CPS 9981/1 Flynn Drive Stage 2 and 3 2025

Revegetation and Rehabilitation Plan

March 2025



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1. Introduction

1.1 Proposed Clearing Plan - Flynn Drive Upgrade

The City of Wanneroo (hereby referred to as the City) is proposing to undertake the clearing of native vegetation within the boundaries of Flynn Drive Road reserve, Mather Drive Road reserve, Lot 8002 270 Flynn Drive, and Lot 9943 310 Flynn Drive BANKSIA GROVE, CARRAMAR and NEERABUP. The proposed clearing is to enable the staged upgrade of the existing road to a dual carriageway and enable the installation of associated infrastructure. The staged upgrade will also include the adjoining intersection, the installations of shared use pathways, drainage and kerbing, street lighting, asset (service) relocation, signage, and associated landscaping.

Due to the clearing activities associated with the upgrade, the City is required under Part V of the Environmental Protection Act (EP Act) to compensate for the significant residual impact resulting from the construction of Flynn Drive Stages 2 and 3. The City is proposing the following offsets (presented in **Table 1: Summary of Proposed Offsets** below) to address the environmental values impacted by the clearing of the Flynn Drive Road upgrade.

Table 1: Summary of Proposed Offsets

Location	Lot Number	Deposit Plan	Proposed hectares (ha)	Type of Offset	Environmental Value Addressed
Edgar Griffiths Park - Wanneroo	10857	15402	1.78ha	Revegetation	1.06ha of.Banksia Woodland on the Swan Coastal Plain TEC
Montrose Park - Girrawheen	9276	10841	4.62 ha to revegetation	Revegetation and Conservation	0.81ha of Banksia attenuata woodlands over species
			6.01 ha to Conservation Covenant	Conservation Covenant	0.81ha of Rich dense shrublands (<u>SCP Community</u> type 20a) TEC
			6.01 ha Included to Bush Forever	Include to Bush Forever	Bush Forever
Brennan Road- Bindoon	901	409610	38.46ha and a Minimum of Two (2) installed Artificial Hollows	Land Acquisition	5.7ha High and Very High- quality Black Cockatoo foraging habitat
			Installation of Four (4) Artificial Cockatoo Hollows	Installation	Two (2) Potential breeding trees

1.2 Revegetation and Rehabilitation Plan for Flynn Drive Development

The proposed Revegetation and Rehabilitation Plan is designed to mitigate the environmental impacts caused by the clearing of Flynn Drive Stage 2 and 3 road upgrades. This plan addresses the following key environmental values:

1. Loss of 5.7 hectares of High and Very High-quality Black Cockatoo foraging habitat To compensate for this impact, the City is offering an offset of 38.46 hectares of high-quality Black Cockatoo foraging habitat at Brennan Road, Bindoon. (Lot 901, DP 409610)

2. Removal of two (2) potential breeding trees with unsuitable hollows

The City proposes the installation of at least two (2) artificial breeding hollows at Brennan Road, Bindoon (Lot 901, DP 409610) to support Black Cockatoo breeding.

3. Loss of 0.81 hectares of State-listed *Banksia attenuata* woodlands over species rich dense shrublands (SCP Community type 20a) TEC

To offset this loss, the City intends to convert Montrose Park, GIRRAWHEEEN Lot 9276 DP 10841 5.7 hectares (ha) and rehabilitate 4.7 ha within Montrose Park.

4. Loss of 1.06 hectares of Banksia Woodland on the Swan Coastal Plain TEC

To address this impact, the City will <u>revegetate 1.78 hectares</u> of bare and degraded land within Edgar Griffiths Park, WANNEROO adjacent to an existing remnant bushland area of the Park. (Lot 10857 DP 15402)

5. Loss of 1.91 hectares of Bush Forever Site 295

The City proposes to convert 5.7 <u>hectares</u> of Montrose Park, GIRRAWHEEN to Bush Forever status to offset the loss of Bush Forever within the development area. (Lot 9276 DP 10841)

These offset and rehabilitation efforts are critical to maintaining biodiversity and ensuring that the environmental values affected by the road upgrades are adequately mitigated.

1.3 Clearing Permit Number

This revegetation and offset plan have been drafted as a supporting document to **CPS 9981/1** clearing permit application.

1.4 Key Contacts and details of person who developed the Plan

Clearing Permit Number: CPS 9981/1			
Contact Person	Natasha Musungwa		
Position Environmental Asset Planner			
Contact Details	Phone: (08) 9405 5633 Email: Natasha.Musungwa@wanneroo.wa.gov.au		
Level of Qualification	Master of Environmental Science Experience: 5 years		

1.5 Background of Proposed Clearing

The City has been advocating for several years for the upgrades to Flynn Drive due to the strategic and community benefits. The urgency for road upgrades has grown due to the increased traffic volumes and growing needs of residential and commercial road users. The proposed staged upgrades to Flynn Drive will provide the following strategic and community benefits:

- Improving road infrastructure and providing an arterial link from Wanneroo Road to Old Yanchep Road and the adjoining Neerabup Industrial Area
- a strategic transport link between the Mitchell Freeway and the Neerabup Industrial Area
- an important East / West link to the future proposed realigned Neaves Road and Whiteman Park to Yanchep Highway
- accommodate extra traffic capacity generated by the industrial development of Lot 9100, Mather Drive and subsequent development of additional land in the Neerabup Industrial Estate
- encourage investment and development, catering for the development within this corridor
- reduce traffic congestion and frustration, provide the community in Banksia Grove and Carramar residential areas a safer transportation route and
- provide cycle lanes and shared paths and additional road connectivity for surrounding residents.

The City proposes to construct the project in three (3) stages over the next three years which will involve staged road improvement upgrades to Flynn Drive. The total proposed clearing for stages 2 and 3 of the Flynn Drive upgrade projects is 7.3918 ha (73,918 m²) within a 20.2106 ha (202,106m²) project footprint.



Figure 1; Location map of Flynn Drive between Tranquil Drive and Pinjar Road, BANKSIA GROVE, CARRAMAR AND NEERABUP. Clearing 7.3918ha



Figure 2 Project footprint of Flynn Drive between Tranquil Drive and Pinjar Road, BANKSIA GROVE, CARRAMAR AND NEERABUP. Project Footprint 20.2106ha

The City's proposed Stage 2 and 3 Flynn Drive dual carriageway and associated works will impact upon native vegetation, planted landscaped vegetation and weed species within the Flynn Drive road reserve, Mather Drive Road Reserve, Lot 8002 and Lot 9943. To ensure that the project can progress the City is applying for a clearing permit from the Department of Water and Environmental Regulation (DWER).

2. Proposed Revegetation and Offset Sites

To counter the impact of clearing of the key environmental values identified in **Section 1.2**, The City plans to do the following:

2.1 Revegetation of Edgar Griffiths Lot 10857 DP 15402

To counter the loss of 1.06 ha of *Banksia* Woodlands of the Swan Coastal Plain (TEC), the City proposes to revegetate a minimum of 1.78 ha of bare and degraded land within Edgar Griffiths Park, WANNEROO on Lot 10857 DP 15402, with *Banksia* woodland species.

EDGAR GRIFFITHS PARK REVEGETATION SITE







NEARMAP MGA2020/50 IN FEB 2025

Figure 3: Edgar Griffiths Park, WANNEROO Revegetation Area 1.78ha

The City will change the Reserve Purpose from 'Public Recreation' to 'Conservation' (currently over existing bushland within the Park) to cover the 1.78ha of revegetated areas.

Table 2: Revegetation Rehabilitation Site Edgar Griffith's Park, WANNEROO

Revegetation Rehabilitation Area					
Location of Revegetation	Bare and degraded Parkland around Edgar Griffith's Park,				
Area	WANNEROO				
Property details	Lot 10857 DP 15402				
Size of revegetation	1.78ha				
Reserve Purpose	Public Recreation (current) change to Conservation				

2.2 Revegetation and Management of Montrose Park

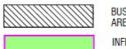
To offset the loss of 0.81 ha *Banksia attenuata* woodlands over species rich dense shrublands (<u>SCP Community type 20a</u>) TEC the City will infill revegetate 4.7 ha of *Banksia attenuata* woodlands over species rich dense shrublands (<u>SCP Community type 20a</u>) TEC at Montrose Park Lot 9276: DP10841. In addition, the, the land use designation will be changed from Public Recreation to Conservation, ensuring long-term protection and ecological value. A Crown Land Enquiry Form (CLEF) was submitted to the department of Land Development and Heritage (DPLH) 19February 2025. (refer to Attachment A).

These measures will directly offset the loss of 0.81 ha of SCP Community Type 20a.

To offset the Loss of 1.91 ha of Bush Forever vegetation at site 295, Flynn Drive, the City will secure a Bush Forever agreement over the bushland area within Montrose Park (5.7 ha). This designation will be included in the upcoming North Metro Omnibus Amendment, ensuring the site's conservation status aligns with regional biodiversity objectives. The Department of Planning, Lands and Heritage (DPLH) has expressed its agreement for the City to proceed with the inclusion of Montrose Park as part of Bush Forever to meet the offset requirements for CPS 9981/1.

DPLH and the City are currently collaborating on the necessary documentation to include Montrose Park in the next North Metro Omnibus Amendment. Given that Montrose Park contains SCP Community Type 20a a threatened Ecological Community and is part of a of Local Ecological Linkage ID 27, connecting Bush Forever Site 201 (Koondoola Regional Bushland) and Bush Forever Area 328; DPLH is confident that the site meets the criteria for regionally significant bushland and is a strong candidate for Bush Forever designation.

MONTROSE PARK INFILL REVEGETATION SITE



BUSH FOREVER PART CPS 9981 AREA = 6.0172 Ha

INFILL REVEGETATION SITE AREA = 4.6237 Ha





Figure 4: Lot 9276 Montrose Park, GIRRAWHEEN Revegetation Site and Proposed Bush forever Site

Below is a summary table of the offset proposed at Montrose Park.

Table 3: Revegetation Rehabilitation Site at Lot 9276 Montrose Park, GIRRAWHEEN

Revegetation Rehabilitation Area				
Location of Revegetation Area	Montrose Park, GIRRAWHEEN			
Property details	Lot 9276: DP 10841			
Size of infill revegetation	4.72 ha			
Current Reserve Purpose	Public Recreation			
Proposed Reserve Purpose	Conservation			
Other Proposed Conservation Covenant	Include into Bush Forever			

2.3 Bindoon Lot 901 Brennan Road (Banked Offset)

To offset loss of 5.7 hectares of High and Very High-quality Black Cockatoo foraging habitat, the City is proposing an offset of 38.46ha of High-quality Black Cockatoo foraging habitat at Brennan Road, Bindoon (Lot 901, DP 409610).

2.4.1 Black Cockatoo Foraging Habitat Bindoon

The City of Wanneroo has a banked offset site at Lot 901, DP 409610 Brennan Road, Bindoon. This offset site was acquired by the City in 2016 from a farmer at Department of Biodiversity, Conservation, and Attractions (DBCA)'s suggestion the Land was then ceded to DBCA for the purpose of conservation. Lot 901 contains 154.84ha of Very High-quality Black Cockatoo foraging habitat; canopy cover of both Eucalypts and Banksia species both showing evidence of feeding sites. with a (Ecoscape, 2019).

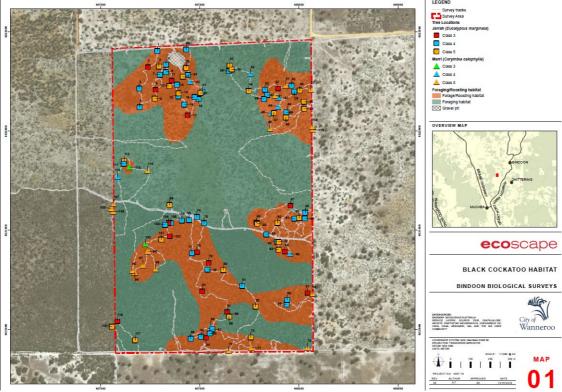


Figure 5: Extract from Ecoscape 2019 -Lot 901 Brennan Road Bindoon Black Cockatoo Habitat Survey

To offset the loss of 5.7 hectares of High and Very High-quality Black Cockatoo foraging habitat the City is proposing an offset of 38.46 hectares of High-quality Black Cockatoo foraging habitat at the City's Banked offset site, Brennan Road, Bindoon (Lot 901, DP 409610). Please see below map **Figure 7:** Flynn Drive Offset Very Good Quality Foraging Habitat: 38.46ha showing the City's proposed offset area.

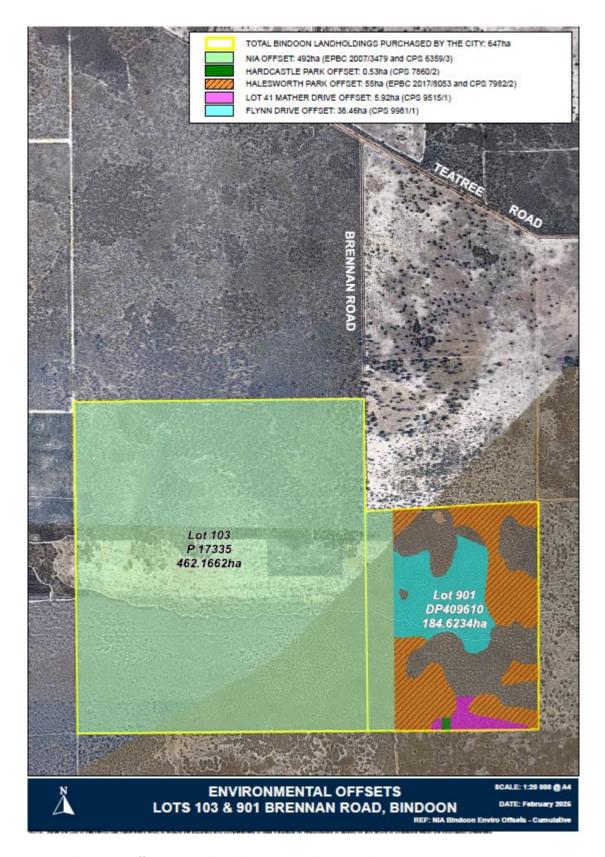


Figure 6: Flynn Drive Offset Very Good Quality Foraging Habitat: 38.46ha

2.4.2 Breeding Habitat (Installation of Artificial Hollows Bindoon)

Additionally, the City will install four (4) Black Cockatoo artificial hollows at the Brennan Road, BINDOON site to compensate for the removal of two (2) potential habitat trees at Flynn Drive. This installation aligns with the Department of Biodiversity, Conservation, and Attractions' (DBCA, 2023) guidance (**Appendix B**), which cautions against placing artificial hollows in built-up areas west of a designated line to avoid increased risks

to birds. Furthermore, the DBCA Fauna Note on artificial hollows for Black Cockatoos five (5) essential criteria (Table 1 of the Fauna Note in **Appendix B**) was implemented when picking suitable trees and location for Black Cockatoo hollow installation. **Figure 8** below provides further details.



Figure 7: Extract from the DBCA 2023 Fauna Notes, Artificial Hollows for Black Cockatoos

On 15 November 2024, the City's environmental officers assessed potential habitat trees on Lot 901, DP 409610, Brennan Road, Bindoon. A total of 24 trees were evaluated to determine their suitability for the installation of artificial hollows.

The assessment was guided by the Department of Biodiversity, Conservation and Attractions (DBCA) *Fauna Note* assessment criteria (Table 1: Essential criteria for a site to be considered suitable for installation of artificial hollows), which also provides alternative conservation actions for criteria not met. Additionally, the Occupational Health and Safety considerations for the installation and maintenance of the hollows were considered to identify suitable trees. The following trees were selected for artificial hollow installation:

- 1. Tree Option 2 Eucalyptus marginata (Jarrah) 116.02590980555556; -31.429307305555557
- 2. Tree Option 8 Eucalyptus marginata (Jarrah) 116.03260230555556; -31.431227111111113
- 3. Tree Option 18 Eucalyptus marginata (Jarrah) 116.0236925; -31.437343305555554
- 4. Tree Option 22 Eucalyptus marginata (Jarrah) 116.028059; -31.443014805555556
- 5. Tree Option 19 Eucalyptus marginata (Jarrah) 116.0256509; -31.44302589

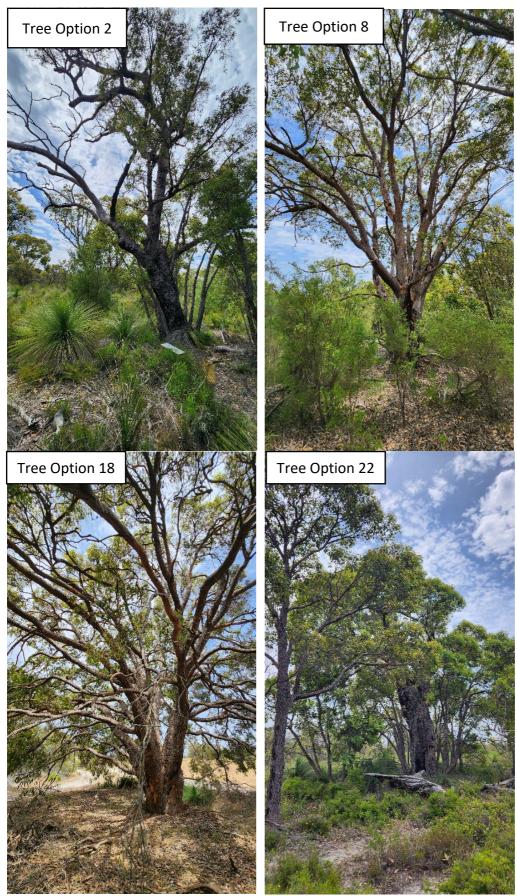


Plate 1: Examples of Trees selected for Artificial Hollow Installation at Brennan Road, BINDOON

3. Background of Revegetation Site

3.1 Edgar Griffiths Park, WANNEROO Revegetation Site

3.2 Site History

Edgar Griffiths Park, WANNEROO contains remnant vegetation comprising of two (2) distinct vegetation communities:

- Banksia spp woodland over Hibbertia hypericoides, Mesomelaena pseudostygia and mixed shrubs and herbs (2.24ha), classified as Banksia Woodland of the Swan Coastal plain.),
- Eucalyptus gomphocephala woodland over Hibbertia hypericoides, Grevillea vestita and mixed shrubs and herbs (3.15 ha).

The condition of this vegetation varies from Excellent (1.19ha), Very Good (2.42ha), Good (1.80ha) to Degraded (0.02ha) the park has been impacted by the presence of two (2) declared weeds/pests: Bridal Creeper (*Asparagus asparagoides*) / Cape Tulip (*Moraea flaccida*).

The site also supports over 400 individual Priority 4 *Jacksonia sericea* plants (NAMS, 2024). Jacksonia sericea, commonly known as waldjumi, is a species of flowering plant in the Fabaceae family, is endemic to the south-west of Western Australia and is currently listed as endangered.

The adjacent area, referred to as the Revegetation Site, was cleared prior to 1965 as indicated by the earliest aerial imagery available from Landgate (see **Figure 9** below). Historically, this site has been used for grazing, open parkland with minimal landscaping including the planting of a few trees. Over the years non-native species have been planted in the proposed revegetation area and these have become well established. The species include *Eucalyptus sideroxylon, Eucalyptus utilis, Eucalyptus cladocalyx* and *Acacia iteaphylla*.

In 2024, the City's Trees and Conservation Unit, through the "Keep Our Carnaby's Flying – Ngoolarks Forever" project, planted 55 *Corymbia calophylla* and one (1) *Eucalyptus marginata*, based on recommendations from Murdoch University. Despite these efforts, the overall condition of the site remains degraded.



Figure 8: Lot 10857 DP 15402 and Lot 10080 DP 12918 (Landgate Arial 1956) accessed 11/11/2024

3.3 Existing Land Use and adjacent tenure

Edgar Griffiths Park, WANNEROO (Lot 10857 DP 15402), known as the Revegetation Site, is currently classified as Crown Land with a City of Wanneroo Management Order. These land parcels are reserved for the purpose of 'Public Recreation' and are currently designated in the East Wanneroo District Structure Plan (EWDSP) as a Neighbourhood Park situated within Precinct 6 of the East Wanneroo District Plan.

The Park's current facilities (South of the proposed revegetation area), includes:

- Public toilets
- Changing rooms
- Multipurpose field
- Playgrounds
- Dog Exercise Area

The park also contains Bush Forever Site 470 in the Northeastern part of the Park as depicted in **Figure 10** below.



Figure 9: Edgar Griffiths Park, WANNEROO - Current Land use and Bush Forever site 470 (in green hatching).

3.4 Geology and Soils

The topography of the site is generally flat with a slight East-west slope ranging from 80 mAHD to 60 mAHD (DWER, 2024). The Spearwood system, with its sand dunes and plains, features a range of sand types from yellow to pale deep sands and yellow to brown shallow sands. The offset site being within the same zones as the Flynn Drive proposed project suggests that it shares similar geological conditions. (DPIRD, 2024).

3.5 Climate

The nearest Bureau of Meteorology (BoM) operational station is Wanneroo (Site No. 009105). The average annual rainfall for the station is 786.4 mm, with most of the rain falling in the winter between May and August (BoM, 2024).

3.6 Hydrology

Ground water levels in the proposed site ranges from a depth of 15 metres below ground level (mbgl) to 35mbgl. Groundwater salinity levels range between 250-500 Total Dissolved Solids (TDS). From the ground water levels and contours the water ground water flows East to the West of the site (DWER, 2024).

3.7 Remnant Vegetation

No remnant vegetation remains with the revegetation area, the earliest aerial imagery available from Landgate date back to 1965 – at which time that land had already been cleared. For more information, please refer to Section 3.2.1 - Site History above.

3.8 Montrose Park, GIRRAWHEEN Revegetation Site (Lot 9276 DP 10841)

3.9 Site History

Montrose Park, GIRRAWHEEN features remnant vegetation, primarily consisting of *Banksia* woodland of the Swan Coastal Plain TEC and Banksia *attenuata* woodland over species-rich dense shrubland (TEC), covering 5.7 hectares of the site. The remainder of the site consists of a drainage sump, a tennis court and car park, located in the north of the park. These areas of the park are classified as completely degraded.

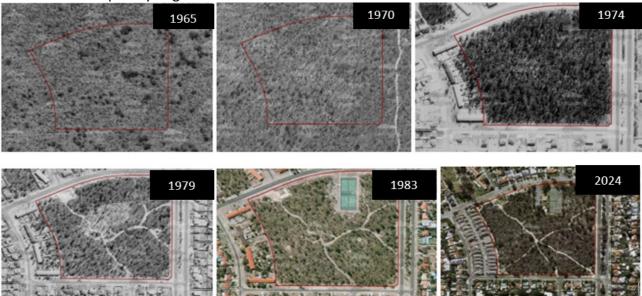


Plate 2: Montrose Park, GIRRAWHEEN Lot 89276: DP 10841 Historical Aerials (Accessed February 2025).

3.10 Existing Land Use and Adjacent Tenure

Montrose Park (Lot 9276; DP 10841), is currently classified as Public Recreation. The Lot consists of a car park and Tennis court and bathrooms in the northeastern part of the Lot.

The vegetation within Montrose Park has experienced degradation due to various anthropogenic activities. These include the development of the sump, the development of the tennis courts and the installation of bathroom facilities from 1979 to 1983. Pedestrian tracks within Montrose Park also begin to occur in 1979.

Please see **Plate.2** above for your reference.

3.11 Geology and Soils

The topography of the site is generally flat with most of the site being 65 mAHD (DWER, 2024). The site is located within the Spearwood system, which is characterised by Sand dunes and plains. Yellow to pale deep sands and yellow to brown shallow sands (DPIRD, 2025).

3.12 Climate

The nearest Bureau of Meteorology (BoM) operational station is Wanneroo (Site No. 009105). The average annual rainfall for the station is 786.4 mm, and most of the rainfall occurs between May and August (BoM, 2024).

3.13 Hydrology

Ground water levels in the proposed site is at a depth of 29 (metres below ground level). Groundwater salinity levels range between 250-500 Total Dissolved Solids (TDS). From the ground water levels and contours the water ground water flows east to the west of the site (DWER, 2025).

3.14 Remnant Vegetation

Vegetation, primarily consisting of *Banksia* woodland of the Swan Coastal Plain TEC and Banksia *attenuata* woodland over species-rich dense shrubland (TEC), covering 5.7 hectares approximately of the site. Degradation of the site largely occurring along disused and rehabilitated tracks.

4. Current Disturbances & Threats Edgar Griffiths, WANNEROO & Montrose Park, GIRRAWHEEN Reserve

4.1 Tracks

<u>Edgar Griffiths Park, WANNEROO</u> has recently experienced disturbances due to fire mitigation activities. In 2021, an informal track was created for fire mitigation access, and this track remains present today. Additionally, the Southeastern side of the reserve is in a Degraded condition due to non-native species being planted. The land to the south and west of the bushland is also Degraded and has been since 1956 as illustrated above in **Figure 9**.

Montrose Park, GIRRAWHEEN contains remnant vegetation state-listed *Banksia attenuata* woodlands over species rich dense shrublands (SCP Community type 20a) TEC and has remained mostly uncleared, as verified by Landgate aerial imagery (accessed in February 2025) (Refer to **Plate.2**). The sole disturbances documented within these land parcels involve the establishment of a tennis court and drainage sump in the north section and the establishment of pedestrian tracks from 1979.

In addition, unformalized tracks have been created due to unauthorised access to both reserves by the community. This has resulted in disturbances within both reserves causing increased weed invasion, proliferation of rubbish/rubble dumping and the introduction of feral animals into the Edgar Griffiths Park only.

4.2 Weeds

Edgar Griffiths Park WANNEROO

Increasing human activity in the surrounding area has made these land parcels vulnerable to various disturbances, particularly the introduction and spread of weed species. As a result, targeted weed management strategies are essential to control the current weed infestation at the proposed offset site. Implementing effective weed control measures will not only improve vegetation quality but also help mitigate fire risks.

The area classified as "parkland clearing" (the revegetation site) is described in the NAMS (2024) report as being completely degraded, consisting mainly of weed or crop species with scattered native trees. The report identifies 56 introduced weed species, including two declared pests: Bridal Creeper (*Asparagus asparagoides*) and One-Leaf Cape Tulip (*Moraea flaccida*). Under the Biosecurity and Agriculture Management Act 2007 (WA), landowners and managers are legally required to control populations of these declared pests.

Therefore, as part of this management plan the City will ensure that weeds within the revegetation areas are managed.

4.3 Rubbish Dumbing

Moreover, a pressing concern pertains to the prevalent issue of public rubbish dumping within both reserves. Excessive rubbish deposition poses a tangible threat to vegetation by physically obstructing plant growth, impeding sunlight penetration, and potentially introducing hazardous chemicals and pollutants that can contaminate the soil and water, thereby hindering the growth of

native vegetation. Furthermore, the presence of dumped rubbish elevates the risk of invasive species proliferation and escalates fire hazards.

4.4 Feral Animals

Additionally, both reserves are highly vulnerable to feral animal intrusions, particularly rabbits, which indiscriminately consume native vegetation, consequently fostering invasive species proliferation and diminishing the quality of native vegetation.

4.5 Unauthorized Access

Unauthorized access to the bush areas at both sites poses a threat to potential fly tipping (unauthorized rubbish dumping) and clearing from illegal activities.

5. Reference Site Floristic Data

Reference site for floristic evidence was collected for both Edgar Griffiths Park, Wanneroo (NAMS, 2024) and Montrose Park, GIRRAWHEEN. Table 2 and Table 3 below show the floristic data for each of the Reserves.

Table 4: Edgar Griffiths Park Floristic Data

Edgar Griffiths, Wanneroo Floristic Data (NAMS, 2024)					
Quadrat Level	Bare ground	2%			
(Quadrate number EG04)	Weeds	<5%			
(Also see Attachment N for	Species Heiliess	Average species richness from quadrat was 31 taxa			
vegetation that may geminate due to the import of topsoil and mulch from Flynn drive)	vegetation Condition	Excellent to Good			

Vegetation Unit:

Banksia attenuata woodland over species rich dense shrublands (Western Australian and EPBC-listed Endangered TEC) Banksia spp woodland over Hibbertia hypericoides, Mesomelaena pseudostygia and mixed shrubs and herbs

Eucalyptus gomphocephala woodland over Hibbertia hypericoides, Grevillea vestita and mixed shrubs and herbs

Species Specie				
Alexgeorgea nitens	Hibbertia hypericoides			
Amphipogon turbinatus	Jacksonia sternbergiana			
Anigozanthos humilis	Lomandra caespitosa			
Austrostipa compressa	Lomandra hermaphrodita			
Banksia attenuata	Lyginia imberbis			
Banksia menziesii	Mesomelaena pseudostygia			
Bossiaea eriocarpa	Microlaena stipoides			
Burchardia congesta	Petrophile linearis			
Caladenia flava	Pigea calycina			
Calandrinia liniflora	Ptilotus manglesii			
Conostephium pendulum	Rhodanthe citrina			
Conostylis aculeata	Scaevola thesioides			
Dampiera linearis	Sowerbaea laxiflora			
Daviesia divaricata	Stylidium neurophyllum			
Daviesia nudiflora	Thysanotus sparteus			
Daviesia triflora	Trachymene pilosa			
Dianella revoluta	Xanthorrhoea brunonis			

Drosera erythrorhiza	Xanthorrhoea preissii
Drosera pallida	

Table 5: Montrose Park Floristic Data

Montrose Park Floristic Data					
Site Level	Data not available				
	Weeds	Data not available			
	Species richness	Data not available			
Vegetation Condition		90% Excellent and 10% Pristine (DBCA, 2006)			

Vegetation Unit: Banksia attenuata woodland over species rich dense shrublands (Western Australian and EPBC-listed Endangered TEC).

Banksia attenuata, Allocasuarina fraseriana and Eucalyptus marginata subsp. marginata low woodland, over Xanthorrhoea preissii mid sparse shrubland, over Hibbertia hypericoides and Mesomelaena pseudostygia low open shrubland/sedgeland.

pseudostygia iow open sin ubiand/seugeland.						
Species						
Acacia pulchella var. pulchella	Daviesia divaricata	Macrozamia riedlei				
Alexgeorgea nitens	Daviesia nudiflora	Mesomelaena pseudostygia				
Allocasuarina fraseriana	Daviesia triflora	Patersonia occidentalis				
Allocasuarina humilis	Desmocladus fasciculatus	Petrophile linearis				
Amphipogon turbinatus	Desmocladus flexuosus	Petrophile macrostachya				
Anigozanthos humilis	Drosera erythrorhiza	Philotheca spicata				
Astroloma pallidum	Dryandra lindleyana	Phlebocarya ciliata				
Banksia attenuata	Eremaea pauciflora	Scaevola repens var. repens				
Banksia menziesii	Eucalyptus marginata	Schoenus curvifolius				
Bossiaea eriocarpa	Gastrolobium capitatum	Stirlingia latifolia				
Burchardia congesta	Gompholobium tomentosum	Stylidium repens				
Caladenia flava	Haemodorum laxum	Xanthorrhoea preissii				
Calectasia cyanea	Haemodorum spicatum					
Calytrix flavescens	Hibbertia huegelii					
Comesperma calymega	Hibbertia hypericoides					
Conospermum stoechadis	Hybanthus calycinus)					
Conostephium pendulum	Hypocalymma robustum					
	Hypolaena exsulca					
	Jacksonia floribunda					
	Kennedia prostrata					
	Lepidosperma tenue					

6. Revegetation/ Rehabilitation Commitment and Completion Criteria

6.1 Revegetation Commitments

The intent of this plan is to provide a clear description of the techniques and strategies to be utilised to ultimately improve **1.78** ha of land at Edgar Griffiths Park and **4.72** ha of infill vegetation at Montrose Park back to vegetation that meets the criteria of consideration *Banksia* Woodland of

the Swan Coastal Plain (SCP) Threatened Ecological (TEC) (State) and Banksia *attenuata* woodland over species rich dense shrublands ecological community (Federal) respectively. The City acknowledges however that it may not be possible to restore the reserves to its original state. The Revegetation should be similar in structure and content to comparable naturally occurring vegetation within the reserves.

To achieve this vision, the City has identified the following objectives:

- Revegetate a portion of degraded areas within Edgar Griffiths Park, WANNEROO
- Infill revegetate disturbed areas within Montrose Park Bushland.
- Protect environmental values within both reserves.
- Manage high priority weed infestation within the revegetation areas and surrounding bushland

6.2 Completion Criteria Edgar Griffiths Park, WANNEROO

Criterion	Reference area data	Completion Targets	Completion Criteria	Monitoring
A(i) Site Species Richness	Site species richness is 33 (native sp. only)	Minimum of 50% of native species returned, based on reference site	Minimum of 50% native species to be present in the revegetation areas.	Years 3, 4 & 5.
A(ii) Quadrat Species Richness	Quadrates species richness is 31 (native sp. only).	Minimum of 50% of native species returned, based on reference site	Minimum of 16 native species to be present in the revegetation areas.	Years 3, 4 & 5.
B(i) Quadrats Species Density	Information not previously recorded. An average plant density of 2 stems/m ² in dryland environments is used as a baseline measure.	Minimum of 50% of native species returned, based on reference site data.	The revegetation site needs a minimum of 2 stems/m ² .	Years 3, 4 & 5.
C(i) Weed Cover	Average weed cover of all Quadrats averaged at 30%	Weed cover to be no greater than reference site	Weed cover to be no greater than reference site	Years 3, 4 & 5.
C(ii) Declared weeds	Asparagus asparagoides and Moraea flaccida are declared weeds recorded in the vegetation reference site.	No Declared weeds Asparagus asparagoides and Moraea flaccida to be present within the revegetation areas.	0% declared weed cover.	Years 3, 4 & 5.
D(ii) Survival rate to be achieved	Survival rate to be achieved.	If after year 3,4 and 5 of planting, a survival rate of at least 50% is not achieved all planted tubestock that have not survived must be replanted within 12 months. and monitored for a further 1 year.	The revegetation site needs to ensure a survival rate for trees tube stock of at least 50% is achieved after five years and replant any trees within 12 months of dying.	Years 3, 4 & 5.
E(i) Bare ground	Percentage of bare ground should be≥ 15%	No more than ≥15% greater than in the reference site	The revegetation site average for bare ground is to be no more than 15% as recorded at the reference site	Years 3, 4 & 5

6.3 Completion Criteria Montrose Park, GIRRAWHEEN

Criterion	Reference area data	Completion Targets	Completion Criteria	Monitoring
A(i) Total Species Richness	Information not previously recorded.	Minimum of 70% of native species	Minimum of 70% native species to be present in the revegetation areas.	Years 3, 4 & 5.
A(ii) Quadrats Species Richness	Information not previously recorded.	5-10 native species per 10m ²	5-10 native species per 10m ²	Years 3, 4 & 5.
B(i) Quadrats Species Density	Information not previously recorded.	Minimum of 60% of native species planted	The revegetation site needs a minimum of 2 stems/m ² .	Years 3, 4 & 5.
C(i) Weed Cover	Information not previously recorded. Weed Cover recorded within quadrats was very low <10% observed	Weed cover to be ≤10%	Weed cover is ≤10%	Years 3, 4 & 5.
C(ii) Declared weeds	Information not previously recorded. No Declared weeds or Weeds of National Significance identified	No declared weeds to be present within the revegetation areas.	0% declared weed cover.	Years 3, 4 & 5.
D(ii) Survival rate to be achieved	planting, a survival rate of at least 60% is not achieved all planted tubestock that have not survived must be replanted within 12 months and monitored for a further 1 years.		The revegetation site needs to ensure a survival rate of at least 60% is achieved after five years and replant any vegetation within 12 months of dying.	Years 3, 4 & 5.
E(i) Bare ground	Percentage of bare ground should be≥ 15%	No more than 15% greater than in the reference site	The revegetation site average for bare ground is to be no more than 15% as recorded at the reference site	Years 3, 4 & 5

7. Site Preparation

Prior to planting at the proposed revegetation sites within Edgar Griffiths Park and Montrose Park, the sites will require preparation to ensure that the revegetation is successful. Due to the current condition at Edgar Griffiths Park, more site preparation efforts will be required for Edgar Griffiths Park than at Montrose Park. Below describes details of site preparation at both sites.

7.1 Installation of Emergency Access Tracks

In Year one (1) the City will install limestone tracks and firebreaks (if required) to improve the access for maintenance and emergency vehicles at both revegetation sites.

7.2 Fire Management Measures

Firebreaks & Access

- Establish and maintain clear firebreaks around rehabilitation areas.
- Ensure vehicle access routes are kept clear for emergency response.

Hazard Reduction Burns & Mulching

- Implement controlled burns or mechanical mulching as needed to reduce fire hazards.
- Coordinate with local fire authorities for safe execution of burns.

Emergency Preparedness & Response

- Train staff in fire safety protocols and evacuation procedures.
- Ensure compliance with local fire regulations and management guidelines.
- Adjust mitigation strategies based on seasonal conditions and risk assessments

7.3 Weed Control

Before tubestock planting at Edgar Griffiths Park, the site will undergo herbicide treatment. Once the herbicide has taken effect and soil conditions are suitable, planting will be carried out using a planting auger. Targeted herbicide applications will continue throughout the revegetation program to manage identified weed species and prevent regrowth.

In Montrose Park, where infill revegetation is planned, weed treatment will also be required. To prevent the spread of weeds, hand weeding will be implemented as needed.

Ongoing weed control will be maintained throughout the revegetation process to ensure that completion criteria are successfully met.

7.4 Dieback Management

Phytophthora Dieback poses a significant threat to Banksia woodlands, impacting plant health and overall ecosystem resilience. To minimize the risk of introducing or spreading dieback within the revegetation areas, the following management measures will be implemented:

Site Hygiene & Access Control

- All machinery, vehicles, and tools will be cleaned and free of soil before entering and leaving the site.
- Access to revegetation areas will be restricted during wet conditions to prevent soil movement.
- Designated access tracks will be used to minimize soil disturbance.
- Planting & Material Handling
- Tube stock will be sourced from accredited nurseries that follow dieback hygiene protocols.
- Soil amendments or mulch used on-site will be certified as dieback-free.
- Planting will be conducted in dry conditions to reduce the risk of pathogen spread.

Chemical Treatment & Monitoring

- High-risk areas will be treated with phosphite injections or foliar sprays, where necessary, to enhance plant resistance.
- Monitoring will be conducted to detect early signs of dieback infection.
- Any infected plants will be removed and disposed of appropriately to prevent further spread.

Education & Compliance

- Contractors and personnel involved in the project will be briefed on dieback management protocols.
- Signage will be installed where necessary to inform visitors and workers about hygiene requirements.
- Compliance with DBCA (Department of Biodiversity, Conservation and Attractions) and City of Wanneroo guidelines will be ensured.

Ongoing dieback management will be integrated into the revegetation program to ensure the long-term health and sustainability of the restored Banksia woodland.

7.5 Fencing

The Edgar Griffith's Park site is directly adjacent to parkland. To distinguish between the revegetation area and the parkland, a conservation fence (TS 01-4-2) will be installed around the revegetation site.

Montrose Park already has an existing conservation fencing (TS 01-4-2) and therefore no requirement for installation of a Conservation fencing (TS 01-4-2) around the bush area. This fence will be maintained and after revegetation has occurred will be upgraded to conservation fencing.

7.6 Feral Animal Control

If feral animals are recorded at either site, the City proposes to release RHDV in the hope to decrease numbers. Cages will also be used to reduce number of feral animals. Feral animal such

as rabbits eat the freshly planted vegetation and hinder revegetation progress. Controlling feral animals ensures completion criteria are met.

7.7 Seed Collection, Plant Salvage and Propagation

The City will engage a contractor to collect seeds from Mather Road Reserve (the clearing area), Edgar Griffiths Park, Badgerup Reserve, and Lake Gnangara Park to ensure the necessary diversity for the offset.

Plant salvaging will be carried out in winter and spring to secure sufficient diversity and quantity for the offset area.

Plant propagation will involve growing a variety of native species from seed and cuttings collected from these sites, providing an adequate supply for revegetation efforts.

7.8 Vegetation Establishment

7.4.1 Installing Tube stocks

Tube stock will be planted by hand. This method increases the seedlings' survival chances, as they can re-sprout even if the tops are grazed. Tree bags will not be used in this revegetation process due to the impracticality of applying them across a large planting area.

7.4.2 Topsoil and Mulch application

Topsoil and mulch will be collected from the clearing area along Flynn Drive, mainly from the bushland near Mather Reserve. As a valuable source of native seeds, topsoil helps preserve species from Banksia woodland that are difficult to propagate. Plant species present in the topsoil will be incorporated into the flora list for the Edgar Griffiths Revegetation Area. See **Attachment N** for flora list from the topsoil and mulch area.

The mulch will be spread across the revegetation sites to aid moisture retention, supporting successful plant establishment. Additionally, as the mulch composts, it will enrich the soil with nutrients, further benefiting the revegetation efforts.

7.9 Signage

The City will install signage at both locations informing the public of the active revegetation activities occurring. The signage will also include information on the benefits of revegetation in the area. The information will hopefully increase positive behaviour of the community towards the revegetation areas.

8. Schedule and Budget

The City has prepared a detailed schedule of actions, including high-level start times for activities, such as site preparations, vegetation establishment maintenance and reporting. The schedule also includes an estimated budget, of the proposed revegetation plan. Table 7 below outlines the schedule and budget necessary for the City to meet the completion criteria for CPS 9981.

Table 6: Edgar Griffiths Park, WANNEROO and Montrose Park -Schedule and Budget

Stage	Actions	Responsibility	Year 1	Year 2	Year 3	Year 4	Year 5	Estimated Cost Edgar Griffiths Park	Estimated Costs Montrose Park
	Weed Control / (Veldt Grass)	Project Manager						\$50,000.00	\$37,500.00
ou	Fencing/ fencing repairs and Signs	Project Manager						\$39,000.00	
ırati	Limestone Tracks/ Fire access track		•					\$95,000.00	
Site Preparation	ACM removal	Project Manager							\$150,000.00
Site	Rubbish removal	Project Manager						\$10,000.00	
	Seed Collection	Project Manager						\$290,340.00	\$8,031.51
	Plant Propagation	Project Manager						\$798,683.99	\$ 20,187.00
ent	Mulching	Project Manager						\$200,000.00	
Vegetation Establishment	Topsoil	Project Manager						\$75,000.00	
	Watering	Project Manager						\$834,200.24	19,864.50
	Planting and infill planting	Project Manager						\$479,665.14	\$ 16,150.00
/egeta	Monitoring of Revegetation site	Project Manager						\$103,000.00	\$80,000.00
	General Maintenance and rubbish and fencing repairs	Project Manager						\$10,000.00	\$10,000.00
ce	Weed Control	Project Manager						\$60,000.00	\$34,500.00
Maintenance	Feral Animal control (if required)	Project Manager				•			
	Annual Compliance Reporting/ Data collection	Project Manager						\$150,000.00	\$ 150,000.00
Tot	al Cost					<u> </u>		\$3,099,889.37	\$526,233.01

9. Monitoring and Analysis

Revegetation monitoring will be done in Spring in Years three (3), four (4) and five (5) as illustrated in the completion criteria table and schedule and budget **Table 7**. Monitoring will include the following:

- Monitoring must address the completion criteria targets listed in Section 6.2.
- The City will engage an environmental specialist experienced in surveying and flora analysis.
- Vegetation and Flora surveys will be conducted in Spring of Year's three (3), four (4) and five (5).
- Environmental specialist will collect flora data that includes the following:
 - Species richness within three (3) established quadrats
 - Quadrats species density within three (3) established
 - Weed cover percentage %
 - Assess presence of declared weeds
 - Measure survival rate percentage % achieved.
 - Bare ground percentage %

Monitoring will be ongoing from Year three (3) to Year five (5) after practical completion to ensure success criteria have been met and to implement contingency measure(s) where required. Monitoring reports for the Spring events will be provided to the City of Wanneroo, by 31 March.

Table 7: Monitoring requirements and environmental data to be collected to measure success, through completion criteria and targets.

Data Collection Type	Aim of monitoring	Output	Duration		
Site- level	A(i) Total Species Richness across entire site. B(i)Total Species Density. C(i) Weed Cover. C(ii) Declared weeds. D(ii) Survival rate to be achieved.	Floristic survey data, analysis, and discussions. Floristic survey data, analysis, and discussions. Data and mapping. Data and mapping. Floristic survey data, analysis, and discussions.	For the lifetime of clearing permit CPS 9981-1 or until the revegetation is considered successful and completion target and criteria is met.		
Quadrat-level	E(i) Bare ground A(ii) Quadrat Species Richness. C(i) Weed Cover.	Visual estimate for site Floristic survey data, analysis, and discussions. Floristic survey data, analysis,			
	C(ii) Declared weeds.	and discussions. Floristic survey data, analysis, and discussions.			
	D(ii) Survival rate to be achieved.	Floristic survey data, analysis, and discussions.			
	E(i) Bare ground	Visual estimate for quadrates. Bare ground including soil			

10. Maintenance and Contingency Measure

10.1 Revegetation Monitoring and Planting

According to the revegetation monitoring plan, the site will be monitored yearly starting from the third year to conduct survival counts. This monitoring will take place early enough to allow for the ordering of infill seedlings in October for planting the following July. Seedlings will be handplanted using a planting auger and by hand into spaces left by non-surviving plants. Large or consistently failing areas, identified as inhospitable, will be investigated to determine why plants are not thriving and if the problem cannot be fixed the areas will be avoided in future in-fill planting.

10.2 Weed Control

As part of the ongoing maintenance, weed control will be conducted starting from the first year and will continue until the completion criteria have been met.

10.3 Rubbish Control

Rubbish will be collected on the site as needed throughout the duration of the permit and until the completion criteria have been met.

10.4 Fencing Maintenance

Fencing will be maintained, and any necessary repairs will be carried out as needed.

10.5 Maintenance Once Revegetation Completion Criteria Has Been Met

The revegetation site will be handed over to the City's internal Tree's and Conservation Maintenance (TCM) team for ongoing management and maintenance once completion criteria have been satisfied. The TCM team will undertake inspections and scheduling works (planting, weed management, asset repairs etc) as needed.

11. References

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Western Environmental (2014). *Edgar Griffiths Park Black Cockatoo Habitat Survey*. Perth. Western Environmental.

12. Appendices

Attachment A – CLEF – Reserve 33343 from Public Recreation to Conservation Girrawheen City of Wanneroo

Attachment B - DBCA Fauna Note Artificial Hollows for Black Cockatoos

Attachment C- Montrose Park Infill Revegetation shapefiles

Attachment C (i) - Montrose Park Infill Revegetation

Attachment D - Edgar Griffiths Park Revegetation shapefiles

Attachment D (i) – Edgar Griffiths Park Revegetation

Attachment E – Bush Forever Lot 9276 Deposit Plan 10841 Montrose Park GIRRAWHEEN

Attachment F – Bush Forever Lot 9276 Deposit Plan 10841 Montrose Park GIRRAWHEEN-shapefile

Attachment G – Environmental Offsets (EPBC 2007-3479) Brennan Road Bindoon-Cumulative

Attachment G(i)- Flynn Dr Offset Site Lot 901 Brennan Rd Bindoon

Attachment H – Fauna and Black Cockatoo Habitat Survey 2024 – Edgar Griffiths Bushland

Attachment I - Montrose Plot 1 flora species list DBCA

Attachment J – Flora and Vegetation Survey – 2024- Edgar Griffiths Bushland

Attachment K – EMAIL TO DBCA Request for Information on SCP 20a at Montrose Park Girrawheen 6064 (lot 9276 P 10841)

Attachment L – Black Cockatoo Habitat Survey Lot 901 Bindoon

Attachment M – Flora and Fauna Survey Lot 901 Bindoon

Attachment N - Flora Data from Topsoil Harvesting Area