

# Coastal Shared Path Revegetation Plan for Hillarys to Mullaloo



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### **Acknowledgement of Traditional Custodians**

The City of Joondalup acknowledges the traditional custodians of this land, the Whadjuk people of the Noongar nation. We recognise the culture of the Noongar people and the unique contribution they make to the Joondalup region and Australia. We pay our respects to their elders past, present and emerging, as well as all Aboriginal and Torres Strait Islander peoples.

*Joondalup-ak ngala kaditj Noongar moort nidja Wadjak boodjar-ak kalyakool moondang-ak kaaradj-midi. Ngala Noongar Moort wer baalabang moorditj kaadidjiny koota-djinanginy. Ngala Noongar wer Torres Strait Moort-al dandjoo koorliny kwaba-djinanginy. Koorra, yeyi wer kalyakool, ngalak Noongar wer Torres Strait Birdiya wer moort koota-djinanginy.*

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## Acronyms

<b>Acronym / Abbreviation</b>	<b>Definition</b>
CPS	Clearing Permit System
FCT	Floristic Community Type
UXO	Unexploded Ordnance

# 1.0 Introduction

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## 1.1 Purpose

The Coastal Shared Path Revegetation Plan for Hillarys to Mullaloo outlines revegetation works that will be completed within Hillarys to Mullaloo to offset clearing of native vegetation for Stage 1 of the coastal shared path upgrade and relates to clearing permit application CPS 10219/1.

## 1.2 Project Background

The coastal shared path upgrade is being undertaken to improve safety and reduce user conflicts. The path has been designed to avoid and minimise clearing of native vegetation wherever possible. The coastal shared path upgrade and widening from 3 metres to a maximum of 4 metres will be delivered through the Western Australian Bicycle Network Grants Program, which is an initiative of the State Government administered by the Department of Transport, and will involve two stages. Stage 1 will include widening of the coastal shared path from Hillarys to Mullaloo and Stage 2 will include widening of the path from Ocean Reef to Burns Beach.

The coastal shared path is classified as a Primary Route in the Department of Transport's Long Term Cycle Network Plan meaning that it is a high demand corridor connecting major destinations and generally means the path will be four metres wide.

Hillarys and Mullaloo Foreshore Reserves are major conservation areas within the City and are managed for conservation purposes under the [Hillarys – Kallaroo Coastal Foreshore Reserve Management Plan](#) and the [Mullaloo Foreshore Reserve Management Plan](#).

## 1.3 Qualifications and Experience

The Coastal Shared Path Revegetation Plan for Hillarys to Mullaloo was developed by the following City of Joondalup staff members:

- Danielle Bowler, Environmental Development Coordinator, Postgraduate Certificate in Policy Studies specialising in Ecologically Sustainable Development, 17 years environmental experience.
- Sian Dodd, Principal Environmental Project Officer, Bachelor of Environmental Science, 10 years environmental experience.
- Nicole Adams, Senior Environmental Project Officer, Bachelor of Science, 15 years environmental experience.
- Georgia Davis, Environmental Approvals Officer, Bachelor of Science, 5 years environmental experience.

## 1.4 Native Vegetation Clearing Details

The original clearing permit application referred to clearing of 0.54 hectares of native vegetation within a 2.78 hectare footprint to upgrade and widen sections of the Coastal Shared Path from Hillarys to Mullaloo which has a total distance of 5.59 kilometres. The amount of native vegetation to be cleared has been reduced to 0.38 hectares.

The widening of the path will maintain the existing alignment for the entire length, with only widening on one or both sides of the existing path to facilitate a new width of up to 4 metres, conservation fencing, and any drainage works required. The coastal shared path upgrade has

been broken into two stages with clearing permit application CPS 10219/1 being for stage 1 works (see clearing permit application CPS 10219/1 for locations of clearing and property details). Stage 2 works will include the upgrade and widening of the path from Ocean Reef Marina to Burns Beach carpark, the length of 2.58 kilometres. The total coastal shared path upgrade length for both stages is 8.17 kilometres.

The revised native vegetation to be cleared for stage 1 of the coastal shared path upgrade includes:

- Coastal shrublands on shallow sands Priority Ecological Community (FCT 29a) – 0.33 ha or 3,273m<sup>2</sup>
- Acacia shrublands on taller dunes Priority Ecological Community (FCT 29b) – 0.0369 ha or 369m<sup>2</sup>
- Tuart Woodlands and Forests of the Swan Coastal Plain Threatened Ecological Community (FCT 29a) – 0.0079 ha or 79m<sup>2</sup>
- Northern Spearwood shrublands and woodlands Priority Ecological Community (FCT 24) – 0.0037 ha or 37m<sup>2</sup>.

## 1.5 Revegetation Background

The coastal shared path upgrade will require the clearing of 0.38 ha (3,809m<sup>2</sup>) of native vegetation with the majority (98%) being Priority Ecological Communities and a minor amount (2%) being Tuart Woodlands and Forests of the Swan Coastal Plain Threatened Ecological Community. Revegetation works are proposed to be conducted using local native species in two locations including 1.037 ha (10,374m<sup>2</sup>) of primarily good condition vegetation within Hillarys Foreshore Reserve and 0.1 ha (1,077m<sup>2</sup>) of degraded vegetation in Mullaloo Foreshore Reserve, with a total area of 1.14 ha (11,451m<sup>2</sup>) to be revegetated which is over three times the amount of area of native vegetation to be cleared. Maps showing the proposed revegetation sites are included in Attachment 1.

The City proposes that revegetation is conducted in winter 2025 using native plant seedlings propagated through local provenance seed and cuttings suitable for Coastal shrublands on shallow sands (FCT<sup>1</sup> 29a) priority ecological community for the revegetation site in Hillarys Foreshore Reserve and Northern spearwood shrublands and woodlands priority ecological community (FCT 24a) for the revegetation site in Mullaloo Foreshore Reserve. A list of species and quantities proposed to be used in the revegetation are detailed in Section 4.4 including 10 species for the revegetation site in Hillarys Foreshore Reserve (total of 5,150 seedlings to be planted) which are reflective of the FCTs. Section 4.4 also lists 16 species for the revegetation site in Mullaloo Foreshore Reserve (total of 535 seedlings to be planted) which are reflective of the FCTs. There is also existing native vegetation occurring within each of the revegetation sites to meet the completion criteria of 2 plants per m<sup>2</sup>.

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<sup>1</sup> FCT means Floristic Community Type

## 2.0 Background of Revegetation Sites

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### 2.1 Planning Context

The proposed revegetation site within Hillarys Foreshore Reserve is Crown land managed by the City of Joondalup (Lot 15445 on Deposited Plan 40340). Hillarys Foreshore Reserve is a Major Conservation Area in Bush Forever site 325 that will continue to be managed as a natural area under the Hillarys-Kallaroo Coastal Foreshore Reserve Management Plan.

The proposed revegetation site within Mullaloo Foreshore Reserve is Crown land managed by the City of Joondalup (Lot 10789 on Diagram 67314). Mullaloo Foreshore Reserve is a Major Conservation Area in Bush Forever site 325 that will continue to be managed as a natural area under the Mullaloo Foreshore Reserve Management Plan.

### 2.2 Existing Environment

#### Climate

The revegetation sites are located within the south-west of Western Australia, which experiences hot, dry summers and cool, wet winters. The average annual rainfall is 767mm with approximately 80% falling between May and September. The best time to establish plants in the site is late autumn to early winter to coincide with seasonal rainfall.

#### Geomorphology

The revegetation sites are located within the Swan Coastal Plain and are broadly characterised as including areas of Jarrah and Banksia woodlands on sandy soils in a series of sand dunes. The site is located on the youngest formation, the Quindalup Dune System. The proposed dual use path is located within the coastal reserve, which ranges from 98 - 396 m wide, and ranges in height from 1 - 25 mAHD, with the highest points occurring on large secondary dunes.

#### Vegetation

The proposed coastal shared path upgrade will require clearing of 0.38ha (3,809m<sup>2</sup>) of native vegetation with the majority (98%) being Priority Ecological Communities and a small amount (2%) being Tuart (*Eucalyptus gomphocephala*) woodlands and Forests of the Swan Coastal Plain Threatened Ecological Community.

#### Vegetation Complexes

Regional scale mapping indicates that the revegetation sites are located within the Quindalup Complex on Quindalup Dunes. The Quindalup Complex is a coastal dune complex consisting mainly of two alliances:

1. The strand and foredune alliance.
2. the mobile and stable dune alliance.

Local variations include the low closed forest of *Melaleuca lanceolata* – *Callitris preissii* and the closed scrub of *Acacia rostellifera*.

#### Hillarys Revegetation Site

The Hillarys revegetation site includes 1ha (10,374m<sup>2</sup>) of primarily good condition vegetation within Hillarys Foreshore Reserve. The majority (90%) of the Hillarys revegetation site is in good condition (0.93 ha or 9,294 m<sup>2</sup>) and a small area (10%) of the site is in very good

condition (0.1 ha or 1,080 m<sup>2</sup>). The Hillarys revegetation site includes Coastal shrublands on shallow sands Priority Ecological Community (Priority 3) which aligns with FCT 29a.

The Hillarys revegetation site was subject to a fire occurrence several years ago.

A flora survey was conducted in October 2015 which assessed the vegetation condition of the revegetation site as very good condition.

Two vegetation communities are present within the revegetation site:

- ArAcTOS - *Acacia rostellifera* and *Acacia cyclops* tall open shrubland over *Spyridium globulosum* and *Olearia axillaris* shrubland to open shrubland over *Melaleuca systema*, *Rhagodia baccata* subsp. *baccata* and *Acanthocarpus preissii* low shrubland over *Lepidosperma gladiatum* open sedgeland.
- OaApRbLOS – *Olearia axillaris*, *Acanthocarpus preissii* and *Rhagodia baccata* subsp. *baccata* low shrubland over *Spinifex hirsutus* very open grassland.

### **Mullaloo Revegetation Site**

The Mullaloo revegetation site includes 0.1 ha (1,077m<sup>2</sup>) of degraded vegetation in Mullaloo Foreshore Reserve. The Mullaloo revegetation site has planted vegetation rather than a native vegetation community. Directly adjacent to the Mullaloo revegetation site is the Northern Spearwood shrublands and woodlands Priority Ecological Community (Priority 3) which aligns with FCT 24.

The following vegetation community is located adjacent to the Mullaloo revegetation site and is in predominantly very good condition:

SgMsOS - *Spyridium globulosum*, *Templetonia retusa*, *Acacia saligna* tall open shrubland over *Melaleuca systema*, *Acacia lasiocarpa* mid open shrubland over *\*Bromus diandrus* low open grassland and *Lomandra maritima*, *Acanthocarpus preissii* low open herbland.

### **Hydrology and Drainage**

Maps showing drainage at the Hillarys and Mullaloo revegetation sites are included in the Hillarys-Kallaroo Foreshore Coastal Reserve Management Plan and Mullaloo Foreshore Reserve Management Plan and are also shown in Attachment 1.

### **Previous Works**

The City supports ongoing revegetation works in degraded areas on site through providing hundreds of native plants to the Mullaloo Beach Community Group each year, as well as implementing the Adopt a Coastline interactive bushland management program with schools. Glengarry Primary School conducted revegetation works at Pinnaroo Point in June 2023 as part of the Adopt a Coastline program. Native plants are grown in the City's nursery from seed stock collected on site. A total of 2,500 native plants were provided to the Mullaloo Beach Community Group in 2023 for revegetation works in degraded areas on site.



## 3.0 Threats and Opportunities

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### 3.1 Site history

The City's coastal zone from Hillarys-Kallaroo to Mullaloo includes coastal foreshore reserves and significant remnant vegetation of high conservation value, including Threatened and Priority Ecological Communities, within Bush Forever site 325. A 3m wide Coastal Shared Path currently extends along the length of these coastal zones, situated within the coastal foreshore reserve. This coastal shared path is highly used by the community, and because of this popularity, there have been regular conflicts between pedestrians and cyclists. As such, a wider path is proposed. Clearing along the sides of the existing path is required to widen the Coastal Shared Path from 3m to 4m width. The proposed clearing also allows for conservation fencing to be relocated and installed at 0.5 m offset from either side of the path edges.

Based on the coastal shared paths high usage and community feedback, the City undertook a condition assessment to determine the condition of the coastal shared path network along the City's 17km of coastline. Based on the outcomes of the condition assessment, the City identified key sections of the coastal shared path requiring upgrades to address aging infrastructure, and in some sections the updates will include widening to align with the standard 4m width of Perth's broader coastal shared path network.

The City of Joondalup encourages natural bushland regeneration through weed management and conservation fencing to allow the vegetation to re-establish itself and maintain species diversity and populations. Revegetation is undertaken as required in degraded, completely degraded or good areas using local provenance species.

Weed control and revegetation has occurred in the site area, which has increased biodiversity and reduced weed abundance. Weed monitoring is conducted by the City every six months to establish the extent and distribution of weed species and to identify priority weeds.

### 3.2 Existing land use disturbances

#### **Unmanaged access**

The movement of people, domestic animals and/or vehicles over the revegetated area may result in erosion, damage to plants and directly limit revegetation outcomes. Therefore, restricting access to the revegetation sites may be required during restoration and over the long term.

#### **Vegetation condition**

The Mullaloo revegetation site currently contains some areas of degraded vegetation, which offers an opportunity for restoration. The Hillarys revegetation site was subject to a fire several years ago and mostly contains vegetation of good condition which could be restored to very good or excellent condition. There is also a minimal amount of vegetation in very good condition in the Hillarys revegetation site which could be restored to excellent condition.

### 3.3 Existing physical site factors

#### **Erosion and dust generation**

Surface water is likely to drain freely across the site due to the permeable sands present. Therefore, water erosion from surface runoff would occur infrequently, if at all, and only in response to intense events. However, wind erosion and sand drift have the potential to impact revegetation due to ground disturbance and removal of vegetation cover. Although

revegetation will stabilise the site and reduce the potential for dust and erosion, management actions will be undertaken prior to planting and also if evidence of erosion is observed in the site prior to plant maturation.

### **Unexploded Ordnance**

The Hillarys revegetation site falls within an unexploded ordnance (UXO) area of 'other potential' and was used by allied aircraft for gunnery and bombing practice during WWII. No specific UXO contaminated site has been identified in the area and no UXO has been recovered from the site, however a possibility still exists that UXO may be found on site. It is considered that the possible risks from UXO within this area are minimal, however a level of risk still remains. The City's 'Finding Unexploded Ordnance Items' process will be implemented during the revegetation works, if required.

## **3.4 Existing biological site conditions**

### **Weeds**

Weeds can degrade native vegetation by competing for space and resources. An increase in weed presence could therefore limit revegetation outcomes. There is the potential for the cover and/or diversity of weeds to be increased during coastal shared path upgrade works through the ground disturbance and by introducing new weeds on vehicles or equipment. Good hygiene practices and weed management are required to limit weed introduction and control weeds within the site.

### **Non-native Fauna**

Non-native herbivorous fauna can directly limit the outcomes of revegetation by damaging or destroying plants. It is possible that herbivores like rabbits could pose a risk to site revegetation. Rabbit and other non-herbivorous fauna management will be required if impacts are recorded, particularly in initial periods when plants are small.

### **Plant pathogens**

Soil borne water moulds *Phytophthora* spp. or other pathogens (*Pythium* spp.) may occur in the revegetation sites and surrounding area. Pathogen sampling was conducted at Hillarys Foreshore Reserve in 2013/14 and 2016/17 and no pathogens were identified within the revegetation site or directly adjacent, however only a couple of samples were undertaken. No pathogen sampling has been undertaken within or adjacent to the Mullaloo revegetation site.

A large range of native species are susceptible to pathogens which are spread through movement of contaminated soil and mud, especially by vehicles, equipment, and footwear.

There is no practical large-scale cure for *Phytophthora* and *Pythium* pathogens and therefore containment is the primary option available for management. While pathogens are not expected to be a critical issue for vegetation within the site, good hygiene practices will nonetheless need to be applied at all times to limit the potential spread or introduction of plant pathogens. The City's Pathogen Hygiene Procedure will be implemented during the coastal shared path upgrade works, as shown in Attachment 2.

## 4.0 Revegetation Works

### 4.1 Goal

The overarching goal for revegetation is to stabilise, revegetate and improve the condition of the vegetation within the revegetation sites.

### 4.2 Objectives

The following objectives are proposed to guide the revegetation and ensure that the overarching goal has been met:

- Landforms within revegetated areas are stable and not actively eroding such that native shrub and herb species can be established.
- Revegetated areas have a minimum of 2 plants per metre squared.
- Revegetated areas have a minimum diversity of at least 7 appropriate locally native species.
- Weed cover does not exceed 10% of revegetated areas.
- Hillarys revegetation site improves from good condition to a minimum of very good to excellent condition and from very good condition to a minimum of excellent condition.
- Mullaloo revegetation site improves from degraded condition to a minimum of good to very good condition.

### 4.3 Targets and Completion Criteria

The table below outlines the revegetation completion targets and criteria.

Measure	Completion targets	Completion criteria	Monitoring
Native diversity	Minimum of 60% of native species returned	A minimum of 7 native species per quadrat	Native diversity will be counted annually in years 2 and 3
Weed density	Weed cover at the site is 10% or less (minor non-competitive weeds)	Weed cover is to be 10% or less of minor non-competitive weeds	Weed cover percentage will be assessed annually in years 2 and 3
Native density	Survival rate of 2 plant / m <sup>2</sup>	A survival rate of 2 plant / m <sup>2</sup> is to be achieved after 3 years. All planted species that have not survived will be replanted within 12 months and monitored for a further 2 years.	The number of surviving plants will be counted annually in years 2 and 3. Further monitoring will be conducted if replantings are required.
Watering	Watering of tubestock over summer months	Watering to be conducted 5 times over the summer months each year for 3 years	Watering of tubestock to be conducted 5 times in years 1, 2 and 3
Weed control	Quarterly weed control events with the first event to be undertaken prior to planting	Weed control events to be conducted quarterly each year for 3 years	Quarterly weed control events to be conducted in years 1, 2 and 3

The revegetation sites will be monitored annually in autumn against the completion targets and criteria and a vegetation condition assessment undertaken. Remedial actions will be undertaken as required.

#### 4.4 Revegetation Species

The City would engage a contractor to propagate and grow revegetation species as listed below, using local provenance seed collected from site where possible.

The City's Natural Environment team will also consider the collection of cuttings and seeds from the native vegetation clearing to grow in the City's nursery for revegetation projects. The City adopts a local provenance approach for revegetation projects within the City and works closely with the local Friends Groups in revegetation efforts.

Reference sites in very good condition have been used to develop revegetation species lists representative of the current and adjacent ecological communities. These include species from the Coastal shrublands on shallow sands Priority Ecological Community (Priority 3) and Northern Spearwood shrublands and woodlands Priority Ecological Community (Priority 3) found within and adjacent to the Hillarys and Mullaloo revegetation sites.

##### Hillarys Revegetation Site

The following species and quantities are proposed to be planted for revegetation in Hillarys Foreshore Reserve:

Latin Name	Number of plants
<i>Acacia cyclops</i>	300
<i>Acacia lasiocarpa</i>	400
<i>Carpobrotus virescens</i>	300
<i>Ficinia nodosa</i>	300
<i>Lepidosperma gladiatum</i>	500
<i>Myoporum insulare</i>	500
<i>Olearia axillaris</i>	550
<i>Rhagodia baccata</i>	550
<i>Scaevola crassifolia</i>	550
<i>Spinifex longifolius</i>	1200

Total number of plants: 5,150

##### Mullaloo Revegetation Site

The following list of species and quantities are proposed to be planted for revegetation in Mullaloo Foreshore Reserve:

Latin Name	Number of plants
<i>Acacia cyclops</i>	25
<i>Acacia saligna</i>	20
<i>Acanthocarpus preissii</i>	40
<i>Conostylis aculeata</i>	30
<i>Desmocladius flexuosus</i>	20
<i>Hardenbergia comptoniana</i>	20

Latin Name	Number of plants
<i>Leucopogon parviflorus</i>	30
<i>Lomandra maritima</i>	30
<i>Melaleuca systema</i>	40
<i>Myoporum insulare</i>	40
<i>Olearia axillaris</i>	50
<i>Rhagodia baccata</i>	50
<i>Scaevola crassifolia</i>	50
<i>Spyridium globulosum</i>	30
<i>Templetonia retusa</i>	30
<i>Threlkeldia diffusa</i>	30

Total number of plants: 535

## 4.5 Revegetation Techniques

### Site Preparations

Clearing of non-native planted vegetation will be undertaken in the Mullaloo revegetation site prior to plantings of locally native species.

### Plantings

Tubestock seedlings will be planted in winter 2025 as it is an effective method for revegetating the sites. Tubestock will be planted once the winter rains have started and the ground is sufficiently moist. Species will be planted in a mixed pattern so that diversity is maintained across the revegetation sites. Tree guards will be used across the revegetation sites to prevent damage from grazing and improve the survival rate of planted tubestock.

Tubestock will be installed using a deep planting method. Supplementary plantings will be undertaken in years 2 and 3 if the native diversity and density criteria is not met.

### Pathogen and Weed Hygiene

Pathogen and weed hygiene protocols will be adhered to prior to entering and leaving the site, including implementation of the City's Pathogen Hygiene Procedure as shown in Attachment 2.

### Weed Control

Weed control will occur at the revegetation sites prior to planting. Following planting in winter 2025, quarterly weed control events will be scheduled.

### Pest Management

Rabbit control methods such as fumigation will be conducted at the revegetation sites prior to revegetation works to prevent damage to revegetation works and to improve the condition of the existing vegetation.

### Watering

Tubestock will be watered over summer months as required.

## **Fencing and Signage**

Temporary fencing will be installed surround the revegetation sites to protect them from disturbance if required. Temporary fencing will be inspected every 6 months and repairs undertaken as required. Temporary signage will also be installed indicating that the sites contain revegetation and are not to be disturbed.



## 5.0 Schedule

Year	Timing	Task
2024 Year 0	July 2024	Order revegetation tubestock for 2025 planting
	May - Oct 2024	Clearing completed
2025 Year 1	Mar - May 2025	Clear non-native plants from Mullaloo revegetation site
	Mar - May 2025	Weed control at revegetation sites prior to planting
	Jun - Aug 2025	Plant tubestock seedlings at revegetation sites
	After planting is completed	Install temporary fencing if required and signage around revegetation sites
	Every six months after fencing is installed	Inspect fencing and signage and make repairs if required
	Quarterly after planting	Weed control at revegetation sites after planting
	Sept - Nov 2025	Inspect revegetation survival rates and determine number of new plants required to be planted in 2026 to meet targets and assessment criteria
	Sept - Nov 2025	Order plants for supplementary planting in 2026 if required
	Summer 2025/26	Water revegetation plants over summer – five times over 2025/26 summer period
2026 Year 2	Every six months	Inspect fencing and signage and make repairs if required
	Quarterly	Weed control at revegetation sites
	Mar - May 2026	Monitoring and assessment against targets and completion criteria
	Jun - Aug 2026	Order plants for supplementary planting in 2027 if required
	Summer 2026/27	Water revegetation plants over summer – five times over 2026/27 summer period
2027 Year 3	Every six months	Inspect fencing and signage and make repairs if required
	Quarterly	Weed control at revegetation sites
	Mar - May 2027	Monitoring and assessment against targets and completion criteria
	Jun - Aug 2027	Order plants for supplementary planting in 2028 if required
	Summer 2026/27	Water revegetation plants over summer – five times over 2027/28 summer period

# Attachments

## Attachment 1: Proposed Revegetation Site Maps



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		Path: E:\GIS Projects\Coastal Shared Path Upgrade\CSPU Upgrade			





  
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**Merrifield Place Proposed Revegetation Site - 0.1ha**



  
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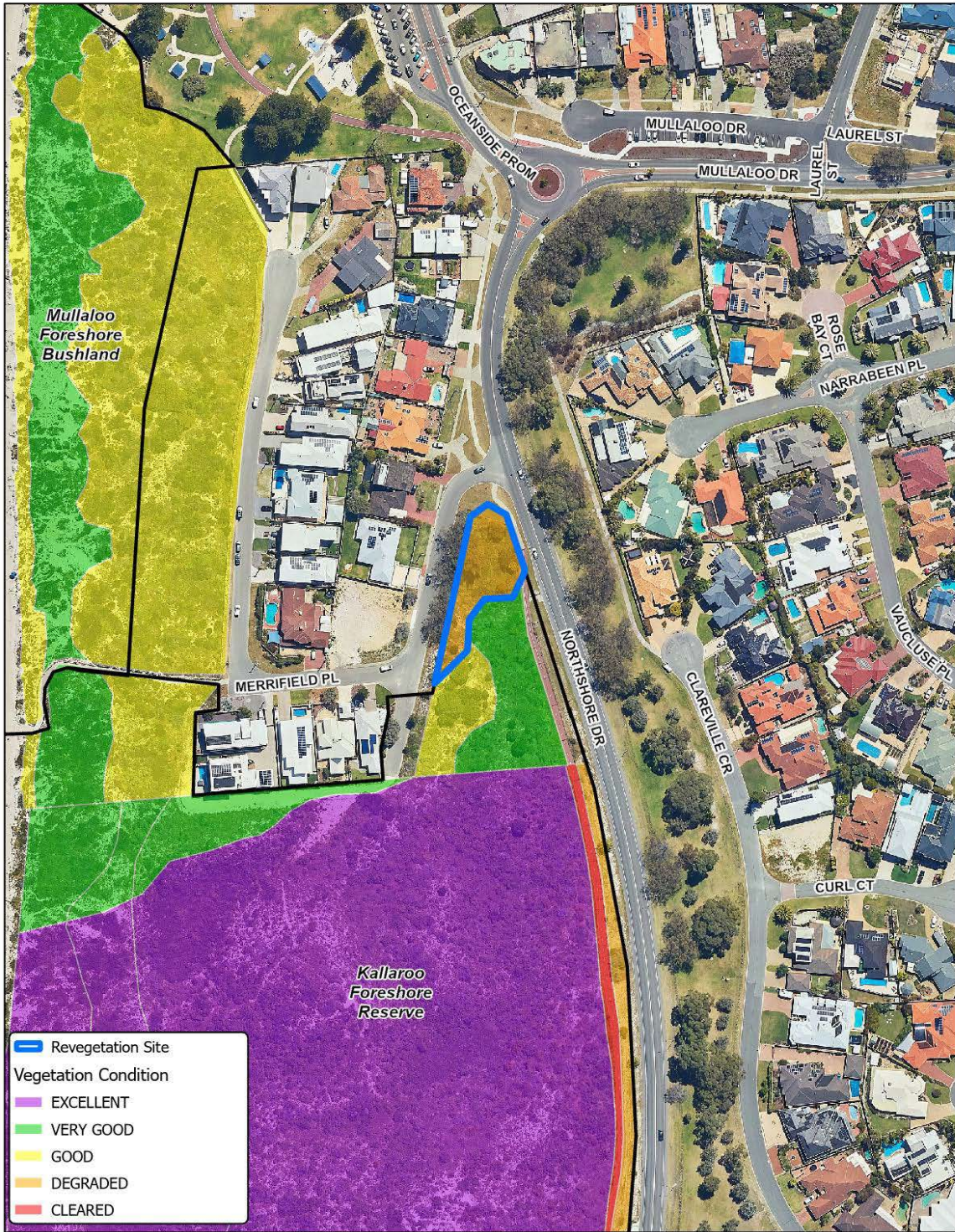
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**Hillarys Foreshore Reserve  
Proposed Revegetation Site  
Vegetation Condition (2021)**

### Vegetation Condition - North



Whitfords Nodes Foreshore Flora, Fauna and Fungi Survey vegetation condition assessment undertaken in October 2015



  
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**Merrifield Place Proposed  
 Revegetation Site  
 Vegetation Condition (2022)**



Acacia rostellifera and Acacia cyclops tall open shrubland over Spyridium globulosum and Olearia axillaris shrubland to open shrubland over Melaleuca systema, Rhagodia baccata subsp. baccata and Acanthocarpus preissii low shrubland over Lepidosperma gladiatum open sedgeland. FCT 29a and FCT 29b.

Coastal shrubland or open shrubland containing some or all of the following species - Scaevola crassifolia, Olearia axillaris, Spyridium globulosum, Melaleuca systema, Acacia lasiocarpa var. lasiocarpa, Acanthocarpus preissii, Rhagodia baccata over Lomandra maritima herbland or Spinifex hirsutus open grassland.

Revegetation Site

  
 90 Boas Ave, Joondalup WA 6027  
 PO Box 21, Joondalup WA 6919  
 Ph: 08 9400 4000  
 Fax: 08 9300 1383  
 info@joondalup.wa.gov.au  
 www.joondalup.wa.gov.au



Scale (A4): 1:2,344	Date: 2/05/2023	Compiled: A.Gilbert
Path: E:\GIS Projects\Coastal Shared Path Upgrade\CSPU Upgrade		
<small>DISCLAIMER: While every care is taken to ensure the accuracy of this data, the City of Joondalup makes no representations or warranties about its accuracy, completeness or suitability for any particular purpose and disclaims all liability for all expenses, losses, damages, and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.</small>		

**Hillarys Foreshore Reserve  
 Proposed Revegetation Site  
 Vegetation Communities (2021)**



- Acacia rostellifera* and *Acacia cyclops* tall open shrubland over *Spyridium globulosum* and *Olearia axillaris* shrubland to open shrubland over *Melaleuca systema*, *Rhagodia baccata* subsp. *baccata* and *Acanthocarpus preissii* low shrubland over *Lepidosperma gladiatum* open sedgeland. FCT 29a and FCT 29b.
- Coastal shrubland or open shrubland containing some or all of the following species - *Scaevola crassifolia*, *Olearia axillaris*, *Spyridium globulosum*, *Melaleuca systema*, *Acacia lasiocarpa* var. *lasiocarpa*, *Acanthocarpus preissii*, *Rhagodia baccata* over *Lomandra maritima* herbland or *Spinifex hirsutus* open grassland.
- Melaleuca raphiophylla* and *Eucalyptus rudis* open to closed forest over *Spyridium globulosum*, *Acacia saligna* subsp. *saligna* and *Exocarpos sparteus* tall open shrubland over *Baumea juncea* and *Baumea articulata* open sedgeland over *Centella asiatica* very open herbland.
- Rehabilitation Area
- Cleared
- Revegetation Site

  
 90 Boas Ave, Joondalup WA 6027  
 PO Box 21, Joondalup WA 6919  
 Ph: 08 9400 4000  
 Fax: 08 9300 1383  
 info@joondalup.wa.gov.au  
 www.joondalup.wa.gov.au



Scale (A4): 1:2,000	Date: 2/05/2023	Compiled: A.Gilbert
Path: E:\GIS Projects\Coastal Shared Path Upgrade\CSPU Upgrade		
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**Merrifield Place Proposed  
 Revegetation Site  
 Vegetation Communities (2022)**



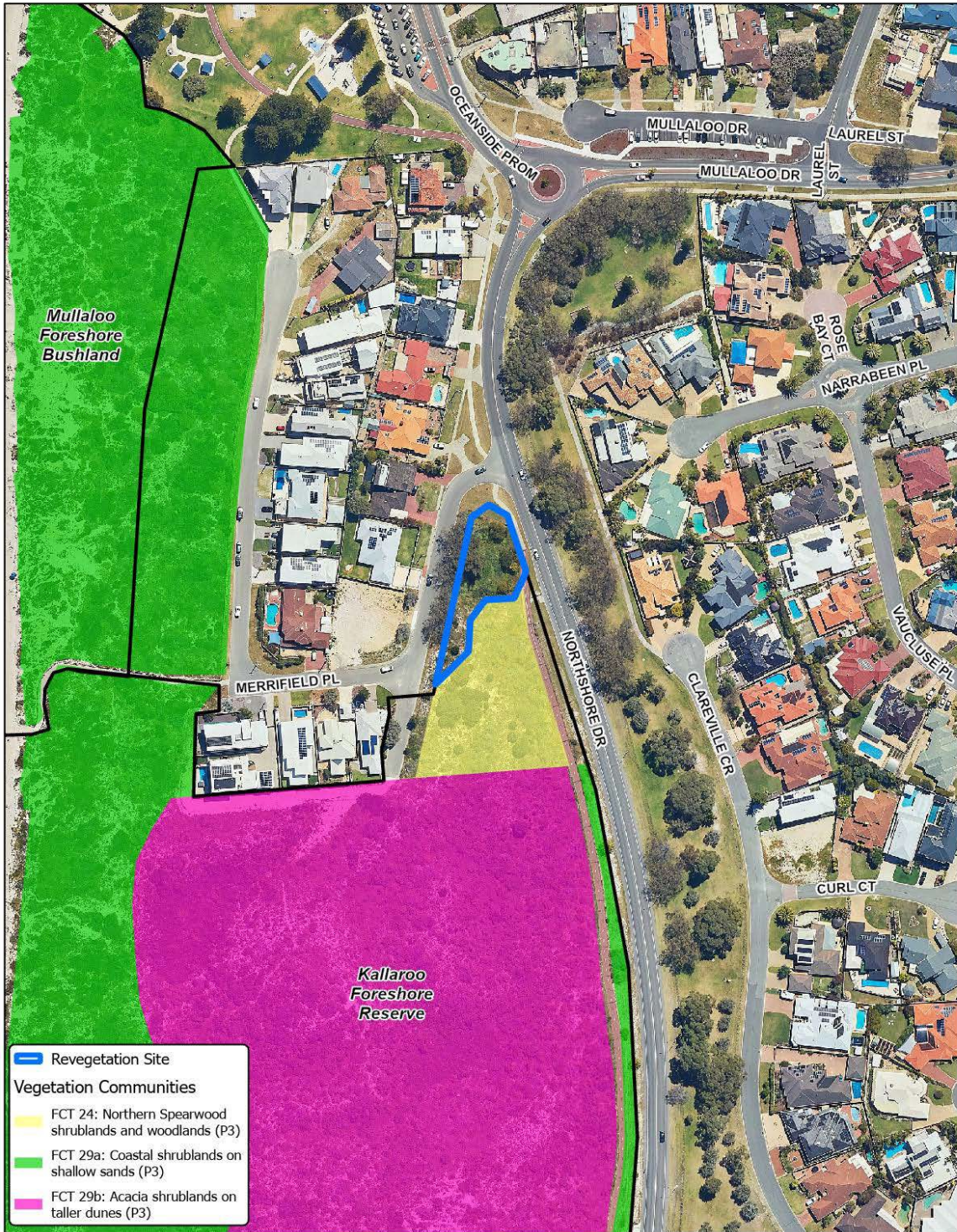
Revegetation Site  
**DESCRIPTION**  
 Tuart Woodlands and Forests of the Swan Coastal Plain ecological community  
 FCT 29a: Coastal shrublands on shallow sands (P3)

  
 90 Boas Ave, Joondalup WA 6027  
 PO Box 21, Joondalup WA 6919  
 Ph: 08 9400 4000  
 Fax: 08 9300 1383  
 info@joondalup.wa.gov.au  
 www.joondalup.wa.gov.au



Scale (A4): 1:1,500	Date: 2/05/2023	Compiled: A.Gilbert
Path: E:\GIS Projects\Coastal Shared Path Upgrade\CSPU Upgrade		
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**Hillarys Foreshore Reserve  
 Proposed Revegetation Site  
 Priority and Threatened Ecological  
 Communities (2021)**



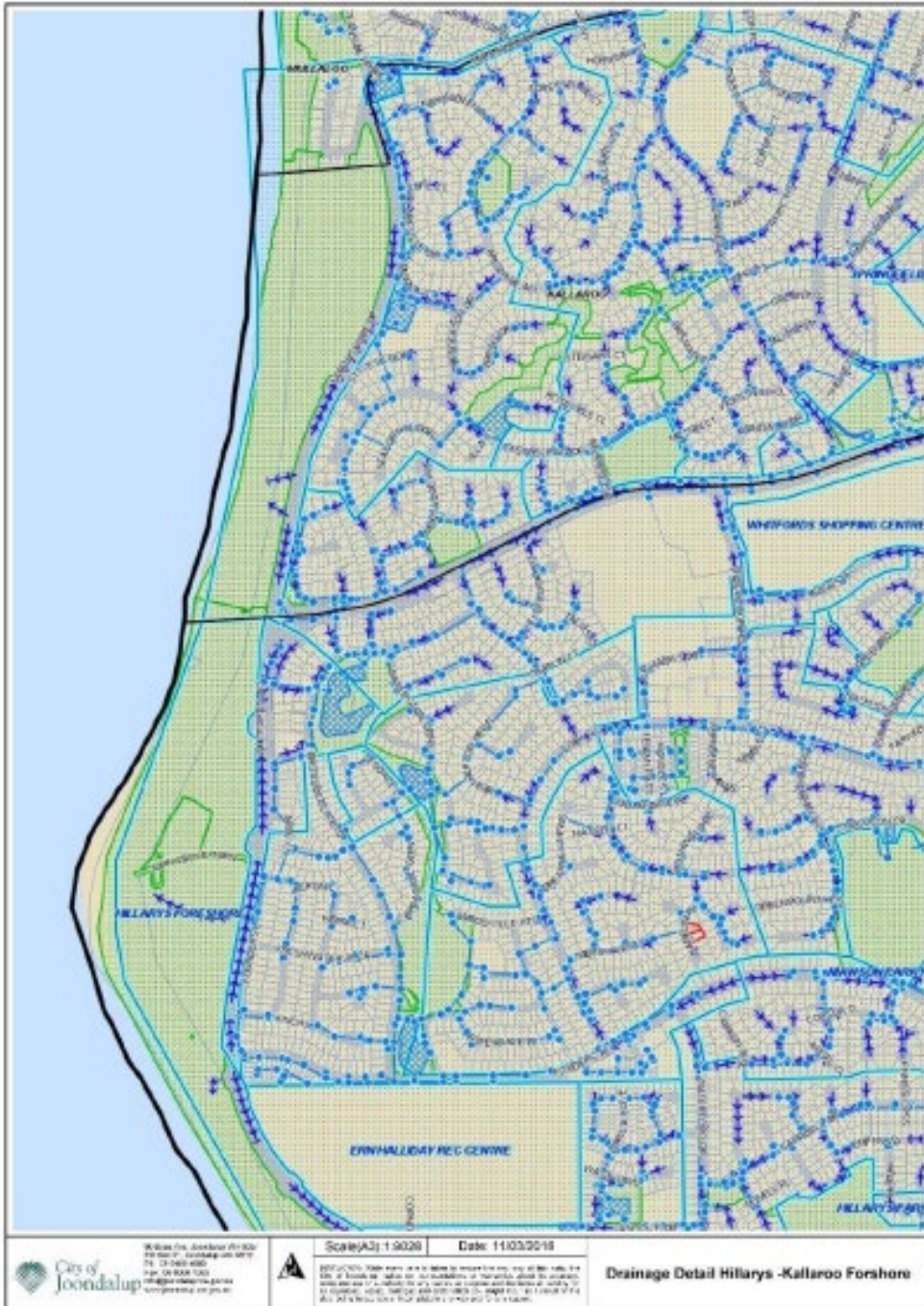
  
 90 Boas Ave, Joondalup WA 6027  
 PO Box 21, Joondalup WA 6919  
 Ph: 08 9400 4000  
 Fax: 08 9300 1383  
 info@joondalup.wa.gov.au  
 www.joondalup.wa.gov.au



Scale (A4): 1:2,000	Date: 2/05/2023	Compiled: A.Gilbert
Path: E:\GIS Projects\Coastal Shared Path Upgrade\CSPU Upgrade		
<small>DISCLAIMER: While every care is taken to ensure the accuracy of this data, the City of Joondalup makes no representations or warranties about its accuracy, completeness or suitability for any particular purpose and disclaims all liability for all expenses, losses, damages, and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.</small>		

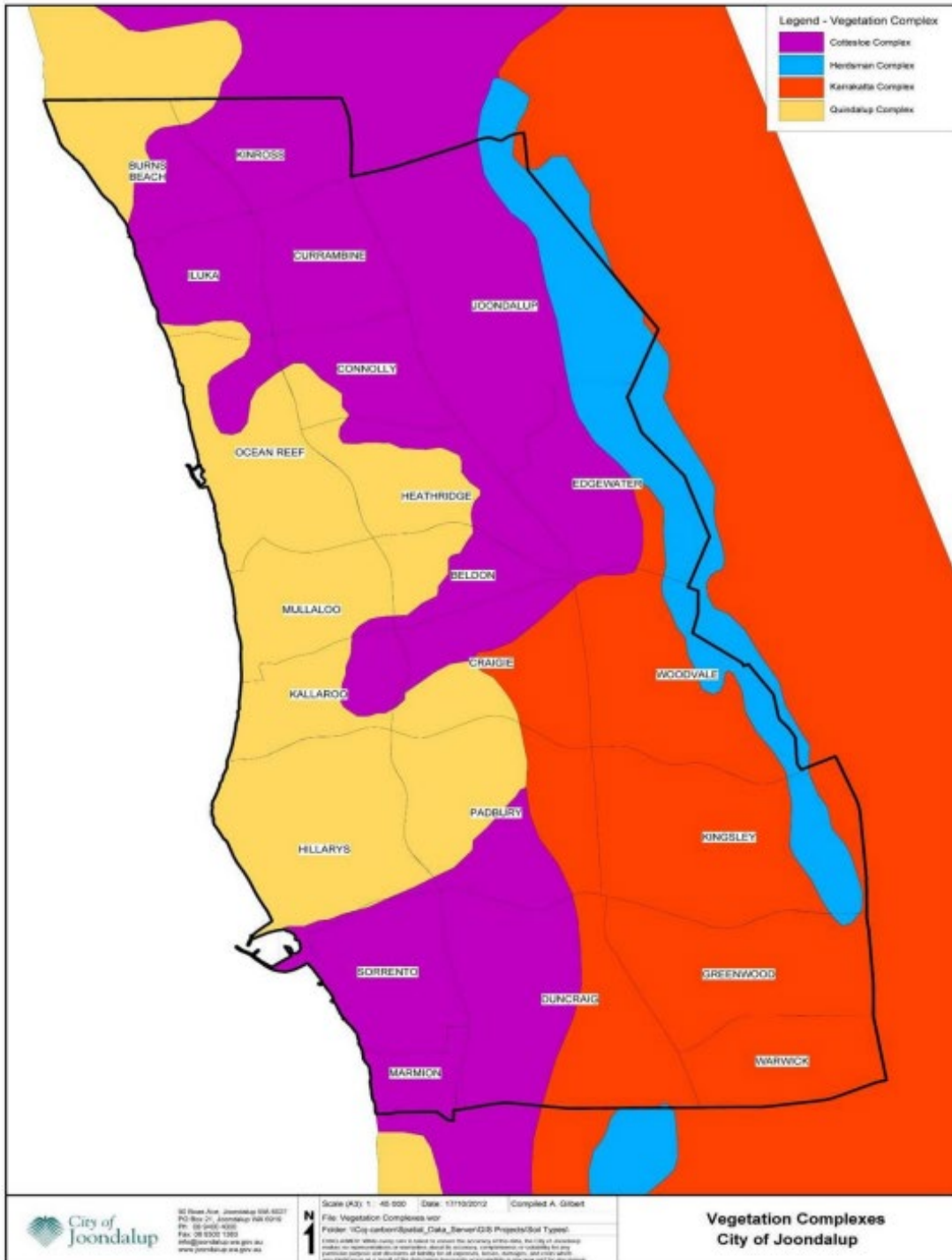
**Merrifield Place Proposed  
 Revegetation Site  
 Priority Ecological Communities  
 (2022)**





Hillarys-Kallaroo Foreshore Reserve Drainage





# Attachment 2: Pathogen Hygiene Procedure



## City of Joondalup Staff and Contractors Pathogen Hygiene Procedure

All City staff and contractors are responsible for avoiding the spread of pathogens to protect the natural environment. This procedure is in accordance with the City of Joondalup *Pathogen Management Plan* and applies to City parks, urban landscaping areas and natural areas.

### Clean-down procedures should be undertaken when conducting

- Works that disturb soil
- Tree pruning

### Clean-down procedures consist of the following steps

1. Before entering the site, clean footwear, clothing, tools, equipment and vehicle to remove all soil and plant materials.
2. Conduct site activities.
3. Brush-down footwear, clothing, tools, equipment and vehicles within the site compound area or in the immediate vicinity of construction works to remove all soil and plant materials.
4. Exit the site.

Note: A vehicle washdown bay is available for use at the City of Joondalup Works Operation Centre. Contact your City representative for access.

### General pathogen hygiene principles for on-site activities:

#### Parks and Urban Landscaping Areas

- In pathogen identified areas, avoid pruning trees during wet conditions where possible.
- Avoid damaging the trunk of trees when mowing or trimming.
- When walking on site, remain on paths and avoid bushland or vegetated areas where possible and/or practical.
- If accessing site with a vehicle, remain on formalised tracks or areas demarcated for vehicle access.
- Avoid water draining into bushland and vegetated areas.

- Use mulch that is certified pathogen free to the relevant Australian Standard (AS4454) and source plants from nurseries compliant with Nursery Industry Accreditation Scheme Australia (NIASA), where possible.

#### Natural Areas Bushland

- Works should commence in non-pathogen identified areas first and in known or suspected pathogen identified areas last.
- Avoid conducting works and accessing site in wet conditions, where possible.
- If accessing site with a vehicle, remain on formalised tracks or areas demarcated for vehicle access.
- When walking on site, remain on paths and avoid bushland or vegetated areas where possible and/or practical.
- In pathogen identified area, avoid pruning trees during wet conditions, where possible.
- Minimise water use in bushland and vegetated areas.
- Avoid water draining into bushland and vegetated areas.
- Use mulch that is certified pathogen free to the relevant Australian Standard (AS4454) and source plants from nurseries compliant with Nursery Industry Accreditation Scheme Australia (NIASA), where possible.

For any queries, please contact the Environmental Development Coordinator or email [enviro@joondalup.wa.gov.au](mailto:enviro@joondalup.wa.gov.au).

## Attachment 3: Revegetation Site Photos

## Coastal Shared Path Revegetation Plan Site and Reference Site Photos



Plate 1: Hillarys Foreshore Reserve revegetation site's existing acacia shrubland vegetation community classified as very good condition in 2021. Photograph taken from northern extent along fence line.

Coordinates: S31° 47.940, E115°43.921



Plate 2: Hillarys Foreshore Reserve revegetation site's existing acacia shrubland vegetation community classified as good condition in 2021. Photograph taken from southern extent along fence line.

Coordinates: S31°48.019, E115°43.900



Plate 3: Hillarys Foreshore Reserve revegetation site's existing coastal shrubland vegetation community classified as very good condition in 2021. Photograph taken from northern extent along fence line.

Coordinates: S31°47.935, E115°43.921



Plate 4: Hillarys Foreshore Reserve revegetation site's existing coastal shrubland vegetation community classified as good condition in 2021. Photograph taken from southern extent along fence line.

Coordinates: S31°48.009, E115°43.871



Plate 5: Hillarys Foreshore Reserve revegetation site acacia shrubland vegetation community classified as good condition in 2021. Photograph taken from the northeast extent along fence line.

Coordinates: S31°47.951, E115°43.927



Plate 6: Hillarys Foreshore Reserve revegetation site coastal shrubland vegetation community classified as good condition in 2021. Photograph taken from the northwest extent along fence line.

Coordinates: S31°47.957, E115°43.884





Plate 7: Hillarys Foreshore Reserve revegetation site acacia shrubland vegetation community classified as good condition in 2021. Photograph taken from the southeast extent along fence line.

Coordinates: S31°48.021, E115°43.905



Plate 8: Hillarys Foreshore Reserve revegetation site coastal shrubland vegetation community classified as good condition in 2021. Photograph taken from the southwest extent along fence line.

Coordinates: S31°48.006, E115°43.867



Plate 9: Hillarys Foreshore Reserve revegetation site acacia shrubland vegetation community classified as very good condition in 2021. Photograph taken from the eastern extent along fence line.

Coordinates: S31°47.945, E115°43.925



Plate 10: Hillarys Foreshore Reserve revegetation site coastal shrubland vegetation community classified as very good condition in 2021. Photograph taken from the western extent along fence line.

Coordinates: S31°47.939, E115°43.888



Plate 11: Mullaloo Foreshore Reserve revegetation site classified as degraded condition in 2021. Site was noted to contain evidence of rabbits. Photograph taken from the northern extent along fence line.

Coordinates: S31°47.274, 1E15°44.135



Plate 12: Mullaloo Foreshore Reserve revegetation site classified as degraded condition in 2021. Site was noted to contain evidence of rabbits. Photograph taken from the southern extent along western fence line.

Coordinates: S31°47.309, E115°44.119



Plate 13: Mullaloo Foreshore Reserve revegetation reference site coastal shrubland vegetation community classified as good condition in 2021. Photograph taken from along the western fence line.

Coordinates: S31°47.319, S115°44.116



Plate 14: Mullaloo Foreshore Reserve revegetation reference site coastal shrubland vegetation community classified as good condition in 2021. Photograph taken from along the western fence line.

Coordinates: S31°47.333, E115°44.113



Plate 15: Mullaloo Foreshore Reserve revegetation reference site coastal shrubland vegetation community classified as very good condition in 2021. Photograph taken from along the eastern fence line.

Coordinates: S31°47.310, E115°44.149



Plate 16: Mullaloo Foreshore Reserve revegetation reference site coastal shrubland vegetation community classified as very good condition in 2021. Photograph taken from along the eastern fence line.

Coordinates: S31°47.342, E115°44.159