

# **Proposed Management Works to Dual Use Path (Sections 2, 3, 6 and 7) WOODVALE**

Native vegetation clearing permit application  
Supporting documentation

December 2022

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## 1. Introduction

The City of Wanneroo is seeking a 10 year clearing permit to undertake the clearing of vegetation alongside Sections 2, 3, 6 and 7 of the Dual Use Path (DUP) in Yellagonga Regional Park in Woodvale. The proposed clearing will facilitate both on-going maintenance and upgrades of the path aimed at mitigating drainage issues caused by the proximity of the DUP to the wetland and rising groundwater levels. The City intends to raise the current path level to incorporate a new culvert drainage system underneath the pathway and a new stone pitching system on selected sides of the path, to channel excess surface water to designated areas for infiltration. The City also intends to keep both sides of the path clear of vegetation to ensure that path users have unobstructed use of the pathway network and that the new drainage system and the associated disposal of flood water is not obstructed by vegetation regrowing.

Detailed information for the land parcels affected by the proposed clearing works is shown in Table 1 below.

**Table 1:** Land ownership and zoning within clearing areas.

<b>Lot Number</b>	<b>Reserve Number</b>	<b>Address</b>	<b>Land Owner</b>	<b>MRS Zoning</b>	<b>Reserve Purpose</b>
Lot 3000 on Deposited Plan 69603	50955	2 Panzano Circuit, WOODVALE 6026	Crown Land – City of Wanneroo Management	Urban	Recreation
Lot 300 on Deposited Plan 413701	50955	26 Cosimo Drive, WOODVALE 6026	Crown Land – City of Wanneroo Management	Urban	Public Recreation
Lot 9002 on Deposited Plan 414951	N/A	35 Rosso Meander, WOODVALE 6026	Freehold – City of Wanneroo Management	Urban, Parks and Recreation	N/A
Lot 84 on Deposited Plan 70131	N/A	471L Wanneroo Road, WOODVALE 6026	Freehold – City of Wanneroo Management	Parks and Recreation	N/A
Lot 8004 on Deposited Plan 414951	53504	15 Rosso Meander, WOODVALE 6026	Crown Land – City of Wanneroo Management	Urban	Public Recreation and Drainage
Lot 61 on Deposited Plan 411618	50885	5 Rosso Meander, WOODVALE 6026	Crown Land – City of Wanneroo Management	Urban	Public Recreation
Lot 8001 on Deposited Plan 68139	50885	19 Solaia Loop, WOODVALE 6026	Crown Land – City of Wanneroo Management	Urban	Public Recreation

## 2. Background

The project is prioritised by the City due to the condition of certain sections of the DUP posing a safety risk to the public. Over the past years, these sections of the DUP have been continuously wet, ponded and inundated which resulted in several slip hazards and slip incidents. Additionally, on-going maintenance works are required to ensure that vegetation growing on both sides of the DUP is not obstructing the path for users or the associated drainage system.

### 2.1 Development of the area

ABN Developments Pty Ltd, Endeavour Properties Pty Ltd, GMF W.A. Pty Ltd, Progress Developments Pty Ltd and Watson Property Group Pty Ltd jointly developed a 25-hectare parcel of land (formerly part of Lots 1, 22, 23, 26, 27, 28, 32, 34, 35, 83, 90, 91, 200, 300, 800 and 801) located within the City of Wanneroo Structure Plan 64 (SP64) area, for the purposes of residential subdivision development. The project was staged and the development area was progressively cleared of vegetation and subdivided, which included the creation of a Dual Use Path, the DUP. Table 2, below, lists the WAPC Subdivision approvals references and appointed Developers for each Lot subdivided within the development area.

During the structure planning phase, a Wetland Management and Rehabilitation Strategy (WMRS) was prepared by Cardno (2009) on behalf of one of the Developers (Watson Property Group Pty Ltd) to define the measures to be undertaken to protect and enhance the Walluburnup Swamp and its associated buffer zone within and adjacent to the boundary of SP64 (Attachment M). Subdivision approvals for the development area were conditioned with a requirement to develop and implement a Wetland Management Plan (WMP) consistent with the approved WMRS. Six WMPs were prepared on behalf of the Developers (ABN Developments Pty Ltd, Endeavour Properties Pty Ltd, GMF W.A. Pty Ltd and Watson Property Group Pty Ltd) and focused on different areas within and adjacent to the boundary of SP64 (Cardno, 2010a; Strategen, 2010; Cardno, 2011; Coterra, 2017; Strategen 2017, Strategen, 2020) (Attachments I, J, K, L, N, O). The WMPs outlined management responsibilities and restoration actions, including revegetation and weed control, to create a functioning buffer for the wetland from the proposed development area. The revegetation of the site commenced in 2011, with subsequent plantings occurring in the last ten years.

**Table 2.** WAPC subdivision approvals references, and appointed Developers for each Lot subdivided within the development area.

Lot Number	WAPC Reference	Developer
Lot 26	152199	GMF W.A. Pty Ltd
Lot 35	152136	Endeavour Properties Pty Ltd
Lots 32, 83, 90 & 91	142649 (superseded), 155158, 443-17	Progress Developments Pty Ltd and Watson Property Group
Lots 1, 200, 300	140326	ABN Developments Pty Ltd
Lots 27, 28 and 801	140038	Watson Property Group Pty Ltd

Lots 22, 23, 34 and 800	142547 (superseded), 150555	Watson Property Group Pty Ltd
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## *2.2 The Dual Use Path (DUP) Project*

The DUP from Woodvale Drive to Whitfords Avenue (Figure 1) was conditioned under WAPC bordering residential subdivision applications, to be constructed as part of the developments to the north and south. The northern section of the DUP was constructed by Endeavour Properties Pty Ltd and ABN Developments Pty Ltd in 2011. The developer to the south (Watson Property Group Pty Ltd) defaulted and did not complete their section of the DUP, resulting in the City completing the construction in 2015, to ensure that the surrounding community would have a linked DUP along the eastern side of Yellagonga Regional Park.

As a result of having various stakeholders involved in the construction and maintenance of the DUP, a holistic approach to construction, drainage and vegetation maintenance has not occurred. Certain sections of the DUP are now periodically inundated with water throughout the year (not just winter months), causing ongoing safety issues for users. In the wetter seasons, and particularly after rainfall, the DUP is impassable especially in the low-lying wetland areas. Over the past several years, the City has received numerous complaints from the community in regards to the safety of the path, with reports of slip incidents and slip hazards. Urgent works are required to ensure the ongoing safe use of the path for the community. To remediate these issues, the path levels are proposed to be raised and a new drainage system installed to remove excess surface water surrounding the pathway. Additionally, vegetation is proposed to be removed from both sides of the path as required to enable the community to safely use the path and ensure that new drainage system and associated disposal of flood water is not obstructed by vegetation regrowing.





**Figure 1:** Locality map of the DUP (in red) at Yellagonga Regional Park, Woodvale.

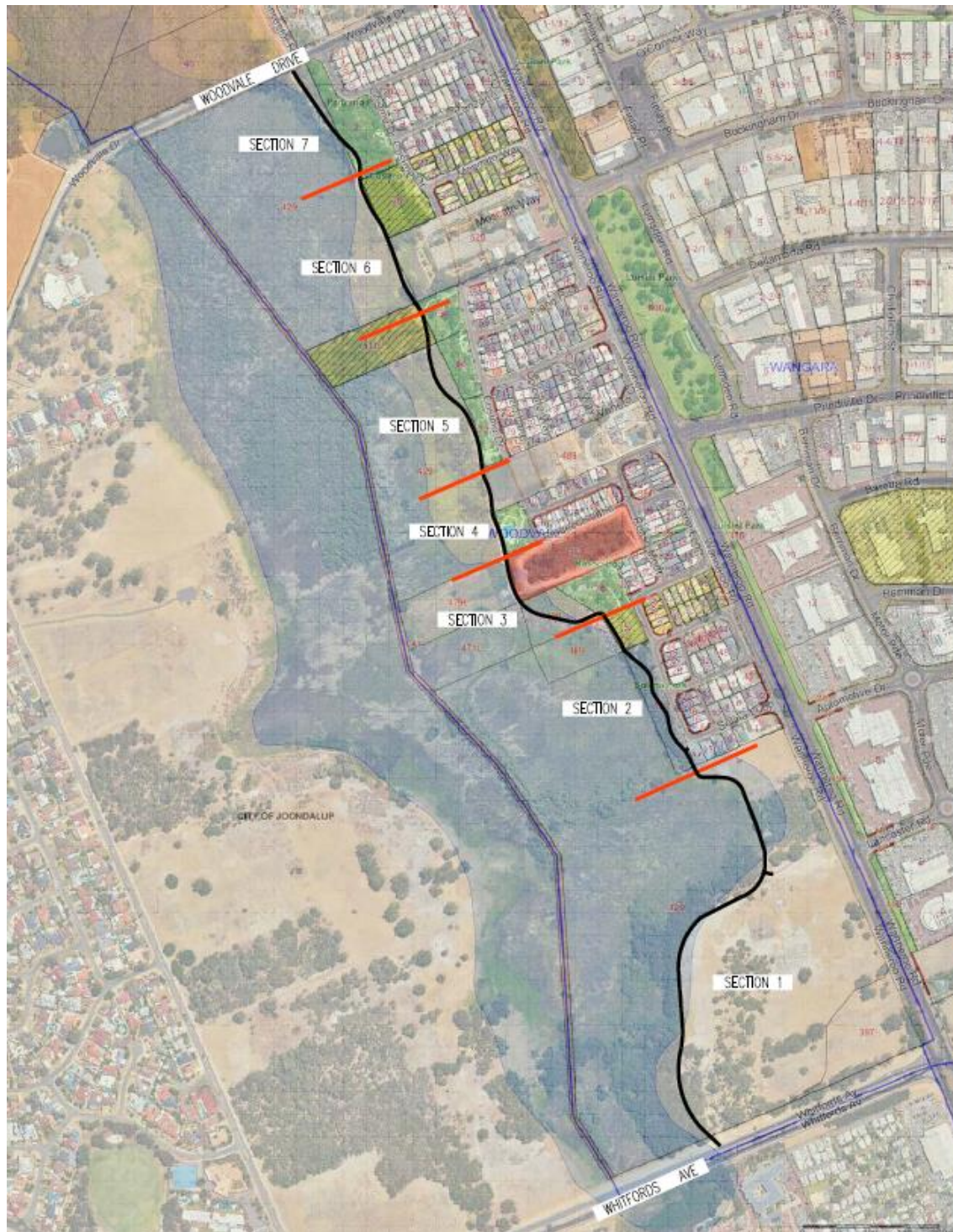
### 3. Scope

The purpose of this document is to provide an assessment against the *Environmental Protection Act 1986* – Ten Clearing Principles to determine whether the proposed clearing is likely to have a significant impact on the environment.

The clearing of vegetation is proposed along Sections 2, 3, 6 and 7 of the DUP located within Yellagonga Regional Park in Woodvale (Figure 2), to facilitate both upgrade works to the path and on-going maintenance. Clearing is proposed to be undertaken in seven different areas within Sections 2, 3, 6 and 7 (Clearing Areas 1, 2, 3, 4, 5, 6 and 7) (Figure 4), totalling 0.17222 hectares (1722.2 m<sup>2</sup>).

The proposed works for Sections 2, 3, 6 and 7 are part of a staged project which involves various upgrade and maintenance works to the existing path, from Woodvale Drive to Whitfords Avenue. Works are divided into seven stages, corresponding to seven different sections of the DUP (Figure 2, below) located both in land parcels managed by the City and land parcels managed by the *Department of Biodiversity, Conservation and Attractions* (DBCA). Works are planned for the next ten years, with some sections prioritised due to the urgency of the works.





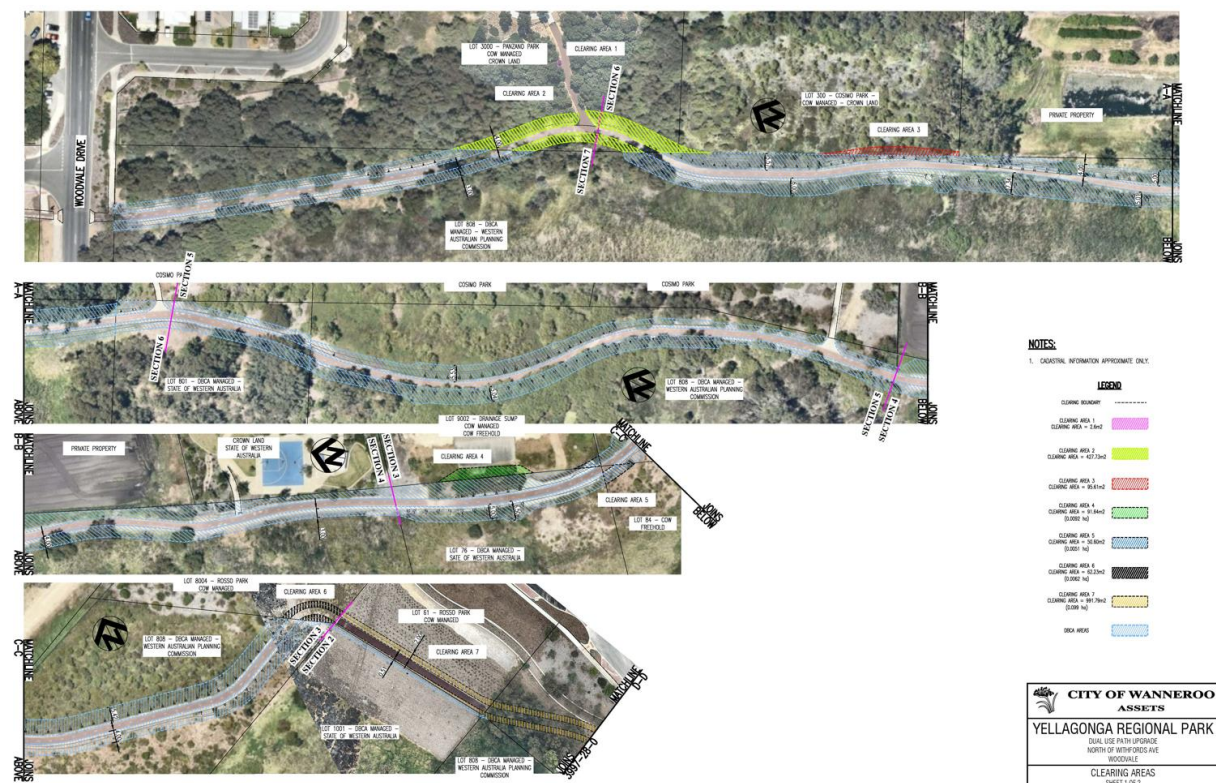
**Figure 2.** Location of Sections 2, 3, 6 and 7 of the DUP which are proposed for on-going path maintenance and upgrade works.

On 20 October 2022, the City submitted a clearing permit application, under the City's Strategic Permit CPS 6661/2, to clear three areas located within Sections 6 and 7 in order to upgrade the path and the associated drainage system. The City prioritised these sections of the DUP as they are continuously wet, ponded and inundated and require immediate intervention. It should be noted that Sections 6 and 7 have been included in this clearing permit application as completion of upgrade works, and associated proposed clearing under CPS



6661/2, might be delayed depending on funding availability. Additionally, the City is proposing to undertake on-going maintenance works in these sections of the DUP, including keeping the upgraded drainage system clear of vegetation and ensuring that the disposal of flood water is not obstructed by vegetation regrowing.

The proposed maintenance and upgrade work for Sections 2, 3, 6 and 7 also affect land parcels managed by DBCA (Figure 3), however the clearing in DBCA managed land will not be included in this clearing permit application as they are exempted under Schedule 6 of the *Environmental Protection Act 1986 - Clearing carried out by the Department of Biodiversity, Conservation and Attractions* (see Attachment R – Letters of Authority from DBCA and Approved Construction Plan).







**Figure 3.** Proposed clearing for the upgrade of Sections 2, 3, 6 and 7 of the DUP at Yellagonga Regional Park, Woodvale. The clearing includes Clearing Area 1 (in pink), Clearing Area 2 (in green), Clearing Area 3 (in red), Clearing Area 4 (in dark green), Clearing Area 5 (in dark blue), Clearing Area 6 (in black) and Clearing Area 7 (in yellow). The clearing in DBCA managed land (in light blue) is depicted for information only and is not included in this purpose clearing permit application.

Clearing is proposed to be undertaken in seven different areas within Sections 2, 3, 6 and 7 (Clearing Areas 1, 2, 3, 4, 5, 6 and 7) (Figure 4).

A summary of the maintenance and upgrade works to the path for each Clearing Area is provided below:

#### **Clearing Area 1 (within Section 7)**

##### Maintenance works:

- Removal of vegetation adjacent to the existing path to ensure safe use of the path.

#### **Clearing Area 2 and Clearing Area 3 (within Sections 6 and 7)**

Upgrade works (to be undertaken only if works delayed and clearing not completed under CPS 6661/2):

- Removal of vegetation adjacent to the existing path.
- Removal of existing asphalt seal layer and base course layer to a maximum depth of 150 mm and installation of 200 mm compacted limestone base topped with 30 mm red asphalt.
- Installation of the drainage system including 300 mm box culverts below the limestone base and stone pitching and table drains on both sides of the path.

Maintenance works:

- Removal of vegetation regrowing along the upgraded path to ensure that the new drainage system, and associated disposal of flood water, is not obstructed.

**Clearing Area 4, Clearing Area 5 and Clearing Area 6 (within Section 3)**

Upgrade works:

- Removal of vegetation adjacent to the existing path.
- Removal of existing asphalt seal layer and base course layer to a maximum depth of 150 mm and installation of 200 mm compacted limestone base topped with 30 mm red asphalt.
- Installation of the drainage system including 300 mm box culverts below the limestone base and stone pitching and table drains on both sides of the path.

Maintenance works:

- Removal of vegetation regrowing along the upgraded path to ensure that the new drainage system is not obstructed.

**Clearing Area 7 (within Section 2)**

Maintenance works:

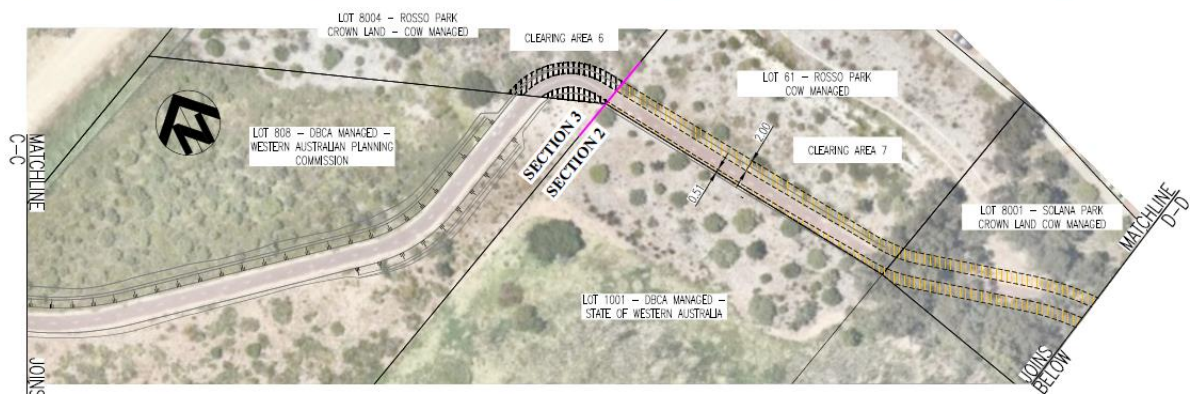
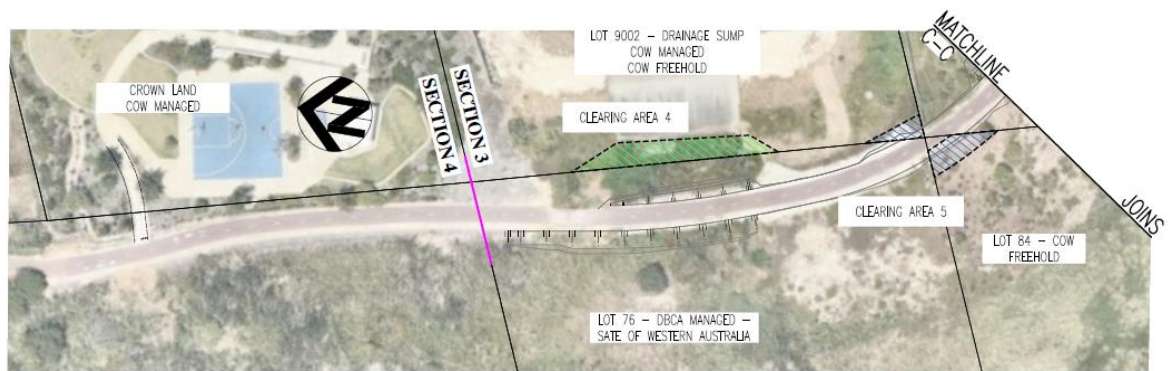
- Removal of vegetation adjacent to the existing path to ensure safe use of the path.

It is proposed that trees will be removed via mechanical means and the rest of the vegetation will be removed by an excavator.

The clearing of vegetation for upgrade works in Section 3 will commence in early to mid-2027. The duration of upgrade works will be approximately six months. There is the possibility that clearing might be required in Sections 6 and 7 to complete upgrade works in these sections, potentially in late 2023 to early 2024. The clearing of vegetation for on-going maintenance works will be undertaken as required throughout the proposed 10 year clearing period.

The clearing of vegetation is proposed within Clearing Areas 1-7 totalling 0.17222 hectares (1722.2 m<sup>2</sup>) (Figure 4 below), see both Attachment A – Clearing Plans and Attachment B – Clearing Areas Shapefiles.





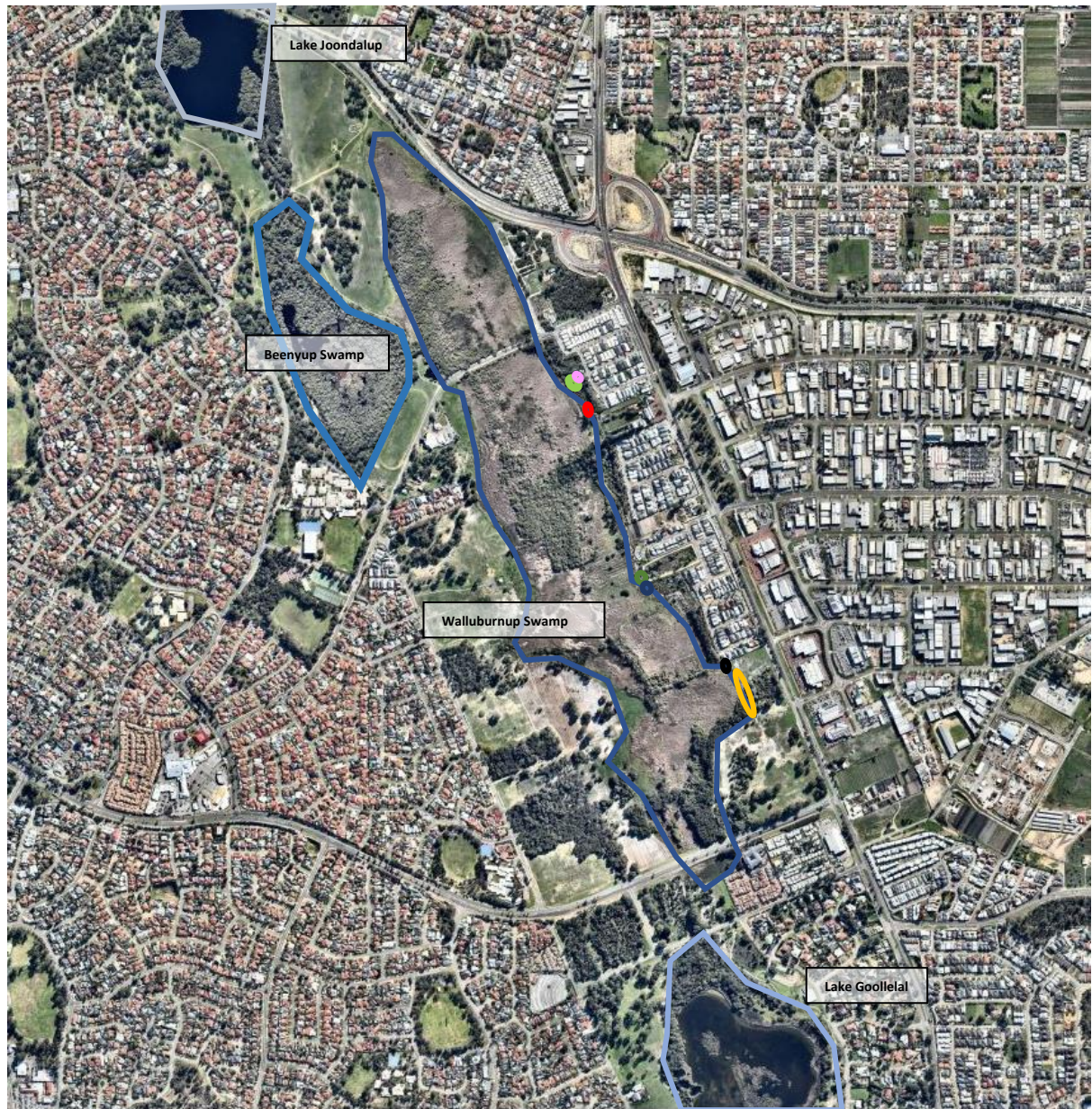




**Figure 4:** Proposed clearing of 0.17222 hectares (1722.2 m<sup>2</sup>) for the upgrade of Sections 2, 3, 6 and 7 of the DUP at Yellagonga Regional Park, Woodvale. The proposed clearing for the upgrade of these sections includes Clearing Area 1 (in pink), Clearing Area 2 (in green), Clearing Area 3 (in red), Clearing Area 4 (in dark green), Clearing Area 5 (in dark blue), Clearing Area 6 (in black) and Clearing Area 7 (in yellow).

The proposed clearing area is surrounded by wetland areas of Yellagonga Regional Park, including Beenyup Swamp to the west, Walluburnup Swamp to the north, west and south, Lake Goollelal to the south and Lake Joondalup to the north; and residential areas to the east (Figure 5 below).





**Figure 5:** Proximity of proposed clearing (Clearing Area 1 in pink, Clearing Area 2 in green, Clearing Area 3 in red, Clearing Area 4 in dark green, Clearing Area 5 in dark blue, Clearing Area 6 in black and Clearing Area 7 in yellow) in relation to surrounding wetland of Yellagonga Regional Park to the south, west and north and residential housing to the east.

## 4. Flora and Vegetation

The vegetation present within the proposed Clearing Areas 1-7 has been planted and is not considered to be naturally occurring at the site prior to clearing for the development of the area.

The vegetation present within the proposed Clearing Areas 1-7 was planted as part of the revegetation and rehabilitation plan developed for the subdivided area to satisfy Subdivision approval conditions. Prior to clearing for development of the area, the site was rated as 'Completely Degraded' due to the lack of native species, vegetation structure and dominance of invasive weed species (Cardno, 2010; Strategen, 2010; Coterra, 2017) (Attachments I, J and K). Consequently, species found within Clearing Areas 1-7 are not considered to be naturally occurring at the site prior to clearing for development of the area.

The site was revegetated with locally native species listed in the WMRS and WMPs prepared to rehabilitate the wetland area and its associated buffer zone (Cardno, 2009; Cardno, 2010a; Strategen, 2010; Cardno, 2011; Coterra, 2017; Strategen, 2017; Strategen, 2020) (Attachments I, J, K, L, M N, O).

Species were selected based on their natural presence in the area and their habitat and included plants typically found within a *Machaerina* – *Schoenoplectus* sedgeland community type, *Melaleuca raphiophylla* open forest community type, and *Melaleuca raphiophylla/Eucalyptus rudis* forest community type (Cardno, 2009; Cardno, 2010a; Strategen, 2010; Cardno, 2011; Coterra, 2017; Strategen, 2017; Strategen, 2020) (Attachments I, J, K, L, M, N, O). Table 3, below, lists the species selected for planting within the wetland area and its buffer zone which includes the proposed clearing areas.

**Table 3:** Revegetation species list for the wetland area and its buffer zone including the proposed clearing areas (adapted from Cardno, 2009; Cardno, 2010a; Strategen, 2010; Cardno, 2011; Coterra, 2017; Strategen, 2017; Strategen, 2020) (Attachments I, J, K, L, M, N and O).

REVEGETATION SPECIES
<i>Acacia pulchella</i>
<i>Acacia saligna</i>
<i>Anigozanthos manglesii</i>
<i>Banksia attenuata</i>
<i>Banksia ilicifolia</i>
<i>Banksia littoralis</i>
<i>Banksia nivea</i>
<i>Machaerina (Baumea) articulata</i>
<i>Machaerina (Baumea) juncea</i>
<i>Machaerina (Baumea) preissii</i>
<i>Machaerina (Baumea) vaginalis</i>
<i>Bolboschoenus caldwellii</i>
<i>Calothamnus quadrifidus</i>
<i>Carex appressa</i>
<i>Carex fascicularis</i>
<i>Carex inversa</i>
<i>Centella asiatica</i>



<i>Conostylis juncea</i>
<i>Corymbia calophylla</i>
<i>Dianella revoluta</i>
<i>Eleocharis acuta</i>
<i>Eleocharis sphacelata</i>
<i>Eremophila nivea</i>
<i>Eucalyptus rudis</i>
<i>Exocarpos sparteus</i>
<i>Ficinia nodosa</i>
<i>Grevillea obtusifolia</i>
<i>Hakea lissocarpha</i>
<i>Hakea prostata</i>
<i>Hardenbergia comptoniana</i>
<i>Hemiandra pungens</i>
<i>Isopogon latifolius</i>
<i>Jacksonia furcellata</i>
<i>Juncus kraussii</i>
<i>Juncus pallidus</i>
<i>Kennedia prostrata</i>
<i>Kunzea glabrescens</i>
<i>Lechenaultia biloba</i>
<i>Lechenaultia floribunda</i>
<i>Lepidosperma gladiatum</i>
<i>Lepidosperma longitudinale</i>
<i>Lobelia anceps</i>
<i>Melaleuca preissiana</i>
<i>Melaleuca raphiophylla</i>
<i>Melaleuca teretifolia</i>
<i>Melaleuca thymoides</i>
<i>Myoporum caprarioides</i>
<i>Pericalymma ellipticum</i>
<i>Rhagodia baccata</i>
<i>Schoenoplectus tabernaemontani</i> (validus)
<i>Thryptomene 'Supernova'</i>
<i>Viminaria juncea</i>

On 18 August 2022, 31 August 2022, 12 September 2022, 16 September 2022, 30 September 2022, and 23 November 2022 the City's Environmental Planners and Officer conducted vegetation assessments of the proposed Clearing Area 1 through 7. The vegetation within the proposed clearing areas ranges from a majority Degraded to small areas of Good condition. The proposed clearing areas were observed to have high levels of weed cover and contain numerous previously cleared areas.

A total of 62 flora species were identified during the surveys, including 25 native flora and 37 weed or other planted species which were not planted under subdivision condition (Table 4, below). Clearing Area 7 consisted of the highest diversity in species, with 14 native species present, Clearing Area 2 consisted of 12 native species, Clearing Area 3 consisted of eight native species, Clearing Areas 5 and 6 consisted of six native species and Clearing Area 4 consisted of four native species. Only one native species was noted within Clearing Area 1 (Attachment C – Site Photographs, Attachment D – Photograph Locations and Flora List, Tables 1-7).

A summary of the dominant species identified in each Clearing Area is provided below:

Clearing Area 1 contains only one dead tree (*Melaleuca preissiana*).

Clearing Area 2 is dominated by several weed species (*Avena barbata*, *Bromus diandrus*, *Cynodon dactylon* and *Trifolium campestre*). However, Clearing Area 2 also contains numerous native trees located in proximity to the outer clearing boundaries (opposite to the edges of the existing path), with dominant species being *Melaleuca raphiophylla* and *Eucalyptus rudis* (Attachment C – Site Photographs, Attachment D – Photograph Locations and Flora List, Table 2).

Clearing area 3 is dominated by native species *Typha orientalis* and *Schoenoplectus tabernaemontani*. The site was also observed to have high levels of weed cover, with the dominant weed species being *Trifolium campestre* and *Persicaria decipiens* (Attachment C – Site Photographs, Attachment D – Photograph Locations and Flora List, Table 3).

Clearing Area 4 is dominated by native species *Typha orientalis* and weed species *Persicaria decipiens* (Attachment C – Site Photographs, Attachment D – Photograph Locations and Flora List, Table 4)

Clearing Area 5 is dominated by weed species *Erigeron bonariensis* and *Lotus subbiflorus* (Attachment C – Site Photographs, Attachment D – Photograph Locations and Flora List, Table 5).

Clearing Area 6 is dominated by native species *Regelia inops* and weed species *Ehrharta longiflora* and *Bromus diandrus* (Attachment C – Site Photographs, Attachment D – Photograph Locations and Flora List, Table 6).

Clearing Area 7 is dominated by native species *Eucalyptus rudis* and weed species *Erigeron bonariensis* and *Trifolium campestre* (Attachment C – Site Photographs, Attachment D – Photograph Locations and Flora List, Table 7).

**Table 4:** Species identified during the vegetation assessments on 18/08/2022, 31/08/2022, 12/09/2022, 16/09/2022, 30/9/2022 and 23/11/2022. Note that \**Eremophila glabra* is listed in the 'Weed/Planted Species' column as it was planted as part of the landscape works in the adjacent Rosso Park and not as part of the revegetation works required under Subdivision condition approval (the species is in fact not listed in Table 3, above). Although WA native, this species is not known to naturally occur within the wetland areas of Yellagonga Regional Park.

NATIVE SPECIES	WEED/PLANTED SPECIES
<i>Acacia pulchella</i>	<i>Acacia iteaphylla</i>
<i>Azolla rubra</i>	<i>Avena barbata</i>
<i>Banksia littoralis</i>	<i>Brassica tournefortii</i>
<i>Centella asiatica</i>	<i>Bromus diandrus</i>
<i>Eucalyptus rudis</i>	<i>Cenchrus clandestinus</i>
<i>Ficinia nodosa</i>	<i>Cotula turbinata</i>
<i>Hakea prostrata</i>	<i>Cynodon dactylon</i>
<i>Hakea trifurcata</i>	<i>Cyperus involucratus</i>
<i>Hardenbergia comptoniana</i>	<i>Cyperus rotundus</i>
<i>Jacksonia furcellata</i>	<i>Dracaena trifasciata</i>
<i>Jacksonia sternbergiana</i>	<i>Ehrharta calycina</i>
<i>Juncus pallidus</i>	<i>Ehrharta longiflora</i>
<i>Machaerina articulata</i>	* <i>Eremophila glabra</i>
<i>Machaerina juncea</i>	<i>Erigeron bonariensis</i>
<i>Machaerina preissii</i>	<i>Euphorbia terracina</i>
<i>Melaleuca lateritia</i>	<i>Foeniculum vulgare</i>
<i>Melaleuca preissiana</i>	<i>Fumaria capreolata</i>
<i>Melaleuca raphiophylla</i>	<i>Gomphocarpus fruticosus</i>
<i>Melaleuca teretifolia</i>	<i>Lactuca serriola</i>
<i>Regelia inops</i>	<i>Lotus subbiflorus</i>
<i>Rhagodia baccata</i>	<i>Lupinus angustifolius</i>
<i>Schoenoplectus tabernaemontani</i>	<i>Lupinus cosentinii</i>
<i>Senecio condylus</i>	<i>Oenothera stricta</i>
<i>Typha orientalis</i>	<i>Oxalis pes-caprae</i>
<i>Viminaria juncea</i>	<i>Oxalis</i> sp.
	<i>Paspalum distichum</i>
	<i>Pelargonium capitatum</i>
	<i>Plumeria</i> sp.
	<i>Persicaria decipiens</i>
	<i>Polypogon monspeliensis</i>
	<i>Pseudognaphalium luteoalbum</i>
	<i>Rorippa nasturtium-aquaticum</i>
	<i>Rumex crispus</i>
	<i>Solanum nigrum</i>
	<i>Sonchus oleraceus</i>
	<i>Trifolium campestre</i>
	<i>Vicia sativa</i> subsp. <i>nigra</i>



## 5. Fauna

During the 31 August 2022 and 23 November 2022 vegetation surveys, potential Quenda diggings were observed within Clearing Area 5 (Attachment C – Site Photographs). No other fauna species were documented within the extent of the proposed clearing areas. However, fauna species were documented in the surrounds of the proposed clearing areas during vegetation surveys undertaken by the City's Environmental Officer and Planners on 18 August 2022 and 31 August 2022 and are therefore likely to occur also in the project area (Table 5). Among the fauna species reported, Quenda or Brown Bandicoot (*Isoodon obesulus fusciventer*) is listed as Priority 4 species by State Government (DBCA, 2019) and New Holland Honeyeater (*Phylidonyris novaehollandiae*) is considered to be of local conservation significance as its population declined in the Perth area due to impacts associated with urban development (DEP, 2000). None of the other fauna species expected to occur in the project area is of conservation significance.

The City's Environmental Planning Considerations Report (EPCR) (Attachment E) and the City's 'Desktop Assessment Report for Native Vegetation Clearing (NVC) Application' (Attachment F) did not identify any instances of threatened or priority fauna species within the selected footprint. Protected fauna species were however identified within a 5km radius of the selected area (Attachment E and F).

The City's EPCR and NVC did identify the selected area as being located within a Carnaby's Black Cockatoo (*Zanda latirostris*) roosting area buffer. The EPCR and NVC also identified the proposed clearing areas were within or adjacent to a Key Biodiversity Area for birds and contained vegetation mapped as potential Quenda Habitat.

**Table 5:** Fauna species potentially occurring in the project area. These species were observed in the vicinity of the project area during a vegetation survey undertaken by the City's Environmental Officer and Planners on 18 August 2022 and 31 August 2022. Quenda diggings were observed within Clearing Area 5 on 31 August 2022 and 23 November 2022.

FAUNA SPECIES	TYPE OF OBSERVATION
Australian Raven <i>Corvus coronoides</i>	Visual (sighted)
Clicking Froglet <i>Crinia glauerti</i>	Auditory
Motorbike frog <i>Litoria moorei</i>	Auditory
New Holland Honeyeater <i>Phylidonyris novaehollandiae</i>	Visual (sighted)
Quenda or Brown Bandicoot <i>Isoodon obesulus</i>	Visual (diggings)
Sandgroper	Visual (sighted)
Tiger Snake <i>Notechis scutatus</i>	Visual (sighted)
Western Grey Kangaroo <i>Macropus fuliginosus</i>	Visual (sighted and tracks)

## 6. Avoidance and Mitigation Measures

Clearing will be undertaken within Clearing Areas 1-7 to facilitate maintenance and upgrade works to the existing path as required to address safety concerns and on-going pathway use. The proposed total clearing area is expected to be considerably larger than the actual clearing footprint. The City opted for a bigger clearing area to account for all possible working spaces for upgrade and maintenance works however, it is anticipated that only selected areas will be cleared.

Clearing Areas 1, 2 and 3 are proposed to be cleared under CPS 6661/2 once the submitted permit application is approved (Attachment P – CPS 6661/2 Sections 6 and 7 Upgrade Works to Dual Use Path Woodvale – Submitted Clearing Plan, Attachment Q – CPS 6661/2 Sections 6 and 7 Upgrade Works to Dual Use Path Woodvale – Assessment Update Email from DWER). However, it is possible that the completion of upgrade works within Clearing Area 2 and 3 might be delayed depending on funding availability. If clearing for upgrade works is still required in Clearing Areas 2 and 3 after expiry of CPS 6661/2, only minor clearing will be undertaken in these areas under the proposed purpose permit to complete the works. Clearing might include the removal of selected trees within Clearing Area 2, however clearing of trees will be very limited on site.

After completion of upgrade works, clearing under this purpose permit will be limited to regrowth vegetation within Clearing Areas 1, 2 and 3 as required for on-going maintenance of the path and to ensure that the new drainage system is not obstructed by vegetation regrowing.

Clearing Areas 4, 5 and 6 will be cleared of existing vegetation to upgrade the drainage system on both sides of the path and facilitate on-going maintenance of the path, including keeping the new drainage system clear of vegetation and ensure that the disposal of flood water is not obstructed by vegetation regrowing. These works are unavoidable and without intervention, the path is expected to become unusable. It should also be noted that Clearing Areas 4-6 consist mostly of small, degraded areas previously cleared of vegetation or infested by weeds. Consequently, the clearing of native vegetation will be limited within Clearing Areas 4-6.

Clearing Area 7 has been included in this permit application to facilitate on-going maintenance of the path. As no upgrade works are required in this area, clearing will be limited to removal of weeds and, potentially, of smaller native species as required to ensure safe use of the path. The City does not intend to remove any tree present in Clearing Area 7, instead pruning will be undertaken.

Overall, the least clearing possible is to be undertaken within Clearing Areas 1-7, with clearing limited to what is required for works.


## 7. Clearing Principles

The City generated a 'Desktop Assessment Report for Native Vegetation Clearing (NVC) Application' (Attachment F) as supporting documentation for the below clearing principle assessment. The impacts listed in the report are categorised in Table 6.

This, along with the City's 'Environmental Planning Consideration Report' (EPCR) (Attachment E) and additional data sources provided by various state and federal departments, were reviewed to determine the level of impact and the level of variance to the clearing principles.


The following table summarises the identified environmental impacts and the level of variance against the clearing principles.

**Table 6:** Identified Impacts against Clearing Principles




Clearing Principle	Impacts*	Proposed Project Impacts
<b><i>Principle (a) – Native vegetation should not be cleared if it comprises a high level of biodiversity</i></b>	Red Flag 	<p>The proposed clearing areas are within a mapped Environmentally Sensitive Area (ESA) which is part of the Yellagonga Regional Park. The proposed clearing areas are also within a small section of Bush Forever Site 299 and within 5 km of eight Bush Forever Sites.</p> <p>The City's EPCR and NVC (Attachment E and F) identifies the following flora and fauna attributes for the proposed clearing site:</p> <ul style="list-style-type: none"> <li>• No records of Federal or State listed TECs, PECs, Threatened and Priority Flora records or Threatened and Priority Fauna records within the selected site boundaries</li> <li>• The proposed clearing areas are within an important birding area (Northern Swan Coastal Plain IBA).</li> </ul> <p>The City's EPCR and NVC (Attachment E and F) identifies the following flora and fauna attributes within 5kms of the proposed clearing site:</p> <ul style="list-style-type: none"> <li>• Federal and State listed TECs and PECs (or their buffers) located within a 5km radius of the proposed clearing site</li> <li>• Federal and State listed Priority Flora records located within a 5km radius of the proposed clearing site</li> <li>• Federal and State listed Threatened and Priority Fauna and Fauna Habitat records located within a 5km radius of the proposed clearing site</li> <li>• Confirmed Carnaby's Black Cockatoo roosting habitat buffer within 6km's of the proposed clearing site.</li> </ul>



		<p>The vegetation assessments undertaken by the City's Environmental Planners and Officer identified that the vegetation within the proposed clearing areas ranges from a majority degraded to small areas of good condition. High levels of weed cover were observed throughout the proposed clearing areas.</p> <p>Clearing Area 7 consisted of the highest diversity in species, with 14 native species recorded. However, clearing in this area will not affect any trees and will be limited to removal of weeds and, potentially, of smaller native species if required to ensure safe use of the path.</p> <p>Clearing area 2 had a relatively high biodiversity compared to the other areas, however clearing in this area will be limited to vegetation regrowing after the clearing to be undertaken under CPS 6661/2. There is the possibility that clearing in this area might include clearing of selected trees to complete upgrade works, however clearing for this purpose will be very limited and it is not considered likely to cause any biodiversity loss beyond what will be created by the clearing of this area under CPS 6661/2.</p> <p>Low biodiversity was reported in Clearing Areas 1, 3, 4, 5 and 6 due to the dominance of weeds and the degraded nature of these areas.</p> <p>Bulrush (<i>Typha orientalis</i>) was recorded throughout the proposed clearing areas. Although <i>Typha orientalis</i> has been recently reclassified as native of Western Australia, it has historically been removed from Yellagonga Regional Park because of its negative impact on the biodiversity of the site and flow of water. <i>Typha orientalis</i> currently requires management and control in Yellagonga Regional Park to ensure that it does not completely displace other local native species (CALM, 2000) (Attachments G and H).</p> <p>No flora species recorded at the clearing site represented a range extension or were otherwise unique in the local and regional area.</p> <p>Additionally, it is important to note that native species present on site were planted under subdivision condition and it is unlikely that remnant vegetation is still present. In fact, prior to clearing for development, the site was rated as 'Completely Degraded' as it had little to no native vegetation (Cardno, 2010; Strategen, 2010; Coterra, 2017) (Attachments I, J and K).</p> <p>Fauna species of conservation significance have been reported within Yellagonga Regional Park</p>
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		<p>(State of Western Australia, 2000) and may occur occasionally in the proposed clearing areas or surrounds as reported during the Vegetation Assessments undertaken by the City on 18 August 2022, 31 August 2022 and 23 November 2022. However, it is unlikely that species of conservation significance would rely on the proposed clearing areas for survival due to the degraded and disturbed nature of the site and a lack of suitable habitats as previously reported for the application area (Cardno, 2009; Bamford Consulting Ecologists, 2010) (Attachments K and M).</p> <p>As the proposed clearing is occurring within an ESA and Bush Forever Site 299, the clearing may be at variance to principle (a). However, it should be considered that clearing comprises mostly of small, degraded areas previously cleared of vegetation or infested by weeds.</p>
<p><b><i>Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna</i></b></p>	<p>Red Flag</p> 	<p>The City's EPCR and NVC (Attachment E and F) identified the proposed clearing areas are within an important birding area (Northern Swan Coastal Plain IBA) and within a Carnaby's Black Cockatoo Confirmed 'roosting area buffer'. The proposed clearing areas also contain potential Quenda Habitat.</p> <p>The City's Vegetation Assessments identified the presence of trees within the proposed clearing areas however there is no intention at this stage to remove trees under this permit other than, potentially, some selected trees within Clearing Area 2 to complete upgrade works.</p> <p>No avian species or hollows suitable for nesting were observed within the proposed clearing areas, however a species of conservation significance, the New Holland Honeyeater, was observed flying in the surrounds of the proposed clearing areas. Given the widespread nature of this species and the of lack of suitable food sources (nectar-rich plant species such as <i>Banksia</i>, Newland and Wooler, 1985) within the proposed clearing areas, it is probable that this species only occurs as an occasional visitor and does not depend on the project site for survival.</p> <p>Diggings potentially indicating the presence of Quenda were observed within Clearing Area 5 during the vegetation survey undertaken on 31 August 2022 and 23 November 2022, however it is likely that this species only occasionally visits the area while searching for food.</p> <p>Quenda is known to create conical-shaped foraging pits (~100 mm across and 70 mm deep), which are characterised by a clear point at the</p>



		<p>bottom of the pit and a spoil heap adjacent to the pit (where displaced soil was accumulated via the digging activities) (Valentine <i>et al.</i>, 2013). To detect subterranean prey items (Quin 1992) and/or target invertebrates which commonly occur in the leaf litter layer (Hattenschwiler <i>et al.</i> 2005), Quenda also make 'nose pokes' which are obvious movement of the ground debris and soil but without a defined point or adjacent spoil heap (Valentine <i>et al.</i>, 2013).</p> <p>As the diggings observed were lacking a defined point or adjacent spoil heap and were less than 70 mm deep, it is more probable that they represent nose pokes rather than foraging pits.</p> <p>Rabbits are also known to colonise the area and dig holes, however rabbit diggings are usually larger and square ended, and droppings can be typically found around the diggings.</p> <p>Quenda favours dense, low vegetation which occurs around wetlands, and inhabit dense weeds, as well as dense native vegetation. Given the degraded and cleared nature of the site, and the fact that no foraging pits but nose pokes only were found, it is unlikely that the proposed clearing areas constitute a suitable foraging habitat for this species. Quenda are most likely only an occasional visitor to the project area.</p> <p>Over 122 avian fauna species and priority faunal species including the Western Brush Wallaby, Quenda and Echidna are known to occur in the surrounding regional park and Bush Forever sites (State of Western Australia, 2000), however the majority of these species are not likely to occur on the project site due to a lack of suitable habitats. This is supported by previous fauna surveys (Cardno, 2009; Bamford Consulting Ecologists, 2010) (Attachments K and M) conducted in the subdivision development area, including the proposed clearing areas, which concluded that the range and diversity of potential fauna habitats was very low on site.</p> <p>Although the site was then revegetated with native species conditioned under subdivision, most of the clearing areas are currently still degraded and covered with weeds. Consequently, fauna habitat potential is considered limited within the proposed clearing areas.</p> <p>Due to the high value of remnant vegetation available throughout Yellagonga Regional Park and nearby Bush Forever Sites (including Bush Forever Site 299) it is unlikely that the removal of this vegetation will be seen as a significant habitat removal for fauna species.</p>
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		<p>It should also be noted that the proposed works are not likely to cause any fragmentation of habitat beyond what is already created by the previous development of this area.</p> <p>Given the above, the proposed clearing is not likely to be at variance to clearing Principle (b).</p>
<p><b>Principle (c) – Native vegetation should not be cleared if it includes or is necessary for the continued existence of, threatened flora.</b></p>	<p>Orange Flag</p> 	<p>The City's EPCR and NVC (Attachment E and F) identified Priority Flora species within a 5km radius of the application area, however no Federal or State Threatened or Priority Flora species were identified within the application area.</p> <p>Considering the application area does not contain rare flora and the vegetation contains both weed species and native flora ranging from a majority degraded to small areas of good condition, the application area is not likely to be at variance with clearing principle (c).</p>
<p><b>Principle (d) - Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a Threatened Ecological Community.</b></p>	<p>Red Flag</p> 	<p>The City's EPCR and NVC (Attachment E and F) identified both Federal and State Threatened Ecological Communities (and buffers) within a 5km radius of the application area, however no Threatened or Priority Communities are present within the proposed application area.</p> <p>The City's EPCR (Attachment E) identified three 'Banksia Woodlands of the Swan Coastal Plain' TECs directly adjacent to the proposed clearing areas, however it is unlikely that the vegetation in this area, included the proposed clearing areas, currently represents a TEC due to the degraded nature of the site and the lack of a generally dominant <i>Banksia</i> component.</p> <p>Given the above, the application area is not likely to be at variance to principle (d).</p>
<p><b>Principle (e) - Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been significantly cleared.</b></p>	<p>Red Flag</p> 	<p>The City's NVC (Attachment F) identified the reason for variance is due to the presence of a Vegetation complex, the Karrakatta Complex-Central and South, with less than 10% of pre-European extent protected for conservation on the Swan Coastal Plain portion of Perth. However, it is unlikely that the project area retains remnant vegetation representative of the Karrakatta Complex-Central and South given the historical land use of the site and that the site was cleared and subsequently revegetated under subdivision condition.</p> <p>The study area is in the Interim Biogeographical Regionalisation of Australia (IBRA) region of the Swan Coastal Plan (SCP) in sub-region SWA2:</p>



		<p>Perth (Department of Environment and Heritage, 2000; Thackway and Cresswell, 1995).</p> <p>According to 1:250,000-scale vegetation mapping by Heddle et al. (1980), the study area is within vegetation complex 49: Karrakatta Complex-Central and South.</p> <p>The National Objectives and Targets for Biodiversity Conservation 2001-2005 (Commonwealth of Australia, 2001) recognised that the retention of 30% or more of the preclearing extent of each ecological community is necessary if Australia's biodiversity is to be protected.</p> <p>The Environmental Protection Agency (EPA) has a modified objective to seek to retain at least 10% of the pre-clearing extent of each ecological community for defined constrained areas (intensely developed) in the Perth Metropolitan and Bunbury Regions (EPA, 2015).</p> <p>In accordance with DBCA's South West Vegetation Complex Statistics, 23.49% of the Karrakatta Vegetation complex-Central and South remains intact (DBCA, 2018). This is therefore in exceedance of the recommended 10% target for the retention of vegetation at a local level in this region. However, EPA has also a target for the protection in lands reserved for conservation of at least 10 per cent of all vegetation complexes originally occurring in the Swan Coastal Plain portion of the Perth Metropolitan Region (EPA, 2015). Of the remaining Karrakatta complex-Central and South, only 3.87% is protected (reserved) for conservation (DBCA, 2018).</p> <p>Although remnant vegetation is abundant locally within Yellagonga Regional Park and nearby Bush Forever Sites, it is unlikely that the clearing site contains remnant vegetation.</p> <p>This is because the site was cleared and used for market garden/orchard activities from mid-1950s until 2011, when it was cleared again to be subdivided as part of the residential development to the north and south of this area. To address subdivision conditions, the site was then revegetated with locally native species to create a vegetation buffer between the development and the wetland.</p> <p>Given the current extent of the Karrakatta Complex-Central and South and the fact that the proposed clearing areas were revegetated with native species under subdivision condition, the City's proposed clearing is not likely to be at variance with clearing Principle (e).</p>
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<p><b><i>Principle (f) - Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or a wetland</i></b></p>	<p>Red Flag</p> 	<p>The proposed clearing areas are located within 50m of Walluburnup Swamp and within 5km of eight other wetlands: Beenyup Swamp (1247.3m), Lake Joondalup (1706.7m), Lake Goollelal (1443.2m), Badgerup Lake (3200m), Gngangara Lake (4953.9m), Snake Swamp (4973.5m) and two unnamed lakes (3775.6m and 4418.9m) (Attachment F).</p> <p>As the proposed clearing will affect riparian vegetation possibly including mature and semi mature riparian trees, the City's proposed clearing might be at variance to clearing Principle (f).</p> <p>However, it should be noted that the area to be cleared is small (0.17222 hectares) and native vegetation ranges from a majority degraded to small areas of good condition.</p>
<p><b><i>Principle (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.</i></b></p>	<p>Orange Flag</p> 	<p>The proposed clearing is located within an Acid Sulphate Soil risk area (DWER, 2022). Given that the area is quite small, it is unlikely that clearing of the vegetation will result in appreciable land degradation. Despite the small area, controls such as clean machinery forms and other controls in accordance with the Treatment and Management of Soil and Water in Acid Sulphate Soil Landscapes (DWER, 2015) guidelines will be implemented to ensure that the clearing does not result in degradation to the land and surrounding area.</p> <p>The Groundwater Salinity (Total Dissolved Solids) at the proposed clearing site is considered to be Fresh with a salinity range of between 250 - 500mg/L (DWER, 2022).</p> <p>DWER's Perth Groundwater Map identifies two surface geology types within the application area:</p> <ul style="list-style-type: none"> <li>• Tamala Limestone: aeolian calcarenite, variably lithified, leached quartz sand</li> <li>• Swamp and lacustrine deposits - peat, peaty sand and clay (DWER, 2022).</li> </ul> <p>The Natural Resource Information (WA) mapping tool identifies two soil landscape types within the application area:</p> <ul style="list-style-type: none"> <li>• Karrakatta Sand Yellow Phase (211Sp_Ky) - low hilly to gently undulating terrain. Yellow sand over limestone at 1-2 m. <i>Banksia</i> spp. woodland with scattered emergent <i>E. gomphocephala</i> and <i>E. marginata</i> and a dense shrub layer</li> </ul>

		<ul style="list-style-type: none"> <li>Spearwood wet, swamp phase (211SpW_SWAMP) - Swamp (DPIRD, 2022).</li> </ul> <p>Due to its insignificant scale, the proposed clearing is not likely to cause appreciable land degradation and be at variance to Principle (g).</p> <p>It should be noted that the principle aim of this project is to mitigate and improve the drainage issues in these sections of the DUP and to ensure that future land degradation does not occur.</p>
<p><b>Principle (h) - Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.</b></p>	<p>Red Flag</p> 	<p>The proposed clearing areas are within a small section of Bush Forever site 299. Eight other Bush Forever Sites are located within 5 km of the proposed clearing areas: Bush Forever Site 327 (2120.5 m), Bush Forever Site 328 (3417.2 m), Bush Forever Site 463 (3710.1 m), Bush Forever Site 471 (3884.2 m), Bush Forever Site 199 (4419.4 m), Bush Forever Site 202 (4607.8 m), Bush Forever Site 324 (4781.2 m), Bush Forever Site ID 193 (4895.1 m) (Attachment F).</p> <p>The proposed clearing is within Yellagonga Regional Park and is within, or directly adjacent to, EPA Redbook 1976-91 reserve (Attachment F).</p> <p>Given the high value of remnant vegetation available throughout the large extents of Yellagonga Regional Park and nearby Bush Forever Sites, and the insignificant scale of the clearing, it is not likely for the proposed clearing to be at variance to clearing Principle (h).</p>
<p><b>Principle (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.</b></p>	<p>Orange Flag</p> 	<p>Walluburnup Swamp is located within 50 metres of the project area (Attachment E).</p> <p>Although surface water is present, clearing is not likely to cause deterioration in surface water quality through sedimentation or eutrophication due to the small clearing requirement of 0.17222 hectares (1722.2 m<sup>2</sup>).</p> <p>The proposed clearing areas are within the Perth Coastal Underground Public Drinking Water Pollution Control Area – P3 and within the <i>Perth Groundwater Area RIWI Act</i> area.</p> <p>Indicative groundwater depths show the water table is approximately 0-2 mbgl. Although ground water might be intercepted during works, the proposed clearing areas are small and clearing is not likely to result in a significant change to groundwater levels or surface water runoff.</p> <p>Given the availability of remnant vegetation in the surrounding Bush Forever Sites and Yellagonga</p>



		<p>Regional Park, and the proposed small clearing area, it is not considered that the proposed clearing will increase groundwater salinity.</p> <p>The proposed clearing is therefore not likely to be at variance to clearing Principle (i).</p>
<b><i>Principle (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause or exacerbate the incidence or intensity of flooding.</i></b>	NA	<p>The proposed clearing areas are within a DAFWA Land Quality flood risk category – Category 0.</p> <p>The clearing is not likely to cause, or exacerbate the incidence, or intensity of flooding. The proposed clearing is not likely to be at variance to Principle (j).</p>

\***Red** – Likely to be at variance, **Orange** – May be at variance, **Green** – Not likely to be or not at variance

## 8. Conclusion

The City has assessed the proposed clearing against the 10 clearing principle and has found that the clearing of 0.17222 hectares (1722.2 m<sup>2</sup>) within Yellagonga Regional Park, may be at variance to principle (a) and (f) due to the clearing of riparian vegetation occurring directly adjacent to Walluburnup Swamp, and within an ESA and Bush Forever Site 299, however, it is not likely to be at variance to the remaining clearing principles.

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