



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

### PERMIT DETAILS

Area Permit Number: CPS 9953/1  
File Number: DWERVT11376  
Duration of Permit: From 18 August 2023 to 18 August 2025

### PERMIT HOLDER

City of Swan

### LAND ON WHICH CLEARING IS TO BE DONE

Lot 210 on Deposited Plan 29101, Henley Brook  
Henley Brook Avenue road reserve (PIN 11080776), Henley Brook  
Henley Brook Avenue road reserve (PIN 11092885), Henley Brook

### AUTHORISED ACTIVITY

The permit holder must not clear more than 0.043 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

### CONDITIONS

#### 1. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of *native vegetation*;
- (b) minimise the amount of *native vegetation* to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

#### 2. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known dieback or weed-affected soil, mulch, fill, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

### 3. Management of land degradation risks

The permit holder must commence road construction activities no later than three (3) months after undertaking the clearing authorised under this permit.

### 4. Vegetation management

The permit holder must not clear any riparian *native vegetation* of any watercourse or wetland within the area cross-hatched yellow in Figure 1 of Schedule 1.

### 5. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner towards adjacent *native vegetation* to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

### 6. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

**Table 1: Records that must be kept**

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> <li>(a) the species composition, structure, and density of the cleared area;</li> <li>(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings;</li> <li>(c) the date that the area was cleared;</li> <li>(d) the size of the area cleared (in hectares);</li> <li>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1;</li> </ul>

No.	Relevant matter	Specifications
		<p>(f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 2;</p> <p>(g) actions taken to not clear any riparian native vegetation of any watercourse or wetland in accordance with condition 4; and</p> <p>(h) actions taken to ensure clearing activities are undertaken in a slow and progressive manner, allowing fauna to move into adjacent native vegetation in accordance with condition 5</p>

## 7. Reporting

The permit holder must provide to the *CEO* the records required under condition 6 of this permit when requested by the *CEO*.

## DEFINITIONS


In this permit, the terms in Table 2 have the meanings defined.

**Table 2: Definitions**

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

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## END OF CONDITIONS

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Ryan Mincham  
MANAGER  
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20  
of the Environmental Protection Act 1986*

26 July 2023

# SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).



Figure 1: Map of the boundary of the area within which clearing may occur





# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

<b>Permit number:</b>	CPS 9953/1
<b>Permit type:</b>	Area permit
<b>Applicant name:</b>	City of Swan
<b>Application received:</b>	10 November 2022
<b>Application area:</b>	0.043 hectares of native vegetation
<b>Purpose of clearing:</b>	Construction of the proposed Henley Brook Ave extension between north of Messara Avenue and south of Asturian Drive
<b>Method of clearing:</b>	Mechanical
<b>Property:</b>	Lot 210 on Deposited Plan 29101 Henley Brook Avenue road reserve (PIN 11080776) Henley Brook Avenue road reserve (PIN 11092885)
<b>Location (LGA area):</b>	City of Swan
<b>Localities (suburb):</b>	Henley Brook

### 1.2. Description of clearing activities

The City of Swan (the applicant) propose to extend the existing Henley Brook Avenue between north of Messara Avenue and south of Asturian Drive. The proposed clearing area comprises of 0.043 hectares of native vegetation, distributed along the eastern and southern side of the existing Henley Brook Avenue road reserve, covering approximately 490 metres in length and approximately 13 metres in width (see Figure 1, Section 1.5). Vegetation in the application area is largely degraded, due to previous clearing from surrounding subdivisions and road construction. It should be noted that some of the vegetation within the application area is not native vegetation, therefore has been excluded from the application area's clearing footprint.

The clearing of these areas (CPS 9953/1) forms part of a larger project, the Henley Brook Avenue extension, which has been reserved as an 'Other Regional Road' under the Metropolitan Region Scheme and identified as a key transport connection, whereby this route will play an important role in enhancing the transport network in the area (for more information regarding this see section 3.3 below). The applicant has advised that the greater project will alleviate pressure on the local road network, reduce travel times and ensure safety and connectivity for people living and working in the region.

The applicant advised the Department of Water and Environmental Regulation (DWER) in the assessment phase that due to scheduled construction works, they would like to revise the original application area (see Figure 2, Appendix F) to only include part of the northern section of the original application area. This modification reduced the size of the application area from 5.95 hectares to 0.043 hectares.

### 1.3. Decision on application

<b>Decision:</b>	Granted
<b>Decision date:</b>	26 July 2023

**Decision area:**

0.043 hectares of native vegetation, as depicted in Section 1.5, below.

**1.4. Reasons for decision**

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). DWER advertised the application for 21 days and one submission was received. Consideration of matters raised in the public submission is summarised in Appendix B.

In making this decision, the Delegated Officer had regard for:

- the site characteristics (see Appendix C),
- relevant datasets (see Appendix H.1),
- representative photographs and the findings of a black cockatoo habitat assessment (see Appendix F),
- additional information provided by the applicant (see Appendix A),
- assessment against the clearing principles set out in Schedule 5 of the EP Act (see Appendix D),
- relevant other pertinent matters considered relevant to the assessment (see Section 3.3), and
- the priority of the project, given its a Local Government Authority / Main Roads Western Australia road-upgrades initiative, to alleviate pressure on the local road network, reduce travel times and ensure safety and connectivity for people living and working in the region.

The applicant advised DWER in the assessment phase that due to scheduled construction works they would like to revise the original application area (see Figure 2, Appendix F) to only include part of the northern section of the original application area. This modification reduced the size of the application area from 5.95 hectares to 0.043 hectares. However, it should be noted that the applicant intends to apply for a clearing permit for the remainder of the original application area (approximately 5.91 hectares). The cumulative impacts of the Henley Brook Avenue extension project will be considered in the assessment of any future clearing permit application.

The Delegated Officer was satisfied that the applicant has undertaken reasonable measures to avoid and minimise the potential impacts of the proposed clearing and acknowledges that some native vegetation will be retained within the road reserves. The Delegated Officer noted that in some areas, native vegetation occurs adjacent to the proposed clearing, and the implementation of weed and dieback management strategies during construction will mitigate impacts to these areas. In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- Avoid, minimise to reduce the impacts and extent of clearing;
- Take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback;
- Avoid the clearing of riparian vegetation;
- Commence road construction activities within 3 months of clearing to mitigate the potential for land degradation; and
- Conduct slow, directional clearing to mitigate potential impacts to fauna.

## 1.5. Site map



**Figure 1 - Map of the application area**

The areas cross-hatched yellow indicates the areas authorised to be cleared under the granted clearing permit.

## 2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the polluter pays principle
- the principle of the conservation of biological diversity and ecological integrity.



Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

### 3 Detailed assessment of application

#### 3.1. Avoidance and mitigation measures

A Construction Environmental Management Plan (CEMP) has been developed by the applicant, which will be implemented during the project's entirety to manage the impacts of the proposed road works, which includes wind and water erosion, subsurface acidification, flood risk, waterlogging and phosphorous export risk (PGV Environmental, 2023).

The applicant advises the CEMP includes management measures for dust prevention and stabilisation to minimise the risk of wind and water erosion during clearing and construction to prevent flooding and waterlogging and drainage design to include management of nutrients (PGV Environmental, 2023).

The following avoidance and mitigation measures have been committed to by the applicant within the CEMP (PGV Environmental, 2023):

- Only clear what is required for the construction of Henley Brook Avenue extension and trees that are to be retained would be marked so there is no misunderstanding with the clearing contractor;
- Dust management procedures to manage the impacts of potential wind erosion;
- Management of surface water during clearing and construction to prevent waterlogging, water erosion and offsite impacts on surrounding wetland areas;
- Road design and stormwater controls to manage nutrients and petroleum derivatives in stormwater and ensure that there is no contaminant export from the road and ensure water quality and quantity in the multiple use wetland is maintained;
- An emergency response plan for any potential spills during clearing and construction;
- Hygiene protocols to prevent the spread of dieback disease and other soil-borne pathogens; and
- Landscaping strategies to be used in the road reserve.

The Delegated Officer was satisfied that the applicant has undertaken reasonable measures to avoid and minimise potential impacts of the proposed clearing on environmental values.

#### 3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see 0) and the extent to which the impacts of the proposed clearing present a risk to biological, land and water resource values.

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing may present a risk to significant remnant vegetation, land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

##### 3.2.1. Significant remnant vegetation - Clearing Principle (e)

###### **Assessment:**

The national objectives and targets for biodiversity conservation in Australia has a target to prevent the clearance of ecological communities with an extent below 30 per cent of that present prior to the year 1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001).

The application area is located within the Swan Coastal Plain bioregion as described by Thackway and Cresswell (1995). The Swan Coastal Plain bioregion (SWA) as a whole retains approximately 38.6 per cent of its pre-European vegetation extent (Government of Western Australia 2019a). Hedde et al. (1980) as updated by Webb et al. (2016) mapped the vegetation complexes of the Swan Coastal Plain, with one vegetation complex mapped over the application area - the Southern River Complex (SCP 42), an open woodland of *Corymbia calophylla* (Marri) and *Eucalyptus marginata* (Jarrah) and Banksia species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) and

*Melaleuca raphiophylla* (Swamp Paperbark) along creek beds. This vegetation unit is below the 30 per cent threshold of the Commonwealth of Australia (2001), with the Southern River Complex (SCP 42) at 18.43 per cent retention (Government of Western Australia 2019b) (see Appendix C.2). However, the Environmental Protection Authority (EPA) recognises the Perth Metropolitan Region as a constrained area, which provides for the reduction of vegetation complexes to a minimum of ten per cent of their pre-European extent (EPA 2008).

At the local scale of a ten-kilometre radius of the application area, approximately 8,550.62 hectares of native vegetation has been retained, representing 25.17 per cent native vegetation cover. Noting the application area does not contain conservation significant flora, fauna or ecological communities, the application area is not considered significant as a remnant of native vegetation.

The application area is partially cleared due to previous subdivisions and new road construction and is in a completely degraded (Keighery, 1994) condition. The application area includes *Acacia saligna* (Orange Wattle), *Adenanthos cygnorum* (Woolly Bush) and *Xanthorrhoea preissii* (Grass trees) with little to no leaf litter and is dominated by weeds including non-native Geraldton Wax (*Chamelaucium uncinatum*) (PGV Environmental, 2023).

The applicant has committed to hygiene protocols within the CEMP to prevent the spread of dieback disease and other soil-borne pathogens (PGV Environmental, 2023).

While it is noted that the application area is not located within any formal ecological linkages, there was a public submission about the vegetation remaining in the road reserve which serves as a wildlife corridor and that this would be severed if all the vegetation within it is lost. The applicant has revised the application area to only include part of the northern section of the original application area (see Figure 2, Appendix F), thereby, reducing the clearing to 0.043 hectares, down from 5.95 hectares in the original application.

The reduction in size of the application area (including a reduction in total clearing width) and retention of some native vegetation (including overstorey trees) will contribute to the maintenance of connectivity attributes (see Figure 1, Section 1.5 and Figure 2, Appendix F for comparison).

Notwithstanding the above, given that native vegetation remains surrounding the application area, a weed and dieback condition will be placed on the permit to assist in mitigating impacts to surrounding vegetation.

While the application area is not within any formal ecological linkages and does not represent significant fauna habitat, as the vegetation proposed to be cleared is within a road reserve it may contribute to an informal ecological linkage for fauna species within the local area. A directional clearing condition has been imposed on the permit to mitigate potential impacts to fauna species that may be present at the time of the clearing.

#### **Outcome:**

Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered acceptable subject to relevant conditions in relation to this environmental value.

#### **Conditions:**

- Weed and dieback management measures will assist in mitigating impacts to surrounding vegetation;
- The permit holder must conduct clearing activities in a slow, progressive manner towards adjacent native vegetation to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

### **3.2.2. Land and water resources – wetland and water quality - Clearing Principles (f) and (i)**

#### **Assessment:**

Given the application area intersects a small section of a 'Multiple use' palusplain (wetland) (UFI 13758), it may contain vegetation that is growing in, or in association with, an environment associated with a watercourse. There are no other permanent, perennial wetlands or watercourses mapped within the application area. 'Multiple use' wetlands are defined as wetlands with few remaining important attributes and functions (DEC, 2007) and within the wetland management category 'Multiple use' wetlands can be used, developed and managed in the context of water, town and environmental planning (WAPC, 2005). Additionally, advice received from the department's Water Source Protection Planning branch advises that the application area is partly within a Priority 2 (P2), Priority 3 (P3) and Priority 3\* (P3\*) Public Drinking Water Source Area as proclaimed under the RiWI Act (DWER, 2023b).

The vegetation within the proposed clearing area is in a completely degraded (Keighery, 1994) condition, therefore the clearing of this vegetation is unlikely to impact water quality. However, a commitment by the applicant was made

advising that vegetation that is growing in, or in association with, an environment associated with a watercourse will be retained (City of Swan, 2023).

In addition to the above, the applicant has prepared a CEMP which addresses potential impacts to water quality and includes the management of surface water during clearing and construction to prevent offsite impacts on surrounding wetland areas and road design and stormwater controls to ensure water quality is maintained (PGV Environmental, 2023). The applicant has advised that the proposed clearing activities will not require ground or surface water extraction (City of Swan, 2023).

Advice received from the department's Water Source Protection Planning branch indicates that road construction and upgrades would be considered a land use that is compatible with conditions in a P2, P3 and P3\* area. However, the Water Source Protection Planning branch has advised that additional information (under specifications) is required to determine whether the proposed road construction and upgrades meets condition 37 specified in Water Quality Protection Notice (WQPN) 25 and WQPN's 10, 28, 29, 44, 56 83, 84 and the associated brochure, noting the best environmental practices are applied to the application area (DWER, 2023b).

Condition 37 of the WQPN 25 states "In accordance with Roads to reuse: Product specification – recycled road base and recycled drainage rock:

- Do not use recycled drainage rock in PDWSAs.
- Do not use recycled road base in P1 areas, WHPZs and RPZs".

The City of Swan confirms that they will not be using recycled drainage rock and recycled road base due to the proximity of the PDWSA (PGV Environmental, 2023).

Management measures under the WQPNs as detailed in the advice include:

- WQPN 10: Contaminant spills – Emergency response plan (DWER, 2020)
- WQPN 28: Mechanical servicing and workshops (DWER, 2013a)
- WQPN 29: Mobile mechanical servicing and cleaning (DWER, 2013b)
- WQPN 44: Roads near sensitive water resources (DWER, 2006)
- WQPN 56: Tanks for fuel and chemical storage near sensitive water resources (DWER, 2018)
- WQPN 83: Infrastructure corridors near sensitive water resources (DWER, 2007)
- WQPN 84: Rehabilitation of disturbed land in PDWSAs (DWER, 2009)
- Brochure: Construction depots near sensitive water resources (DWER, 2008)

Information with regard to WQPNs 10, 44, 83 and 84 and additional details are provided in the applicant's CEMP. The applicant has advised that WQPNs 28, 29, 56 and the Brochure are not applicable for the following reasons:

- There are no mechanical workshops or servicing proposed on the site;
- No fuels or oils will be stored on the site;
- There will be no on-site servicing or cleaning or depots constructed as part of the road extension works; and
- There will be machinery stored on the site within a compound of hardstand (PGV Environmental, 2023).

**Conclusion:**

With the applicant's commitments above, the proposed clearing is not likely to impact the attributes of the mapped multiple use palusplain or impact on- or off-site hydrology and water quality.

**Outcome:** Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered acceptable in relation to these environmental values.

**Conditions:** The Permit Holder must not clear any riparian native vegetation of any watercourse or wetland within the area cross-hatched yellow on Plan 9953/1.

***3.2.3. Land and water resources – land degradation and flooding – Clearing Principles (g) and (j)***

**Assessment:**

The mapped soils within the application area are highly susceptible to wind erosion, water erosion, subsurface acidification and nutrient export.

The applicant's CEMP includes management measures for dust prevention and stabilisation to minimise the risk of wind and water erosion during clearing and construction to prevent flooding and waterlogging and drainage design to include management of nutrients (PGV Environmental, 2023). Given that the application area comprises only 0.043

hectares in a completely degraded (Keighery, 1994) condition and noting the management commitments made by the applicant, the proposed clearing is not likely to increase the risk of land degradation or flooding.

The applicant has prepared a CEMP which will be implemented during the construction and clearing which includes strategies to prevent waterlogging, drainage controls for water erosion, subsurface acidification and nutrient export (PGV Environmental, 2023). The CEMP also includes standard and staged road construction methodologies, road design and stormwater controls to manage nutrients and petroleum derivatives in stormwater and minimising any wind erosion impacts.

Within the CEMP, the applicant advises that given most of the proposed road extension and surrounds are cleared of vegetation, it is unlikely that the clearing for the construction of the road will have an impact on subsurface acidification which would be exacerbated by the removal of the small amount of vegetation for the road. Pursuant to the *Contaminated Sites Act 2006*, an investigation and if required Acid Sulphate Soils (ASS) Management Plan will be prepared for the road construction. The Western Australia Planning Commission's (WAPC) *Acid Sulphate Soils Planning Guidelines* (WAPC, 2009) indicate that "*acid sulphate soils are technically manageable in the majority of cases*" which would be applicable to the site (PGV Environmental, 2023).

Additionally, the vegetation within the proposed clearing area is in a completely degraded (Keighery, 1994) condition, therefore the clearing of this vegetation is unlikely to exacerbate or intensity of the flood or land degradation risks.

The applicant has advised that the proposed clearing activities will not require ground or surface water extraction and as above, have prepared a CEMP, which includes the standard and staged road construction methodologies, which will be implemented which includes strategies for flooding controls and water erosion (City of Swan, 2023).

**Conclusion:**

Given the small extent of the proposed clearing (0.043 hectares), completely degraded (Keighery, 1994) condition of the vegetation within the application area, and noting the applicants' management measures in the form of a CEMP, the proposed clearing is not likely to have an appreciable impact on land degradation or flooding.

**Outcome:** Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered acceptable in relation to these environmental values.

**Conditions:** The permit holder must commence road construction activities no later than three (3) months after undertaking the clearing authorised under this permit.

### **3.3. Relevant planning instruments and other matters**

The clearing permit application was advertised on the DWER website on 24 February 2023 with a 21-day submission period. One public submission was received in relation to this application (see Appendix B for consideration of public submission comments).

**Planning**

The City of Swan is the local government authority that manages the application area (CPS 9953/1) as it is located within the Henley Brook Avenue road reserve. The application area is zoned Local Reserve - Local Road and the clearing purpose is consistent with Local Planning Scheme 17.

Henley Brook Avenue is reserved under the Metropolitan Region Scheme as an 'Other Regional Road'. The proposed works relating to this clearing permit application are required as part of the City of Swan's Henley Brook Avenue extension project, which has been identified as a key transport connection in the WAPC's endorsed Swan Urban Growth Corridor Sub-regional Structure plan 2009. The road reserve runs north-south from Ellenbrook to Reid Highway and improvements to this route will play an important role in enhancing the transport network in the area. Main Roads anticipate the road will carry over 30,000 vehicles per day by 2031 (PGV Environmental, 2023). The applicant has advised that the greater project will alleviate pressure on the local road network, reduce travel times and ensure safety and connectivity for people living and working in the region.

The larger project includes a development footprint of approximately 5.91 hectares within the Henley Brook Avenue road reserve and surrounding properties that the applicant has recently acquired.

**Aboriginal sites under the *Aboriginal Heritage Act 1972***

No Aboriginal sites of significance have been mapped within the local area, or application area itself. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.



***Rights in Water and Irrigation Act 1914 (RiWI Act)***

The application area is mapped within the Swan River System Surface Water Area and within the Mirrabooka and the Swan Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914* (RiWI Act). No rivers proclaimed under the RiWI Act intersect the application area and the application area is not located in a *Country Areas Water Supply Act 1947* (CAWS Act) catchment area (DWER, 2023a). The applicant has advised that no water licences or permits will be required for the proposed clearing (PGV Environmental, 2023).

**End**

## Appendix A. Additional information provided by applicant

Reference	Description of information (in timeline order)
PGV Environmental (on behalf of City of Swan), 2023	Additional supporting information for clearing permit application CPS 9953/1, <i>City of Swan's response to DWER's request for further information, including response letter, Construction Environmental Management Plan and Black Cockatoo Habitat Assessment</i> . Received 30 June 2023 (DWER Ref: DWERDT800756).
City of Swan, 2023	Additional supporting information for clearing permit application CPS 9953/1, <i>City of Swan's advice to revise application area to only include northern section of application area</i> . Received 5 July 2023 (DWER Ref: DWERDT802319) and 10 July 2023 (DWER Ref: DWERDT804535 and DWERDT804663).

## Appendix B. Details of public submissions

Summary of comments	Consideration of comment
Area proposed to be cleared impacts a wildlife corridor and western ringtail possum	<p>The vegetation in the application area is completely degraded (Keighery, 1994) condition with limited connectivity values, due to previous clearing from surrounding subdivisions and road construction.</p> <p>Although conservation significant fauna species occur within the vicinity of the application area, including black cockatoos, the application area does not include vegetation necessary for the maintenance of a significant habitat for fauna.</p> <p>Western Ringtail Possums were not considered in the likelihood analysis, as the application is outside of the known distribution for the species. The application area also lacks vegetation necessary for the maintenance of this species, with no Peppermint trees (<i>Agonis flexuosa</i>) present.</p> <p>Due to the completely degraded (Keighery, 1994) condition of the vegetation, it is highly unlikely that any species of conservation significance have a dependency on habitat within the application areas.</p> <p>Notwithstanding the above, the applicant is retaining some of the trees within the original application area, which will contribute to the maintenance of connectivity attributes.</p>
No explanation provided for the south section of the Henley Brook Avenue expansion	<p>As previously advised above, the applicant has revised the original application area to only include part of the northern most sections for this application (CPS 9953/1).</p> <p>It should be noted that the applicant intends to apply for a clearing permit for the remainder of the original application area (approximately 5.91 hectares) The cumulative impacts of the Henley Brook Avenue extension project will be considered in the assessment of any future clearing permit application.</p>

## Appendix C. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix D.

### C.1. Site characteristics

Characteristic	Details
Local context	<p>The proposed clearing is in Henley Brook, an outer rural suburb of Perth, Western Australia, part of the Swan Valley wine region.</p> <p>Vegetation in the application area is completely degraded, due to previous clearing from surrounding subdivisions and road construction in the area.</p> <p>Aerial imagery and spatial data indicates that the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 25.17 per cent of the original native vegetation cover.</p>
Ecological linkage	<p>The application area is not within any formal ecological linkages, however, as the vegetation proposed to be cleared is within a road reserve, it may contribute to an informal ecological linkage for fauna species within the local area.</p>
Conservation areas	<p>The application area is not within any conservation areas. The closest record is the Gnangara-Moore River State Forest, located approximately 2.15 kilometres north-west of the application area.</p>
Vegetation description	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of <i>Acacia saligna</i> (Orange Wattle) shrubs and <i>Adenanthos cygnorum</i> (Woolly Bush), with little to no leaf litter and is dominated by weeds including non-native Geraldton Wax (<i>Chamelaucium uncinatum</i>).</p> <p>This is largely consistent with the mapped vegetation type(s):</p> <ul style="list-style-type: none"> <li>Southern River (42), which is described as Open woodland of <i>Corymbia calophylla</i> (Marri) - <i>Eucalyptus marginata</i> (Jarrah) - Banksia species with fringing woodland of <i>Eucalyptus rudis</i> (Flooded Gum) - <i>Melaleuca raphiophylla</i> (Swamp Paperbark) along creek beds.</li> </ul> <p>Representative photographs are available in Appendix F.</p>
Vegetation condition	<p>Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in a completely degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> <li>Completely degraded - The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.</li> </ul> <p>The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photographs available in Appendix F.</p>
Climate and landform	<ul style="list-style-type: none"> <li>Topography: The site is mostly flat 30-32 metres Australian Height Datum (AHD) with a central ridge line rising up to 40 metres AHD</li> <li>Rainfall: 800 millimetres;</li> <li>Evapotranspiration: 700 millimetres;</li> <li>Geology: Alluvial, shoreline, and eolian deposits; and</li> <li>Acid Sulfate Soil Risk: Moderate to low risk.</li> </ul>

Characteristic	Details		
Soil description	<p>The soils within the application area comprise of:</p> <ul style="list-style-type: none"> <li>Bassendean, Jandakot Phase (212Bs__Ja), which is described as Jandakot low dunes and slopes (99 per cent) and</li> <li>Bassendean, Joel Phase (212Bs__J), which is described as Poorly drained depressions. Humus podzols. Scattered <i>M. preissiana</i>, <i>E. rudis</i> and <i>Banksia ilicifolia</i> with a dense shrub layer (1 per cent)</li> </ul>		
Land degradation risk	<b>Risk categories</b>	<b>212Bs__Ja</b>	<b>212Bs__J</b>
	Wind erosion	H1	M1
	Water erosion	H1	H1
	Salinity	N/A	N/A
	Subsurface Acidification	H2	H2
	Flood risk	H1	H1
	Water logging	N/A	H2
	Phosphorus export risk	H2	H2
	<p><u>Note:</u></p> <p>L1 &lt;3% of map unit has a high (to extreme) risk  L2 3-10% of map unit has a high (to extreme) risk  M1 10-30% of map unit has a high (to extreme) risk  M2 30-50% of map unit has a high (to extreme) risk  H1 50-70% of map unit has a high (to extreme) risk  H2 &gt;70% of map unit has a high (to extreme) risk</p>		
Waterbodies	<p>The application area is within the Coastal Plain Hydrological Zone of Western Australia (DPIRD-069). The desktop assessment and aerial imagery indicates that a small section of the application area intersects a 'Multiple use' palusplain (UFI 13758).</p> <p>Groundwater is mapped at 500-1,000 Total Dissolved Solids, milligrams per litre (that is, 'fresh'). Groundwater is at 27 metres AHD (DWER, 2023), which is between 3 metres and 13 metres below the surface.</p>		
Hydrogeography	<p>The application area is mapped within the Swan River System Surface Water Area and within the Mirrabooka and the Swan Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RiWI Act).</p> <p>In addition, the application area is mapped within the Gngangara Underground Water Pollution Control Area (Priority 2, Priority 3 and Priority 3*) Water Reserve Public Drinking Water Source Area. The application area does not transect any water resources proclaimed under either the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> or the <i>Country Areas Water Supply Act 1947</i> (CAWS Act).</p>		
Flora	<p>According to available databases, there are no records of Threatened or Priority flora within the application area. There are 207 records of 54 conservation significant flora species within the 10-kilometre local area. The closest record being <i>Verticordia lindleyi</i> subsp. <i>lindleyi</i>, which is located approximately 0.35 kilometres north-east from the application area.</p> <p>However, due to the completely degraded (Keighery, 1994) condition of the application area, noting that the understorey is predominately weeds, the likelihood of conservation significant flora occurring in the application area is highly unlikely.</p>		
Ecological communities	<p>According to available databases, there are no Threatened or Priority Ecological Communities (TECs/PECs) within the application area. The nearest mapped conservation significant ecological community is a PEC (Priority 3) listed by the Department of Biodiversity, Conservation and Attractions, known as 'Banksia Dominated Woodlands of the Swan Coastal Plain', which is located approximately 0.48 kilometres from the application area. At the Commonwealth level, this ecological community is listed as an endangered TEC under the EPBC Act.</p>		



Characteristic	Details
Fauna	<p>According to available databases, there are no Threatened or Priority fauna species within the application area. There are 32,458 records from 40 fauna species of conservation significance in the local area. The most common species is <i>Zanda latirostris</i> (Carnaby's Cockatoo) with 25,762 records. The closest record is of a <i>Isoodon fusciventer</i> (Quenda) located approximately within 35 metres of the application area.</p> <p>There are no confirmed breeding locations for Black Cockatoos within the local area (10-kilometre radius from the application area), however the nearest Black Cockatoo roost site is approximately 1.36 kilometres from the application area. The application area is mapped within the distribution range of the Carnaby's and Forest Red Tail's black cockatoo.</p> <p>Due to the completely degraded (Keighery, 1994) condition of the application area, and the lack of significant trees within the application area, it is unlikely that any conservation fauna species are located within the application area.</p>

## C.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	38.45
Vegetation complex**					
Southern River (42)	58,781.48	10,832.18	18.43	940.36	1.60
Local area					
10km radius	33,977.26	8,550.62	25.17	-	-

\*Government of Western Australia (2019a)

\*\*Government of Western Australia (2019b)

## C.3. Fauna and ecological community analysis

With consideration for the site characteristics set out above, relevant datasets (see Appendix H.1), the habitat preferences and distribution and extent of existing records, as well as the findings from the black cockatoo habitat assessment (PGV Environmental, 2023), the application area does not provide suitable habitat for conservation significant fauna species or ecological communities.

## Appendix D. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain significant flora, fauna, habitats or assemblages of plants. The application area does not intersect and any Threatened Ecological Communities listed under the EPBC Act, or Priority Ecological Communities listed under the BC Act.</p> <p>The application area is in a completely degraded (Keighery, 1994) condition, has minimal to no understorey vegetation, a high abundance of weeds and is highly disturbed. The vegetation and habitat features within the application area is not conducive for the occurrence of any conservation significant flora species that have been previously recorded within the local area.</p> <p>Based on the above, it is highly unlikely that any flora or fauna species of conservation significance have a dependency on habitat within the application area.</p>	Not likely to be at variance	No
<p><u>Principle (b):</u> <i>“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></p> <p><u>Assessment:</u></p> <p>Due to the completely degraded (Keighery, 1994) condition of the application area, which consists of <i>Acacia saligna</i> (Orange Wattle), <i>Adenanthos cygnorum</i> (Woolly Bush) and <i>Xanthorrhoea preissii</i> (Grass trees), with little to no leaf litter and a lack of significant trees, it is unlikely that the application area contains significant habitat for any conservation fauna species (PGV Environmental, 2023).</p> <p>The applicant has committed to retaining some native vegetation within the Henley Brook Avenue Road reserve, which will facilitate fauna movement across the landscape (City of Swan, 2023).</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>Given the completely degraded (Keighery, 1994) condition of the vegetation in the application area, noting that the understorey is predominately weeds, the application area is unlikely to contain flora species listed as threatened under the BC Act (PGV Environmental, 2023),</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The vegetation within the application area is not representative of a threatened ecological community that is mapped within the local area.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of native vegetation in the local area is inconsistent with the national objectives and targets for biodiversity conservation in Australia, with approximately 25.17 per cent retention. The vegetation proposed to be cleared is not considered to be part of any formal ecological linkage in the local area, however, due to the extensively cleared landscape, may perform an informal linkage function. However, the Environmental Protection Authority (EPA) recognises the Perth Metropolitan Region as a constrained area, which provides for the reduction of vegetation complexes to a minimum of ten per cent of their pre-European extent (EPA 2008).</p> <p>The area proposed to be cleared does not comprise high biodiversity values or represent significant habitat for conservation significant flora or fauna, on which basis it is not likely to be considered a significant remnant when compared to other larger, intact remnants within the local area.</p>	Not likely to be at variance	Yes  Refer to section 3.2.1
<p><u>Principle (h):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>Given that the distance to the nearest conservation area is 2.15 kilometres, the proposed clearing is not likely to have an impact on the environmental values of any conservation areas.</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given the application area intersects a small section of a ‘Multiple use’ palusplain (UFI 13758), it may contain vegetation that is growing in, or in association with, an environment associated with a watercourse. No permanent, perennial wetland or watercourses are mapped within the application area.</p> <p>Given that it only impacts a small section of the wetland, it is unlikely to impact on- or off-site hydrology and water quality.</p>	May be at variance	Yes  Refer to section 3.2.2
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are highly susceptible to wind erosion, water erosion, subsurface acidification and nutrient export. The applicant has prepared a CEMP to address these land degradation impacts (City of Swan, 2023).</p> <p>Noting the completely degraded (Keighery, 1994) condition of the vegetation within the application area, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	Yes  Refer to section 3.2.3

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>While the application area intersects a small section of a ‘Multiple use’ palusplain (UFI 13758), there are no other watercourses that occur within the application area. Regional groundwater is mapped as ‘fresh’ at 500 to 1,000 total dissolved salts (TDS) milligrams per litre (mg/L), and salinity risk is rated low (DPIRD 2017). Notwithstanding the above, the application area is partly within a Priority 2 (P2), Priority 3 (P3) and Priority 3* (P3*) Public Drinking Water Source Area as proclaimed under the RiWI Act.</p> <p>The applicant has advised that the proposed clearing activities will not require ground or surface water extraction and have prepared a CEMP, which includes the standard and staged road construction methodologies, which will be implemented which includes strategies for drainage controls and water erosion (City of Swan, 2023).</p> <p>Given the above, the proposed clearing is unlikely to cause any deterioration in the quality of any surface waters or groundwater.</p>	Not likely to be at variance	Yes  Refer to section 3.2.2
<p><u>Principle (j):</u> <i>“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></p> <p><u>Assessment:</u></p> <p>The mapped soils and topographic contours in the surrounding area indicate the proposed clearing is not likely to contribute to increased incidence or intensity of flooding. The applicant has prepared a CEMP, which includes the standard and staged road construction methodologies, which will be implemented which includes strategies for drainage controls, waterlogging and water erosion (City of Swan, 2023).</p> <p>Given the extent and shape of the application area, the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding or contribute to waterlogging.</p>	Not likely to be at variance	Yes  Refer to section 3.2.3

## Appendix E. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

### Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.



Condition	Description
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

### CPS 9953/1 - Map



Figure 2 – Original application area (City of Swan, 2022)



**Additional information excerpts provided by the applicant for revised application area**



**Figure 3 – Revised location of application area (City of Swan, 2023)**





Figure 4 – Vegetation types in (revised) application area (City of Swan, 2023)

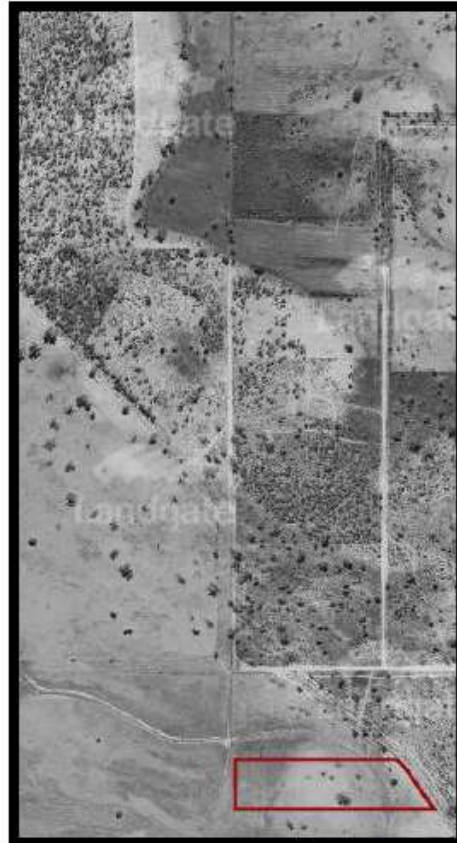


The earliest available historical aerial photograph of the site is from 1953 and shows the area contains native vegetation that appears to have been impacted and parkland cleared with a track through the central part (Plate 1). The alignment of the proposed extension of Henley Brook Avenue is partially aligned with a cleared track. There is significant clearing undertaken between 1953 and 1965 on much of the proposed road works site (Landgate, 2023) (Plate 2). Some remnant trees have been retained within the site.

**Plate 1: Aerial Photograph from 1953**



**Plate 2: Aerial Photograph from 1974**



Additional clearing is evident from the photograph from 1995 (Plate 3), after which a number of trees were planted within the area as observed in the photograph from 2008 (Plate 4).

**Figure 5 – Historical land use of application area from 1953 to 1974 (PVG Environmental, 2023)**

**Plate 3: Aerial Photograph from 1995**



**Plate 4: Aerial Photograph from 2008**



**Figure 6 – Historical land use of application area from 1995 to 2008 (PVG Environmental, 2023)**



***Photographs of the vegetation – supplied by applicant***



**Figure 7 – Vegetation within Henley Brook Avenue, south of Asturian Drive (City of Swan, 2022)**



**Figure 8 – Vegetation within Henley Brook Avenue, south of Asturian Drive (City of Swan, 2022)**





**Figure 9 – Vegetation within Henley Brook Avenue, north of Asturian Drive (City of Swan, 2022)**



**Figure 10 – Vegetation within Henley Brook Avenue, close to Garran Loop (City of Swan, 2022)**





Figure 11 – Vegetation within Henley Brook Avenue, close to Garran Loop (City of Swan, 2022)

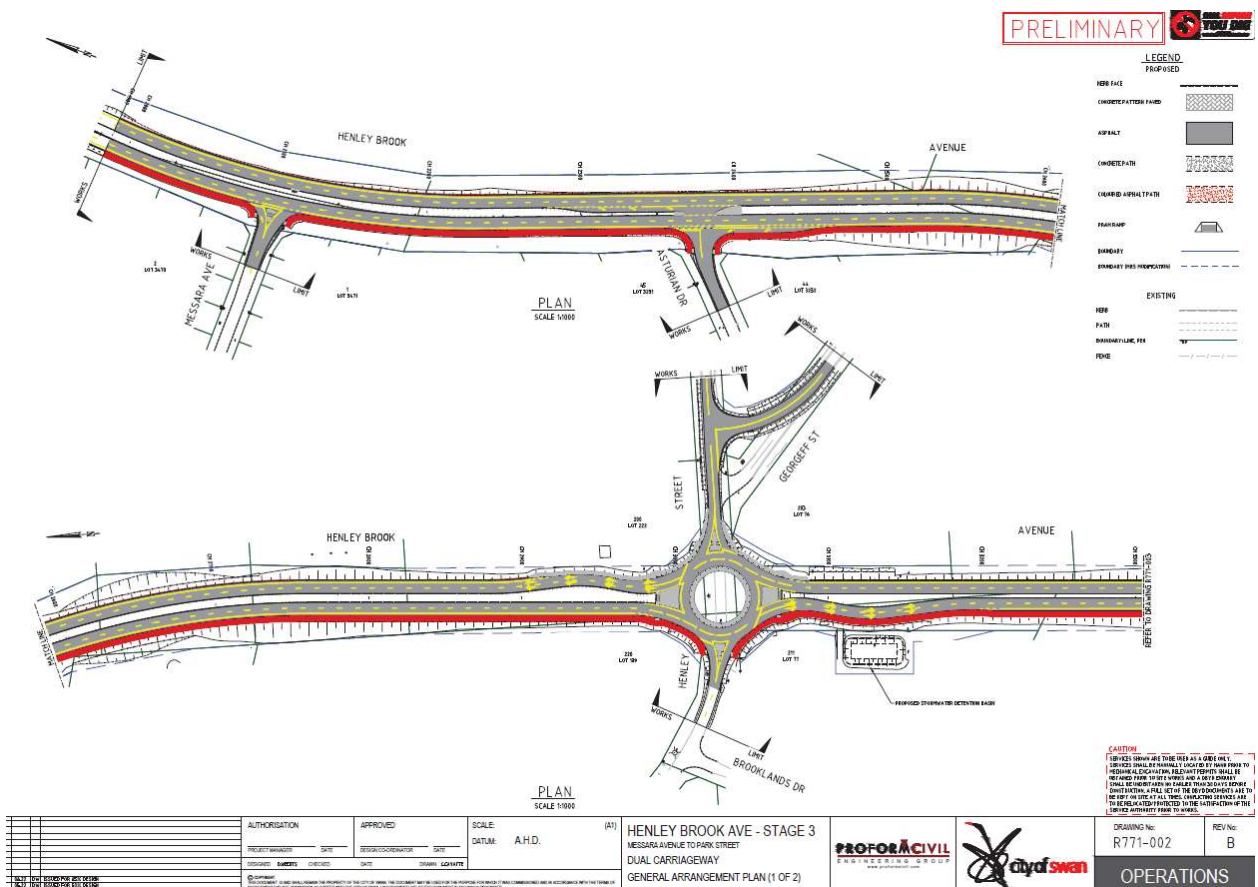


Figure 12 – Proposed civil design for project’s upgrades and road extension (City of Swan, 2022)



## Appendix H. Sources of information

### H.1. GIS databases

Publicly available GIS Databases used (sourced from [www.data.wa.gov.au](http://www.data.wa.gov.au)):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)



## H.2. References

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