✓							
	<i>Eucalyptus cephalocarpa s.l.</i>	Silver-leaf Stringybark																						
	<i>Eucalyptus leucoxylon</i>	Yellow Gum											✓									✓	✓	
	<i>Eucalyptus ovata</i>	Swamp Gum																						
	<i>Eucalyptus viminalis subsp. pryoriana</i>	Coast Manna-gum															✓							
	<i>Ficinia nodosa</i>	Knobby Club-sedge	✓					✓																
*	<i>Ficus macrophylla</i>	Moreton Bay Fig						✓															✓	
*	<i>Fraxinus angustifolia subsp. Angustifolia</i>	Desert Ash							✓															



Origin	Scientific Name	Common Name	ER 14 A-D	ER 15 A-D	ER 16 A-D	ER 17	ER 18	ER 19	ER 20	ER 21	ER 22	ER 23	ER 24	ER 25	ER 26	ER 27	ER 28	ER 29	ER 30	ER 31	ER 32	ER 33	ER 34	ER 35
	<i>Fumitory muralis</i> subsp. <i>muralis</i>	Wall Fumitory																						
	<i>Goodenia ovata</i>	Hop Goodenia					✓										✓							
	<i>Hardenbergia violacea</i>	Purple Coral-pea																				✓		
	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	Sea Rush						✓																
	<i>Juncus</i> spp.	Rush						✓																
*	<i>Lagunaria patersonia</i> subsp. <i>patersonia</i>	Norfolk Island Hibiscus													✓									
	<i>Lasiopetalum baueri</i>	Slender Velvet-bush																	✓					
	<i>Lepidosperma gladiatum</i>	Coast Sword-sedge																						
	<i>Leptospermum laevigatum</i>	Coast Tea-tree					✓		✓				✓										✓	
	<i>Leucophyta brownii</i>	Cushion Bush			✓										✓									
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓			✓		✓				✓						✓	✓	✓	✓			
*	<i>Malva parviflora</i>	Small-flowered Mallow																						
*	<i>Medicago polymorpha</i>	Burr Medic																						
	<i>Melaleuca ericifolia</i>	Swamp Paperbark																						
	<i>Myoporum insulare</i>	Common Boobialla			✓		✓			✓	✓	✓	✓			✓	✓				✓			✓
	<i>Myoporum parvifolium</i>	Creeping Myoporum																						
	<i>Olearia axillaris</i>	Coast Daisy-Bush																					✓	
	<i>Olearia glutinosa</i>	Sticky Daisy-bush																						
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush																						
	<i>Pelargonium australe</i>	Austral Stork's-bill																						
	<i>Pimelea curviflora</i>	Curved Rice-flower																						
	<i>Pittosporum undulatum</i>	Sweet Pittosporum											✓											
	<i>Poa poiformis</i>	Coast Tussock-grass				✓		✓		✓													✓	
*	<i>Polygonum aviculare</i>	Wireweed																						
	<i>Pomaderris paniculosa</i> ssp. <i>Paralia</i>	Coast Pomaderris																						
	<i>Portulaca oleracea</i>	Common Purslane																						
	<i>Rhagodia candolleana</i> ssp. <i>Candolleana</i>	Seaberry Saltbush	✓	✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓				✓	✓		✓

Origin	Scientific Name	Common Name	ER 14 A-D	ER 15 A-D	ER 16 A-D	ER 17	ER 18	ER 19	ER 20	ER 21	ER 22	ER 23	ER 24	ER 25	ER 26	ER 27	ER 28	ER 29	ER 30	ER 31	ER 32	ER 33	ER 34	ER 35
	<i>Solanum aviculare</i>	Kangaroo Apple																						
	<i>Solanum laciniatum</i>	Large Kangaroo Apple											✓	✓				✓						
*	<i>Sonchus oleraceus</i>	Smooth Sow-thistle																						
	<i>Tetragonia tetragonioides</i>	New Zealand Spinach																						
	<i>Tetragonia implexicoma</i>	Bower Spinach					✓		✓		✓	✓	✓				✓							
*	<i>Trifolium repens</i> var. <i>repens</i>	White Clover																						
	<i>Wahlenbergia</i> spp.	Bluebell																						
	<i>Zygophyllum billardierei</i>	Coast Twin-leaf																						

## 12. LAGOON RESERVE

### Location:

Reserve and parkland area in Port Melbourne bordered by Graham Street to the south, Esplanade west and a childcare centre to the west, Liardet Street to the north and an apartment complex to the east.

### Description:

Lagoon Reserve is an area of green space that was created following the infilling of a large former lagoon that used to run north–south throughout Port Melbourne almost reaching the bay. The Lagoon Reserve portion of the lagoon was infilled in the 1890's. It was soon affected by the industrialisation of Port Melbourne and filled with sewage and pollution. Its mouth was also formerly dredged to create a boat harbour. A bridge used to cross the lagoon at Graham Street (Edelstein 2001).

The reserve now provides for a variety of uses and includes a sports oval and cricket nets, a number of tables and barbeque facilities, a sporting pavilion and amenities block and a number of pathways, with the most formal of these being a concrete path running down the east side of the reserve.

The reserve fronts on to a number of roads and there are two formal access points from Liardet Street and Graham Street. Additionally, five more informal access points also occur at the corner of Graham Street and Esplanade West, three along Esplanade West and another from Liardet Street close to the childcare centre.

The vegetation within the reserve is all either native or indigenous and reflects various revegetation works undertaken over a number of decades.

**NHA Priority:** Medium priority NHA

### **Management Issues within this NHA**

#### **General Issues:**

- Informal paths through vegetation and trampling, within LR10 and along the Esplanade West edge.
- Site contamination below the soil is a significant issue

#### **Issues Associated with Vegetation Management:**

- Low diversity vegetation
- Shrubbiness
- Some trampling especially within LR10

### **Activities to Improve Reserve Management**

#### **Vegetation management:**

- Reduce shrubbiness of vegetation and replant with less shrubby species
- Install barriers and plant vegetation that will reduce the likelihood of trampling and paths

#### **Management priorities and activities:**

A feature of Lagoon Reserve is that there is a strong group of local residents who take an interest in the management of Lagoon Reserve and monitor the activity that occurs within it. They also regularly assist with plantings and other management activities when they are coordinated by council.

A Reserve Management Plan was developed in 2013. It provides a number of recommendations for the reserve based on community feedback and engagement. With regard to vegetation management, these include:

- more provision of shade within the reserve
- removal of the fences around the edges of the reserve and replacing with vegetation that will provide a physical barrier to entry
- planting around the perimeter of the reserve that will assist in buffering light and noise emanating from the reserve during sporting events
- removal of dead and senescing vegetation and infilling gaps that currently exist

Informal paths through vegetation particularly along the western edge of the reserve and within LR10 are also an issue. It is recommend that the pathways identified within the Lagoon Reserve Foreshore Management Plan be adopted and all other pathways closed.

Any garden beds along the concrete pathway and other informal pathways should include edge plantings that do not require high maintenance and that maximise access and safety.

The residents within the adjacent apartment complex have some conflicting issues regarding the adjoining garden beds. These include the wish for privacy and screening from the reserve, but also that the vegetation not be too shrubby as to increase the potential occurrence of crime or nuisance issues.

In response to one of the recommendations from the Reserve Management Plan, shade plantings have been proposed in three locations within the reserve. These locations will be determined at a later date in consultation with other CoPP staff as the Reserve Management Plan proposes to relocate tables and other infrastructure which may benefit from shade plantings in the future.



Table 30. Lagoon Reserve VMZ descriptions and future management actions

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
LR1	A stretch of vegetation in the north-western portion of the reserve adjacent to the childcare centre. This garden bed has been planted with a diversity of species including some recent plantings of grasses and herbs as well as some shrubs and a variety of Eucalypts providing an effective canopy. There is also a large log on the ground.	Damp Sands Herb-rich Woodland/Grassy Woodland	Gaps	Infill gaps with species appropriate to Damp Sands Herb-rich Woodland/ Grassy Woodland  Maintain as required	Low-medium
LR2	A small patch of planted vegetation that is densely shrubby with large shrubs. Some Eucalypts are also present at the edges and there have been some recent edge plantings of grasses and herbs.	Damp Sands Herb-rich Woodland/Grassy Woodland	Shrubbiness Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Damp Sands Herb-rich Woodland/ Grassy Woodland	Medium
LR3	A patch to the west of the cricket nets which has an overstorey of young River Red Gums and recently planted mid and understorey comprising of shrubs, grasses and herbs with a relatively high diversity.	Damp Sands Herb-rich Woodland/Grassy Woodland	No significant issues	Maintain as required	Low-medium
LR4	Another patch of planted vegetation that is densely shrubby with large shrubs. Some Eucalypts are also present at the edges.	Damp Sands Herb-rich Woodland/Grassy Woodland	Shrubbiness Senescing vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Damp Sands Herb-rich Woodland/ Grassy Woodland	Medium
LR5, 6, 7, 8	These three patches are all located along the eastern edge of the reserve and are separated from each other by concrete entrance paths into the apartment complex. They comprise a mixture of older shrubby species with the occasional eucalypt. There are sections within each that are quite shrubby as well as some large gaps. There are also some occurrences of senescing and dead vegetation.	Damp Sands Herb-rich Woodland/Grassy Woodland	Shrubbiness Senescing and dead vegetation	Reduce shrubbiness Remove senescing vegetation Replant with species appropriate to Damp Sands Herb-rich Woodland/ Grassy Woodland	Medium
LR9	A small patch of a few native Melaleuca species as well as a small amount of understorey planting. Located to the west of the concrete walkway and isolated from other vegetation.	Damp Sands Herb-rich Woodland/Grassy Woodland	No significant issues Perhaps increase diversity in time	Maintain as required	Low
LR10	A large area of revegetation comprising older and ageing native vegetation. Whilst some shrubs within this garden bed are large,	Damp Sands Herb-rich	Some shrubbiness Senescing vegetation	Reduce shrubbiness	High

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
	<p>there is generally little mid and understorey species and there are large open areas beneath the larger shrubs and canopy.</p> <p>It is understood that planting is planned for this VMZ in the 2015 planting season.</p> <p>Prior to this planting some pruning of large shrubs would be useful in order to ensure that the younger plants will have grown by the time the older senescing shrubs need replacing.</p> <p>There are a number of pathways through this vegetation and these need to be rationalised.</p>	Woodland/Grassy Woodland	<p>Gaps and open areas</p> <p>Tracks and trampling</p>	<p>Remove senescing vegetation</p> <p>Replant with species appropriate to Damp Sands Herb-rich Woodland/Plains Grassland</p> <p>Rationalise access points and then fence to restrict pedestrian access in other areas</p>	
LR11	A small patch along the western edge of the reserve. It has been planted with a diversity of species including some recent plantings of grasses and herbs as well as some shrubs and a variety of Eucalypts.	Damp Sands Herb-rich Woodland/Grassy Woodland	No significant issues	Maintain as required	Low
LR12, 13	Two patches of revegetation along the western edge of the reserve. Like LR11 they have been planted with a diversity of species including some recent plantings of grasses and herbs as well as some shrubs and a variety of Eucalypts.	Damp Sands Herb-rich Woodland/Grassy Woodland	No significant issues	Maintain as required	Low



Figure 29. Vegetation Management Zones at Lagoon Reserve



	
LR1	LR2
	
LR2	LR3
	
LR4	LR4
	
LR5	LR6



 <p>10/04/2015 15:09</p>	 <p>10/04/2015 15:11</p>
<p>LR6</p>	<p>Looking south along LR6 and LR7</p>
 <p>10/04/2015 15:22</p>	 <p>10/04/2015 15:24</p>
<p>LR8</p>	<p>LR9</p>
 <p>10/04/2015 15:25</p>	 <p>10/04/2015 15:24</p>
<p>LR10</p>	<p>LR10, gaps in vegetation</p>
 <p>10/04/2015 15:29</p>	 <p>10/04/2015 15:25</p>
<p>LR11</p>	<p>LR11</p>





LR12



LR12



LR13



LR13

Table 31. Vegetation List for Lagoon Reserve

Origin	Scientific Name	Common Name	LR1	LR2	LR3	LR4	LR5	LR6	LR7	LR8	LR9	LR10	LR11	LR12	LR13
#	<i>Acacia baileyana</i>	Cootamundra Wattle	✓												
	<i>Acacia brownii</i>	Heath Wattle		✓											
#	<i>Acacia covenyi</i>	Bluebush				✓									
	<i>Acacia implexa</i>	Lightwood										✓			✓
#	<i>Acacia iteaphylla</i>	Flinders Range Wattle				✓				✓		✓	✓		
#	<i>Acacia floribunda</i>	Gossamer Wattle		✓	✓	✓	✓			✓		✓	✓		
	<i>Acacia longifolia</i> var. <i>sophorae</i>	Coast Wattle										✓			
	<i>Acacia mearnsii</i>	Black Wattle				✓			✓			✓			
	<i>Acacia melanoxylon</i>	Blackwood												✓	
	<i>Acacia paradoxa</i>	Hedge Wattle						✓							
#	<i>Acacia saligna</i>	Willow Wattle					✓	✓				✓	✓		✓
	<i>Allocasuarina littoralis</i>	Black Sheoak										✓			
	<i>Allocasuarina verticillata</i>	Drooping Sheoak	✓					✓			✓	✓		✓	
	<i>Atriplex semibaccata</i>	Berry Saltbush							✓		✓	✓		✓	
	<i>Austrostipa stipoides</i>	Prickly Spear-grass											✓		
	<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	Coast Banksia			✓				✓						
	<i>Bulbine bulbosa</i>	Bulbine Lily			✓										
	<i>Bursaria spinosa</i>	Sweet Bursaria	✓												✓
	<i>Callistemon</i> spp.	Bottlebrush		✓					✓						
	<i>Callistemon viminalis</i>	Weeping Bottlebrush		✓						✓					
	<i>Cassinia arcuata</i>	Drooping Cassinia										✓		✓	
	<i>Chloris truncata</i>	Windmill Grass	✓												
	<i>Chrysocephalum apiculatum</i>	Common Everlasting	✓	✓			✓							✓	✓
	<i>Chrysocephalum semipapposum</i>	Clustered Everlasting												✓	✓
	<i>Clematis microphylla</i> s.l.	Small-leaved Clematis				✓									✓
	<i>Correa alba</i>	White Correa	✓			✓	✓	✓		✓			✓	✓	✓
	<i>Correa reflexa</i>	Common Correa	✓	✓	✓	✓		✓				✓	✓	✓	✓

Origin	Scientific Name	Common Name	LR1	LR2	LR3	LR4	LR5	LR6	LR7	LR8	LR9	LR10	LR11	LR12	LR13
#	<i>Corymbia citriodora</i>	Lemon-scented Gum											✓		
#	<i>Corymbia maculata</i>	Spotted Gum										✓			
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily		✓	✓			✓					✓	✓	
	<i>Dianella longifolia s.l.</i>	Pale Flax-lily					✓								
	<i>Dianella admixta</i>	Black-anther Flax-lily							✓						
	<i>Dichelachne crinita</i>	Long-hair Plume-grass													✓
	<i>Einadia nutans ssp. nutans</i>	Nodding Saltbush	✓		✓	✓	✓	✓	✓			✓	✓	✓	
	<i>Enchylaena tomentosa</i>	Ruby Saltbush		✓	✓	✓		✓	✓			✓		✓	
#	<i>Eucalyptus botryoides</i>	Southern Mahogany	✓												✓
	<i>Eucalyptus camaldulensis</i>	River Red-gum		✓	✓	✓	✓	✓	✓			✓		✓	✓
#	<i>Eucalyptus cladocalyx</i>	<u>Sugar Gum</u>		✓				✓			✓	✓		✓	
#	<i>Eucalyptus leucoxyloides subsp. pruinosa</i>			✓								✓	✓		
	<i>Eucalyptus melliodora</i>	Yellow Box										✓			
	<i>Eucalyptus tricarpa</i>	Red Ironbark											✓		
	<i>Eucalyptus viminalis subsp. pryoriana</i>	Coast Manna-gum					✓	✓		✓	✓			✓	✓
#	<i>Eucalyptus spp.</i>	Eucalypt	✓						✓			✓	✓		
*	<i>Fraxinus angustifolia subsp. angustifolia</i>	Desert Ash												✓	
	<i>Goodenia ovata</i>	Hop Goodenia	✓	✓	✓	✓	✓					✓			✓
	<i>Hakea drupacea</i>	Sweet Hakea		✓	✓							✓			
	<i>Hardenbergia violacea</i>	Purple Coral-pea												✓	
	<i>Lasiopetalum baueri</i>	Slender Velvet-bush	✓											✓	✓
	<i>Leptospermum laevigatum</i>	Coast Tea-tree		✓											
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓	✓	✓	✓	✓	✓	✓	✓			✓		✓
#	<i>Melaleuca armillaris subsp. armillaris</i>	Giant Honey-myrtle				✓			✓			✓		✓	
#	<i>Melaleuca linariifolia</i>	Narrow-leaved Paperbark									✓	✓			
#	<i>Melaleuca nesophila</i>	Showy Honey-myrtle				✓						✓			
#	<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark									✓				
	<i>Melaleuca squarrosa</i>	Scented Paperbark										✓			
	<i>Myoporum insulare</i>	Common Boobialla					✓								



Origin	Scientific Name	Common Name	LR1	LR2	LR3	LR4	LR5	LR6	LR7	LR8	LR9	LR10	LR11	LR12	LR13
	<i>Myoporum viscosum</i>	Sticky Boobialla	✓	✓		✓									
	<i>Olearia axillaris</i>	Coast Daisy-Bush													✓
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush		✓	✓		✓					✓	✓	✓	
	<i>Pelargonium australe</i>	Austral Stork's-bill			✓										
	<i>Poa poiformis</i>	Coast Tussock-grass	✓												
	<i>Poa labillardierei</i>	Common Tussock-grass	✓				✓	✓					✓	✓	✓
	<i>Pomaderris paniculosa ssp. Paralia</i>	Coast Pomaderris	✓	✓											✓
	<i>Rhagodia candolleana ssp. Candolleana</i>	Seaberry Saltbush										✓			
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass		✓	✓	✓									
	<i>Rytidosperma racemosum</i>	Slender Wallaby-grass	✓	✓	✓	✓			✓					✓	
	<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass					✓						✓	✓	
	<i>Rytidosperma spp.</i>	Wallaby-grass										✓			
	<i>Solanum laciniatum</i>	Large Kangaroo Apple		✓		✓									
	<i>Tetragonia implexicoma</i>	Bower Spinach												✓	
	<i>Themeda triandra</i>	Kangaroo Grass	✓	✓	✓		✓						✓	✓	✓
	<i>Westringia fruticosa</i>	Coast Rosemary						✓							
	<i>Xerochrysum viscosum</i>	Sticky Everlasting		✓	✓										

\* Denotes an introduced non-indigenous species

## 13. CANTERBURY ROAD URBAN FOREST

### **Location:**

A linear reserve that lies between the Light Rail line and Canterbury Road and extends from Kerferd Road in the west to opposite the end of Fraser Street in the east.

### **Description:**

The Canterbury Road Urban Forest is a linear parkland nature walking trail that was established in the late 1970's by the South Melbourne Council.

At the time the plantings aimed to represent some of the regions of Victoria. As follows:

- Kerferd Road to Wright Street Station – the Grampians region
- Wright Street to Harold Street – West and East Gippsland
- Harold Street to Middle Park Station – the Mallee
- Middle Park Station to Langridge Street – the Otways
- Langridge Street to South Melbourne Swamp – Box Ironbark country
- South Melbourne Swamp – plants that formerly grew locally (Earthcare 1992).

The South Melbourne Swamp area is located just before Fraser Street and comprises a series of three small wetland areas which were constructed by the South Melbourne Council as part of the creation of the Urban Forest (Simon Arnold Pers. Comm. 2015). This being said, this area is naturally wet from one source or another. The Phragmites that grows naturally in the area provides evidence of this.

In recent years the City of Port Phillip has been updating the garden beds with indigenous plantings as gaps open up.

A walking path extends along the length of the reserve except that the reserve and path are punctuated by a carpark at the Middle Park station.

The vegetation within the reserve is all either native or indigenous and reflects various phases of revegetation.

**NHA Priority:** Medium priority NHA

### **Management Issues within this NHA**

#### **General Issues:**

- Many informal paths through vegetation from the road

#### **Issues Associated with Vegetation Management:**

- Senescing vegetation
- Gaps and open spaces
- Dead vegetation
- Shrubbiness and Rhagodia dominating
- Consistent woody weed incursions: English Elm
- Ensuring access to foot pathway along the edge Canterbury Road is not obstructed by vegetation

## **Activities to Improve Reserve Management**

### **Vegetation management:**

- Reduce shrubbiness of vegetation in some parts, particularly Rhagodia and replant with less shrubby species
- Rationalise pathways and then install barriers and plant vegetation that will reduce the likelihood of trampling and paths
- Ensure vegetation facing Canterbury Road is low maintenance/has low pruning requirements

### **Management priorities and activities:**

This reserve has a high level of value as a habitat corridor and also as a location where the community can enjoy a natural, shaded and partially obscured space for walking. These environments are now rare within urban environments. This reserve also still holds some value for learning about the plants from other regions and the experience of walking through different vegetation types is interesting in its own right.

Key management issues in the reserve include managing the pathways and trampling that occur as people access the walking track from the road side.

Replacing dead and senescing vegetation is also an issue, and is particularly relevant within UF 6, 8 and 9.

Occurrences of English Elm and other small patches of weeds, namely within UF10.

Ensuring access for pedestrians along the edge of Canterbury Road is possible is an issue along the entire length of this NHA. In each VMZ as plants are replaced a buffer of low-growing vegetation should be considered for the first metre in.

Where the vegetation and site conditions are relatively similar the Vegetation Management Zones have been assigned to align with the roads that intersect Canterbury Road. In other cases the VMZ has been assigned based on specific management issues or site layout eg. Where the walking path runs along the south of the reserve rather than through it or where there are clear differences in vegetation type.

Table 32. Canterbury Road Urban Forest VMZ descriptions and future management actions

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
UF1	The most easterly section of vegetation. From Kerferd Road to Mills Street. Contains canopy midstorey and understorey vegetation. There has also been recent planting here and the treeguards are still present. This area receives heavy use especially during the Grand Prix when buses are parked on Canterbury Road and people disembark and walk through to the pathway.	Damp Sands Herb-rich Woodland/Plains Grassland	Gaps and pathways	Rationalise pathway points  Infill gaps with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland  Maintain as required	Medium
UF2	The next section of vegetation to the south. Again contains all strata and has seen some recent planting. Runs from Mills Street to Wright Street Station	Damp Sands Herb-rich Woodland/Plains Grassland	Gaps and pathways	Rationalise pathway points  Infill gaps with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland  Maintain as required	Medium
UF3	A small patch at the entrance to the Wright Street Station which mainly comprises a number of Drooping Sheoak and little understorey	Coast Banskia Woodland	No significant issues	Maintain as required  Potentially introduce some understorey	Low-medium
UF4	This section of vegetation is more narrow and a wider gravel walkway extends across to Canterbury Road. This is part of the East Gippsland section and some areas are dominated by Paroo Lily.	Damp Sands Herb-rich Woodland/Plains Grassland	Paroo Lily dominance in understorey.	Reduce Paroo Lily cover  Replant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	Medium
UF5	A longer section comprising vegetation from Gippsland and then moving into the Mallee. All strata are present. There are some notable dead trees throughout, gaps and senescing vegetation. In the northern section, Paroo Lily is also dominant	Damp Sands Herb-rich Woodland/Plains Grassland	Paroo Lily dominance in understorey. Senescing and dead vegetation Gaps and pathways	Reduce Paroo Lily cover  Remove senescing vegetation  Replant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	Medium



VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
UF6	This patch of vegetation just south of the Middle Park Station has been recently planted with a mixture of grasses and some herbs. There are still a number of gaps and there are some dead Black Wattles with others senescing that will need removal.	Damp Sands Herb-rich Woodland/Plains Grassland	Dead Wattles Gaps and pathways	Remove dead wattles and senescing vegetation  Rationalise pathway points  Infill gaps with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	High
UF7	A longer stretch of vegetation which stretches from a diagonal gravel path at the end of McGregor Street. Through to the underpass to Albert Park at the end of Langridge Street. This stretch of vegetation has all strata present. It contains some particularly shrubby vegetation and the pathway meanders from the centre to the northern edge and back again. There is a patch of Phragmites regenerating part way along.	Damp Sands Herb-rich Woodland/Plains Grassland	Some shrubbiness Senescing vegetation Gaps and open areas Tracks and trampling	Reduce shrubbiness  Remove senescing vegetation  Replant with species appropriate to Damp Sands Herb-rich Woodland/Plains Grassland  Rationalise access points and then fence to restrict pedestrian access in other areas	High
UF8	A section of vegetation that runs between Langridge Street and the beginning of UF9 (wetter area). This VMZ contains a high cover of senescing vegetation that requires removal and replanting.	Damp Sands Herb-rich Woodland/Plains Grassland	Some shrubbiness Senescing vegetation Gaps and open areas Tracks and trampling	Remove dead and senescing vegetation  Replant with species appropriate to Damp Sands Herb-rich Woodland/Plains Grassland  Rationalise access points and then fence to restrict pedestrian access in other areas	High
UF9	The area identified in the past as the South Melbourne Swamp. It has been planted with the aim of reflecting plants that formerly grew in the region however, it is possible that the plant mix here is reflecting a more freshwater environment than would have formerly occurred. According to pre-1750 mapping brackish floristic	Brackish Grassland/Sedgy Swamp Woodland	Dead and senescing vegetation Low diversity vegetation Woody weed incursions: English Elm suckers	Remove dead and senescing vegetation	High

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
	<p>communities would have been more likely. However a different water regime is now in place and the planted species appear to be relatively healthy.</p> <p>On this basis, it is recommended that species consistent with Sedgy Swamp Woodland, the EVC indicated for much of the former St Kilda Swamp which occurred to the south of this site. This woodland vegetation provides more scope for a diversity of species and strata appropriate to the Canterbury Road site.</p> <p>The vegetation in this section is quite dense in parts and shady however there is also a high degree of senescing vegetation and there are a high number of dead shrubs and trees which require cleaning up.</p>			<p>Replant with species appropriate to Sedgy Swamp Woodland</p> <p>Rationalise access points and then fence to restrict pedestrian access in other areas</p> <p>Treat Elm suckers</p>	
UF10	<p>This section contains patches of vegetation amongst a maze of gravel pathways and open areas.</p> <p>There is a relatively low diversity of species and few shrubs. Rhagodia is dominating in some sections.</p> <p>There are erosion issues across this VMZ and retaining structures have been erected in the past to deal with this issue. Some patches of Agapanthus are present and two juvenile Canary Island Palms are also located in the eastern portion.</p>	<p>Damp Sands Herb-rich Woodland/Plains Grassland</p>	<p>Multiple paths and open areas.</p> <p>Erosion</p> <p>Shrubby vegetation (Rhagodia in some garden beds)</p> <p>Environmental Weeds: Agapanthus and Canary Island Palm</p>	<p>Rationalise pathways and fence.</p> <p>Establish garden beds across site and install more soil retention barriers.</p> <p>Plant with species appropriate to Damp Sands Herb-rich Woodland/Plains Grassland</p> <p>Treat all weeds</p>	High



Figure 30. Vegetation Management Zones at Canterbury Road Urban Forest





Map 13b.  
Canterbury Road Urban Forest

**Legend**

- Parcel boundaries
- Vegetation Management Zones
- \*\*\*\*\* Tracks through vegetation
- +++++ Proposed fences

**Proposed Management Actions**

- Supplementary planting zone
- \*\*\*\*\* Proposed retained pathways

**Details**  
 Mapping by: Colin Broughton & Karen McGregor  
 Date: 10/06/2015  
 Aerial photography from Google Earth Pro.  
 Base map data Copyright © The State of Victoria,  
 Department of Environment and Primary Industries

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Map 13c.  
Canterbury Road Urban Forest

**Legend**

- Parcel boundaries
- Vegetation Management Zones
- \*\*\*\*\* Tracks through vegetation
- - - - - Proposed fences

**Proposed Management Actions**

- Supplementary planting zone
- \*\*\*\*\* Proposed retained pathways

**Details**  
 Mapping by: Colin Broughton & Karen McGregor  
 Date: 10/06/2015  
 Aerial photography from Google Earth Pro.  
 Base map data Copyright © The State of Victoria,  
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Map 13d.  
Canterbury Road Urban Forest

**Legend**

- Parcel boundaries
- Vegetation Management Zones
- Proposed fences

**Proposed Management Actions**

- Supplementary planting zone
- Remove dead/senescent vegetation and replant

**Details**

Mapping by: Colin Broughton & Karen McGregor  
Date: 10/06/2015  
Aerial photography from Google Earth Pro.  
Base map data Copyright © The State of Victoria,  
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Map 13e.  
Canterbury Road Urban Forest

**Legend**

- Parcel boundaries
- Vegetation Management Zones
- Tracks through vegetation
- Proposed fences
- Retaining wall

**Proposed Management Actions**

- Supplementary planting zone
- Remove dead/senescent vegetation and replant
- Agapanthus and Canary Island Palm
- Proposed retained pathways

**Details**

Mapping by: Colin Broughton & Karen McGregor  
Date: 10/06/2015  
Aerial photography from Google Earth Pro.  
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UF1	UF1
	
UF2	UF2
	
UF3	UF3
	
UF4	UF4







	
UF7	UF7
	
UF8	UF8
	
UF9	UF9
	
UF9	UF9



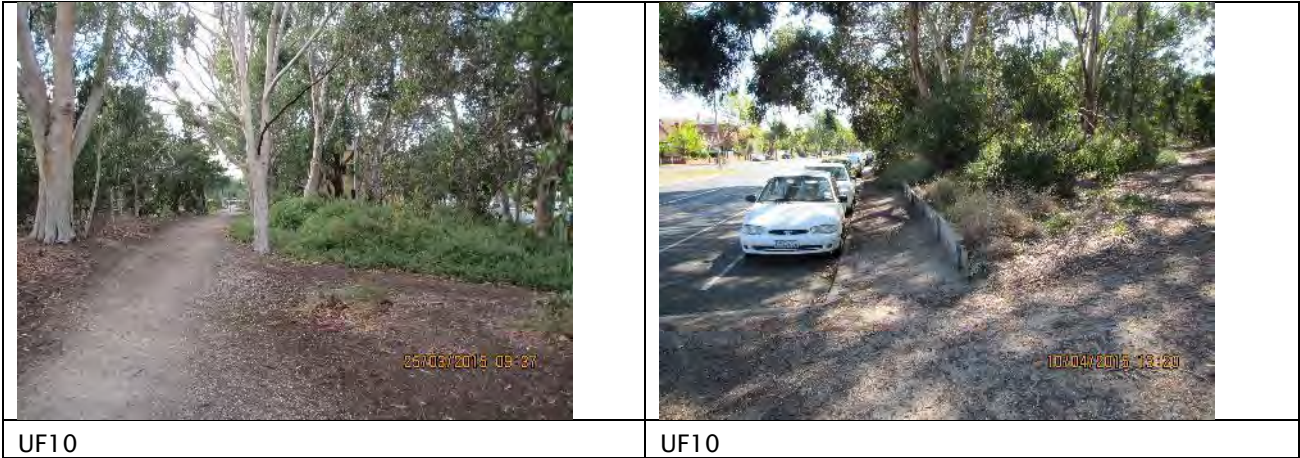


Table 33. Vegetation List for Canterbury Road Urban Forest

Stat us	Scientific Name	Common Name	UF 1	UF 2	UF 3	UF 4	UF 5	UF 6	UF 7	UF 8	UF 9	UF 10
	<i>Acacia acinacea s.l.</i>	Gold-dust Wattle								✓		
#	<i>Acacia baileyana</i>	Cootamundra Wattle	✓				✓			□		
#	<i>Acacia iteaphylla</i>	Flinders Range Wattle	□				□			✓		
	<i>Acacia brownii</i>	Heath Wattle	✓									
#	<i>Acacia calamifolia</i>	Wallowa	□				✓					
#	<i>Acacia covenyi</i>	Bluebush	□				□					
#	<i>Acacia cyclops</i>	Red-eyed Wattle					✓					
#	<i>Acacia howittii</i>	Sticky Wattle	✓	□			□					
	<i>Acacia implexa</i>	Lightwood		✓							✓	
#	<i>Acacia grey pointy wattle (s)</i>		✓	□							□	
#	<i>Acacia longifolia</i>	Sallow Wattle	✓									
	<i>Acacia mearnsii</i>	Black Wattle	✓	✓				✓			✓	✓
	<i>Acacia melanoxylon</i>	Blackwood	✓	✓				✓			✓	✓
	<i>Acacia floribunda</i>	White Sallow Wattle	□	□				□		✓	□	□
	<i>Acacia paradoxa</i>	Hedge Wattle	✓	✓		✓	✓	✓	✓	✓		✓
#	<i>Acacia pravissima</i>	Ovens Wattle	□	□		□	□	□	□	✓		□
	<i>Acacia pycnantha</i>	Golden Wattle					✓	✓		✓		
#	<i>Acacia saligna</i>	Willow Wattle	✓	✓	✓				✓	✓		
#	<i>Acacia wilhelmiana</i>	Dwarf Nealie					✓					
#	<i>Acacia spp.</i>	Wattle					✓	✓				
	<i>Acacia suaveolens</i>	Sweet Wattle										
	<i>Acacia verticillata</i>	Prickly Moses		✓			✓					
	<i>Acaena novae-zelandiae</i>	Bidgee-widgee	✓				✓	✓				
*	<i>Agapanthus praecox subsp. orientalis</i>	Agapanthus	□				□	□				✓
#	<i>Agonis flexuosa</i>	West Australian Peppermint	□	✓			□	□				□
	<i>Allocasuarina littoralis</i>	Black Sheoak	✓	✓				✓	✓	✓	✓	
	<i>Allocasuarina verticillata</i>	Drooping Sheoak	✓	✓	✓		✓					
	<i>Austrostipa elegantissima</i>	Elegant Spear-grass					✓					✓
	<i>Austrostipa mollis</i>	Supple Spear-grass										
	<i>Austrostipa scabra</i>	Rough Spear-grass						✓				
	<i>Austrostipa spp.</i>	Spear Grass										
#	<i>Baeckea behrii</i>	Broom Heath Myrtle					✓					
#	<i>Banksia ericifolia</i>	Heath-leaved Banksia						✓	✓			
	<i>Banksia integrifolia subsp. integrifolia</i>	Coast Banksia	✓	✓		✓	✓	✓		✓	✓	
	<i>Banksia marginata</i>	Silver Banksia					✓	✓	✓			
#	<i>Banksia serrata</i>	Saw Banksia	✓				✓					
	<i>Banksia spinulosa var. cunninghamii</i>	Hairpin Banksia										
	<i>Billardiera mutabilis</i>	Common Apple-berry										
	<i>Bossiaea cinerea</i>	Showy Bossiaea								✓		
	<i>Bulbine bulbosa</i>	Bulbine Lily						✓				



Stat us	Scientific Name	Common Name	UF 1	UF 2	UF 3	UF 4	UF 5	UF 6	UF 7	UF 8	UF 9	UF 10
	<i>Bursaria spinosa</i>	Sweet Bursaria	✓	✓		✓				✓	✓	
#	<i>Callistemon spp.</i>	Bottlebrush					✓					
#	<i>Callitris spp.</i>	Cypress-pine					✓					
	<i>Cassia artemisioides</i>	Silver Cassia				✓						
	<i>Cassinia arcuata</i>	Drooping Cassinia	✓	✓					✓	✓		
	<i>Chyrsocephalum apiculatum</i>	Common Everlasting					✓		✓			
	<i>Clematis aristata</i>	Mountain Clematis										
	<i>Clematis microphylla s.l.</i>	Small-leaved Clematis	✓	✓		✓		✓		✓		
	<i>Correa alba</i>	White Correa	✓	✓			✓		✓	✓		
	<i>Correa reflexa</i>	Common Correa	✓			✓	✓	✓		✓		✓
#	<i>Corymbia citriodora</i>	Lemon-scented Gum	□			□	✓	□		□		✓
#	<i>Corymbia ficifolia</i>	Red Flowering Gum				✓						
#	<i>Corymbia maculata</i>	Spotted Gum		✓		✓	✓					
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily		✓		✓			✓	✓		✓
#	<i>Dianella caerulea s.l.</i>	Paroo Lily				✓	✓					
	<i>Dianella longifolia s.l.</i>	Pale Flax-lily					✓	✓	✓			
	<i>Dianella revoluta s.l.</i>	Black-anther Flax-lily	✓	✓						✓		
	<i>Dichondra repens</i>	Kidney-weed									✓	
#	<i>Diplarrena latifolia</i>	Western Flag-iris									□	✓
	<i>Disphyma crassifolium subsp. clavellatum</i>	Rounded Noon-flower										
#	<i>Dodonaea viscosa</i>	Sticky Hop-bush	✓			✓						
	<i>Einadia nutans subsp. nutans</i>	Nodding Saltbush	✓	✓								
	<i>Elymus scaber var. scaber</i>	Common Wheat-grass	✓									✓
	<i>Enchylaena tomentosa var. tomentosa</i>	Ruby Saltbush	✓	✓		✓	✓	✓	✓	✓		
#	<i>Eremophila longifolia</i>	Berrigan					✓					
#	<i>Eremophila maculata</i>	Spotted Emu-bush					✓					
#	<i>Eremophila spp.</i>	Emu-bush					✓					
*	<i>Erharta erecta var erecta</i>	Panic Veldt-grass	✓				□	✓		✓	✓	
#	<i>Eucalyptus botryoides</i>	Southern Mahogany				✓		✓	✓	✓		
	<i>Eucalyptus camaldulensis</i>	River Red-gum	✓	✓	✓					✓	✓	
#	<i>Eucalyptus cornuta</i>	Yate										
#	<i>Eucalyptus crenulata</i>	Buxton Gum					✓					
#	<i>Eucalyptus globulus</i>	Southern Blue-gum					✓			✓		✓
#	<i>Eucalyptus leptophylla</i>	Slender-leaf Mallee										
#	<i>Eucalyptus leucoxylon subsp. pruinosa</i>		✓						✓	✓		✓
#	<i>Eucalyptus longifolia</i>	Woollybutt										
	<i>Eucalyptus macrorhyncha</i>	Red Stringybark	✓									
	<i>Eucalyptus melliodora</i>	Yellow Box										✓
	<i>Eucalyptus microcarpa</i>	Grey Box										
	<i>Eucalyptus obliqua</i>	Messmate Stringybark	✓									
	<i>Eucalyptus ovata</i>	Swamp Gum		✓						✓	✓	
	<i>Eucalyptus polyanthemos</i>	Red Box								✓		

Stat us	Scientific Name	Common Name	UF 1	UF 2	UF 3	UF 4	UF 5	UF 6	UF 7	UF 8	UF 9	UF 10
#	<i>Eucalyptus polybractea</i>	Blue Mallee										
#	<i>Eucalyptus punctata</i>	Grey Gum										
#	<i>Eucalyptus robusta</i>	Swamp Mahogany										
#	<i>Eucalyptus sideroxylon</i> s.s.	Mugga										
#	<i>Eucalyptus</i> spp.	Eucalypt										
	<i>Eucalyptus viminalis</i>	Manna Gum										
	<i>Eucalyptus viminalis</i> subsp. <i>pyroriana</i>	Coast Manna-gum						✓	✓		✓	
	<i>Ficinia nodosa</i>	Knobby Club-sedge										
	<i>Goodenia ovata</i>	Hop Goodenia	✓					✓	✓	✓	✓	
#	<i>Grevillea robusta</i>	Silky Oak	✓									
#	<i>Hakea mitchellii</i>	Desert Hakea					✓					
	<i>Hakea nodosa</i> (?)	Yellow Hakea										
#	<i>Hakea sericea</i> s.l.	Bushy Needlewood										
#	<i>Hakea</i> spp.	Hakea										
	<i>Hardenbergia violacea</i>	Purple Coral-pea	✓	✓				✓		✓		
	<i>Helichrysum</i> spp.	Everlasting										
	<i>Indigofera australis</i>	Austral Indigo					✓					
	<i>Juncus pallidus</i>	Pale Rush										
	<i>Kennedia prostrata</i>	Running Postman										
	<i>Kunzea ericoides</i> spp. agg.	Burgan										
	<i>Lachnagrostis filiformis</i>	Blown Grass						✓				
#	<i>Lasiopetalum baueri</i>	Slender Velvet-bush	✓	✓		✓	✓	✓				
#	<i>Leptospermum laevigatum</i>	Coast Tea-tree		✓		✓	✓	✓	✓	✓		
#	<i>Leptospermum</i> spp.	Tea Tree										
	<i>Lomandra filiformis</i>	Wattle Mat-rush										
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓	✓		✓	✓	✓	✓	✓	✓	
#	<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	Giant Honey-myrtle		✓		✓	✓	✓	✓		✓	
	<i>Melaleuca ericifolia</i>	Swamp Paperbark							✓			
#	<i>Melaleuca gibbosa</i>	Totem Poles						✓	□			
	<i>Melaleuca lanceolata</i> subsp. <i>lanceolata</i>	Moonah					✓					
	<i>Melaleuca nesophila</i>	Showy Honey-myrtle					□		✓	✓		
	<i>Melaleuca</i> spp.	Honey-myrtle										
	<i>Melaleuca squarrosa</i>	Scented Paperbark		✓								
#	<i>Melaleuca uncinata</i>	Broombush					✓					
#	<i>Melaleuca quinquenervia</i>	Niaouli										
#	<i>Melaleuca wilsonii</i>	Violet Honey-myrtle					✓					
	<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass	✓	✓			✓	✓				
	<i>Myoporum insulare</i>	Common Boobialla					✓					
	<i>Myoporum parvifolium</i>	Creeping Myoporum										
	<i>Myoporum viscosum</i>	Sticky Boobialla		✓					✓			
	<i>Olearia axillaris</i>	Coast Daisy-Bush	✓	✓							✓	
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush		✓		✓	✓	✓	✓	✓		

Stat us	Scientific Name	Common Name	UF 1	UF 2	UF 3	UF 4	UF 5	UF 6	UF 7	UF 8	UF 9	UF 10
	<i>Ozothamnus turbinatus</i>	Coast Everlasting								✓	✓	
	<i>Pelargonium australe</i>	Austral Stork's-bill					✓		✓			
*	<i>Phoenix canariensis</i>	Canary Island Palm										✓
	<i>Phragmites australis</i>	Common Reed									✓	
	<i>Poa labillardierei</i>	Common Tussock-grass										✓
	<i>Poa sieberiana</i>	Grey Tussock-grass							✓			
	<i>Poa</i> spp	Tussock-grass									✓	
	<i>Pomaderris paniculosa</i> ssp. <i>Paralia</i>	Coast Pomaderris		✓						✓		
*	<i>Pseudognaphalium luteoalbum</i>	Jersey Cudweed										
	<i>Pultenea shrub</i> (s)			✓								
	<i>Rhagodia spinescens</i>	Hedge Saltbush					✓					
	<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	Seaberry Saltbush				✓					✓	
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass										
	<i>Rytidosperma geniculatum</i>	Knead Wallaby-grass										
	<i>Rytidosperma racemosum</i>	Slender Wallaby-grass	✓	✓		✓		✓	✓	✓		
	<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass										
	<i>Rytidosperma</i> spp.	Wallaby Grass	✓				✓	✓				
	<i>Senecio quadridentatus</i>	Cotton Fireweed					✓					
#	<i>Senna artemisioides</i> spp. agg.	Desert Cassia										
	<i>Solanum laciniatum</i>	Large Kangaroo Apple									✓	✓
*	<i>Sonchus oleraceus</i>	Smooth Sow-thistle					✓					
#	<i>Syzygium smithii</i>	Lilly Pilly										
	<i>Themeda triandra</i>	Kangaroo Grass										
*	<i>Ulmus aff procera</i>	English Elm										
	<i>Wahlenbergia</i> spp.		✓									

## 14. HR JOHNSON RESERVE

### Location:

A small planting at the side of the HR Johnson Reserve located on Cowderoy Street near the corner with Canterbury Road and at the end of Longmore Street.

### Description:

This NHA at HR Johnson Reserve is a small but significant planting that was planted as a demonstration and features a variety of grasses and wildflowers consistent with the Grassy Woodland EVC.

The plantings were undertaken as part of an initiative of Earthcare St Kilda and serve as a demonstration site to local residents to encourage plantings of habitat gardens and use of local indigenous species. A cycle through-path has recently been installed alongside the planting area.

**NHA Priority:** Medium priority NHA

### **Management priorities and activities:**

This NHA was originally planted with a wide diversity of plants and now there appears to be less diversity evident. Although field work as part of this study was undertaken in Autumn, when some of the species (such as Chocolate Lilies and Vanilla Lilies) would not be visible, this statement is likely to still stand true in Spring.

Some native grasses have established but are perhaps dominating the patch and there is also a moderate cover of exotic grasses, Prairie Grass and Panic Veldt Grass.

Treatment of grassy weeds on a consistent basis is recommended for this site using low-impact techniques (hand weeding). So too is a reduction in the cover of Weeping Grass and planting a new batch of wildflower species.

A good complement to the effort invested in this site would be the installation of an interpretive sign which promotes the species used and the benefits of a habitat garden.

**Table 34. Lagoon Reserve VMZ descriptions and future management actions**

Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
HR1	A revegetated patch featuring grasses and herbs consistent with Grassy Woodland EVC. Weedy grasses are present throughout and the original diversity perhaps has been reduced over time particularly in the southern half.	Damp Sands Herb-rich Woodland/Plains Grassland	Grassy weeds Loss of diversity	Treat grassy weeds. Aim for 30% reduction annually.  Thin some dominant grasses (Weeping Grass) and undertake infill plantings using wildflowers.	Medium





Figure 31. Vegetation Management Zones at HR Johnson Reserve





Table 35. Vegetation List for HR Johnson Reserve

Origin	Scientific Name	Common Name	HR1
	<i>Acaena ovina</i>	Sheep's Burr	✓
	<i>Anthosacne scabra</i>	Common Wheat-grass	✓
	<i>Arthropodium spp.</i>	Lily	✓
	<i>Atriplex semibaccata</i>	Berry Saltbush	✓
	<i>Cynoglossum suaveolens</i>	Sweet Hound's-tongue	✓
	<i>Banksia integrifolia subsp. integrifolia</i>	Coast Banksia	✓
*	<i>Bromus catharticus</i>	Prairie Grass	✓
	<i>Chrysocephalum apiculatum</i>	Common Everlasting	✓
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily	✓
	<i>Einadia nutans ssp. nutans</i>	Nodding Saltbush	✓
*	<i>Erharta erecta var erecta</i>	Panic Veldt-grass	✓
	<i>Enchylaena tomentosa</i>	Ruby Saltbush	✓
	<i>Eucalyptus camaldulensis</i>	River Red-gum	✓
	<i>Ficinia nodosa</i>	Knobby Club-sedge	✓
	<i>Hardenbergia violacea</i>	Purple Coral-pea	✓
	<i>Leptorhynchos tenuifolius</i>	Wiry Buttons	✓
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓
	<i>Myoporum parvifolium</i>	Creeping Myoporum	✓

Origin	Scientific Name	Common Name	HR1
	<i>Pelargonium australe</i>	Austral Stork's-bill	✓
	<i>Pimelea humilis</i>	Common Rice-flower	✓
	<i>Poa labillardierei</i>	Common Tussock-grass	✓
	<i>Podolepis jaceoides</i>	Showy Podolepis	✓
	<i>Populus alba</i>	White Poplar	✓
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	✓
	<i>Rytidosperma racemosum</i>	Slender Wallaby-grass	✓
	<i>Themeda triandra</i>	Kangaroo Grass	✓
	<i>Xerochrysum viscosum</i>	Sticky Everlasting	✓

\* Denotes an introduced non-indigenous species

## 15. BALACLAVA RAIL RESERVE

### **Location:**

A linear reserve that lies to the west of the railway line between Nightingale Street and Grosvenor Street in Balaclava.

### **Description:**

This reserve comprises an embankment which is very steep in parts located between a raised section of the railway line and a walkway that runs behind houses that front onto Gibbs, Nightingale and Bothwell Streets. It has been revegetated by a community group that was particularly active around ten years ago but in the intervening years, participation and interest from the community has lapsed. The land is owned by VicTrack but managed by council as a legacy of the time when the community were more active at this site.

**NHA Priority:** Lower priority NHA

### **Management Issues within this NHA**

#### **General Issues:**

- Erosion associated with steepness of slope
- Potential future fencing of site associated with the community gardens that sit opposite
- Possible site contamination
- Debris and fill material
- Steepness of slope
- Dumping of garden and construction waste

#### **Issues Associated with Vegetation Management:**

- Senescing vegetation
- Gaps and open spaces
- Dead vegetation

### **Activities to Improve Reserve Management**

#### **Vegetation management:**

- Reduce shrubbiness of vegetation in some parts
- Remove dead vegetation
- Infill plantings to address gaps in vegetation

#### **Management priorities and activities:**

The vegetation on the site has now aged and there are few recent plantings. There is now a lot of debris on the slope in places and a high incidence of senescing vegetation with a number of dead trees also present.

A number of large Desert Ash are present in the south of the reserve.

Council contractors are now unable to work across the upper portions of the site due to its steepness after an accident occurred and so works are currently restricted to the lower portions unless a method is devised that could enable safe access.

There is potentially a lot of work that could be undertaken within this reserve to rejuvenate it, to address the erosion issues, and to make it a safer environment for management staff. This would involve a high level of



investment and also further research and negotiation with VicTrack to determine an appropriate course of action.

At this stage it is only recommended that this reserve be maintained to basic presentation standards and that council contractors work only in the lower sections of the reserve. Therefore all of the actions listed below are only to be undertaken within the first 3 metres from the path.

**Table 36. Lagoon Reserve VMZ descriptions and future management actions**

VMZ	Description	Approximated EVC	Management Issues	Management Actions	Priority
BR1	This portion of the reserve comprises a flatter area in the north and then steeper slopes across the remainder. It includes vegetation that represents an approximation of Damp Sands Herb-rich Woodland with some Grassy Woodland elements. There is little in the way of understorey but the mid-storey is not too shrubby. There is some senescing and dead vegetation throughout but this is particularly pronounced in the southern portion.	Damp Sands Herb-rich Woodland/Grassy Woodland	Gaps Senescing and dead vegetation Erosion	Remove dead and senescing vegetation Replant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	Medium
BR2	This section of vegetation is dominated by Desert Ash trees. There is a lot of debris located beneath the trees and very little indigenous vegetation.	Damp Sands Herb-rich Woodland/Grassy Woodland	Gaps Debris Erosion	Remove dead and senescing vegetation Plant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	Medium
BR3	This section to the south of BR2 is similar to BR1 but is a little shrubbier. There is less in the way of senescing vegetation here.	Damp Sands Herb-rich Woodland/Grassy Woodland	Some gaps and senescing vegetation Erosion	Remove senescing vegetation Replant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	Low-medium
BR4	This is the most southern section and comprises a number of mature Desert Ash with some sparse plantings of indigenous shrubs beneath. This area has some lower sections which are less steep and could be planted a little more easily. This is also an area which is subject to rubbish dumping and some dense planting may assist in deterring this behaviour.	Damp Sands Herb-rich Woodland/Grassy Woodland	Gaps Debris Erosion Rubbish dumping	Plant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland with a dense buffer at the edges to deter rubbish dumping	Medium



Figure 32. Vegetation Management Zones at Balaclava Rail Reserve



 <p>09/04/2015 13:52</p>	 <p>09/04/2015 14:17</p>
BR1	BR1
 <p>09/04/2015 14:20</p>	 <p>09/04/2015 14:30</p>
BR1	BR1
 <p>09/04/2015 14:33</p>	 <p>26/03/2015 10:45</p>
BR2	BR2
 <p>26/03/2015 10:23</p>	 <p>09/04/2015 14:34</p>
BR3	BR4

Table 37. Vegetation List for Balaclava Rail Reserve

Origin	Scientific Name	Common Name	BR1	BR2	BR3	BR4
	<i>Acacia mearnsii</i>	Black Wattle	✓			✓
	<i>Acacia melanoxylon</i>	Blackwood	✓			
	<i>Acacia paradoxa</i>	Hedge Wattle	✓	✓		✓
	<i>Acacia stricta</i>	Hop Wattle		✓		
	<i>Acacia verticillata</i>	Prickly Moses		✓		
	<i>Acaena novae-zelandiae</i>	Bidgee-widgee				
	<i>Allocasuarina littoralis</i>	Black Sheoak	✓	✓		
	<i>Allocasuarina verticillata</i>	Drooping Sheoak	✓	✓	✓	✓
	<i>Austrostipa</i> spp.	Spear Grass				✓
*	<i>Brassica</i> spp.	Turnip	✓	✓	✓	
	<i>Bursaria spinosa</i>	Sweet Bursaria	✓	✓		
	<i>Callistemon thiny</i> (S)			✓		
	<i>Correa alba</i>	White Correa	✓			
	<i>Correa reflexa</i>	Common Correa		✓		✓
#	<i>Corymbia ficifolia</i>	Red Flowering Gum	✓			
*	<i>Cotoneaster</i> spp.	Cotoneaster		✓		
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily		✓		
	<i>Dianella revoluta</i> var. <i>revoluta</i> s.l.	Black-anther Flax-lily		✓		✓
*	<i>Ehrharta erecta</i> var. <i>erecta</i>	Panic Veldgrass	✓		✓	
	<i>Einadia nutans</i> subsp. <i>nutans</i>	Nodding Saltbush	✓			
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush	✓			
	<i>Eucalyptus camaldulensis</i>	River Red-gum	✓			
	<i>Eucalyptus</i> spp.	Eucalypt	✓	✓	✓	
*	<i>Fraxinus angustifolia</i> subsp. <i>angustifolia</i>	Desert Ash			✓	✓
	<i>Goodenia ovata</i>	Hop Goodenia			✓	✓
	<i>Hakea</i> spp.	Hakea		✓		
	<i>Hardenbergia violacea</i>	Purple Coral-pea	✓	✓		✓
	<i>Kunzea ericoides</i> spp. agg.	Burgan	✓			✓
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓	✓		✓
	<i>Myoporum insulare</i>	Common Boobialla	✓			
	<i>Myoporum viscosum</i>	Sticky Boobialla		✓		✓
	<i>Olearia axillaris</i>	Coast Daisy-Bush				
	<i>Poa labillardierei</i>	Common Tussock-grass		✓		✓
	<i>Solanum aviculare</i>	Kangaroo Apple	✓			

\* denotes an introduced non-indigenous species



## 16. ELWOOD CANAL

### **Location:**

A linear reserve that runs along both sides of the Elwood Canal. It extends from Port Phillip Bay to St Kilda Street in the east.

### **Description:**

The Elwood Canal is an engineered drain that was created along the approximate path of the Elster Creek. The region was formerly a low-lying area and the Elster Creek drained into a large swamp complex before exiting to the bay, approximately 150 metres to the north (opposite Meredith Street) from where the Canal meets the sea today (Edelstein 2001).

The Canal now sits over part of the former Elwood Swamp which was drained and dredged in the 1890's (Edelstein 2001).

The Canal has a number of historic features including bluestone fords and weirs.

A high pressure gas pipeline runs beneath the centre of the eastern portion of the canal and Melbourne Water manages the central sections of the canal. This limits the extent to which plantings can/should occur.

Exotic and native vegetation has been planted over the years and in more recent years indigenous vegetation. Within this reserve 50 garden beds were identified although in some cases a number of revegetated areas were documented together for efficiency.

In the past, Earthcare St Kilda has been active in undertaking activities such as planting and fauna monitoring.

A walking and cycling path extends along the length of this reserve and it is used extensively by the local community for passive and active recreation, namely walking, jogging and cycling.

**NHA Priority:** Medium priority NHA

### **Management Issues within this NHA**

#### **General Issues:**

- Many informal paths through vegetation from the road
- Access for service vehicles difficult in some areas, particularly along the northern side of the Canal where bollards are in place and also where a resident works on cars, using the area adjacent to his garage to park cars

#### **Issues Associated with Vegetation Management:**

- A high level of fragmentation
- Senescing vegetation
- Gaps and open spaces within some plantings
- Dead vegetation
- Shrubbiness and Rhagodia dominating
- Some woody weed incursions: White Poplar
- Some minor weed incursions
- Ensuring access to pathway

## **Activities to Improve Reserve Management**

### **Vegetation management:**

- Remove dead and senescing vegetation
- Reduce shrubbiness of vegetation in some parts, particularly Rhagodia and replant with less shrubby species
- Rationalise pathways and then install barriers and plant vegetation that will reduce the likelihood of trampling and paths
- Ensure vegetation along the pathways is low maintenance/has low pruning requirements
- Long-term consider rationalising the pathways along the canal with one path dedicated to cyclists the other to pedestrians (see below for more detail)

### **Management priorities and activities:**

This reserve has a high level of value for recreation purposes and also potentially as a habitat corridor, particularly where the space available for planting is wider.

The fact that the canal is intersected by numerous roads as well as rear driveways means that it is difficult to provide a contiguous length of habitat however.

Flooding is also a consideration for managing vegetation. With the levels of flooding expected to increase, the flooding occurrences in the vicinity of the canal may also increase (depending on the expediency of council drainage works). This may limit the type and location of future plantings but for now this has not been directly factored into our recommendations.

The key management issues are mainly concerned with increasing the amount of native vegetation present and reducing fragmentation whilst also maintaining the vegetation that already exists. There are also a couple of dead trees in EC2 and a tree touching the powerlines in EC35.

As this is a high use area adjoining houses, amenity considerations are also particularly relevant.

There are some occurrences of woody weeds along the reserve that need addressing. In particular White Poplar which is suckering. There are also some Agapanthas and South African Daisy which should be removed.

Ensuring that the plantings do not create a nuisance for adjoining neighbours is also a consideration as is ensuring safe access for pedestrians and cyclists who use the pathways.

Vegetation Management Zones have mainly been assigned on a garden bed basis so that they can be referred to for specific activities. However where possible, larger blocks have been used to align with the roads that intersect the canal. In the table below the VMZ's have been clustered according to their location either north or south of the canal and also the streets that they occur between.



The eastern portion of the reserve where the waterway is not within the concrete channel has the widest areas for planting and the vegetation that has been established here is the most natural. On this basis, this area should be a priority for revegetation works that aim to widen the vegetation here. It should also be planted for habitat values in particular. It is noted however that the gas pipeline which runs beneath the waterway provides a barrier to planting closer to the waterway and also that Melbourne Water manage the area immediately adjacent to the waterway, again restricting the amount of planting area.

The alignment of the current pathways is problematic for the creation of habitat and aiming to create a contiguous corridor. In most sections the path has either a northern or southern alignment and then runs diagonally across the site to finish at the opposite side. This consistently fragments the vegetation and reduces the efficiencies that can be gained by having contiguous stretches of vegetation. A long term suggestion is to rationalise the pathways within the reserve. This would involve choosing one side of the canal to run a cycle path along and another to encourage more relaxed pedestrian access. For the cycle path side, the pathway would run adjacent to the neighbouring fencelines. This would not only create a buffer between the neighbours thus reducing conflicts around adjoining vegetation as well as providing a pathway to rear-access on some properties.

As this proposal would involve the establishment of major infrastructure and would be undertaken outside the 5 year timeframe of this plan, it has not been costed.

As the Elwood Canal is located on reclaimed swamp land the vegetation to be planted will only approximate the former original vegetation which was reportedly Sedgy Swamp Woodland. The surrounding vegetation types that are more terrestrial have therefore been utilised as the aspirational EVC's for planting. The recommended EVC's also aim to reflect the various likely vegetation types depending on distance from the coast (rather than distance from the coast and landscape features as the landscape is highly altered).

Table 38. Elwood Canal VMZ descriptions and future management actions

Location Along Canal	Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
St Kilda Street to Foam Street – South	EC1	The most easterly section. This section contains one main stretch of vegetation south of a pathway as well as a few planted Eucalypts north of the path and two small triangular patches of vegetation on the north edge of the path at each end of this stretch. A bench seat is also located here. Recent plantings have been undertaken which include shrubs, grasses, sedges and lilies. A resident's garden area is also present which includes an exotic palm some lilies and an expanse of English Ivy. Also Banana plants and Cordylines.	Damp Sands Herb-rich Woodland/Grassy Woodland	No significant issues although it would be preferable to remove all English Ivy.	Maintain as required	Medium
St Kilda Street to Foam Street – North	EC50	This patch comprises one larger planting along the southern edge of a pathway. A series of smaller plantings around Eucalypts feature in the western portion. In the east there are sparse plantings beneath a number of mature Drooping Sheoaks. Fragmentation and gaps feature in this VMZ. There are also some plantings of garden plants including French Lavender and Rose-scented Geranium that would ideally be removed from this location.	Damp Sands Herb-rich Woodland/Grassy Woodland	Fragmentation Gaps	Plant to join patches and infill gaps with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland  Maintain as required	Medium
Foam Street to Wave Street – South	EC2	This patch comprises one larger planting along the southern edge of the path that is punctuated by driveway access points for the adjoining residents. Small plantings around larger Eucalypts have been established to the north of the path. These have large gaps between them. There are a couple of dead trees in this stretch that will require addressing to be made safe.	Damp Sands Herb-rich Woodland/Grassy Woodland	Dead trees Fragmentation	Remove or lop dead trees to render them safe.  Plant on the northern side of the path to join patches with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland  Maintain as required	Medium
Foam Street to Wave Street	EC46, 47, 48 and 49	Four patches of relatively well linked vegetation. EC46 and 47 comprise two patches that contain a reasonable representation of all strata and diversity although the plantings are sparse in some places—there appears to be a lot of fill	Damp Sands Herb-rich Woodland/Grassy Woodland	Dead trees and shrubs Gaps – EC46, 47, 48 Shrubbiness (Rhagodia)–EC48, 49	Reduce Rhagodia – EC48,49  Replant and infill gaps with species appropriate to	Medium



Location Along Canal	Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
Street – North		material here and perhaps it is not conducive to good planting conditions. Some dying Drooping Sheoaks are present in EC47 on the northern edge. This patch also has some disturbance and gaps associated with recent earthworks for some water infrastructure as well as gaps and one wide path through. EC48 is dominated by mature Desert Ash trees with a shrubby Rhagodia dominated understorey. There are also gaps in vegetation throughout. EC49 comprises a diverse mix of indigenous plantings including Eucalypts, shrubs, grasses, sedges and herbs. Some excess shrubbiness is present.	Grassy Woodland		Damp Sands Herb-rich Woodland/Grassy Woodland	
Wave Street to Glenhuntly Road – South	EC3, 4 and 5	EC 3 is notable in that it is dominated by River Sheoak, a native plant from NSW that has a tendency to be invasive. In this location it is suckering but does not appear to have spread. EC4 and 5 are plantings of indigenous species beneath Eucalypts, namely shrubs. Rhagodia is relatively dominant in the understorey.	Damp Sands Herb-rich Woodland/Grassy Woodland	Shrubbiness (Rhagodia) Fragmentation	Reduce shrubbiness (Rhagodia). Link EC4 and 5. Plant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	Medium
Wave Street to Glenhuntly Road – North	EC43, 44, 45	East of the canal proper. EC43 comprises a group of plantings of indigenous shrubs, grasses, sedges and lilies surrounding separate patches of Eucalypts. One large Sugar Gum is also located here close to the pathway. EC44 comprises some native and exotic plantings beneath a large Coast Manna Gum. Part of this garden bed is being used by the adjoining neighbour to plant cottage-style plants. Agapanthas are also present here. EC45 includes two large, mature Sugar Gum with a couple of Lightwoods as well as some South African Daisy and Agapanthus beneath. This section of the canal is wide and there is potential for expansion of EC43 and 44 and linking within EC43. However it is also acknowledged that there are problems with plant establishment in the vicinity of EC44 as past experience has shown.	Damp Sands Herb-rich Woodland/Grassy Woodland	Fragmentation Gaps (all) Agapanthus, South African Daisy – EC44, 45	Link patches in EC43.  Plant out the gaps in EC44 and 45 with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland  Remove Agapanthus, South African Daisy – EC44, 45	

Location Along Canal	Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
Glenhuntly Road to Broadway –South	EC6, 7, 8 and 9	<p>The canal proper starts to the west of Glenhuntly Road. The first section of this stretch of the canal has no opportunity for planting as the Elwood Primary School Grounds come right to the canal’s edge.</p> <p>After the Shelley Street Bridge (former road, now closed) the reserve commences again.</p> <p>EC6 comprises two small patches of revegetation near the bridge that lie on either side of the path. EC6, a newer planting features a variety of shrubs, grasses, sedges and lilies. EC6A comprises a number of Lophostemons with a few indigenous grasses and shrubs beneath.</p> <p>EC7 is another planting adjacent to the driveway of the neighbouring house and EC8 comprises of some clusters of shrubs growing adjacent to the fenceline to the south. These are intersected by a small raised vegetable garden that somebody has planted. EC9 is a longer stretch of garden bed that contains all strata of vegetation but also has a large area devoid of vegetation beneath a large White Cypress tree.</p>	Damp Sands Herb-rich Woodland/Grassy Woodland	Fragmentation Gaps Rhagodia dominating – EC9	<p>Reduce the Rhagodia</p> <p>Plant out the gaps in EC9 with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland</p> <p>Maintain as required</p>	Medium
Glenhuntly Road to Broadway –North	EC39, 40, 41 and 42	<p>Four very different and distinctive disjunct plantings along a section of canal that has a low cover of native vegetation.</p> <p>EC39: a relatively narrow linear planting along a fenceline and set back from the path. A good representation of species are planted. A seat is located at the eastern end of this planting and a patch of Kikuyu is also located here.</p> <p>EC40: a wide planting beneath a number of mature Eucalypts. This planting is part of garden beds that extend around a sports oval. It contains a wide diversity of shrubs and is densely shrubby in the west but has gaps in the eastern half.</p> <p>EC41: a small patch dominated by Coast Saltbush. This is lacking diversity and the species selection would better align with those that are suggested in the following columns.</p> <p>EC42: a long thin stretch north of the pathway. Including only a number of native Eucalypts and little else. There is an opportunity for plantings to the south of the pathway.</p>	Damp Sands Herb-rich Woodland/Grassy Woodland	High threat weed: Kikuyu–EC39 Shrubiness – EC40, 41 Lack of diversity – EC40 Gaps–EC40, EC42	<p>Treat Kikuyu</p> <p>Reduce shrubiness – EC40, 41</p> <p>Infill gaps with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland</p> <p>Consider expanding EC39 also planting the southern side of the pathway adjacent to EC42</p>	High Medium

Location Along Canal	Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
Broadway to Ruskin – South	EC10, 11 and 12	This section includes three small, disjunct patches of planted vegetation. A large White Cypress tree is located within EC10 and a White Poplar within EC12. In particular the White Poplar is suckering and the suckers need treatment. There is some shrubbiness associated with EC12 and there is also the opportunity to greatly expand EC11 to the east and EC12 also to the east. The three patches are separated by the walking path which snakes diagonally through this section.	Damp Sands Herb-rich Woodland/Grassy Woodland	Woody weed suckering – EC12 Some shrubbiness – EC12 Fragmentation – all	Treat White Poplar suckers  Reduce shrubbiness  Replant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	High  Medium
Broadway to Ruskin – North	EC35, 36, 37 and 38	Four patches of vegetation, two on the south side of the path (37 and 38) and two on the north (37 and 38). EC35 has all strata represented but a key issue is a tall shrub touching the powerlines. This needs to be urgently addressed . EC38 comprises some indigenous plants, some native and some exotic. There is a significant amount of bare ground in this patch. Some Agapanthas are also present here. These should be removed. EC35 and 36 should be linked. EC37:recently planted shrubs, grasses, sedges and lilies. A seat is located adjacent and there is the potential to widen this planting so that it extends to the pathway. EC38 contains all strata but also many dead shrubs and gaps.	Damp Sands Herb-rich Woodland/Grassy Woodland	Dead tree touching powerlines. Agapanthus – EC36 Gaps in vegetation – EC36, 38 Senescing and dead shrubs–EC38 Fragmentation – all	CoPP will prune this tree in accordance appropriate guidelines – EC35  Remove Agapanthas – EC36  Infill gaps – EC36  Replant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland  Consider linking EC35 and 36 and widening EC37	High
Ruskin to Addison – South	EC13, 14 and 15	A very similar situation to the section between Broadway and Ruskin. Three patches, the plantings are generally OK but a White Poplar is located in EC15 and its suckers need attention. There is a White Cypress tree located within EC 14 and there are some gaps in vegetation beneath.	Damp Sands Herb-rich Woodland/Grassy Woodland	Woody weed suckering – EC15 Shrubiness – EC15 Gaps in vegetation – EC14 Fragmentation – all	Treat White Poplar suckers Plant EC14 to infill gaps Reduce shrubbiness in EC15 Replant with species appropriate to Damp Sands Herb-rich Woodland/Grassy Woodland	High  Medium
Ruskin to Addison – North	EC32, 33 and 34	Three disjunct plantings. Blady Grass is present with high cover within EC32. In the eastern portion of EC32 Rhagodia is dominant and should be reduced. EC 35 has all strata present but could be widened in the future.	Damp Sands Herb-rich Woodland/	Shrubiness – Rhagodia – EC32	Reduce shrubbiness in EC32 Replant with species appropriate to Damp Sands	Medium

Location Along Canal	Vegetation Management Zone	Description	Approximated EVC	Management Issues	Management Actions	Priority
		A seat is located adjacent to EC33.	Grassy Woodland		Herb-rich Woodland/ Grassy Woodland	
Addison to Barkly – South	EC16, 17 and 18	Three disjunct patches of vegetation. EC 17 has been established following the removal of a large White Cypress and is narrow with sparse indigenous plantings. The neighbour has planted some native species and would like to add more. EC18: Drooping Sheoaks with sparse mid/understorey. EC16 is small with shrubby vegetation and little canopy or groundstorey.	Damp Sands Herb-rich Woodland	Gaps in vegetation  Opportunity to widen EC17	Plant out the gaps in EC17 and 18 with species appropriate to Damp Sands Herb-rich Woodland	
Addison to Barkly – North	EC 29, 30 and 31	Three disjunct plantings which comprise midstorey and understorey vegetation. EC30 also includes some Eucalypts. EC 30 contains a high level of shrubbiness that could be adjusted with new plantings. A seat is provided adjacent to EC30. EC 30 should be expanded into the lawned area surrounding the seat.	Damp Sands Herb-rich Woodland	Shrubbiness – EC30  Opportunity to expand EC30	Reduce shrubbiness – EC30  Replace with non-shrubby species appropriate to Damp Sands Herb-rich Woodland	Medium-high
Barkly to Marine Pde – South	EC19, 20, 21 and 22	Four disjunct plantings. EC19 should be expanded along the fenceline. EC21 features a number of native plants that are not indigenous. EC21 and 22 have a stronger coastal element. Each planting is missing some elements. EC19 is dominated by Coast Teatree. This should be diversified. EC21 is dominated by Marsh Saltbush and EC20 is dominated by shrubs. EC21 also has some gaps and should be planted and mulched.	Coast Banksia Woodland	Missing strata (EC19, EC21), gaps (EC19 and 22), shrubbiness (all).	Reduce shrubbiness and fill gaps Replace with non-shrubby species appropriate to Coast Banksia Woodland Mulch EC22	Medium
Barkly to Marine Pde – North	EC23, 24, 25, 26, 27 and 28	Four plantings with different elements. EC23 contains all relevant strata. EC24 is dominated by large shrubs and requires diversification and shrub reduction. EC25 comprises Drooping Sheoak over Australian Salt-grass and requires careful management and maintenance of a buffer between exotic grasses. 26 and 27 are similar to EC23 however 27 is adjacent to a car turning area and suffers from car traffic.	Coast Banksia Woodland	Shrubbiness, diversification – EC24 Exotic grass incursion – EC25 Car traffic impacts – EC27	Reduce shrubbiness and fill gaps – EC24 Replace with non-shrubby species appropriate to Coast Banksia Woodland – EC24 Fence EC27, replant as above. Maintain edge on EC25	Medium  High  High



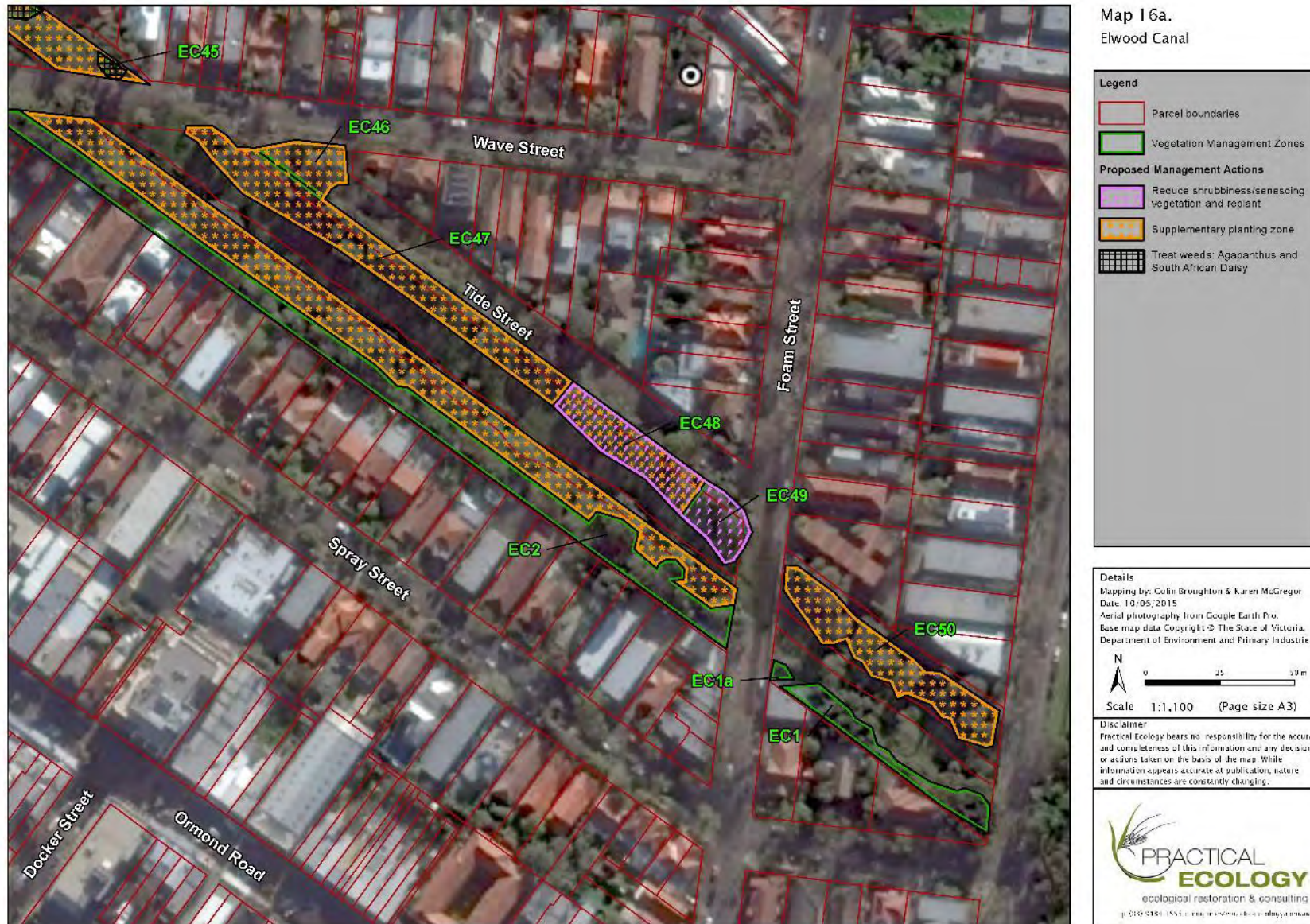


Figure 33. Vegetation Management Zones at Elwood Canal





Map 16b.  
Elwood Canal

**Legend**

- Parcel boundaries
- Vegetation Management Zones

**Proposed Management Actions**

- Shrub reduction and fill plantings
- Supplementary planting zone
- Treat weeds: Agapanthus and South African Daisy

**Details**

Mapping by: Colin Broughton & Karen McGregor  
Date: 10/06/2015  
Aerial photography from Google Earth Pro.  
Base map data Copyright © The State of Victoria,  
Department of Environment and Primary Industries

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Map 16c.  
Elwood Canal

**Legend**

- Parcel boundaries
- Vegetation Management Zones

**Proposed Management Actions**

- Shrub reduction and infill plantings
- Reduce shrubbiness/senescing vegetation and replant
- Supplementary planting zone

**Details**

Mapping by: Colin Broughton & Karen McGregor  
Date: 10/06/2015  
Aerial photography from Google Earth Pro.  
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Map 16d.  
Elwood Canal

**Legend**

- Parcel boundaries
- Vegetation Management Zones
- Tree touching power lines
- WP White Poplar

**Proposed Management Actions**

- Reduce shrubbiness/senescent vegetation and replant
- Supplementary planting zone
- Remove Agapanthus

**Details**

Mapping by: Colin Broughton & Karen McGregor  
 Date: 10/06/2015  
 Aerial photography from Google Earth Pro.  
 Base map data Copyright © The State of Victoria,  
 Department of Environment and Primary Industries

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Map 16e.  
Elwood Canal

**Legend**

- Parcel boundaries
- Vegetation Management Zones
- Proposed fences

**Proposed Management Actions**

- Reduce shrubbiness/senescing vegetation and replant
- Supplementary planting zone
- Increase diversity
- Mulch
- Remove dead/senescing vegetation and replant
- Cycle friendly replacement plantings

**Details**

Mapping by: Colin Broughton & Karen McGregor  
 Date: 10/06/2015  
 Aerial photography from Google Earth Pro.  
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St Kilda Street to Foam Street	
	
EC1	EC1
	
EC50	EC50
Foam Street to Wave Street	
	
EC2	



EC46



EC47



EC48



EC49

Wave Street to Glenhuntly Road



EC3



EC4



 <p>25/03/2015 12:02</p>	 <p>09/04/2015 12:00</p>
<p>EC43</p>	<p>EC43</p>
 <p>09/04/2015 12:22</p>	 <p>09/04/2015 12:57</p>
<p>EC44</p>	<p>EC45</p>
<p>Glenhuntly Road to Broadway</p>	
 <p>09/04/2015 16:37</p>	 <p>09/04/2015 16:36</p>
<p>EC6 and 6A</p>	<p>EC8</p>





EC9

EC9



EC39

EC39



EC40

EC40



EC41

EC42



<p>Broadway to Ruskin Street</p>	
	
	<p>EC11</p>
	
<p>EC12</p>	<p>EC35</p>
	
<p>EC36</p>	<p>EC36</p>
	
<p>EC37</p>	<p>EC38</p>
<p>Ruskin to Addison Streets</p>	





EC13 (background) and 14 (foreground)



EC15



EC32



EC32



EC33



EC34

Addison Street to Barkly Street



EC16



EC17





EC18



EC29



EC30



EC31

Barkly Street to Marine Parade



EC19 (both sides of path)



EC19



EC20



EC 21 and 22





EC23



EC24



EC25



EC26



EC27



EC28

Table 39. Vegetation List for Elwood Canal

Origin	Scientific Name	Common Name	EC1	EC2	EC3	EC4	EC5	EC6	EC6A	EC7	EC8	EC9	EC10	EC11	EC12	EC13	EC14	EC15	EC16	EC17	EC18	EC19	EC20	EC21	EC22	EC23	EC24	EC25
#	<i>Acacia baileyana</i>	Cootamundra Wattle		✓																								
	<i>Acacia implexa</i>	Lightwood	✓	✓		✓						✓			✓	✓		✓	✓									
	<i>Acacia longifolia subsp. sophorae</i>	Coast Wattle										✓							✓				✓					
	<i>Acacia mearnsii</i>	Black Wattle		✓																								
	<i>Acacia melanoxylon</i>	Blackwood		✓		✓	✓		✓			✓																
	<i>Acacia pycnantha</i>	Golden Wattle		✓																								
	<i>Acacia stricta</i>	Hop Wattle		✓																								
	<i>Acacia verticillata</i>	Prickly Moses		✓																								
#	<i>Acacia saligna</i>	Willow Wattle				✓																						
*	<i>Agapanthus spp.</i>	Agapanthus																				✓	✓					
*	<i>Argyranthemum frutescens</i>	Marguerite Daisy	✓																									
#	<i>Allocasuarina cunninghamii</i>	River Sheoak			✓																							
	<i>Allocasuarina littoralis</i>	Black Sheoak	✓	✓					✓	✓																		
	<i>Allocasuarina verticillata</i>	Drooping Sheoak		✓		✓		✓			✓	✓					✓				✓	✓	✓					✓
	<i>Alyxia buxifolia</i>	Sea Box																							✓			
	<i>Atriplex cinerea</i>	Coast Saltbush						✓						✓														
	<i>Atriplex semibaccata</i>	Berry Saltbush		✓		✓																						
	<i>Atriplex paludosa spp. paludosa</i>	Marsh Saltbush																						✓				
	<i>Austrostipa scabra</i>	Rough Spear-grass		✓																								
	<i>Austrostipa spp.</i>	Spear Grass						✓																				
	<i>Austrostipa stipoides</i>	Prickly Spear-grass	✓																					✓	✓	✓		
	<i>Banksia integrifolia subsp. integrifolia</i>	Coast Banksia									✓								✓		✓						✓	
	<i>Banksia marginata</i>	Silver Banksia								✓																		
*	<i>Bougainvillea spp.</i>	Bougainvillea	✓																									
	<i>Bursaria spinosa</i>	Sweet Bursaria	✓									✓	✓		✓	✓			✓	✓								
#	<i>Callistemon spp.</i>	Bottlebrush	☐									☐												✓				



Foreshore and Hinterland Vegetation Management Plan – City of Port Phillip

Origin	Scientific Name	Common Name	EC1	EC2	EC3	EC4	EC5	EC6	EC 6A	EC7	EC8	EC9	EC 10	EC 11	EC 12	EC 13	EC 14	EC 15	EC 16	EC 17	EC 18	EC 19	EC 20	EC 21	EC 22	EC 23	EC 24	EC 25
	<i>Carpobrotus rossii</i>	Karkalla	✓															✓			✓							
	<i>Cassinia arcuata</i>	Drooping Cassinia		✓								✓																
*	<i>Chlorophytum comosum</i>	Spider Plant																						✓				
	<i>Clematis microphylla s.l.</i>	Small-leaved Clematis	✓																									
*	<i>Conyza spp.</i>	Fleabane		✓																								
*	<i>Coprosma repens</i>	Mirror Bush	✓																									
	<i>Correa alba</i>	White Correa		✓				✓		✓											✓	✓		✓		✓	✓	
	<i>Correa reflexa</i>	Common Correa		✓																	✓							
#	<i>Corymbia maculata</i>	Spotted Gum		✓																								
*	<i>Cotoneaster spp.</i>	Cotoneaster		✓																								
*	<i>Cupressus macrocarpa</i>	Monterey Cypress								✓		✓	✓															
	<i>Dianella admixta</i>	Black-anther Flax-lily	✓																									
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily	✓	✓									✓					✓	✓	✓		✓			✓	✓		
	<i>Dianella longifolia s.l.</i>	Pale Flax-lily		✓		✓	✓	✓	✓	✓		✓			✓											✓	✓	
	<i>Dichelachne crinita</i>	Long-hair Plume-grass										✓	✓															
	<i>Dichondra repens</i>	Kidney Weed															✓											
#	<i>Diplarrena latifolia</i>	Western Flag-iris		✓									✓															
	<i>Disphyma crassifolium subsp. clavellatum</i>	Rounded Noon-flower																									✓	
*	<i>Eragrostis curvula</i>	African Lovegrass		✓																								
*	<i>Erharta erecta var erecta</i>	Panic Veldt-grass															✓										✓	
*	<i>Ehrharta longiflora</i>	Annual Veldt-grass																										
	<i>Einadia nutans subsp. nutans</i>	Nodding Saltbush		✓		✓			✓			✓																
	<i>Enchylaena tomentosa var. tomentosa</i>	Ruby Saltbush		✓						✓																		
#	<i>Eucalyptus botryoides</i>	Southern Mahogany		✓																								
	<i>Eucalyptus camaldulensis</i>	River Red-gum	✓	✓		✓				✓		✓					✓	✓										
#	<i>Eucalyptus cladocalyx</i>	Sugar Gum	✓	✓			✓																					
#	<i>Eucalyptus globulus</i>	Blue Gum				✓																						
	<i>Eucalyptus leucoxydon</i>	Yellow Gum												✓														

Foreshore and Hinterland Vegetation Management Plan – City of Port Phillip

Origin	Scientific Name	Common Name	EC1	EC2	EC3	EC4	EC5	EC6	EC 6A	EC7	EC8	EC9	EC 10	EC 11	EC 12	EC 13	EC 14	EC 15	EC 16	EC 17	EC 18	EC 19	EC 20	EC 21	EC 22	EC 23	EC 24	EC 25
	<i>Eucalyptus melliodora</i>	Yellow Box		✓																								
	<i>Eucalyptus ovata</i>	Swamp Gum	✓						✓	✓		✓																
#	<i>Eucalyptus</i> spp.	Eucalypt	✓			✓																						
	<i>Eucalyptus viminalis</i>	Manna-gum																✓										
	<i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i>	Coast Manna-gum		✓															✓									
	<i>Ficinia nodosa</i>	Knobby Club-sedge						✓																				
*	<i>Ficus macrophylla</i>	Moreton Bay Fig	✓	✓																								
*	<i>Fraxinus angustifolia</i> subsp. <i>angustifolia</i>	Desert Ash	✓	✓																								
*	<i>Galenia pubescens</i>	Carpet Weed										✓																
	<i>Goodenia ovata</i>	Hop Goodenia								✓		✓					✓	✓		✓		✓						
#	<i>Grevillea rosmarinifolia</i>	Rosemary Grevillea		✓																								
#	<i>Hakea laurina</i>	Pincushion Hakea		✓																								
	<i>Hardenbergia violacea</i>	Purple Coral-pea	✓	✓		✓																						
*	<i>Hedera helix</i>	Ivy	✓																									
	<i>Indigofera australis</i>	Austral Indigo										✓																
	<i>Juncus pallidus</i>	Pale Rush																									✓	
	<i>Kennedia prostrata</i>	Running Postman															✓											
	<i>Kunzea ericoides</i> spp. agg.	Burgan		✓					✓	✓		✓					✓			✓								
	<i>Lasiopetalum baueri</i>	Slender Velvet-bush		✓													✓					✓						
*	<i>Lavendula dentata</i>	Toothed Lavender	✓														✓											
	<i>Leptospermum laevigatum</i>	Coast Tea-tree															✓					✓					✓	
	<i>Leucophyta brownii</i>	Cushion Bush		✓				✓														✓			✓	✓		
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓	✓		✓				✓				✓	✓		✓				✓							
#	<i>Lophostemon confertus</i>	Brush Box							✓																			
*	<i>Musa x paradisiaca</i>	Banana	✓																									
	<i>Myoporum insulare</i>	Common Boobialla		✓		✓				✓	✓														✓			
	<i>Myoporum parvifolium</i>	Creeping Myoporum						✓					✓														✓	
	<i>Myoporum viscosum</i>	Sticky Boobialla								✓																		
*	<i>Nephrolepis cordiflora</i>	Fishbone Fern	✓																									

Foreshore and Hinterland Vegetation Management Plan – City of Port Phillip

Origin	Scientific Name	Common Name	EC1	EC2	EC3	EC4	EC5	EC6	EC6A	EC7	EC8	EC9	EC10	EC11	EC12	EC13	EC14	EC15	EC16	EC17	EC18	EC19	EC20	EC21	EC22	EC23	EC24	EC25
	<i>Olearia axillaris</i>	Coast Daisy-Bush		✓										✓		✓												
	<i>Olearia glutinosa</i>	Sticky Daisy-bush	✓																									
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush	✓	✓		✓						✓																
*	<i>Phoenix canariensis</i>	Canary Island Palm	✓																									
*	<i>Pinus spp.</i>	Pine	✓									✓																
	<i>Poa labillardierei</i>	Common Tussock-grass										✓																
	<i>Poa poiformis</i>	Coast Tussock-grass	✓									✓																
	<i>Poa sieberiana</i>	Grey Tussock-grass																									✓	
	<i>Pomaderris paniculosa</i>	Coast Pomaderris										✓					✓											
*	<i>Populus alba</i>	White Poplar												✓				✓										
*	<i>Portulaca oleracea</i>	Common Purslane																									✓	
*	<i>Quercus ilex</i>	Holm Oak										✓																
	<i>Rhagodia candolleana subsp. candolleana</i>	Seaberry Saltbush	✓	✓			✓					✓						✓				✓	✓		✓			
	<i>Ricinocarpos pinifolius</i>	Wedding Bush		✓																								
*	<i>Rosmarinus officinalis</i>	Rosemary		✓																								
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass																✓										
	<i>Rytidosperma racemosum</i>	Slender Wallaby-grass						✓										✓										
	<i>Rytidosperma spp.</i>	Wallaby Grass										✓																
*	<i>Schinus molle</i>	Peppercorn Tree					✓																					
	<i>Sedum praealtum subsp. praealtum</i>	Shrubby Stonecrop		✓																								
	<i>Solanum laciniatum</i>	Large Kangaroo Apple		✓																								
*	<i>Solanum nigrum s.s.</i>	Black Nightshade	✓									✓																
*	<i>Sonchus oleraceus</i>	Common Sow-thistle										✓																
	<i>Sporobolus virginicus</i>	Sand Couch																										✓
	<i>Tetragonia implexicoma</i>	Bower Spinach		✓								✓			✓	✓	✓				✓	✓			✓	✓		
	<i>Tetragonia tetragonioides</i>	New Zealand Spinach							✓																			
	<i>Themeda triandra</i>	Kangaroo Grass	✓	✓								✓																
	<i>Wahlenbergia spp.</i>	Bluebell	✓														✓											



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#	<i>Acacia decurrens</i>	Early Black Wattle																								✓		
	<i>Acacia implexa</i>	Lightwood						✓	✓		✓	✓				✓						✓	✓		✓	✓		
	<i>Acacia longifolia subsp. sophorae</i>	Coast Wattle																								✓	✓	
	<i>Acacia mearnsii</i>	Black Wattle															✓							✓	✓			
	<i>Acacia melanoxylon</i>	Blackwood											✓	✓										✓		✓	✓	
	<i>Acacia paradoxa</i>	Hedge Wattle														✓	✓							✓				
#	<i>Acacia spp</i>	Wattle											✓															
	<i>Acacia verticillata</i>	Prickly Moses	✓																									
*	<i>Agapanthus spp.</i>	Agapanthus												✓								✓						
#	<i>Agonis flexuosa</i>	West Australian Peppermint								✓																		
#	<i>Allocasuarina cunninghamii</i>	River Sheoak																						✓			✓	
	<i>Allocasuarina littoralis</i>	Black Sheoak											✓										✓					
	<i>Allocasuarina verticillata</i>	Drooping Sheoak		✓	✓	✓	✓									✓	✓	✓					✓		✓	✓	✓	
	<i>Alyxia buxifolia</i>	Sea Box			✓																							
*	<i>Araujia sericifera</i>	Moth Vine											✓															
	<i>Atriplex cinerea</i>	Coast Saltbush															✓	✓										
	<i>Atriplex semibaccata</i>	Berry Saltbush																		✓				✓				
	<i>Austrostipa spp.</i>	Spear Grass														✓	✓											
	<i>Austrostipa stipoides</i>	Prickly Spear-grass		✓	✓												✓	✓					✓	✓	✓	✓		
	<i>Banksia integrifolia subsp. integrifolia</i>	Coast Banksia	✓				✓		✓	✓		✓				✓												
	<i>Banksia marginata</i>	Silver Banksia				✓																						
	<i>Banksia spinulosa var. cunninghamii</i>	Hairpin Banksia																								✓		
	<i>Bursaria spinosa</i>	Sweet Bursaria	✓				✓				✓	✓		✓	✓	✓							✓	✓				
	<i>Carpobrotus rossii</i>	Karkalla				✓			✓																		✓	
	<i>Cassinia aculeata</i>	Common Cassinia																										
	<i>Cassinia arcuata</i>	Drooping Cassinia																						✓				
*	<i>Chenopodium spp</i>	Goosefoot								✓											✓							

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	<i>Chrysocephalum apiculatum</i> s.l.	Common Everlasting															✓										
	<i>Clematis microphylla</i> s.l.	Small-leaved Clematis												✓									✓				
	<i>Correa alba</i>	White Correa	✓		✓	✓					✓				✓								✓		✓	✓	
	<i>Correa reflexa</i>	Common Correa	✓				✓			✓	✓				✓		✓						✓				
#	<i>Corymbia maculata</i>	Spotted Gum															✓										
*	<i>Cynodon dactylon</i>	Couch				✓																					
	<i>Dianella brevicaulis</i>	Small-flower Flax-lily			✓		✓		✓	✓	✓				✓					✓			✓	✓	✓		✓
	<i>Dianella longifolia</i> s.l.	Pale Flax-lily				✓											✓	✓	✓	✓							
	<i>Dianella</i> spp.	Flax-lily	✓																								
#	<i>Diplarrena latifolia</i>	Western Flag-iris											✓								✓						
	<i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>	Rounded Noon-flower	✓			✓											✓										
*	<i>Erharta erecta</i> var. <i>erecta</i>	Panic Veldt-grass						✓			✓						✓										
	<i>Einadia nutans</i> subsp. <i>nutans</i>	Nodding Saltbush															✓			✓			✓				
	<i>Elymus scaber</i> var. <i>scaber</i>	Common Wheat-grass																									✓
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush			✓									✓		✓				✓			✓	✓			
#	<i>Eucalyptus botryoides</i>	Southern Mahogany					✓																				
	<i>Eucalyptus camaldulensis</i>	River Red-gum																		✓			✓	✓		✓	
	<i>Eucalyptus cephalocarpa</i> s.l.	Silver-leaf Stringybark																									✓
#	<i>Eucalyptus cladocalyx</i>	Sugar Gum															✓			✓		✓		✓			
	<i>Eucalyptus melliodora</i>	Yellow Box								✓										✓			✓			✓	
	<i>Eucalyptus ovata</i>	Swamp Gum							✓															✓			✓
#	<i>Eucalyptus</i> spp.	Eucalypt				✓											✓		✓	✓			✓				
	<i>Eucalyptus viminalis</i>	Manna-gum								✓				✓													
	<i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i>	Coast Manna-gum																		✓		✓	✓				
	<i>Ficinia nodosa</i>	Knobby Club-sedge			✓															✓							
*	<i>Fraxinus angustifolia</i> subsp. <i>angustifolia</i>	Desert Ash																							✓		✓
*	<i>Galenia pubescens</i>	Carpet Weed																		✓							
	<i>Goodenia ovata</i>	Hop Goodenia	✓			✓	✓		✓	✓							✓			✓							
#	<i>Grevillea</i> spp.	Grevillea											✓														

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#	<i>Hakea drupacea</i>	Sweet Hakea																						✓			
	<i>Hakea nodosa</i>	Yellow Hakea																									✓
#	<i>Hakea sericea</i> s.l.	Bushy Needlewood													✓												
	<i>Imperata cylindrica</i>	Blady Grass						✓	✓	✓		✓		✓													
	<i>Indigofera australis</i>	Austral Indigo					✓							✓						✓				✓			
	<i>Juncus pallidus</i>	Pale Rush										✓															
	<i>Juncus</i> spp	Rush															✓										
	<i>Kunzea ericoides</i> spp. agg.	Burgan								✓	✓		✓	✓					✓								
	<i>Lasiopetalum baueri</i>	Slender Velvet-bush	✓											✓									✓	✓	✓	✓	
	<i>Leucophyta brownii</i>	Cushion Bush		✓																							
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	✓		✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	✓			✓	✓	✓	✓
*	<i>Malva parviflora</i>	Small-flower Mallow								✓						✓		✓									
#	<i>Melaleuca styphelioides</i>	Prickly-leaved Paperbark																	✓								
	<i>Myoporum insulare</i>	Common Boobialla	✓			✓	✓		✓			✓		✓			✓										
	<i>Myoporum parvifolium</i>	Creeping Myoporum				✓																					
	<i>Myoporum viscosum</i>	Sticky Boobialla				✓																	✓	✓			
*	<i>Olea europaea</i>	Olive																	✓								
	<i>Olearia axillaris</i>	Coast Daisy-Bush				✓	✓	✓						✓										✓			
	<i>Olearia ramulosa</i>	Twiggy Daisy-bush					✓													✓				✓		✓	
*	<i>Osteospermum fruticosum</i>	Shrubby Daisy-bush																			✓	✓					
	<i>Ozothamnus ferrugineus</i>	Tree Everlasting																								✓	
	<i>Pelargonium australe</i>	Austral Stork's-bill																						✓			
*	<i>Pelargonium graveolens</i>	Rose-scented Geranium																									✓
#	<i>Pittosporum undulatum</i>	Sweet Pittosporum																			✓						
	<i>Poa labillardierei</i>	Common Tussock-grass													✓												
	<i>Poa poiiformis</i>	Coast Tussock-grass					✓													✓							
	<i>Poa sieberiana</i>	Grey Tussock-grass														✓							✓	✓			
	<i>Poa</i> spp	Tussock-grass	✓																					✓			



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	<i>Pomaderris paniculosa</i>	Coast Pomaderris								✓	✓			✓													
	<i>Rhagodia candolleana</i> <i>subsp. candolleana</i>	Seaberry Saltbush		✓			✓	✓	✓		✓			✓			✓									✓	✓
	<i>Rytidosperma caespitosum</i>	Common Wallaby-grass												✓	✓	✓											
	<i>Rytidosperma racemosum</i>	Slender Wallaby-grass												✓		✓	✓										
	<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass																		✓							
*	<i>Schinus molle</i>	Peppercorn Tree							✓										✓						✓		
*	<i>Solanum nigrum s.s.</i>	Black Nightshade														✓			✓								
	<i>Tetragonia implexicoma</i>	Bower Spinach		✓	✓		✓		✓	✓		✓					✓										
	<i>Tetragonia tetragonioides</i>	New Zealand Spinach											✓		✓												
	<i>Themeda triandra</i>	Kangaroo Grass					✓							✓	✓												
	<i>Wahlenbergia spp.</i>	Bluebell																								✓	
	<i>Xerochrysum viscosum</i>	Sticky Everlasting															✓										