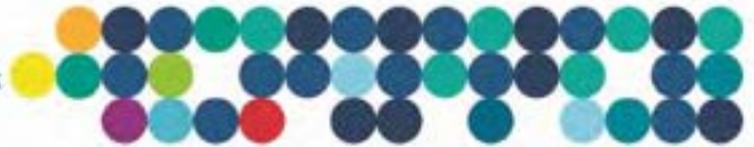


CD00116- Vasse Diversion Drain Upgrade

Construction Environmental Management Framework

Revision 1





Document Control

Nexus #	Document Title
# 96504088	CD00116 Vasse Diversion Drain Upgrade: Construction Environmental Management Framework

Rev	Date	Author	Reviewed By	Changes	Issue Date
A	April 2020	K. Allsopp	S. Bennett L. Tang	Project Team Review	06/04/2020
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C	May 2020	K. Allsopp	L. Tang B Atkinson	Incorporate ASSDMP, WQMP, Draft Permit Conditions	14/05/2020
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1	Oct 2020	K. Allsopp		Final for Issue <ul style="list-style-type: none"> Update shapefile names Update dewatering requirements File path corrections and formatting 	



EPBC Summary Table

EPBC Number	2017/7932
Project Name	CD00116 Vasse Diversion Drain Upgrade
Proponent	Water Corporation
Proposed/Approved Action	Vasse Diversion Drain Upgrade, Busselton, Western Australia (EPBC 2017/7932)
Location	Busselton, Western Australia
MNES Relevant to this plan	Western Ringtail Possum, Carburnup King Spider Orchid

Conditions addressed by this CEMF

Condition	How addressed
Condition 1	Management processes specified to minimise impacts and restrict clearing.
Condition 2 (a), (b), (e)	Management processes specified for Fauna, specifically Western Ringtail Possum. Appendix H: Vasse Diversion Drain Upgrade Fauna Management Plan (Bamford Consulting Ecologists 2020).
Condition 3	Management and monitoring requirement specified. Appendix H: Vasse Diversion Drain Upgrade Fauna Management Plan (Bamford Consulting Ecologists 2020).
Condition 4	Management and monitoring requirement specified. Appendix H: Vasse Diversion Drain Upgrade Fauna Management Plan (Bamford Consulting Ecologists 2020)
Condition 5 (a), (b)	Management and mitigation strategies for the Carburnup King Spider Orchid detailed in Section 4.1.3
Condition 7 (a), (b)	This document. Management and mitigation strategies for the Carburnup King Spider Orchid detailed in Section 4.1.3 Dieback and weed management in Section 4.2.2. Dieback Survey and Risk Assessment (Great Southern BioLogic 2020), Appendix J.
Condition 17	Management and mitigation provided in Section 4.2.12 Vasse Diversion Drain Upgrade Revegetation Management Plan (Tranen Southwest Revegetation 2020) Appendix I.



Document Map

The following table indicates where the required content (as specified in the DoEE document 'Environmental Management Plan Guidelines') can be found in this document.

DoEE Required content	Location in this document	Comment
Cover page and declaration of accuracy	This section	
Document version control	Page 2	Current Version - Revision 1
Table of contents	Page 6	
Executive summary or introduction	Section 9	Introduction
Conditions of approval reference table	This section	
Project description	Section 2	Project Overview
Objectives	Section 4.	Environmental Objectives and targets have been specified for each environmental issue within this section.
Environmental management roles and responsibilities	Section 4	Section 5 includes individual responsibilities for specific environmental management actions. Section 4.4 provides requirements for identifying key roles.
Reporting	Section 4	Refer to the monitoring and reporting tables within this section.
Environmental training	Section 3.4	System Requirements: People Management
Emergency contacts and procedures	Section 3.9	System Requirements: Incident Management Reporting and Investigation Section 3.9.1
Potential environmental impacts and risks <ul style="list-style-type: none"> • Threats to matters protected matters under the EPBC Act • Potential impacts • Risk assessment 	Section 3.1	Construction Environmental Risk Assessment (CERA)
Environmental management measures	Section 4	This section includes objectives, targets, and management measures for each environmental issue.
Environmental monitoring	Section 4	A 'Monitoring and Reporting' table has been developed for each environmental issue within this section.
Corrective actions	Section 4	This section includes objectives, targets, and management measures and change management strategies.
Environmental auditing	Section 3, 4	Section 1.3, CERA, Section 3.10,



DoEE Required content	Location in this document	Comment
Environmental management plan review	Section 1.3, 4	All management plans have been written in the context of Adaptive Management. IndoPacific 2020b, Adaptive Management Plan.

Signature / Declaration

I/We declare that:

- I am authorised to on behalf of Water Corporation to submit this management plan and
- the information within this management plan is factual and accurate and not mislaeading

In making this declaration, I am aware that:

Only include if submitting under the EPBC Act

- section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Only include if submitting under the EP Act

- it is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give or cause to be given information that to his knowledge is false or misleading in a material particular; and

Date: 09/09/2020

Name: Bree Atkinson

Position: TL – Environmental Approvals

Company: Water Corporation



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1 Introduction

1.1 Purpose

This document provides a framework to manage environmental risks associated with the CD00116 Vasse Diversion Drain Upgrade project (detailed in **Section 2**), located in the town of Busselton, Western Australia.

The framework has been developed with consideration of environmental impact assessments and regulatory conditions associated with the project, in order to:

- Identify key environmental risks associated with the project works,
- Set the overall environmental objectives and performance indicators for the project, and
- Provide the minimum environmental requirements to be implemented by the contractors.

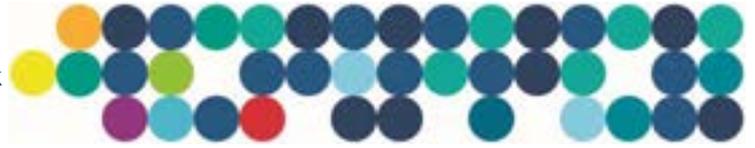
Additionally, the Construction Environmental Management Plan (CEMP) must be prepared to satisfy the following compliance obligations:

- Government of Western Australia, Clearing Permit granted under Section 51E of the *Environmental Protection Act 1986* Purpose Permit number 8191/1 (June 2020 to June 2035)
- Any additional conditions stipulated under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) approval 2017/7932.

1.2 Scope

This document applies to all contractors conducting activities associated with the CD00116 Vasse Diversion Drain Upgrade including, but not limited to:

- Clearing and vegetation reinstatement before, during and after the project.
- Refurbishment of levees including repair of concrete walls along the lower sections of the Vasse Diversion Drain along Queen Elizabeth Avenue.
- Deconstruction, widening and reconstruction of the levees.
- Construction of the Vasse diversion dam.
- Installation or replacement of culverts.
- Dredging/scouring of the Vasse diversion drain channel.
- Construction and deconstruction of temporary coffer dams.
- Two temporary surface water diversions:
 - Vasse River to the Lower Vasse River around the diversion dam and culvert works, and
 - Vasse Sub-drain A to the Vasse Diversion Drain around the drain refurbishment works along Queen Elizabeth Avenue.
- Replacement or refurbishment/extension of bridges.
- Working in and around the borrow site, and commute from the borrow source to the construction site.
- Access and egress from water sources and movement of water carts to the construction site.



Specifically, the CEMP must address and include the following items:

- The project duration, estimated start and completion dates.
- Contact details of essential site personnel, construction period and operating hours.
- Public safety and amenity.
- Traffic, access and parking management for contractors and the public.
- Details of machinery and equipment required (work method statement).
- Complaints and environmental incident management plan.
- Use and location of onsite emergency spill kits.
- A detailed site map showing the locations of:
 - a) Signage, including the contact details of essential site personnel.
 - b) Any perimeter fencing.
 - c) Any laydown areas and vehicle entry/exit points; and
 - d) Any proposed redirection of pedestrian traffic.

Aboriginal and Cultural heritage is outside the scope of this Framework. The Principal will seek advice should be sought from Water Corporation Aboriginal Affairs Team.

1.3 Change Management

This CEMF and the materials and methodologies therein are correct as at the time of publishing. The following changes to materials and methods will not invalidate this plan:

- Changes to the materials that do not result in additional or different environmental impacts.
- Minor changes to method that do not result in lessened environmental monitoring and/or additional or different environmental impacts.

Changes to the materials or method that may result in reduced monitoring and/or cause a significant environmental impact will be referred to the relevant advisory agencies prior to implementation of the change.



2 Project Overview

2.1 Development Footprint

The drain (**Figure 1**) is located in the City of Busselton, 220 km from Perth on the shores of Geographe Bay. The drain extends 6.3 km from the ocean at Geographe Bay in the north, to the connection with the Vasse River, near the Busselton Golf Course in the south.

The development will cover a 5.3 km long section, extending from Bussell Highway, (running parallel to Queen Elizabeth Avenue) in the City of Busselton, to just south of the Chapman Hill Road bridge crossing. The majority of the project is located within degraded to completely degraded landscape. Areas requiring clearing of native vegetation are described in detail below. Average widening is between 5 m – 11 m in these sections.

2.2 Project Description

‘The Project’ extends approximately 5.3 km, from Queen Elizabeth Avenue, Busselton to south of the Chapman Hill Road Bridge. The proposal comprises the hydraulic and structural improvement of the drain to meet the 1-in-100 AEP. This will involve:

- CH800 to CH1300: Refurbishment of the levee banks. Installation of temporary coffer dams and surface water flow diversion to allow for scouring of the channel. Reconstruction of the earthfill levees, raising of the concrete levee walls and shotcreting of the masonry levee walls. Repair of the pedestrian bridge footings at approximately CH840.
- CH1300 to CH6000 the levees will be deconstructed to ground level and reconstructed between 5 m – 11 m wider. This will include reconstruction of drainage culverts through the levees and foundation, and construction of a gauging station at CH5330.
- CH6000 – CH6200 will include deconstruction of the existing diversion dam, and reconstruction of the dam complete with outlet culverts and spillway for discharge of flows into the Lower Vasse River. These works may involve some dewatering and temporary surface water diversion. A dewatering licence will be obtained by the Principal.

Total clearing to be undertaken for the project will be **2.16 ha**.

2.2.1 Water Sources

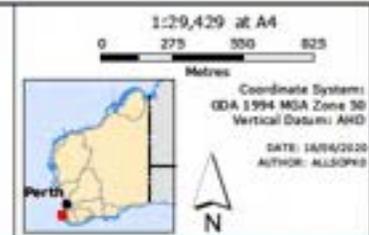
A number of water sources are available in the vicinity of the project site for use during construction, including:

- Busselton Water Standpipe.
- Vasse Diversion Drain.
- Treated dewatering effluent.
- Treated water from Busselton waste water treatment plant.

The contractor must ensure water of a suitable quality for use as dust suppression and for compaction is available. Average daily water use is estimated around 600kL, up to 1000 kL per day. Determining the source and necessary infrastructure for the project water supply is the responsibility of the contractor.



LEGEND
 Project Footprint



WATER
 CORPORATION
 CD00116
 Vasse Diversion Drain
 Project Location
 CEMF

Figure 1



2.2.2 Clay Borrow Source

2.2.2.1 Piggott Road Borrow Pit

The Piggott Road pit is an existing borrow pit occurring within Reserve No. 24564, on the edge of the Whicher Scarp. The Reserve is located approximately 16 km south-east of Busselton within the Shire of Busselton's policy Area Number 3. Subject to compliance with this specification, the site will be made available to the Contractor for the purposes of extracting material for use in Zone 1A areas.

2.2.2.2 Alternative Commercial Sources

A number of alternative commercial sources of Zone 1 clay are outlined in the Specification Appendices. The Contractor shall document in the CEMP any specific controls associated with the extraction, transportation of materials, and rehabilitation of the borrow pit.

2.3 Approved Clearing Areas

The approved clearing areas are provided in **Figures 2a** to **Figure 2e**.

2.4 Indicative Construction Method

The indicative construction methodology proposes two to three construction fronts expediting project delivery, alleviating flood risk and minimising the period of inconvenience to local residents. An indicative schedule of works is as follows:

- Mobilisation in October 2020, completion of earthworks in April/May 2021.
- October and November 2020
 - Clearing and topsoil stripping
 - Construction of coffer dams
- Section 1 CH1260 (Queen Elizabeth Avenue) to CH3300 (Busselton Bypass), November 2020 through to January 2021
 - Progressively excavate and construct levees in this section starting from the Queen Elizabeth Avenue bridge
- Section 2 CH3300 to CH5600 (Chapman Hill Road), December 2020 through to February 2020
 - Progressively excavate and reconstruct levees in this area starting from Busselton Bypass.
- Section 3 CH5600 to CH6200
 - Progressively excavate and reconstruct levees in this section: November 2020 to December 2020
 - Vasse River Overflow Structure: December 2020 to March 2021
 - Vasse River Diversion Dam: December 2020 to April 2021
- Concrete lined section CH850 to CH1250, November 2020 to March 2021
- Finishing works
 - Scour protection in channel and banks: December 2020 to April 2021



- Fencing: May 2021

3 System Requirements

Water Corporation has an Environment Management System (EMS) that is externally certified to AS/NZS ISO 14001. This system has been developed to manage potential environmental impacts associated with the Water Corporation's activities.

Everyone that works for or on behalf of the Water Corporation must meet or exceed our Standards and Procedures. The following sections describe the minimum environmental requirements that must be met by contractors conducting work on this project.

3.1 Environment Policy

Water Corporation's EMS is guided by Water Corporation's Environmental Policy (**Appendix A**). This policy outlines Water Corporation's commitment to continually improving environmental performance, complying with environmental compliance obligations, preventing pollution, and minimising environmental harm.

3.1.1 Requirements

The Contractor must:

- Have an environmental policy that aligns with the Water Corporation's Environmental Policy. Both policies must be displayed at the project site for the duration of the project.
- Document the key roles and responsibilities associated with environmental management of this project.
- Develop project specific environmental objectives and performance indicators. At a minimum these must include any objectives and performance indicators identified in **Section 4**.

3.2 Risk Management

The Corporation has undertaken an environmental risk assessment for the project and identified the key environmental factors. The environmental objectives, performance indicators, and minimum requirements for key environmental factors have been documented in **Section 4**.

This CEMF, and all other environmental management plans associated with this project will be provided to the DWER and AWE for review and approval and will be published on the website within 20 business days of the approval of Action in accordance with **Condition 12** of EPBC 2017/7932. All sensitive environmental data will be redacted (as per EPBC 2017/7932 to protect locations of specially protected species), and the plans will remain published on the website until the end of the permit.

A risk assessment of potential environmental impacts during construction has been provided in **Table 3**.



3.2.1 Project Environmental Risk Assessment

Table 1: Risk Rating Matrix adapted DER (2017) Guidance Statement: Risk Assessments

Consequences	Level of Risk				
5 – Severe	High (18)	High (20)	Extreme (22)	Extreme (24)	Extreme (26)
4 - Major	Medium (12)	Medium (14)	High (19)	High (21)	Extreme (23)
3 - Moderate	Medium (7)	Medium (11)	Medium (13)	High (16)	High (17)
2 - Minor	Low (3)	Medium (5)	Medium (6)	Medium (10)	High (15)
1 – Slight	Low (1)	Low (2)	Low (4)	Medium (8)	Medium (9)
	E - Rare	D - Unlikely	C - Possible	B - Likely	A - Almost Certain
	Likelihood				

Table 2: Risk Rating Matrix adapted DER (2017) Guidance Statement: Risk Assessments

Consequences	Environment	Likelihood	
Severe	<ul style="list-style-type: none"> On-site impacts: Catastrophic Off-site impacts local scale: high level to above Off-site impacts wider scale: mid level or above Mid to long term or permanent impact to an area of high conservation value or special significance Specific Consequence Criteria (for environment) are significantly exceeded. 	Almost Certain	The risk event is expected to occur in most circumstances
Major	<ul style="list-style-type: none"> on-site impacts: high level off-site impacts local scale: mid level off-site impacts wider scale: low level Short term impact to an area of high conservation value or special significance Specific Consequence Criteria (for environment) are exceeded 	Likely	The risk event will probably occur in most circumstances
Moderate	<ul style="list-style-type: none"> on-site impacts: mid level off-site impacts local scale: lowlevel off-site impacts wider scale: minimal Specific Consequence Criteria (for environment) are at risk of not being met 	Possible	The risk event could occur at some time
Minor	<ul style="list-style-type: none"> on-site impacts: low level off-site impacts local scale: minimal off-site impacts wider scale: not detectable Specific Consequence Criteria (for environment) likely to be met 	Unlikely	The risk event will probably not occur in most circumstances.
Low	<ul style="list-style-type: none"> on-site impact: minimal Specific Consequence Criteria (for environment) met 	Rare	The risk event may only occur in exceptional circumstances



Table 3: Construction environmental risk assessment for the Vasse Diversion Drain Upgrade CPS8191/1, EPBC 2017/7932

Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
All project activities/ phases	Non-compliance with Permits and Licences	<ul style="list-style-type: none"> Soil Surface and groundwater Air Flora and Vegetation Fauna 	<ul style="list-style-type: none"> Reputational and financial impacts Non-compliance against DWER Clearing Permit CPS 8191/1 Non-compliance with Approval conditions from referral EPBC 2017/7932 Non-compliance with DWER Approved Acid Sulfate Soils and Dewatering Management Plan CD00116 – Vasse Diversion Drain EEC19269.001-3 (RPS 202c) Non-compliance with DPIRD Translocation Approval for Research Purposes: Carter's Freshwater Mussels 77/19.005 Permits under the Biodiversity Conservation Act 2016 [WA] Dewatering Licence 	Major	Possible	H	<ul style="list-style-type: none"> The Contractor will prepare a Construction Environmental Management Plan (CEMP) in accordance with Section 3.6. The Contractor will engage appropriately qualified and experienced personnel as per Section 3.3.4 & Section 4.4.4.3. All Legislative requirements for the project will be logged in the Regulatory Conditions Management System (RCMS), which forms part of Water Corporation's Environmental Management System. A project <i>Audit Framework</i> will be prepared by Water Corporation with a minimum of four (4) environmental audits to be conducted by the Principal during construction from November 2020 to June 2021. All works will be conducted in accordance with the DWER approved Acid Sulfate Soil and Dewatering Management Plan (ASSDMP). The Contractor will engage a suitably experienced and qualified consultant to implement the ASSDMP as per Section 4.1.4. Subject Matter Experts have been engaged to manage key environmental matters: <ul style="list-style-type: none"> Fauna & Western Ringtail Possums – Bamford Consulting Ecologists. Carter's Freshwater Mussels and Water Quality monitoring – IndoPacific Environmental. <i>C. procera</i> – Prof Kingsley Dixon. Offset implementation and management – Tranen Revegetation Southwest. 	Major	Unlikely	M
All project activities/ phases	Inclement weather; flood events	<ul style="list-style-type: none"> Soil Surface and groundwater 	<ul style="list-style-type: none"> Plume in the Lower Vasse River and Geographe Bay. Soil erosion due to altered drainage conditions during construction. Increased pumping and dewatering due to [temporary] surface water and water-table increase. Uncontrolled discharges or overland flow offsite 	Severe	Rare	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The contractor is required to prepare a <i>Flood Management Plan</i> for contingency. Management will include but not be limited to: <ul style="list-style-type: none"> Monitor Bureau of Meteorology weather forecast for Busselton Aero #009603 http://www.bom.gov.au/climate/averages/tables/cw_009603.shtml Remove Cofferdams as soon as possible and if safe to do so. Raise sections of the levee above predicted flood levels, where practicable and safe to do so Use pumps for minor flooding 	Major	Rare	M



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
All project activities/ phases	Inclement weather: severe weather events including High to Catastrophic Fire Weather	<ul style="list-style-type: none"> Vegetation Surface and Groundwater 	<ul style="list-style-type: none"> Plume in the Lower Vasse River and Geographe Bay. Soil erosion due to altered drainage conditions during construction. Increased pumping and dewatering due to [temporary] surface water and water-table increase. Uncontrolled discharges or overland flow offsite Increased risk of ignition sources – vehicle movements, equipment, lightning strikes 	Severe	Rare	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of inclement weather will be undertaken with specific reference to Section 4.2.9 Management will include but not be limited to: <ul style="list-style-type: none"> Relevant information relating to construction activities shall be provided on a regular periodic basis to the appropriate Health and Safety Authorities (DBCA, City of Busselton, DFES). Contractor to maintain a suitable method of monitoring weather conditions and their impacts on planned activities. Daily weather observations and climate conditions for the nearest station is Busselton Aero #009603 http://www.bom.gov.au/climate/averages/tables/cw_009603.shtml The designated officer shall record, on a twice daily basis (for the following day and the following week), at minimum: <ul style="list-style-type: none"> Maximum temperature Relative humidity, and Morning and afternoon wind speeds Dust management will be undertaken in accordance with Section 4.2.7 Water Quality Monitoring will be undertaken in accordance with Section 4.2.6 Land degradation management will be undertaken in accordance with Section 4.2.3. 	Major	Rare	M
Borrow source	Increased vehicle movements and excavation in and around the extraction site.	<ul style="list-style-type: none"> Air Fauna Vegetation and Flora 	<ul style="list-style-type: none"> Increased Vehicle movements resulting in more frequent fauna collision Increased vehicle movements and excavation resulting in dust and noise generation Fauna Injury or death through poorly maintained/reinstated site. Land degradation and soil disturbance through erosion. Impact's on surface water quality from sedimentation (through erosion). Impact on surrounding vegetation and residents from dust (exposed areas). 	Minor	Possible	M	<ul style="list-style-type: none"> The Contractor will comply with Section 2.2.2 The Contractor is responsible for compliance, monitoring, management and reinstatement of the borrow source. 	Minor	Unlikely	L



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
Fauna	Mussel Translocation	<ul style="list-style-type: none"> Fauna 	<ul style="list-style-type: none"> Disturbance/excavation of the bed and bank resulting in fauna mortality. Increased turbidity resulting in fauna mortality Increased stress from physical removal, handling and transfer resulting in fauna mortality Transmission of disease, infection or parasites resulting in fauna mortality. 	Mod	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of fauna impacts will be undertaken with specific reference to Section 4.1.2. IndoPacific Environment have been engaged to undertake the management of mussels prior to, and during construction. The SME will be responsible for the implementation of the Vasse Diversion Drain Upgrade Westralunio carteri Management Plan (IndoPacific 2020a). The management plan seeks to: <ul style="list-style-type: none"> Minimise disturbance of known habitat with the project area Minimise disturbance of known habitat and <i>W. carteri</i> located upstream and downstream of the project area Minimise mortality of individuals located in the project footprint Minimise risk of disease or infection transmission resulting from relocation. Prominent individuals will be relocated to an approved site in the Vasse River, upstream of the construction site prior to construction commencing. Appropriate permits and approvals from DBCA and DPIRD have been obtained. 	Mod	Possible	M
Fauna	Fauna Dispersion Earthworks and open excavations	<ul style="list-style-type: none"> Fauna 	<ul style="list-style-type: none"> Impact or distress to fauna Loss of fauna Fauna distress, injury or death from becoming trapped and/or exposed. 	Mod	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of fauna impacts will be undertaken with specific reference to Section 4.1.2. The Principal will install reflective signage, warning about increased fauna activity in the area will be installed prior to and during construction on local roads immediately adjacent to the drain in Busselton. A Fauna Management Plan (Bamford Consulting Ecologists 2020) has been prepared and will be implemented by Bamford Consulting Ecologists prior to and during construction. Installation of additional Fauna Shelters and Rope Bridges will occur prior to construction to provide shelter and habitat for fauna (especially Western Ringtail Possums) to disperse. Appropriate permits and approvals have been obtained from DBCA. <p>Management will include, but not be limited to:</p> <ul style="list-style-type: none"> No clearing will be undertaken until as few animals as practicable remain in the clearing area or within open excavations. A suitably qualified and permitted fauna handler is to be present or within specified response time to manage fauna onsite during construction. Inspections of the site will be undertaken daily prior to construction commencement. 	Mod	Unlikely	M



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
Mobilisation to site	Personnel unaware of project requirements, potential hazards, controls and environmental requirements	<ul style="list-style-type: none"> Air Surface and Groundwater Flora and fauna Soil 	<ul style="list-style-type: none"> Damage to the environment Unauthorised clearing Impact or distress to fauna Unauthorised/unmanaged discharges to the environment 	Major	Possible	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management will include but not be limited to: <ul style="list-style-type: none"> Core project team to attend Water Corporation project induction prior to mobilisation. Refer to Section 3.4, 3.5, 3.6 and 3.7 Laydown areas clearing indicated on plans. Installation of fencing and signage are required in the Project Specifications and contractual agreement. 	Minor	Rare	L
Mobilisation to site	Unauthorised entry/ theft/vandalism	<ul style="list-style-type: none"> Flora Vegetation Fauna Soil 	<ul style="list-style-type: none"> Contamination of soil through unauthorised or illegal activities Loss of vegetation or flora through unauthorised access to the site Injury or negative impacts on fauna through unauthorised activities or access on the site. 	Minor	Possible	M	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of unauthorised access will be undertaken with specific reference to Sections 4.1.1, 4.2.10 & 4.2.11 and management Section 3.4, 3.5 & 3.7. Management will include but not be limited to: <ul style="list-style-type: none"> Restrict all activities to the development footprint. Demarcation of a physical clearing barrier (flagging is not deemed sufficient). Designated <i>Environmentally Sensitive Areas</i> will be fully fenced on the public and construction fronts. Construction site 'No Access' fencing and signage will be placed around the site in high traffic areas; primarily between CH800-CH3300. 	Minor	Unlikely	L
Mobilisation Stripping and Clearing Mobile plant operations and vehicle movements	Removal of vegetation outside the approved clearing area	<ul style="list-style-type: none"> Soil Vegetation and Flora Fauna 	<ul style="list-style-type: none"> Loss of flora and fauna habitat Loss of Flora and Vegetation Loss of Threatened or Priority Listed flora Non-compliance with Regulatory permits. Removal of topsoil and exposure of soil to erosion. 	Major	Possible	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.8 which includes a detailed site plan. Management of vegetation removal will be undertaken with specific reference to Sections 4.1.1, 4.1.2 & 4.1.3 Management will include but not be limited to: <ul style="list-style-type: none"> All site personnel to complete the project site induction including environmental awareness sections. A <i>Fauna Management Plan</i> (Bamford Consulting Ecologists 2020) has been prepared and will be implemented by Bamford Consulting Ecologists prior to and during construction. Cleared vegetation will be removed from site or mulched and stockpiled daily. Hard fencing will be installed around the environmentally sensitive area as defined by Orchid SME Clearing boundaries will be clearly demarcated on plans and on the ground by the contractor. This will be inspected and approved by the WC Environmental Advisor and inspected daily for integrity. 	Minor	Unlikely	M



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
Construction Lay-down Mobile plant, vehicles and equipment	Contamination in and around construction activities - due to discharge from wash-down, silt run-off run off from construction sites, refuelling or poorly maintained plant and equipment	<ul style="list-style-type: none"> Soil Surface and Groundwater 	<ul style="list-style-type: none"> Soil contamination from incorrectly stored and banded pads for plant/equipment parking. Soil contamination through spills, leaks or uncontrolled discharges. Groundwater or surface water contamination through spills, leaks or uncontrolled discharges. 	Mod	Possible	M	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.8 which includes a detailed site plan. Management of potential contamination will be undertaken with specific reference to Sections 4.1.1, 4.1.3, 4.1.4 & 4.2.4. Management includes but is not limited to: <ul style="list-style-type: none"> Soil hygiene, Land Degradation and Chemical storage will be undertaken in compliance with Sections 4.2.2, 4.2.3 & 4.2.5 A <i>Water Quality Management Plan</i> (IndoPacific 2020b) has been prepared for the project with trigger values and an Adaptive Management Plan. Monitoring will be conducted in accordance with the plan and Section 4.2.6. 	Mod	Rare	L
Construction Lay-down Mobile plant operations Stockpiles	Land degradation/erosion due to discharge to wash-down, silt runoff and runoff from laydown areas or construction sites.	<ul style="list-style-type: none"> Soil Surface and Groundwater 	<ul style="list-style-type: none"> Soil erosion through poorly managed site drainage design. Surface water sedimentation through uncontrolled or poorly designed site drainage. Loss of productive topsoil due to poor management/compaction 	Mod	Possible	M	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.8 which includes a detailed site plan. The Principal has advised the contractor of the approved construction lay-down and treatment areas. Management of land degradation will be undertaken with specific reference to Sections 4.2.3 & 4.2.6 A <i>Water Quality Management Plan</i> (IndoPacific 2020b) has been prepared for the project with trigger values and an Adaptive Management Plan. Monitoring will be conducted in accordance with the plan and Section 4.2.6. 	Minor	Unlikely	M
Earthworks Mobile Plant & Vehicle movements	Dust and sedimentation	<ul style="list-style-type: none"> Air Vegetation Surface water 	<ul style="list-style-type: none"> Smothering of surrounding vegetation. Impacts on aesthetics and amenity. Visible 'plumes' from dust accumulating on surface water (potential aesthetic impact) in the Lower Vasse River and Geographe Bay. Crop impacts in the southern section of the construction site. Impacts to nearby residential properties 	Mod	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of dust will be undertaken with specific reference to Section 4.2.7. The Principal will install fencing with shade cloth around the designated <i>Environmentally Sensitive Area</i> and provide spatial location files to the Contractor. Standard dust suppression will be undertaken using water carts throughout earthworks. Reinstatement and rehabilitation of disturbed areas will be undertaken progressively. 	Minor	Possible	M



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
Mobile Plant Operations Piling Works Compaction Vehicle movements	Noise and Vibration	<ul style="list-style-type: none"> Fauna Vegetation 	<ul style="list-style-type: none"> Frightened and distressed native wildlife. Dislodge/impacts on orchid tubers. 	Mod	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of noise and vibration will be undertaken with particular reference to Sections 4.1.2 & 4.2.8 Custodial collection of orchids will be undertaken by the SME in accordance with Section 4.1.3. A suitably qualified and licenced ecologist will be present or on call during clearing activities. A suitably qualified and licenced ecologist will inspect the site daily prior to commencing works. Trapped or distressed fauna will be managed by a licenced fauna handler. The works will be carried out in accordance with environmental noise practices set out in Section 4 of AS 2436-2010 'Guide to noise and vibration control on construction, maintenance and demolition sites'. All works will be undertaken in compliance with the City of Busselton Noise Regulations, a Regulation 13 Permit will be obtained by the Contractor. 	Minor	Possible	M
Mobile Plant Operations Vehicle movements Hot works: grinding/ welding & cutting	Ignition source	<ul style="list-style-type: none"> Fauna Vegetation 	<ul style="list-style-type: none"> Loss of Vegetation Loss of Fauna and Fauna habitat Contamination of surface waters 	Severe	Rare	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of ignition sources will be undertaken with specific reference to Section 4.2.9 and all relevant Bushfire Legislative requirements. <p>Management will include but not be limited to:</p> <ul style="list-style-type: none"> Relevant information relating to construction activities shall be provided on a regular periodic basis to the appropriate Health and Safety Authorities (DBCA, City of Busselton, DFES). Contractor to maintain a suitable method of monitoring weather conditions and their impacts on planned activities. Daily weather observations and climate conditions for the nearest station is Busselton Aero #009603 http://www.bom.gov.au/climate/averages/tables/cw_009603.shtml The designated officer shall record, on a twice daily basis (for the following day and the following week), at minimum: <ul style="list-style-type: none"> Maximum temperature Relative humidity, and Morning and afternoon wind speeds 	Mod	Rare	M
Coffer Dam construction & removal Silt curtain installation	Plumes from disturbance of bank/channel sediment	<ul style="list-style-type: none"> Surface water Fauna 	<ul style="list-style-type: none"> Increased turbidity in the Lower Vasse River. Sediment plume discharged to Geographe Bay. Smothering of Carter's Freshwater Mussel. 	Mod	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of the installation and removal of coffer dams and silt curtains will be undertaken with specific reference to Sections 4.1.2, 4.2.3 and 4.2.6. 	Mod	Unlikely	M



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
Bypass pipes and pumps	Impact on water quality through pump rates/volumes and sediment mobilisation/disturbance	<ul style="list-style-type: none"> Surface and Groundwater Fauna 	<ul style="list-style-type: none"> Increased turbidity in the lower Vasse River. Sediment plume discharged to Geographe Bay. Smothering of Carter's Freshwater Mussel. 	Mod	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. <p>The Corporation engaged IndoPacific to prepare a dedicated <i>Mussel Translocation Management Plan</i> (IndoPacific 2020a) and a <i>Water Quality Management Plan</i> (Indopacific 2020b). Ongoing monitoring of water quality in the drain and in sensitive receptors has been detailed, with trigger values.</p> <ul style="list-style-type: none"> An adaptive management plan flow chart has been prepared for site personnel to manage water quality during construction. Refer to Section 4.1.2 and 4.2.6. 	Mod	Unlikely	M
Site Operations	Inappropriate waste management	<ul style="list-style-type: none"> Surface and Groundwater Soil Vegetation Fauna 	<ul style="list-style-type: none"> Soil and water contamination from rubbish. Negative visual impact from an untidy site of the presence of rubbish. Scavenging fauna becoming sick, injured or trapped on site. Bushfire ignition source 	Minor	Possible	M	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Refer to Section 4.2.4 The Contractor must comply with Section 3.9 of the CEMF which includes a detailed site plan. A <i>Fauna Management Plan</i> (Bamford Consulting Ecologists 2020) has been prepared and will be implemented by Bamford Consulting Ecologists prior to and during construction. 	Slight	Rare	L
Site Operations	Dangerous Goods and Hazardous substances storage and disposal	<ul style="list-style-type: none"> Surface and Groundwater Soil 	<ul style="list-style-type: none"> Contamination of soil and water through spillage, incorrect storage and bunding or inappropriate disposal. 	Major	Possible	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of Dangerous Good and Hazardous Substances will be undertaken with particular reference to Section 4.2.5. The Contractor will comply with Section 3.9 of the CEMF which includes a detailed site plan. <p>Management includes but is not limited to:</p> <ul style="list-style-type: none"> Storage of chemical(s) must comply with AS 1940, AS 3780, AS 4332 and AS 1596. A Safety Data Sheet (SDS) will be developed and maintained by the Contractor and a copy stored at main hub/administration building for the project. All refuelling and servicing of plant, vehicles and equipment is to occur on a bunded area or leak proof tray at least 100 m from any waterway or wetland. 	Mod	Rare	M
Concrete pouring	Concrete splash over wide area	<ul style="list-style-type: none"> Soil 	<ul style="list-style-type: none"> Contamination or damage to soil Contamination/discharge into the Lower Vasse River 	Minor	Unlikely	M	<ul style="list-style-type: none"> Management of Dangerous Good and Hazardous Substances will be undertaken with particular reference to Section 4.2.5 The contractor will remediate and remove any soil contaminated by concrete splash. 	Minor	Rare	L



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
Excavation/ Earthworks	Acid sulfate soils disturbed and exposed to oxygen	<ul style="list-style-type: none"> Soil Surface and Groundwater Vegetation 	<ul style="list-style-type: none"> Soil contamination through acidification and/or treatment. Groundwater acidification/contamination. Surface water acidification/contamination. Vegetation death from acidification of soil and water. increased storage, treatment and disposal costs. 	Major	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. All works will be conducted in accordance with the DWER approved Acid Sulfate Soils and Dewatering Management Plan CD00116 – Vasse Diversion Drain EEC19269.001-3 (RPS 2020c). The Contractor will engage a suitably experienced and qualified consultant to implement the ASSDMP as per Section 4.1.4. 	Mod	Unlikely	M
Excavation/ Earthworks	Disturbance of Monosulfidic Black Ooze (MBO)	<ul style="list-style-type: none"> Soil Surface Water 	<ul style="list-style-type: none"> Soil and/or water contamination in the Vasse Diversion Drain Water Contamination in the Geographe Bay 	Major	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. Management of Acid Sulfate Soils will be undertaken with particular reference to Section 4.1.4. Installation of coffer dams downstream of the construction site will prevent uncontrolled flows into Geographe Bay. All MBO management will be undertaken in accordance with the <i>Acid Sulfate Soils and Dewatering Management Plan CD00116 – Vasse Diversion Drain EEC19269.001-3 (RPS 2020c)</i> or as otherwise directed by the Principal. <i>In situ</i> treatment and management of MBO material will be undertaken under the advice and supervision of the SME. Treatment and removal of MBO material if require will be undertaken under the advice and supervision of the SME. 	Mod	Unlikely	M
Dewatering	Uncontrolled flow of treated or untreated dewatering effluent to the environment	<ul style="list-style-type: none"> Soil Surface and Groundwater vegetation 	<ul style="list-style-type: none"> Soil and/or water contamination Soil erosion Runoff into surface waters Localised flooding/ponding Non-compliance with Dewatering Licence 	Major	Likely	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.9 of the CEMF which includes a detailed site plan. Management of dewatering will be undertaken with particular reference to Section 4.1.4. A suitably qualified and experience contractor will be engaged to implement the Dewatering Management Plan. Multiple management and contingency options have been considered for the project. A dedicated dewatering strategy will be prepared by the contractor on award. <p>Management will include but is not limited to:</p> <ul style="list-style-type: none"> Infiltration wells Use as dust suppression: <ul style="list-style-type: none"> Coffer dams/turkey's nest within sections of the drain not impacted by the works Carting to the Lay-down area for storage Piping to the Busselton Golf-course dam Dewatering volumes will not exceed the limits of the licence XX 	Mod	Unlikely	M



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
Excavation/ earthworks	Stockpile management	<ul style="list-style-type: none"> Air quality Fauna Vegetation and flora 	<ul style="list-style-type: none"> Poor stockpile design resulting in wind erosion and nuisance dust generation. Injury or death of fauna attracted to stockpiles for refuge or nesting, particularly Rainbow Bee-eater from November to January. Poorly designed stockpiles resulting in slumping of material and smothering of vegetation. 	Minor	Unlikely	M	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.9 which includes a detailed site plan. Management will include but not be limited to: <ul style="list-style-type: none"> Dust suppression to be undertaken regularly/as required. Stockpiled material will be covered. No debris or cut/ fill material stockpiled in the vicinity of native vegetation 	Minor	Rare	L
Earthworks	Disposal of unsuitable/unusable materials (Cut)	<ul style="list-style-type: none"> Soil Surface and Groundwater 	<ul style="list-style-type: none"> Negative visual impact from an untidy site. Land degradation. Inappropriate or incorrect disposal of materials (incorrectly classed transfer station or waste disposal facility). 	Minor	Unlikely	M	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.9 which includes a detailed site plan. Management of waste disposal will be undertaken with particular reference to Section 4.2.4. Alternative solutions, including repurposing of materials by third parties may be considered, but must be approved by the Principal and comply with WA Waste Regulations. 	Minor	Rare	L
Excavation/ Earthworks	Encountering contaminated material	<ul style="list-style-type: none"> Soil Surface and Groundwater 	<ul style="list-style-type: none"> Soil contamination. Water contamination. Increased storage, treatment and disposal costs. 	Mod	Possible	H	<ul style="list-style-type: none"> An extensive Waste Characterisation CD00116 Vasse Diversion Drain – Levee Soils and Sediments (RPS 2020c) Assessment was undertaken. It is unlikely there is any gross contamination at the site, however due to the heterogeneous nature of the sediments it is expected some minor waste or contaminated material may be encountered. This can be managed through standard waste management practices. Waste Transfer stations are located in Busselton, Dunsborough and Bunbury depending on the waste Class. <ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.9 which includes a detailed site plan. Management and disposal of waste or contaminated materials will be undertaken with specific reference to Sections 4.1.4 & 4.2.4 Management actions include but are not limited to: <ul style="list-style-type: none"> Identification of waste streams on site Identification and appropriate disposal of waste or contaminated materials encountered on site. A qualified environmental scientist will be present on site to supervise sampling and disposal if required. 	Mod	Unlikely	M



Activity /Phase	Hazard	Receptors	Impact	Inherit Risk			Management	Residual Risk		
				Conseq	Likelihood	Rating		Conseq	Likelihood	Rating
Earthworks Excavations	Encountering asbestos containing material (ACM)	<ul style="list-style-type: none"> Soil 	<ul style="list-style-type: none"> Asbestos contamination encountered during construction resulting in mobilisation of friable or otherwise asbestos containing materials 	Mod	Possible	H	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.9 which includes a detailed site plan. Management of ACM will be undertaken with specific reference to Section 4.2.4 An asbestos inspection was undertaken (GHD 2016), however given the age and historic disturbance, there is likelihood of encountering ACM during excavations. An asbestos management plan will developed and maintained by the contractor. Obtain a copy of the clearance certificate after asbestos removal 	Mod	Unlikely	M
Earthworks Excavation	Dieback and weed management	<ul style="list-style-type: none"> Soil Vegetation and Flora 	<ul style="list-style-type: none"> Spread of dieback and soil pathogens through soil and water. Introduction of soil and plant pathogens. Spread of declared and /or controlled weeds impacting remnant native vegetation. 	Minor	Possible	M	<ul style="list-style-type: none"> A dieback survey was undertaken for the project site, including a risk assessment (Great Southern Bio Logic, 2020). This determined that the risk of spread and impact was <i>low and insignificant</i>. The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.9 which includes a detailed site plan. Dieback and weed management will be undertaken with specific reference to Sections 4.2.1 & 4.2.2. <p>Management will include but not be limited to:</p> <ul style="list-style-type: none"> All plant and equipment will be inspected prior to site entry to ensure it is free from soil and plant debris. Contractor will provide training to all personnel during an initial safety and environment induction course, which will include dieback hygiene protocols to ensure all personnel and sub-contractors are aware of the project requirements with respect to minimising the spread or introduction of dieback via movement of soil, vegetation and plant material 	Minor	Rare	L
Demobilisation	Inadequate reinstatement	<ul style="list-style-type: none"> Soil Surface Water Dust Vegetation Fauna 	<ul style="list-style-type: none"> Fauna Injury or death through poorly maintained/reinstated site. Land degradation and soil disturbance through erosion. Impact's on surface water quality from sedimentation (through erosion). Impact on surrounding vegetation and residents from dust (exposed areas). 	Minor	Possible	M	<ul style="list-style-type: none"> The Contractor will prepare a CEMP in accordance with Section 3.6. The Contractor will comply with Section 3.9 which includes a detailed site plan. Revegetation and reinstatement will be undertaken with specific reference to Sections 4.2.1 & 4.2.12. <p>Management will include but not be limited to:</p> <ul style="list-style-type: none"> Removal all amenities, materials and equipment The Contractor shall undertake weed suppression and stabilisation of the levees progressively, as construction completes. This will be complimentary to any management measures included by the Contractor in Section 4.2.1 and Section 4.2.3. 	Minor	Rare	L



3.2.2 Requirements

The Contractor must:

- Develop and maintain a process to ensure environmental risks are managed throughout the project.
- Establish and maintain a risk register for all stages of the project.
- Develop a CEMP detailing the how the environmental risks associated with the project will be managed. The CEMP must:
 - include, at a minimum, the controls, monitoring requirements and reporting requirements listed for the key environmental factors.
 - document any additional controls required to ensure the environmental objectives and performance criteria for the project are met.
 - adaptive management strategies and controls, as well as examples of or processes for controls.
 - identify any credible emergency events and document within the CEMP the contingency actions and reporting requirements to be implemented for these events.

3.3 Register of Legal and Other Requirements

3.3.1 *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*

The project was referred under the *EPBC Act* (Cth). The project is a ‘Controlled Action,’ all activities must be undertaken in compliance with conditions set in the EPBC 2017/7932 Approval Conditions.

3.3.2 *Part V, Environmental Protection Act 1986 (WA)*

The Corporation has been granted a Purpose Permit under Part V of the *EP Act* (WA) for project activities. All activities must be undertaken in compliance with conditions set in the DWER Purpose Permit CPS 8191/1.

3.3.3 Other Legislation

The project is not considered to trigger referral to the Environmental Protection Authority under Section 38, *EP Act* (WA). The project is not considered likely to generate significant risk of causing environmental harm.

The Corporation has been advised by the Department of Water and Environmental Regulation that works being undertaken for this project do not require a Bed and Banks Permit.

All project activities must be undertaken in a manner that complies with the requirements of the following relevant legislation and approvals:



Legal or Other Requirements

Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)

Environment Protection and Biodiversity Conservation Regulations 2000 (Cth)

Matters of National Environmental Significance – Significant Impact Guidelines 2013 (Cth)

Waterways Conservation Act 1976 (WA)

Waste Avoidance and Resource Recovery Act 2007 (WA)

Waste Avoidance and Resource Recovery Regulations 2008 (WA)

Soil and Land Conservation Act 1945 (WA)

Soil and Land Conservation Regulations 1992 (WA)

Environmental Protection Act 1986 (WA) (EP Act 1986)

Environmental Protection Regulations 1987 (WA)

Environmental Protection (Environmentally Sensitive Areas) Notice 2005 (WA)

Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA)

Environmental Protection (Noise) Regulations 1997 (WA)

Environmental Protection (Unauthorised Discharges) Regulation 2004 (WA)

Conservation and Land Management Act 1984 (WA)

Conservation and Land Management Regulations 1992 (WA)

Contaminated Sites Act 2003 (WA)

Biodiversity Conservation Act 2016 (WA)

Biodiversity Conservation Regulations 2018 (WA)

Biosecurity and Agriculture Management Act 2007 (WA)

Bush Fires Act 1954 (WA)

Western Australian Government Gazette, City of Busselton Dust and Building Waste Control Local Law 2010 No. 795 24 February 2010

Western Australian Government Gazette, City of Busselton Waste Local Law 2016, No. 1, 3 January 2017

Western Australian Government Gazette, City of Busselton Waste Amendment Local Law 2018, No. 79, 13 April 2018

Western Australian Government Gazette, City of Busselton Parking Local Law 2011, No. 228, 30 November 2011

The following environmental approvals apply to the works:

- DWER Purpose Permit CPS8191/1 (**Appendix B**)
- Environmental Conditions under the Approval EPBC 2017/7932 (**Appendix C**)
- 5C Licence to Take Water. (**Appendix D**).
- City of Busselton Construction Work Regulation 13 Permit (shall be obtained by the Contractor).



- City of Busselton and Main Roads endorsed *Traffic Management Plan: Busselton Vasse Diversion Drain Upgrade (Adjacent to Queen Elizabeth Ave, College Ave and Chapman Hill Road) Vasse, WA* (Edge Transport Solutions, 2020).
- *Acid Sulfate Soil and Dewatering Management Plan: CD00116 – Vasse Diversion Drain EEC19269.001-3* (RPS, 2020c, **Appendix C**).
- *Vasse Diversion Drain Upgrade, Westralunio carteri (Carter’s Freshwater Mussel) Relocation Management Plan* (IndoPacific, 2020a, **Appendix D**).
- *Vasse Diversion Drain Upgrade: Water Quality Monitoring and Management Plan* (IndoPacific, 2020b, **Appendix E**)
- *Fauna management Plan for the Vasse Diversion Drain Upgrade* (Bamford Consulting Ecologists, 2020, **Appendix F**).
- *Vasse Diversion Drain Upgrade: Revegetation Management Plan* (Tranen Revegetation Southwest, 2020, **Appendix G**).

Any changes to the above compliance obligations will be communicated to the Contractor by Water Corporation.

3.3.4 Requirements

The Contractor must:

- Have a designated and appropriately qualified and skilled environmental professional, nominated under the Contract, to implement the CEMP.
- Ensure that compliance obligations from environmental approvals are documented in the CEMP and have appropriate controls identified.
- Identify and document actions required to meet obligations in environmental legislation associated with any key environmental factors.
- Document a process for ensuring that any communicated changes to compliance obligations are assessed and identify any changes to documentation, controls or management practices.
- Document how records demonstrating compliance are retained and made available to Water Corporation.
- Report and investigate any instances of a compliance obligation not being met.

3.4 People Management

3.4.1 Requirements

The Principal will arrange to provide instruction and training to the Contractor’s key personnel on the particular environmental, social and OHS matters. The instruction and training will be conducted at the Site Office in the first two weeks after possession of site has been given. The Contractor shall incorporate this instruction and training into its induction programme and thereafter ensure that all personnel who enter the site – be they direct employed, subcontractors, suppliers, inspectors, superintendents, representatives of the Principal or visitors – are appropriately inducted regarding the Site and its sensitivities.

The Contractor must:



- Identify any roles/activities within the project scope that require specific environmental training and document training requirements.
- Identify a method for ensuring that workers meet training requirements and records of training are retained.
- Develop and implement induction material specific to the scope of works. The material must include:
 - information related to key environmental factors (**Section 4**) and any additional environmental factors identified in the CEMP.
 - specific requirements for activities with potential high environmental risks.
 - incident management.
 - general awareness of environmental other issues associated with the activities
- Ensure all workers complete the site induction. Short-term visitors such as couriers and delivery agents may receive a shortened or no induction, but should be escorted (or have a designated and marked safe drop off area/zone)
- Include the induction material within the CEMP.

3.5 Stakeholders, Communication, and Consultation

3.5.1 Requirements

The Contractor must:

- Document methods for communicating environmental information to workers and other internal stakeholders.
- Document a process that details how external stakeholder(s) raise concerns/queries on project activities, and the method for recording and responding to these queries/concerns.
- Document any regulatory agencies, landowners, and other rights holders who are required to be consulted during the project and state when and how communication with them will occur.

3.6 Systems of Work

The Contractor must ensure that adequate systems of work are in place so that work is executed efficiently and in a manner that prevents impacts to the environment.

3.6.1 Requirements

The Contractor must:

- Develop a CEMP that:
 - complies with AS/NZS ISO 14001:2016 Environmental Management Systems.
 - where applicable, complies with AS/NZS 4801 Safety Management Systems.
 - complies with AS ISO 31000:2018 Risk Management Standards.
 - addresses the controls, monitoring and reporting actions listed for each environmental factor in **Section 4**.



- identifies any additional controls, monitoring and reporting required to meet the environmental objectives and performance criteria specified for the environmental factors in **Section 4**.
- identifies any additional environmental factors not included in this CEMF and the actions, monitoring and reporting required to manage these factors.
- identifies any credible emergency events, and documents them within the CEMP including contingency actions and reporting requirements to be implemented for these events.
- Identify and document any activities within the project scope that may potentially impact the environment, and the manner in which they may impact on the environment.
- Identify work processes and actions that are required to manage these activities.
- Develop a process to ensure that variations to these processes and actions are controlled and adequately assessed and approved. Include key '*hold points*' to reassess risks as a result of changed scope, methodology, conditions or as identified in **Section 1.3**.
- Retain records to demonstrate compliance with System of Works procedures and monitoring requirements.
- Conditions or requirements required in **Section 3.3**.

3.7 Contractors and Suppliers

3.7.1 Requirements

The Contractor must:

- Establish a process to ensure that any subcontractors or suppliers are assessed for their capability prior to undertaking work.

3.8 Land, Facilities, Plant and Equipment

3.8.1 Requirements

The Contractor must:

- Identify any plant and equipment that is critical to meeting HSE requirements, including:
 - plant and equipment that will be used to meet the requirements.
 - plant and equipment that when used may affect meeting HSE requirements.
- Identify any compliance obligations, industry standards, performance criteria, or other parameters that this plant and equipment must meet.
- Document how this plant and equipment will be inspected, monitored, and maintained to ensure performance criteria are being met.
- Develop a site plan and document this within the CEMP. The plan must include, but not be limited to:
 - the approved development area footprint (DAF)
 - the approved clearing area
 - the approved construction laydown area(s)



- plant and vehicle access and egress points
 - hygiene management points
 - site offices and amenities
 - material stockpiles, soil/spoil windrows
 - location of stormwater runoff control measures
 - acid sulfate soil treatment locations
 - bypass pipes
 - infiltration areas
- Document how the DAF will be delineated on the ground and on plans. The Contractor must obtain documented approval from Water Corporation for any work outside this area. Note this is a key 'Hold' point.
 - Document how key environmentally sensitive areas (ESAs) will be delineated on the ground and on plans. Any changes to the approved and agreed method must be approved by Water Corporation. Note this is a key 'Hold' point.
 - Survey and demarcate the extent of the DAF, approved clearing area and environmentally sensitive area(s) prior to commencing construction. Demarcation must consist of a continuous physical barrier (agreed by the Corporation) and must be inspected and approved by the Corporation prior to commencing earthworks.

3.9 Incident Management, Reporting and Investigation

The following credible emergency scenarios have been identified for this project but are not limited to:

- Wildfire ignition.
- Accidental uncontained spills.
- Debris, chemical treatments or other deleterious matter entering the Lower Vasse River.

The Contractor shall develop a relevant Emergency Response Plan for this project.

Emergency Response Plans and Incident Management processes must be compliant with AS/NZS ISO 14001:2016 and AS/NZS AS/NZS 4801 and AS ISO 31000:2018. Environmental incidents and potential incidents include, but are not limited to:

- Actual incident and emergencies
- Near misses
- Identified opportunities for improvement, and
- Other observations as recorded on daily site environmental checklists.

3.9.1 Requirements

The Contractor must:



- Document the process for responding to, investigating and reporting environmental incidents, including potential environmental incidents. This process must include the key roles, equipment and resources required.
- Report all actual or potential environmental incidents to the Principal as detailed in **Table 4**.

Table 4: Incident reporting periods

Incident type/location	Reporting period
All incidents involving wastewater	As soon as possible, not exceeding 30 minutes
All incidents involving unauthorised discharges into the environment including the Vasse River	As soon as possible, not exceeding 30 minutes
All incidents and potential incidents between CH 1420 and CH 3240 (Area of PEC and ESA)	As soon as possible, not exceeding 30 minutes
All other incidents or potential incidents	As soon as practical not exceeding 24 hours

In the performance of Work under the Contract, the Contractor shall:

- comply with all the applicable Environmental Laws and shall adopt methods in the performance of the Work under the Contract that shall reduce to the greatest possible extent practicable, disruption or damage to the environment caused by or during the performance of the Work under the Contract;
- effect and maintain all approvals, licences, permits and other authorisations required under State and Commonwealth Laws, safeguards and standards, to conduct the Works;
- take such measures as may be necessary to prevent contamination, destruction or impairment of the environment

Where the Contractor does not take effective action to minimise damage to the environment, the Superintendent may direct the Contractor to undertake specific measures within such time as may be deemed necessary to ensure compliance with the provisions of the Specification. Where the Contractor fails to take action within the time specified by any direction, the Superintendent may take such actions as may be necessary to minimise damage to the environment. In accordance with the General Conditions of Contract, the Contractor is advised that the cost of any work undertaken by the Principal due to the failure of the Contractor to observe the terms and conditions of the Contract relating to the Protection of the Environment shall be a debt due from the Contractor to the Principal and shall be recovered by the Principal in accordance with the terms and conditions of the Contract.

3.9.2 Completion of the Action

Within 30 days after the completion of the action, the Principal will notify the Department in writing and provide completion data as per **Condition 20** of EPBC 2017/7932.

3.10 Performance Monitoring, Audit and Improvement

3.10.1 Requirements

The Contractor must:



- Document how performance will be monitored against environmental objectives, performance criteria, and requirements.
- Participate in inspections or audits conducted by Water Corporation or regulators. The minimum frequency of inspections and audits are outlined in **Table 5**.
- Document a process that:
 - determines the cause of incidents and non-conformances / non-compliances.
 - identifies and implements corrective actions.
 - identifies actions required to prevent recurrence.
 - records changes in written procedures resulting from the corrective action.

Table 5: Minimum inspection requirements

Auditor	Type	Frequency
Water Corporation (or authorised delegate)	Environmental inspection of clearing boundaries and ESA fencing	Prior to the commencement of any clearing activities, and daily during clearing activities.
	Environmental inspections	Line items to be included in daily inspections checklists.
	Environmental audit	Ad hoc, but no more than quarterly, unless objectives are not being met
Regulator	Audit/inspection	As requested by the Regulatory Authority
External Certification Agency	Audit of Water Corporation's Environmental Management System	As requested by the Water Corporation



4 Environmental Management

This section includes background information, objectives, performance criteria and the minimum requirements for managing these key environmental factors. The contractor must include actions/controls within their CEMP along with any other actions determined necessary to meet the objective.

4.1 Key Environmental Risks

4.1.1 Native Vegetation Clearing Management

A vegetation clearing permit has been obtained for this project. The approved clearing area is provided in **Figure 2a** to **Figure 2e** and the shapefiles accompanying this document.

Native vegetation along the drain is described in **Table 6**.

Table 6: Vegetation description by chainage

Chainage	Vegetation Description
CH 800 – CH 850	<i>Agonis flexuosa</i> woodland over <i>Acacia littorea</i> , <i>Olearia axillaris</i> and <i>Spyridium globulosum</i> tall open shrubland over <i>Lepidosperma gladiatum</i> sedgeland
CH 850 – CH 1300	<i>Agonis flexuosa</i> , <i>Melaleuca cuticularis</i> , <i>M. lanceolata</i> and <i>M. raphiophylla</i> tall open shrubland over <i>Gahnia trifida</i> and <i>Baumea juncea</i> sedgeland
CH 1300 – CH 3400 Southern side	<i>Corymbia calophylla</i> and <i>Agonis flexuosa</i> with occasional <i>Banksia littoralis</i> and <i>Melaleuca raphiophylla</i> mid open forest over <i>Acacia cochlearis</i> , <i>A. saligna</i> , <i>Hibbertia cuneiformis</i> <i>Jacksonia furcellata</i> , <i>Kunzea glabrescens</i> and <i>Spyridium globulosum</i> open shrubland over <i>Adenanthos meisneri</i> , <i>Conospermum caeruleum</i> , <i>Daviesia physodes</i> , <i>Hardenbergia comptoniana</i> , <i>Hibbertia hypericoides</i> , <i>Leucopogon propinquus</i> low shrubland over <i>Lepidosperma squamatum</i> and <i>Tetralix octandra</i> sedgeland and <i>Caesia micrantha</i> , <i>Chamaescilla corymbosa</i> , <i>Conostylis aculeata</i> subsp. <i>gracilis</i> , <i>Opercularia hispidula</i> , <i>Sowerbaea laxiflora</i> , <i>*Sparaxis bulbifera</i> , <i>*Watsonia meriana</i> var. <i>bulbillifera</i> and <i>*Zantedeschia aethiopica</i> mid forbland on dark brown sandy loams. [P1, Priority Ecological Community (PEC)]
CH 1300 – CH 3400 Northern side	<i>Agonis flexuosa</i> low woodland and scattered <i>Acacia saligna</i> or <i>A. cochlearis</i> tall shrubs over <i>*Ehrharta longifolia</i> , <i>*Watsonia meriana</i> and other introduced herbaceous species
CH 5500 – CH 6200	<i>Eucalyptus rudis</i> and <i>Corymbia calophylla</i> mid open forest or woodland over <i>Agonis flexuosa</i> open low woodland over scattered <i>Acacia saligna</i> over <i>*Oxalis pes-caprae</i> , <i>*Watsonia meriana</i> and other introduced herbaceous species.

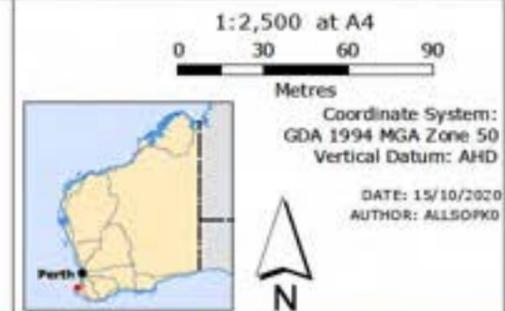
Potential impacts on flora and vegetation from construction to be considered include:

- Direct impact on native vegetation within the approved clearing area (including vegetation clearing, dieback and weeds), with particular consideration for vegetation:
 - on the southern side of the drain from **CH 1420** and **CH 3240** which includes clearing of, and adjacent to a P1 Priority Ecological Community (PEC), and
 - on the southern side of the drain from **CH 1700 – CH 1900**, which includes clearing adjacent to an environmentally sensitive area (discussed further in **Section 4.1.3**).



LEGEND

- Development Footprint
- CPS8191-1-Approved Clearing Area
- Cadastral Boundary



CD00116 Vasse Diversion
Drain Upgrade
Approved Clearing Area

Figure No 2a



LEGEND

-  Development Footprint
-  CPS8191-1-Approved Clearing Area
-  Cadastral Boundary

1:2,500 at A4
 0 30 60 90
 Metres



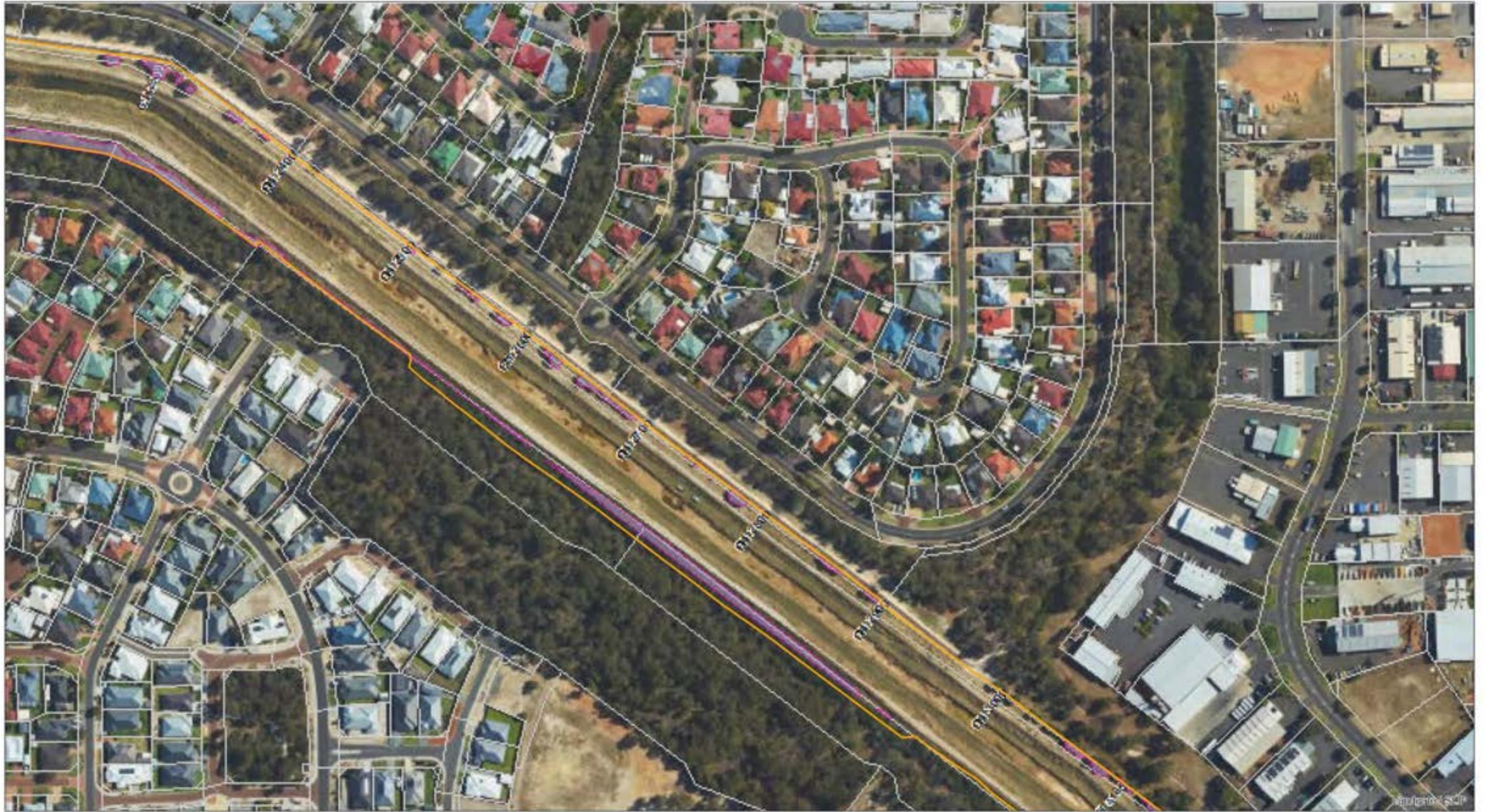
Coordinate System:
 GDA 1994 MGA Zone 50
 Vertical Datum: AHD
 DATE: 15/10/2020
 AUTHOR: ALLSOPKO



**CD00116 Vasse Diversion
 Drain Upgrade
 Approved Clearing Area**

Figure No 2b

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 Data Source: Water Corporation - ESA Fenceline [Water Corporation 2020], Swale Drain Clearing [Water Corporation 2020], C. Provera Present/Absent [Dixon 2020], City of Busselton Swale Drain (East and West) [2019]



LEGEND

-  Development Footprint
-  CPS8191-1-Approved Clearing Area
-  Cadastral Boundary

1:2,500 at A4
 0 30 60 90
 Metres



Coordinate System:
 GDA 1994 MGA Zone 50
 Vertical Datum: AHD
 DATE: 15/10/2020
 AUTHOR: ALLSOPKO



CD00116 Vasse Diversion
 Drain Upgrade
 Approved Clearing Area

Figure No 2c



Amalgator / 45217

LEGEND

-  Development Footprint
-  CPS8191-1-Approved Clearing Area
-  Cadastral Boundary

1:2,500 at A4
 0 30 60 90
 Metres



Coordinate System:
 GDA 1994 MGA Zone 50
 Vertical Datum: AHD
 DATE: 15/10/2020
 AUTHOR: ALLSOPKO



CD00116 Vasse Diversion
 Drain Upgrade
 Approved Clearing Area

Figure No 2d



Lamigaris / 8510

LEGEND

-  Development Footprint
-  CPS8191-1-Approved Clearing Area
-  Cadastral Boundary

1:2,500 at A4
0 30 60 90
Metres



Coordinate System:
GDA 1994 MGA Zone 50
Vertical Datum: AHD
DATE: 15/10/2020
AUTHOR: ALLSOPKO



CD00116 Vasse Diversion
Drain Upgrade
Approved Clearing Area



- Potential direct impacts beyond the approved clearing area (for example from clearing, vehicle/plant movement, watercarts, or equipment laydown).
- Potential indirect impacts beyond the approved clearing area (for example from the effects of dewatering or acid generation following the disturbance of ASS).
- Accidental chemical or hydrocarbon spills.
- Generation of ignition sources.

Objective: Prevent impacts to native vegetation outside the approved clearing area

Performance Indicator

No clearing or damage to vegetation outside the approved project development footprint provided in 'CD00116_VDD_FINALDevelopmentFootprint_20201012MGaz50.shp'.

100% Compliance with Conditions of CPS 8191/1 as they relate to clearing activities.

Exceeds criteria

Identification of opportunities to reduce clearing area of native vegetation as indicated in the shapefile 'CD00116_VDD_FINALDevelopmentFootprint_20201012MGaz50.shp' and visible on **Figure 2a to Figure 2e**.

Minimum Management Requirements

Item	Action	Responsibility	Phase
4.1.1.1	Principal to provide digital shape files of Development Footprint and the Approved Clearing Area at contract award.	Principal	Contract award
4.1.1.2	Principal to notify the AWE in writing within 10 business days of the date of commencement of the Action.	Principal	Within 10 days of ground-breaking activities.
4.1.1.3	Restrict all disturbance and activities to the development footprint, as per CD00116 VDD FINALDevelopmentFootprint 20201012MG Az50.shp	Contractor	During construction
4.1.1.4	Clearing will be restricted to the areas provided in CD00116 VDD CPS8191-1-ApprovedClearingArea_20201012MGaz50.shp digital shapefiles and in compliance with Condition 2, Condition 3 and Condition 4 of CPS8191/1 and Condition 1 of EPBC 2017/7932	Contractor	During construction



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.1.5	<p>Develop and document a clearing method within the CEMP that demonstrates how:</p> <ul style="list-style-type: none"> clearing will be restricted to within the approved clearing area, damage to vegetation outside the approved clearing area (or vegetation identified to be retained) will be prevented through installation of barriers. impacts to fauna will be prevented, including the immediate removal of clearing debris from cleared areas (further discussed in Section 4.1.2). Identification of Environmentally Sensitive Areas (ESAs) and sensitive receptors – including but not limited to the PEC and New River Estuary. any other controls in this section have been incorporated into the clearing method. <p>The CEMP and activities and management actions shall be compliant with Clearing Permit CPS 8191/1 and EPBC 2017/7932.</p>	Contractor	Prior to clearing
4.1.1.6	<p>Identify and document in the CEMP:</p> <ul style="list-style-type: none"> any hot works that will occur the controls that will be implemented to ensure no impacts to surrounding native vegetation resulting from hot works. 	Contractor	Prior to construction
4.1.1.7	<p>The Contractor will provide training to all personnel during an initial safety and environment induction which will include fauna management protocols addressing site specific clearing management requirements.</p>	Contractor	Prior to clearing
4.1.1.8	<p>Survey and demarcate the limit of the approved clearing area and development area footprint (DAF).</p> <ul style="list-style-type: none"> The survey must be conducted by a certified, licenced surveyor. Demarcation must be via a continuous physical barrier in areas defined as ESA (Section 4.1.3), flagging will be sufficient in other areas. Demarcation of the ESA will be undertaken as outlined in Section 4.1.3. 	Contractor	Prior to construction
4.1.1.9	<p>Construction lay-down areas and access tracks have been identified by the Principal. All access and laydown areas will be clearly delineated on plans and demarcated on the ground.</p>	Contractor	Prior to clearing
4.1.1.10	<p>Prior to clearing works, the Contractor will arrange access for Geographe Landcare Nursery personnel to undertake a vegetation salvage operation in area to be cleared.</p> <p>The Nursery has advised they require 3 days to complete their operation, once the clearing area has been demarcated.</p>	Contractor Principal	Prior to clearing



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.1.11	Inspect the demarcated approved clearing area and identify any native vegetation that can be retained or protected thereby reducing overall clearing required. As per Condition 7 of CPS8191/1	Contractor Principal	Prior to clearing
4.1.1.12	Revise the demarcated approved clearing area based on the outcomes of the inspection in Item 4.1.1.11 .	Contractor	Prior to clearing
4.1.1.13	At least 5 working days prior to clearing, the Contractor is to arrange for a final inspection of the demarcation of the approved clearing area by Water Corporation's Environmental Scientist or Delegate. This is a 'Hold Point.'	Contractor	Prior to clearing
4.1.1.14	Provide approval of demarcated boundaries of approved clearing area and confirmation that clearing can proceed. This is a 'Hold Point'	Principal	Prior to clearing
4.1.1.15	Implement the clearing method as required by Item 4.1.1.5 .	Contractor	During clearing
4.1.1.16	Inspect and maintain the integrity of temporary barriers used to demarcate the approved clearing area, ESA protection zones and any areas of native vegetation to be retained.	Contractor	During Clearing and until completion of earthworks.

Monitoring Requirements	Responsibility	Frequency
Contractor must confirm with the Super's Representative once demarcation of the DAF is complete and at least 5 days prior to the commencement of clearing.	Contractor	Once, prior to construction
Visual inspection of all demarcated boundaries for damage or signs of encroachment into adjacent unauthorised areas; observations to be recorded on daily site environmental checklist (to be developed by Contractor and included in the CEMP).	Contractor	Daily
Completion of a clearing record, daily, when undertaking clearing activities. This will include before and after photos and Hand-held GPS coordinates.	Contractor	When undertaking any clearing activities

Reporting Requirements	Responsibility	Frequency
Daily site environmental inspection checklist provided to the Principal.	Contractor	Weekly On request
Completion of a clearing records, complying with Condition 18 and Condition 19 of CPS 8191/1.	Contractor	When undertaking any clearing activities
Georeferenced spatial data indicating the actual extent of clearing undertaken is provided to the Principal in .DXF or	Contractor	Within 2 weeks of completion of the



Reporting Requirements	Responsibility	Frequency
.SHP file format.		project or prior to end of the calendar year (whichever is sooner).
The Principal will report to the DWER CEO annually, by June 30 each year clearing records under Condition 18 of CPS8191/1 as per Condition 19 of CPS8191/1	Principal	June 30 each year
The Principal to publish a compliance report annually, and notify AWE by 30 June of the publishing of all Compliance Reporting on the website in accordance with Condition 14 EPBC 2017/7932	Principal	June 30 each year
The Principal will comply with Condition 15 and Condition 16 of EPBC 2017/7932 reporting on non-compliance if and when necessary.	Principal	As required



4.1.2 Fauna Management

The Vasse Diversion Drain has functional significance as it presents both a corridor and barrier to terrestrial fauna movement through the urban environment. Multiple surveys of the project area identified a total of 37 fauna species consisting of 22 birds, three reptiles, two fish, eight mammals, three amphibians and one mollusc.

Additional surveys focusing of Threatened and Specially Protected fauna targeting:

- Black-Cockatoos
- Western Ringtail Possums (*Pseudocheirus occidentalis*)
- Carter's Freshwater Mussels (*Westralunio carteri*), and
- Other incidental/opportunistic sightings were undertaken by subject matter experts.

Black Cockatoos are unlikely to be significantly impacted by this project, however other fauna will require management, particularly during clearing activities.

Carter's Freshwater Mussel

Carter's Freshwater mussels are predominantly located from Chapman Hill Road Bridge through to CH 6200 and beyond, into the natural Vasse River system. Carter's Freshwater Mussels will be managed by the Principal through a separate Relocation Management Plan (IndoPacific, 2020). The Contractor is required to conduct activities in accordance with the requirements of this plan.

Western Ringtail Possum and Other Mammals

Fauna surveys highlighted that the drain corridor provides shelter and foraging habitat for the Western Ringtail Possum. An estimated 10-15 possum may be displaced as a result of clearing for this project. The Principal will implement measures prior to undertaking clearing works to mitigate and avoid impacts on the species, including the installation of additional nest-boxes, rope bridges and infill planting in vegetation adjacent to the drain.

In addition to Western Ringtail Possums, evidence of Quenda (*Isodon fusciventer*, P4), including foraging holes, was found at several locations, and whilst the Rakali (Water-rat, *Hydromys chrysogaster*, P4) was not found in the survey area, it is known from nearby wetlands.

The project works present a mortality risk, result in a loss of habitat, and result in a potential loss of connectivity for the Threatened and Specially Protected species highlighted above, as well as amphibians, reptiles and avifauna. As such construction risks must be managed to avoid, mitigate or eliminate impacts where possible.

Objective: Prevent impacts to native fauna resulting from project activities

Performance Indicators

No injury or death of fauna as a result of project activities.

Number of fauna required to be rescued from open excavations.

No impacts to habitat outside the approved clearing footprint.



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.2.1	Principal to Install Fauna Shelters and Rope Bridges as detailed in Bamford Consulting Ecologists (2020) and Condition 14, Condition 15 of CPS8191/1 and EPBC 2017/7932 Condition 2 .	Principal	Prior to Construction
4.1.2.2	Principal to provide DWER and AWE with GPS locations, installation photos and reporting of fauna shelters and rope bridges as per Condition 14, Condition 15 of CPS8191/1 and EPBC 2017/7932 Condition 3	Principal	Within two months of installation.
4.1.2.3	Implement Condition 12 of CPS8191/1 as per IndoPacific (2020a), Appendix F	Principal	Prior to Construction
4.1.2.4	Document in the CEMP and implement a method for managing fauna encounters. The CEMP and activities and management actions shall be compliant with the Conditions in CPS 8191/1 and the relevant sections of the Bamford Consulting Ecologists (2020), Appendix H .	Contractor	Prior to construction
4.1.2.5	Contractor must facilitate site access for all Principal Fauna SMEs to ensure implementation of the fauna management strategies detailed in Bamford Consulting Ecologists (2020), Appendix H .	Contractor	All
4.1.2.6	The Contractor will provide training to all personnel during an initial safety and environment induction which will include fauna management protocols addressing site specific fauna management requirements.	Contractor	Prior to commencing works
4.1.2.7	Two (2) siltation curtains will be installed in accordance with IndoPacific (2020a) in the Lower Vasse River, under the supervision of the Principal Mussel SME.	Contractor	Prior to commencing any works
4.1.2.8	Contractor must obtain approval from Principal to commence activities between CH 5480 to CH 6220. Project works cannot commence until inspection, retrieval and relocation of mussels is completed as detailed in IndoPacific (2020a), Appendix F . This is a Hold Point.	Contractor	Prior to commencing any works between CH 5480 to CH 6220
4.1.2.9	Provide authorisation to commence works between CH 5480 to CH 6220.	Principal	Prior to commencing any works between CH 5480 to CH 6220



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.2.10	<p>Unoccupied Western Ringtail Possum dreys will be removed from approved clearing areas one week prior to clearing works being scheduled to commence. This work will be undertaken by, or under the supervision of the Principal's Fauna SME.</p> <p>Areas of focus will be:</p> <ul style="list-style-type: none"> • CH 800-CH 1240 • CH 1275 – CH 3300 (north and south sides) • CH 3320 – CH 3520 (south side) • CH 5960 – CH 6240 • Any opportunistic sightings within the approved clearing area, or as deemed necessary by the Principal's SME. 	Contractor Principal's Fauna SME	One week prior to clearing
4.1.2.11	<p>Check for evidence of the presence of Quenda one week prior to commencing clearing.</p> <p>If Quenda evidence is located, cage trapping is to be carried out for up to four consecutive nights. Cage-traps are to be at tight spacing, roughly 20 m grid.</p> <p>Animals will be held in captivity for a few days, until clearing at the location where they were caught is complete. Quenda will then be returned to adjacent uncleared vegetation. These activities will be undertaken by, or under the supervision of the Principal's Fauna SME.</p> <p>Relocation on the southern side of the drain between CH 1700 –CH 1900 will not be acceptable. Alternative locations adjacent to this area must be sought.</p> <p>This will be completed in compliance with Bamford Consulting Ecologists (2020), Appendix H.</p>	Contractor Principal's Fauna SME	One week prior to clearing
4.1.2.12	<p>Check for evidence of Rakali one week prior to clearing. Cage-trapping shall be carried out where there is evidence, and a suitable release site discussed with DBCA.</p> <p>These activities will be undertaken by, or under the supervision of The Principal's Fauna SME.</p> <p>This will be completed in compliance with Bamford Consulting Ecologists (2020), Appendix H.</p>	Contractor Principal's Fauna SME	One week prior to clearing
4.1.2.13	<p>Contractor must obtain approval from Principal to commence clearing.</p> <p>Project works cannot commence until Item 4.1.2.8, Item 4.1.2.9 and Item 4.1.2.10 are met.</p> <p>This is a Hold Point.</p>	Contractor	Prior to clearing
4.1.2.14	Provide authorisation to commence clearing activities.	Principal	Prior to clearing



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.2.15	The Principal's Fauna SME shall conduct daily pre-start checks of vegetation to be cleared and retrieve fauna if required. No clearing is to be undertaken until as few animals as practicable remain or potentially remain in the clearing area. Clearing will be undertaken in compliance with Condition 13 of CPS8191/1.	Contractor Principal's Fauna SME	Prior to clearing During clearing works.
4.1.2.16	Clearing debris will be removed from the clearing area on the day of clearing. No debris will be stockpiled within or in the immediate vicinity of the native vegetation clearing areas.	Contractor	During clearing
4.1.2.17	A suitably qualified and permitted fauna handler is to be present or within a specified response time to manage fauna on site during construction.	Contractor	All
4.1.2.18	Maintain a clean work environment to avoid attracting fauna to hiding places or garbage.	Contractor	All
4.1.2.19	Prohibit the feeding, disturbance, harassing or hunting of fauna, or the presence of firearms or pets on site.	Contractor	All

Monitoring Requirement	Responsibility	Frequency
The Contractor must maintain a register of all fauna removals, deaths or injuries. The register must identify: <ul style="list-style-type: none"> • Date/time and location. • Type and number of fauna. • Status (E.g. dead/alive/injured). • Method of removal. • Location of removal. • Details of person (Name, Contact Registration/Licence details). 	Contractor	End of each shift
Visual inspection of any open excavations and pipes for the presence of fauna. Observations to be recorded on daily site environmental checklists (to be developed by the Contractor).	Contractor	Start and end of each shift Immediately prior to backfilling.
Visual inspection of vegetation clearing areas immediately prior to clearing being undertaken. Observations to be recorded on daily site environmental checklists.	Principal's Fauna SME	Immediately prior to clearing
Ensure WildCare Helpline contact number (08) 9474 9055 is displayed on site.	Contractor	Duration of the project.



Reporting Requirement	Responsibility	Frequency
Any fauna deaths are considered an environmental incident and are to be reported to the Principal as per Section 3.9.	Contractor	As required
Register of project site Safety and Environmental Inductions	Contractor	<ul style="list-style-type: none"> On request At the end of the project
Fauna register is to be reported to the Principal	Contractor	<ul style="list-style-type: none"> On request At the end of the project
Daily site environmental checklist provided to the Principal	Contractor	<ul style="list-style-type: none"> Weekly On request
Unauthorised discharges into the Lower Vasse River shall be reported to the Principal as per Section 3.9.	Contractor	As required
In the event of a fauna incident relating to the Western Ringtail Possum, the Principal will report to DWER and AWE in compliance with Condition 13(c) of CPS8191/1 and Condition 4 of EPBC 2017/7932	Principal	As required within two (2) business days.



4.1.3 Threatened or Specially Protected Flora Management

Surveys conducted by subject matter experts (SME) on behalf of the Corporation identified a Threatened or Specially Protected Flora species adjacent to the approved native vegetation clearing area between [REDACTED]. This area is to be treated as an Environmentally Sensitive Area.

Objective: No impact on threatened or specially protected flora between CH 1700 to CH 1900

Performance Indicator(s)

No clearing or damage to vegetation outside the approved project development footprint provided in 'CD00116_VDD_FINALDevelopmentFootprint_20201012MGaz50.shp'

100% compliance with the Conditions in the Clearing Permit CPS 8191/1

No clearing or damage to vegetation outside the approved clearing footprint on the southern side of the drain between CH 1700 to CH 1900 as per CD00116_VDD_CPS8191-1-ApprovedClearingArea_20201012MGaz50.shp and CD00116_VDD_CPS8191-1_ESA_fenceline_Oct2020.shp to be provided by the Principal at contract award.

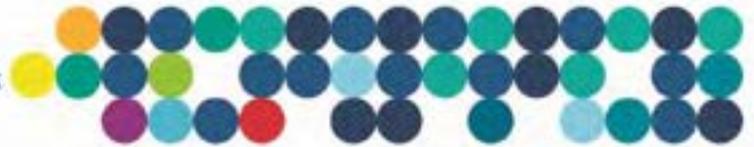
Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.3.1	Principal SME to undertake reconnaissance survey in compliance with Condition 9 of CPS8191/1 and Condition 5 and Condition 6 of EPBC 2017/7932.	Principal SME	Prior to any works/activities
4.1.3.2	This document has been provided in compliance with Condition 10 of CPS8191/1.	Principal	Prior to any works/activities
4.1.3.3	Hard fencing to be installed in a polygon around an area defined as 'ESA' by the SME. In compliance with Condition 9(d) of CPS8191/1, fencing will be a 1.8 m tall, hard barrier, with shade-cloth on the construction side to reduce dust.	Principal	Prior to Site Possession
4.1.3.4	Principal will provide DWER and AWE with digital shapefiles of the fencing perimeter of the ESA prior to commencing ground disturbance, in compliance with Condition 10 of CPS8191/1.	Principal	Prior to any works/activities
4.1.3.5	Contractor must ensure access by the SME to the southern side of the drain between [REDACTED] is not hindered if directed by the Principal.	Contractor	As required
4.1.3.6	Fencing of the ESA will completed by the Principal under the guidance of the SME. Digital shapefiles of the ESA will be provided to the Contractor by the Principal, for inclusion in induction materials and site maps at Contract award	Principal	Prior to any activities on the southern side of the drain between [REDACTED]
4.1.3.7	The Contractor is required to inspect and maintain the ESA fencing throughout construction. Inspection and maintenance of the ESA fencing should be recorded in the Environmental Checklist.	Contractor	All stages



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.3.8	Document in the CEMP and implement a method for managing impacts to Flora and the ESA. The CEMP and activities and management actions shall be compliant with the Conditions in Clearing Permit CPS 8191/1.	Contractor	Prior to commencing works.
4.1.3.9	The Contractor will provide training to all personnel during an initial safety and environment induction which will include ESA management protocols.	Contractor	Prior to commencing works.
4.1.3.10	The ESA area will be highlighted on plans and discussed in daily tool box meetings when clearing is actively being undertaken in close proximity.	Contractor	All project phases when undertaking any activities on the southern side of the drain between CH [REDACTED]
4.1.3.11	Contractor is to advise the Principal at least five working days prior to commencing clearing on the southern side of the drain between [REDACTED]	Contractor	Prior to clearing on the southern side of the drain between [REDACTED]
4.1.3.12	Water Corporation Personnel will be present on site to monitor clearing works in the immediate vicinity of the ESA on the southern side of the drain between [REDACTED]. This is a Hold Point.	Principal	During Clearing on the southern side of the drain between [REDACTED]

The Principal, under advice from the SME does not believe a Translocation Plan for the Caribunup King Spider Orchid will be required. However, if this changes over the life of the Approved Action the Corporation will undertake the following

Measure	Responsibility
Custodial Collection of seeds from one (1) plant is being collected by SME Professor Kingsley Dixon in 2020.	Principal
Monitoring of the condition of the Orchids in the ESA will be included in the regular monitoring for the Vasse Diversion Drain Revegetation Plan. If the Revegetation Consultants are concerned they will notify the Corporation.	
The Corporation will engage a SME to undertake a survey of the condition of the area and if a translocation is deemed necessary, a suitably qualified SME in accordance with Condition 5(c) of EPBC 2017/7932 will be engaged to prepare a Translocation Management Plan and report to DWER in accordance with Condition 9(f)(ii) of CPS8191/1.	
The Translocation Management Plan will be submitted to AWE and DWER for approval prior to any ground disturbing activities.	
All other permits and licences required under the WA BC Act 2016 will be obtained by the Principal.	



Monitoring Requirement	Responsibility	Frequency
Visual inspection of all demarcated boundaries for damage or signs of encroachment into adjacent unauthorised areas; observations to be recorded on daily site environmental checklist.	Contractor	Daily

Reporting Requirement	Responsibility	Frequency
Daily site environmental inspection checklist provided to the Principal	Contractor	<ul style="list-style-type: none"> Weekly On request
Register of project site Safety and Environmental Inductions	Contractor	<ul style="list-style-type: none"> On request At the end of the project
Georeferenced spatial data of the actual ESA fencing boundary	Contractor	Prior to commencing clearing
Principal to Provide DWER and AWE with results of a Targeted Flora Survey within two (2) months of undertaken any clearing in accordance with Condition 9 of CPS8191/1 and Condition 5 and Condition 6 of EPBC 2017/7932.	Principal	Within 2 months of ground clearing commencement.



4.1.4 Acid Sulfate Soils and Dewatering Management

The purpose of this section is to outline the requirements needed to manage the disturbance of acid sulfate soils (ASS) that may occur as a result of project activities.

RPS was engaged to undertake a Detailed Site Assessment (RPS 2020a) and Waste Characterisation Assessment (RPS 2020b), this information, along with historic data, was used to develop the DWER Approved *Acid Sulfate Soils and Dewatering Management Plan: CD00116 – Vasse Diversion Drain EEC19269.001-3* (RPS, 2020c) **Appendix E**. Due to the complexity and nature of the work, the plan has been split into a number of Operating Strategies:

- EEC19269.001-3 Appendix D *VROS/VRDD Earthworks and Dewatering Operating Strategy*.
- EEC19269.001-3 Appendix E *Levee Reconstruction/ Sediment/ Potential MBO Earthworks and Dewatering Strategy*.
- EEC19269.001-3 Appendix F *Gauging Station Earthworks and Dewatering Operating Strategy*

The Contractor must ensure all activities are undertaken as per this DWER approved ASSDMP and associated Operating Strategies.

Objectives

- Prevent contamination of land or water resulting from the disturbance of acid sulfate soils.
- Prevent impacts on vegetation or other sensitive receptors as a result of temporary groundwater drawdown, excavation and infiltration activities (if required).

Performance Indicator(s)

100% compliance with the *Acid Sulfate Soils and Dewatering Management Plan: CD00116 – Vasse Diversion Drain EEC19269.001-3* (RPS, 2020c) **Appendix E**

100% compliance with the project **5c Dewatering Licence**.

Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.4.1	The Contractor CEMP shall include and comply with all requirements specified in the ASSDMP (RPS 2020c).	Contractor	Prior to construction
4.1.4.2	Implement the ASSDMP (RPS 2020c).	Contractor	During and post construction
4.1.4.3	Any personnel completing the environmental monitoring (groundwater, surface water and ASS sampling) must be appropriately qualified and verification of such is provided to the Principal for approval prior to any soil excavation or dewatering activities.	Contractor	Prior to construction, and if any changes in personnel
4.1.4.4	The Contractor will provide training to all personnel during an initial safety and environment induction which will the risks and requirements of contamination, ASS and MBO management and dewatering.	Contractor	Prior to construction



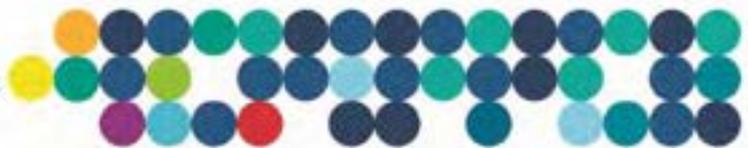
Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.1.4.5	Any instruments/equipment used for the environmental monitoring (groundwater, surface water and ASS sampling) must be calibrated prior to commencement of use and monthly thereafter.	Contractor	Prior to and during construction
4.1.4.6	Calibration certificates for any instruments/equipment used for the environmental monitoring (groundwater, surface water and ASS sampling) provided to Principal.	Contractor	Prior to and during construction
4.1.4.7	An appropriately qualified Environmental Scientist is to be on-site to provide environmental advice, monitoring, reporting and any other environmental support required during construction: <ul style="list-style-type: none"> daily, and for the full duration of each work shift, while excavation, infiltration and/or dewatering activities are occurring. 	Contractor	During construction
4.1.4.8	The Contractor CEMP will include appropriate management and contingency to monitor and alleviate potential water-stress in vegetation surrounding the Vasse Diversion Dam construction site. Stress can present itself as; loss of and/or browning of leaves, wilting and shooting at the base of the trunk.	Contractor	During Dewatering

Monitoring Requirement	Responsibility	Frequency
Monitoring to be undertaken in accordance with the ASSDMP (RPS 2020) and the 5C licence.	Contractor	As per ASSDMP and 5C licence
Visual inspection of integrity of dewatering treatment units, bunds, infiltration ponds, and pipeline trenches; observations to be recorded on daily site environmental checklist (to be developed by Contractor).	Contractor	Daily
Visual inspection of vegetation condition nearby dewatering activities will be recorded weekly. Photos would be acceptable	Contractor	At least weekly, more frequently during extreme weather

Reporting Requirement	Responsibility	Frequency
Reporting shall be undertaken in accordance with the ASSDMP (RPS 2020) and Principal's 5C licence.	Contractor	As per ASSDMP and 5C licence
Groundwater, surface water and soil sampling (for ASS or PASS) results and calibration certificates for sampling instruments are to be reported to the Superintendent and Principal's Environmental Scientist.	Contractor	Weekly
Any exceedance of limits or trigger values specified within the ASSDMP and/or the Principal's 5C licence is to be considered an incident and must be reported as per the requirements in Section 3.13	Contractor	As required



Reporting Requirement	Responsibility	Frequency
Daily site environmental inspection checklist provided to the Principal.	Contractor	<ul style="list-style-type: none">• Weekly• On request



4.2 Standard Construction Environmental Impacts

4.2.1 Weed Management

This section outlines the management of potential disease, pest and weed vectors to prevent impact on or spread within or adjacent to the development area footprint.

Floristic surveys of the project area located Bugle Lilly (**Watsonia meriana*), Wild Oat (**Avena fatua*), Couch (**Cynodon dactylon*), African Lovegrass (**Eragrostis curvula*), Soursob (**Oxalis pes-caprae*), Arum Lilly (**Zantedeschia aethiopica*), Veldt Grass (**Ehrharta longiflora*), Rose Pelargonium (**Pelargonium capitatum*), Guildford Grass (**Romulea rosea*), Great Brome (**Bromus diandrus*), Whiteflower Fumitory (**Fumaria capreolata*) and Kikuyu Grass (**Cenchrus clandestinus*)

The works have the potential to spread disease, pests and weeds through the following activities:

- General movement of vehicles and mobile plant throughout the project area
- Equipment used during works
- Import/export of cut and fill material, and
- Excavation and construction activities.

Objective: *Prevent the introduction or spread of significant weeds or diseases as a result of construction works*

Performance Indicator(s)

No introduction or spread of significant weed species as a result of project activities

Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.1.1	CEMP to include Hygiene Management Controls. As a minimum, establishment of location and requirements for hygiene management points (clean on entry) must be delineated. This must be compliant with Condition 8 of the Clearing Permit CPS8191/1.	Contractor	Prior to works.
4.2.2.2	Inspect all plant and equipment to ensure it is free from soil and plant debris prior to commencement of work on site as per Condition 8(a) of CPS8191/1.	Contractor	Prior to and during works
4.2.2.3	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include weed management protocols to ensure all personnel and sub-contractors are aware of the project requirements with respect to minimising the spread or introduction of weeds via movement of soil, vegetation and plant material.	Contractor	Prior to works
4.2.2.4	Ensure that no known dieback or weed-affected soil, mulch, fill or other material is brought into the area to be cleared as per Condition 8(b) of CPS8191/1	Contractor	All



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.2.5	No importation of mulch or topsoil is permitted without prior approval from the Superintendent.	Contractor	All
4.2.2.6	The project site will be monitored for declared weed infestations during construction. The Contractor will notify the Principal if weed management is required.	Contractor	During construction
4.2.2.7	The Contractor shall implement progressive weed management controls on completed levees and in areas not otherwise included in the Revegetation Plan (Tranen, 2020). Proposed controls and implementation shall be detailed in the Contractor CEMP.	Contractor	All
4.2.2.8	The Contractor will ensure site access Principal Revegetation SME to manage weeds in accordance with the Revegetation Plan (Tranen 2020) for the Project. This is further discussed in Section 4.1.12.	Contractor	As required

Monitoring Requirement	Responsibility	Frequency
The Contractor must undertake regular monitoring of adherence to Hygiene Management Controls within the CEMP as part of routine environmental inspections.	Contractor	Daily
Log of vehicle hygiene for all vehicles, plant and equipment entering areas requiring specific hygiene management.	Contractor	Daily

Reporting Requirement	Responsibility	Frequency
Vehicle hygiene log is provided to Principal and must be compliant with Condition 18(iv) of CPS8191/1.	Contractor	<ul style="list-style-type: none"> As requested At the end of the project
Register of project site Safety and Environmental Inductions	Contractor	<ul style="list-style-type: none"> On request At the end of the project



4.2.2 Soil Hygiene Management

This section outlines the management of dieback infested soils to prevent impact on, or spread within or adjacent to the development area footprint.

The pathogen is spread by the movement of zoospores in soil and water. Human activities such as pick up of infested mud on vehicles travelling from infested to non-infested areas are mostly responsible for the spread of this disease. Spread of dieback can be rapid downslope, due to the influence of surface and sub-surface water-flows on the dispersal of zoospores, but also occurs naturally at a much slower rate by root to root transfer upslope.

A dieback survey and risk assessment of the site was conducted by Great Southern Biologic (2020), **Appendix J**. The risk assessments identify that:

- Due to the lack of protectable areas and the absence of susceptible vegetation the consequence of introducing the disease (which may already be present) is considered to be insignificant.
- The risk associated with introducing Dieback to the re-vegetation sites is assessed using the risk matrix for wet soil presented in Part B of the PDMP. The determined risk is Low.

The works have the potential to spread dieback through the following activities:

- General movement of vehicles and mobile plant throughout the project area
- Equipment used during works
- Import/export of cut and fill material, and
- Excavation and construction activities.

Given the Low and insignificant risk of the impact of dieback, standard dieback management protocols can be utilised.

Objective: To prevent the introduction or spread of significant weeds or diseases as a result of construction works

Performance Indicator

No introduction or spread of dieback associated with construction work.

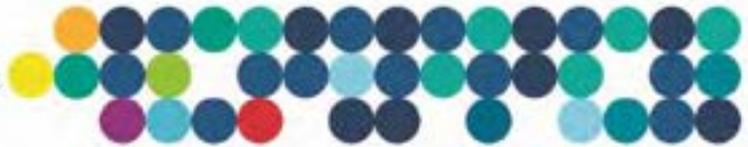
Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.2.1	CEMP to include Hygiene Management Controls. As a minimum, establishment of location and requirements for hygiene management points (clean on entry) must be delineated. This must be compliant with Condition 8 of CPS8191/1 and Condition 1(b) of EPBC 2017/7932.	Contractor	Prior to works
4.2.2.2	Inspect all plant and equipment to ensure it is free from soil and plant debris prior to commencement of work on site.	Contractor	Prior to and during works



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.2.3	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include dieback hygiene protocols to ensure all personnel and sub-contractors are aware of the project requirements with respect to minimising the spread or introduction of dieback via movement of soil, vegetation and plant material.	Contractor	Prior to works
4.2.2.4	No importation of mulch or topsoil is permitted without prior approval from the Superintendent.	Contractor	All
4.2.2.5	Ensure that no known dieback or weed-affected soil, mulch, fill or other material is brought into the area to be cleared as per Condition 8(b) of CPS8191/1	Contractor	All
4.2.2.6	Restrict the movement of machines and other vehicles to the limits of the areas to be cleared as per Condition 8(c) of CPS8191/1.	Contractor	All

Monitoring Requirement	Responsibility	Frequency
The Contractor must undertake regular monitoring of adherence to Hygiene Management Controls within the CEMP as part of routine environmental inspections.	Contractor	Daily
Log of vehicle hygiene for all vehicles, plant and equipment entering areas requiring specific hygiene management. This must be compliant with Condition 18(iv) of CPS 8191/1.	Contractor	Daily

Reporting Requirement	Responsibility	Frequency
Vehicle hygiene log is provided to Principal	Contractor	<ul style="list-style-type: none"> As requested At the end of the project
Register of project site Safety and Environmental Inductions	Contractor	<ul style="list-style-type: none"> On request At the end of the project



4.2.3 Land Degradation

The purpose of this section is to outline the management of potential activities that may result in or exacerbate land degradation through soil erosion. The project involves clearing, which exposes soil to potential wind and water erosion. In addition to this, construction activities, such as vehicle movements, digging, blasting, soil stockpiling, and diverting stormwater runoff, increases erosion and the transport of sediments.

This project is predominantly an earthworks project, with a large amount of cut and fill in addition to water carts entering and exiting the construction site.

Objective: Minimise sedimentation and erosion as a result of clearing and construction works

Performance Indicators

No substantial evidence of erosion within the project footprint.

No substantial visual evidence of sediment transport out of the project footprint.

No increase in sedimentation of surface waters in the lower Vasse River when compared to data obtained prior to construction.

Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.3.1	Develop and document within the CEMP a Stockpiling and Erosion Control Plan. The plan must consider: <ul style="list-style-type: none"> • Site conditions such as soil type, slope, and vegetation cover. • Proximity to sensitive environments 	Contractor	Prior to construction.
4.2.3.2	Silt curtains will be installed downstream of the culvert in the Lower Vasse River to manage turbidity. Further details regarding water quality monitoring have been provided in Section 4.2.6 .	Contractor	Prior to construction
4.2.3.3	Ongoing monitoring of sedimentation (turbidity) of the Lower Vasse River will be undertaken for the duration of the works between CH 5940 to CH 6200 and any works relating to the culvert upgrade, spillway and reconstruction of the diversion dam in this area.	Contractor	Prior to construction
4.2.3.4	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include ways to identify and communicate areas of erosion risk.	Contractor	Prior to construction
4.2.3.5	Sedimentation and/or erosion management structures will only be removed when water quality has returned to baseline levels.	Contractor	Completion of works
4.2.3.6	Construction should be planned to minimise the time period between clear and grade and backfill and restoration to reduce the potential for erosion of exposed soils.	Contractor	Prior to construction



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.3.7	During site work, all vehicles will use the constructed and/or existing access tracks and designated turning circles to prevent erosion of adjacent farmland or vegetation. These areas will be clearly delineated on plans and displayed in the site office.	Contractor	During construction
4.2.3.8	Ground disturbance and vegetation clearing shall be restricted to defined areas within the project footprint.	Contractor	During construction
4.2.3.9	Stockpiled soils shall be stabilised and contained to avoid wind and water erosion.	Contractor	During Construction
4.2.3.10	Erosion and sediment control measures shall be routinely visually inspected (minimum of weekly) during construction.	Contractor	During Construction

The following is applicable to the construction lay-down areas

Item	Action	Responsibility	Phase
4.2.3.10	Strip top soil from the laydown area and any stockpile areas	Contractor	Prior to construction
4.2.3.11	Stockpiled soils shall be stabilised and contained to avoid wind and water erosion and maximise future viability.	Contractor	During Construction
4.2.3.12	Construct a hardstand with imported material (typically natural gravel, crushed limestone, or road base)	Contractor	Prior to construction
4.2.3.13	Install bunding for all machine servicing areas to capture any oil / fuel spills. Install an impermeable membrane under the pad location where servicing vehicles, plant and equipment is proposed.	Contractor	Prior to and during mobilisation

Monitoring Requirement	Responsibility	Frequency
Surface water monitoring and turbidity in the Lower Vasse River as per Section 4.2.6.	Principal SME	Weekly
Visual inspection of efficacy of erosion and sediment control measures. Observations to be recorded on daily site environmental checklists.	Contractor	Daily

Reporting Requirement	Responsibility	Frequency
Surface water monitoring results to be reported to the Principal	Principal SME	Weekly
Any exceedance of surface water triggers are considered an environmental incident and are to be reported to the Principal as per Section 3.13.	Contractor	As required
Daily site environmental inspection checklist provided to the Principal	Contractor	<ul style="list-style-type: none"> Weekly On request



4.2.4 Waste Management

The purpose of this section is to outline the management of waste used during the construction process. The generation of waste has the potential to consume unnecessary resources, and contaminate land and waters.

Potential waste generating activities related to the construction includes, but is not limited to:

- Waste from maintenance of plant and equipment;
- Waste from consumables and resources used during construction; and
- General waste and putrescibles from offices and amenities.

The Corporation engaged RPS to undertake a waste characterisation assessment of the site (RPS 2020b), *Waste Characterisation: CD00116 Vasse Diversion Drain – Levee Soils and Sediments, Appendix K*. The baseline survey data indicates a low risk of gross contamination with the following conclusions:

- The soil waste characterisation investigation involved the coring of 50 locations to 2.5 metres below ground level (mbgl) within the levee banks of the VDD. Based upon the available information, from a contamination perspective RPS recommends the material is suitable for disposal as Class I/II material, subject to confirmation from the nominated landfill operator.
- The sediment waste characterisation investigation involved the sampling of 28 locations to a maximum depth of 0.5 mbgl within the VDD between CH800 and 6200, equating to approximately one location per 200 m within the drain. No evidence of gross contamination was present in the sediments within the drain. The material may potentially be disposed of to a Class I landfill, licensed to accept neutralised ASS, or is required to be disposed of to a Class II or Class III landfill, subject to acceptance of the landfill operator.

The contractor shall use the information contained within that document as a guide for the use and management of cut and fill materials.

Due to the heterogeneous nature of the project materials pockets of contamination may be encountered. Personnel are to be trained to spot possible contamination and the management and reporting procedures associated with locating suspected contamination.

Objective: Prevent contamination of land or soils as a result of waste disposal and minimise the generation of waste/resource use of the project.

Performance Indicators

No waste outside the project footprint

All waste removed from development area at the completion of works.

Percentage of waste reused or recycled.



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.4.1	Identify and document within the CEMP all major waste streams associated with the works and identify any controlled or recyclable wastes. The contractor shall refer to RPS (2020b) waste characterisation report (Appendix K)	Contractor	Prior to construction
4.2.2.2	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include waste identification and management protocols. Where practicable bin and waste disposal locations will be displayed on maps in the site office(s).	Contractor	Prior to construction
4.2.2.3	Remove all waste from site at the completion of works.	Contractor	Rehabilitation

Monitoring Requirement	Responsibility	Frequency
Housekeeping checks	Contractor	Daily

Reporting Requirement	Responsibility	Frequency
Contractor to provide Principal with records of waste classification and disposal.	Contractor	<ul style="list-style-type: none"> On request At end of project
Quantity of soil and sediments reused on site	Contractor	<ul style="list-style-type: none"> On request At end of project



4.2.5 Chemical Use (or other works that may cause contamination)

The purpose of this section is to outline the management of chemicals used during the construction process.

Chemicals used during the construction works include but are not limited to:

- hydrocarbons (fuels and oils) for mobile plant
- Dangerous Goods and Hazardous Substances.

The volumes of chemicals to be stored are expected to be minor and will not require licensing under the *Dangerous Goods Safety Act 2004*.

Objective: Prevent impacts to land, surface water or groundwater resulting from chemical storage or use.

Performance Indicator(s)

No spills of dangerous goods or hazardous substances

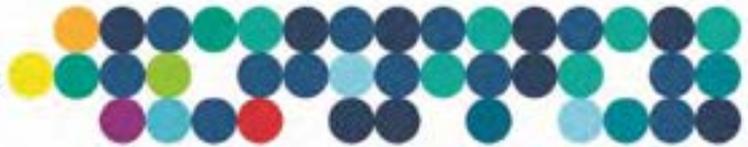
Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.5.1	A full list of fuels, oils or chemicals that will be utilised on site to be included in the CEMP.	Contractor	Prior to construction
4.2.5.2	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include management and safe storage of chemicals. This will also incorporate identification of spills and reporting procedures.	Contractor	Prior to construction
4.2.5.3	Combustible, flammable and/or corrosive liquids are to be stored in accordance with relevant Australian standards, including: <ul style="list-style-type: none"> • AS1940: The Storage and Handling of Flammable and Combustible Liquids • AS3780 The storage and handling of corrosive substances The aggregate quantity stored on site shall not exceed 1,000 L for each chemical.	Contractor	All
4.2.5.4	Flammable gases in cylinders are to be stored in accordance with their relevant Australian Standards: <ul style="list-style-type: none"> • AS 4332 and AS 1596. The aggregate quantity on site shall not exceed 500 L.	Contractor	All
4.2.5.5	Oil and fuel are to be stored in designated, bunded areas, capable of handling 120% of stored capacity and shall only be located in cleared areas.	Contractor	All



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.5.6	Spill kits are to be readily available at chemical storage locations and during maintenance, refuelling or transfer of chemicals.	Contractor	All
4.2.5.7	All refuelling and servicing of plant, vehicles and equipment is to occur on a bunded area or leak proof tray at least 100 m from any waterway or wetland.	Contractor	All
4.2.5.8	Fuel is to be delivered around site via service trucks. Drum storage on site is not permitted.	Contractor	All
4.2.5.9	All vehicles, storage and handling equipment (including transfer hoses, etc.) shall be well maintained.	Contractor	All
4.2.5.10	All on-site maintenance of plant, equipment and vehicles must be in designated bunded areas.	Contractor	All
4.2.5.11	No chemical storage, transfer or handling to occur in areas within 50 m of surface water features, including wetlands, damplands and drainage lines.	Contractor	All
4.2.5.12	The storage, handling or use of aqueous film forming foams, which may contain per- and poly-fluoroalkyl substances (PFAS), is strictly prohibited.	Contractor	All

Monitoring Requirement	Responsibility	Frequency
Daily inspections of chemical storage and bunded areas	Contractor	Daily

Reporting Requirement	Responsibility	Frequency
All chemical spills or leaks reported to the Principal as per the requirements of Section 3.9.	Contractor	<ul style="list-style-type: none"> On request At end of project



4.2.6 Water Quality Management

The project is being undertaken during the summer months, when water levels within the diversion drain are low. Water quality monitoring requirements for dewatering and acid sulfate soils have been captured in **Section 4.1.4** and RPS (2020c). However a number of other risk areas exists that will require ongoing monitoring through construction, these include, but are not limited to:

- Bypass pipes at Sub-Drain A, past the coffer dam at CH 800.
- Bypass pipes at the Vasse River diverting flow around the diversion dam and culvert works.
- Water chemistry for potential impacts to seagrass in the Geographe Bay, and
- Water quality monitoring for impacts on Carter’s Freshwater Mussel.

The Contractor will comply with the management, monitoring and contingency measures of the *Vasse Diversion Drain Upgrade: Water Quality Monitoring and Management Plan* (IndoPacific, 2020b), **Appendix G** where applicable. The Principal SME will be responsible for all monitoring and reporting requirements under the Water Quality Management Plan.

An adaptive management plan/flowchart has been developed for the project and included in the WQMMP (IndoPacific 2020b) the Contractor must ensure this is included in the site induction and a copy displayed in the site office(s).

Objective: *Minimise sedimentation or contamination of surface water and riparian environments.*

Performance Indicator(s)

No prolonged exceedance of water quality assessment criteria set out in the Water Quality Monitoring and Management Plan (IndoPacific 2020b), **Appendix G**.

Exceeds criteria

Identify opportunities to retain additional riparian vegetation and reduce the overall clearing footprint.

Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.6.1	The Contractor will comply with water quality monitoring, management and contingency measures, where applicable, as detailed in IndoPacific (2020a, 2020b) and RPS (2020c).	Contractor	Prior to commencement
4.2.6.2	The Contractor will facilitate site access to the Principal’s Water Quality SME for the duration of works.	Contractor	All
4.2.6.3	One (1) siltation curtain will be installed downstream of the coffer dam at approximately ~CH800, in a location specified by the Principal’s Water Quality SME.	Contractor	Prior to construction
4.2.6.4	Water quality management risks and the adaptive management plan flowchart (IndoPacific 2020b) will be included in the contractor environmental induction.	Contractor	Prior to construction



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.6.5	Identify opportunities to reduce clearing and disturbance of riparian vegetation between CH 5940 to CH 6200 as per Section 4.1.1.	Contractor	Prior to construction
4.2.6.6	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include the identification of deteriorating water quality and reporting procedures.	Contractor	Prior to Construction
4.2.6.7	A trigger value which will result in the instigation of additional management actions is considered to be: <ul style="list-style-type: none"> Salinity of greater than 1.3 ppt recorded at WQM1 (noting this is approaching the tolerable limit for the species is 1.5 ppt); or A variation by $\pm 20\%$ in the value of any monitored parameter at WQM1 or WQM2 in comparison to the corresponding value at WQR1 for a period of greater than two weeks. 	All	All
4.2.6.8	If exceedances are detected the Contractor will implement management contingencies consistent with the IndoPacific (2020b).	Contractor	All
4.2.6.9	Ensure all construction activities are undertaken so that any spillages, runoff and sedimentation are entirely contained within the development area footprint.	Contractor	All
4.2.6.10	The downstream cofferdam and siltation curtains located at approximately ~CH800 will remain in place until confirmatory water quality results confirm water quality criteria have been met. Principal will provide confirmation. This is a Hold Point	Contractor	Post construction
4.2.6.11	Principal to provide confirmation that Downstream Cofferdam and siltation curtains can be removed.	Principal	Post construction

Monitoring Requirement	Responsibility	Frequency
Surface water quality monitoring will be undertaken by the Principal Water Quality SME in accordance with IndoPacific (2020b)	Principal SME	As specified in IndoPacific (2020b)

Reporting Requirement	Responsibility	Frequency
Water quality monitoring results provided to the Principal	Contractor	Weekly
Any exceedance of surface or groundwater trigger values are considered an environmental incident and are to be reported to the Principal as per Section 3.9.	Contractor	As required



4.2.7 Dust Management

The purpose of this section is to outline the management of potential dust and air emissions so that they do not interfere with the amenity of surrounding landowners or users. The soil in the project area is detailed in **Table 7**. The water table drops over summer and the sandy soils dry out in combination with clearing, which will increase exposed surfaces – there area will be prone to dust generation.

Table 7: Geological units along the Vasse Diversion Drain (GHD, 2017)

Chainage		Geology				Unit Number
From	To	Embankment	Upper Foundation	Lower Foundation	Base of Channel	
850	1100	Safety Bay Sand	Safety Bay Sand	Estuarine Clay	Estuarine Clay	Unit 1
1100	2500	Tamala Sand	Tamala Sand	Tamala Limestone	Tamala Limestone	Unit 2
2500	3310	Tamala Sand	Tamala Sand / Recent Alluvium	Recent Alluvium/ Tamala Limestone	Tamala Limestone	
3310	4000	Tamala Sand	Tamala Sand	Tamala Limestone	Tamala Limestone	
4000	4250	Sandy Guildford Formation	Sandy Guildford Formation	Clayey Guildford Formation	Ferricrete	Unit 3
4250	4750	Sandy Guildford Formation	Sandy Guildford Formation	Clayey Guildford Formation	Clayey Guildford Formation	
4750	5500	Sandy Guildford Formation with areas of clayey Guildford	Clayey Guildford Formation	Clayey Guildford Formation	Clayey Guildford Formation	Unit 4
5500	6000	Sandy Guildford Formation	Clayey Guildford Formation	Clayey Guildford Formation	Ferricrete	
6000	6300	Sandy Guildford Formation	Sandy Guildford Formation	Clayey Guildford Formation	Ferricrete	Unit 3

The proposed works involve the excavation and movement of soil, and the carting of sufficient water per day to meet the needs of material conditioning and dust suppression. Activities that have potential to generate dust emissions include:

- Clearing vegetation.
- Stripping and stockpiling.



- Vehicle movements on soils, including lights vehicles.
- Earthworks
- Wind movement across expose bare soils.
- Emissions from plant and equipment on site.

Adverse impact due to airborne dust, sand, smoke or debris due to disturbance of parts of the site shall be prevented during Works in compliance with legislative requirements. The Contractor shall be responsible for ensuring that contingency measures are implemented as appropriate, to prevent adverse impacts from dust. At all times, the Contractor shall comply with *A Guideline for Managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities* (DEC 2011).

Sensitive receptors for dust (primarily located between CH 800 – CH 3400) include, but are not limited to:

- Residential housing (CH800 – CH3400, both sides of the drain). <100m from works
- Saint Mary MacKillop College (~ CH 1500 – CH 1900), College Avenue, northern side, <100m from works.
- Busselton Senior High School and associated sporting fields (~ CH 450 – CH 800), Queen Elizabeth Avenue, Eastern side, <100m from works.
- New River and Vasse-Wonnerup Reserve (~ CH 750 – CH 1000), both sides of the drain and passing under the drain.
- [REDACTED]
- Retained vegetation and priority ecological community (~ CH 1300 – CH 3300), southern side of the drain, immediately adjacent to works.
- Blue Bird Childcare (~CH 1700 – CH 1800), southern side of drain, <50m from works.
- Geographe Primary School (~CH 1600 - CH 1900) Southern side of drain, >100m from works.

Objective: *Ensure that activities do not unreasonably affect the amenity of surrounding lands and landowners.*

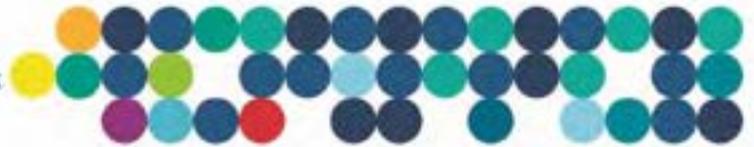
Performance Indicators

No visible dust plumes extending more than 10 m off the development area footprint.

No substantiated complaints relating to dust impacts.



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.7.1	Identify dust control measures that will be available on site and document these within the CEMP. The proposed dust management measures must be submitted in a Dust Management Plan to the Superintendent for approval, not less than 14 days prior to commencing work. The Dust Management Plan should be prepared with reference to relevant guidelines and with consideration to sensitive urban and environmental receptors.	Contractor	Prior to construction
4.2.7.2	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include identification of any deterioration in air quality and reporting procedures.	Contractor	Prior to Construction
4.2.7.3	Inspect and maintain fencing and shade cloth surrounding the ESA as detailed in Section 4.1.3	Contractor	All
4.2.7.4	Where practicable, construction shall be planned to minimise the potential for dust to be generated	Contractor	During construction
4.2.7.5	Soil stockpiles must be managed to minimise dust generation	Contractor	During construction
4.2.7.6	Maintain and implement a suitable method of dust suppression on site at all times.	Contractor	During construction
4.2.7.7	Contractor to maintain a suitable method of monitoring weather conditions and their impacts on planned activities. Daily weather observations and climate conditions for the nearest station is Busselton Aero #009603 http://www.bom.gov.au/climate/averages/tables/cw_009603.shtml	Contractor	All
4.2.7.8	Dust producing activities must be suspended immediately if dust suppression control measures prove ineffective.	Contractor	During construction
4.2.7.9	Project vehicles must travel at appropriate speeds to minimise the amount of dust generated within the construction area.	Contractor	All
4.2.7.10	Movement of vehicles will be restricted to designated tracks and traffic movement minimised, where practicable.	Contractor	All



Monitoring Requirement	Responsibility	Frequency
Site inspections of stockpile stability and erosion risk, recorded on the daily site environmental checklist.	Contractor	Daily
Site inspections of shade cloth and fencing along the ESA as detailed in Section 4.1.3	Contractor	Daily
Monitor and record daily weather observations prior to commencement of work to determine the day's potential for dust generation.	Contractor	Daily

Reporting Requirement	Responsibility	Frequency
All complaints received by the Contractor in relation to dust generation reported to the Principal	Contractor	As required
Daily site environmental checklist provided to the Principal	Contractor	<ul style="list-style-type: none"> • Weekly • As requested



4.2.8 Noise and Vibration Management

The purpose of this section is to outline the management of potential noise emissions and vibration impacts so they do not interfere with the amenity of surrounding landowners or users.

The works fall under the definition of construction within the Environmental Protection (*Noise*) Regulations 1997. Under these regulations, construction works are exempt from complying with the prescribed noise limits where:

- the works are carried out in accordance with environmental noise practices set out in Section 4 of AS 2436-2010 'Guide to noise and vibration control on construction, maintenance and demolition sites'.
- the equipment used is the quietest reasonably available
- the work is carried out under an approved management plan (if one has been requested by the relevant authority).

Construction works will generate noise that may interfere with the amenity of nearby landowners and local residents as well as disturb birds or other fauna. Due to the location of the site, noise may be an issue to nearby residences and schools.

Construction noise will be generated from vibrating machinery, movement of trucks, operation of front-end loaders, vehicle reversing alarms and generators. Construction will require driving of sheet piles, but not near residential areas and dewatering pumps will be operating on a 24-hr basis.

The Principal has engaged GHD to undertake vibration assessment for the proposed works (refer to Specification Appendices). Based on the documented criteria for short term vibration effects on structures, and published vibration data for typical compaction plant, guidance was provided on separation distances between vibration sensitive premises and construction work.

Dilapidation assessments of neighbouring residents and surround infrastructure shall be undertaken prior to commencement of the project. Vibration measuring points will be selected at strategic locations for ongoing monitoring of vibration.

Objective: *Ensure that activities do not unreasonably affect the amenity of surrounding landowners*

Performance Indicator(s)

No substantiated noise related complaints



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.8.1	Document within the CEMP: <ul style="list-style-type: none"> equipment types and expected noise emissions for construction activities. how works will comply with Section 4 of AS 2436-2010. appropriate noise mitigation strategies to mitigate impacts on residents and fauna. noise complaint response procedure. 	Contractor	Prior to construction
4.2.8.2	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include noise management.	Contractor	Prior to Construction
4.2.8.3	An application for <i>Approval of Construction Work</i> (Regulation 13 Permit) including the Noise Management Plan, must be provided to the City of Busselton at least three weeks prior to the Commencement of Works.	Contractor	Prior to construction
4.2.8.4	Work must be limited to between 0700 and 1900h Monday to Saturday excluding public holidays, unless approved by the Superintendent.	Contractor	During construction

This section only applies where after-hours work is required.

Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.8.4	If after-hours works or operation of equipment (e.g. generators, dewatering pumps) is required, a noise management plan must be developed detailing: <ul style="list-style-type: none"> work that is required to be completed and the reason for the work to be completed outside of construction working hours predicted noise levels associated with these works duration of activities that may result in noise above the prescribed levels controls measures to be implemented to minimise noise and vibration monitoring requirements complaint response procedure. 	Contractor	Prior to after-hours construction
4.2.8.5	The noise management plan is to be submitted to the Superintendent for approval at least 30 days prior to the commencement of works.	Contractor	Prior to after-hours construction
4.2.8.6	For works outside ordinary hours, an application for <i>Approval of Construction Work</i> (Regulation 13 Permit) including the Noise Management Plan, must be provide to the City of Busselton at least three weeks prior to the Commencement of Works.	Contractor	Prior to after-hours construction



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.8.7	Any premises that are likely to receive emissions greater than the levels prescribed in the Environmental Protection (Noise) Regulations 1997 must be notified at least 24 hrs before the commencement of works.	Contractor	Prior to after-hours construction

Monitoring Requirement	Responsibility	Frequency
Monitor noise emissions in an appropriate noise monitoring log	Contractor	As required

Reporting Requirement	Responsibility	Frequency
Maintain register of an non-conformances and noise related complaints and provide register to Principal	Contractor	As required



4.2.9 Bushfire Management

The project will be undertaken in areas of extreme fire risk, during fire season. The contractor is expected to comply with the *Bush Fires Act 1954 (WA)* and obey any directives provided by the State or Local Government. The Contractor, or any person employed by the Contractor, shall take the necessary precautions to prevent the occurrence or spread of fire.

The Contractor shall comply with all statutory provisions that may be in force from time to time in relation to bushfire danger and restrictions on the lighting of fires and specific activities in the open, including but not limited to, any specific requirements for fire prevention requested by the City of Busselton, the DBCA and/or the Department of Fire and Emergency Services.

In accordance with Schedule 3 of the *State Emergency Management Committee Policy (SEMP) 2.9 – Management of Emergency Risks*, the City of Busselton is identified as having high or extreme bushfire risk, and requires a Bushfire Risk Management Plan (BRMP). The bushfire plan for this project, must be consistent, and compliant with the City of Busselton's BRMP, which can be found at:

- <https://www.busselton.wa.gov.au/Environment-Waste/Fire-Emergency-Information>

A template for a Bushfire Management Plan created by DFES can be found at:

- https://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireProtectionPlanningPublications/FESA_Model_Bush_Fire_Management_Plan.pdf

Objective: Comply with all bushfire directives (if applicable) from the State and Local government.

Performance Indicator.

Undertake no activities that are found to result in, or have contributed to the ignition of a fire.

Response to fires in accordance with the approved Bushfire Management Plan management Actions.

Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.9.1	Incorporate appropriate bushfire management strategies into the CEMP, including a stand-alone Bushfire Management Plan, consistent with the <i>City of Busselton Bushfire Risk Management Plan 2019-2024</i> . Bushfire Management Plan should be complaint with AS ISO 31000 Risk Management, and meet the specifications indicated under <i>Construction of Vasse Diversion Drain upgrade and Associated Works Modular Specifications (Water Corporation, 2020)</i> .	Contractor	Prior to commencement



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.9.2	Primary vehicular routes are maintained in a condition that facilitates ready access by the appropriate Health and Safety Authorities and site based firefighting equipment. Advance notice of all proposed road and route closures and traffic deviations shall be communicated to the appropriate Health and Safety Authorities.	Contractor	All
4.2.9.3	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include bushfire risk management protocols and emergency evacuation points, to ensure all personnel and sub-contractors are aware of the project requirements.	Contractor	Prior to works
4.2.9.4	The Contractor shall ensure verges and pastures within the site are mowed in late spring and summer to reduce the fire risk.	Contractor	Prior to Works During Construction
4.2.9.5	Equipment with the capacity to cut firebreaks is on site at all times of high fire risk.	Contractor	All
4.2.9.6	A designated on-site employee shall be assigned the task of monitoring and recording bushfire weather forecasts (danger rating), on a daily basis. Monitoring sources shall include, but not be limited to, dfes.wa.gov.au , the local ABC radio station or follow updates on emergency services Facebook and Twitter feeds for any warnings and/or incidents daily. The designated officer shall record, on a twice daily basis (for the following day and the following week), at minimum: <ul style="list-style-type: none"> • Maximum temperature • Relative humidity, and • Morning and afternoon wind speeds. 	Contractor	During construction
4.2.9.7	Monitor weather forecast and plan work accordingly, where possible, reprioritise work that might be affected by total bans and/or vehicle movement bans. Weather monitoring should utilise the same station as Item 4.2.7.5. Daily and weekly fire and weather forecasts shall be displayed in the site office.	Contractor	During construction



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.9.8	If a total fire ban and/or a vehicle movement ban is expected/predicted, advise the Superintendent as soon as practicable to discuss impacts to the work schedule. No activities that could generate sparks (e.g. cutting and grinding) shall be permissible on 'very high' or 'extreme' fire risk days as defined by the appropriate Authority.	Contractor	All
4.2.9.9	Where the occurrence of bush fires is likely to deplete available fire-fighting resources in the locality of the site, the Superintendent may suspend the Works. Relevant information relating to construction activities shall be provided on a regular periodic basis to the appropriate Health and Safety Authorities (DBCA, City of Busselton, DFES).	Contractor	All
4.2.9.10	Smoking will be prohibited except in designated smoking areas, outside of site buildings. These areas will have clear signage and be indicated on site plans.	Contractor	Prior to commencement
4.2.9.11	Appropriate containers for cigarette disposal shall be located in designated smoking areas	Contractor	Prior to commencement
4.2.9.12	Fire extinguishers will be located in designated areas through the Project area, including the site office	Contractor	Prior to commencement
4.2.9.13	Flammable liquids and materials will only be stored in designated areas that are fitted with appropriate fire extinguishers.	Contractor	Prior to commencement
4.2.9.14	The Contractor will ensure that dry chemical or carbon dioxide fire extinguishers are located in close proximity to all cutting, grinding or welding (and any other spark generating activities).	Contractor	All
4.2.9.15	The Contractor will ensure that a shroud will be installed if cutting, grinding or welding (or any other spark generating) activity occurs within 5 m of any vegetation (including dry grass/weeds). The shroud will be installed between the activity and the vegetation to capture sparks.	Contractor	All
4.2.9.16	All construction vehicles shall be fitted with dry chemical or carbon dioxide fire extinguishers and all site personnel trained in their use.	Contractor	Prior to commencement



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.9.17	All vehicles and construction plant intended for use on site are regularly checked, serviced and repaired as necessary to prevent oil and fuel leaks. Plant operators are designated the responsibility to monitor and report any vehicles and construction plant defects promptly and regular maintenance of equipment including the removal of combustible materials from tracks, guards and the undercarriage of all vehicles and construction plant, is implemented on a daily basis.	Contractor	All
4.2.9.18	The Contractor will be liable for suppression costs and damage caused by any fire on, or extending from, the construction area unless they can prove to the satisfaction of the Superintendent that the fire originated outside the construction area and/or arose through some cause beyond their control.	Contractor	All

Monitoring Requirement	Responsibility	Frequency
Monitor and record daily weather observations prior to commencement of work to determine the fire risk.	Contractor	Daily
Check and record fire risk forecast.	Contractor	Daily

Reporting Requirement	Responsibility	Frequency
Daily site environmental checklist provided to the Principal	Contractor	<ul style="list-style-type: none"> Weekly As requested
Register of project site Safety and Environmental Inductions	Contractor	<ul style="list-style-type: none"> On request At the end of the project
Incidents reported to the Principal as per Section 3.13	Contractor	As required



4.2.10 Public Safety and Traffic Management

Vehicle movements have potential to significantly impact the biological and built environment, as a large portion of the works will be undertaken within the Busselton town site, near to schools and residential areas and environmentally sensitive areas.

- Endorsement of the Traffic Management Plan has been provided by the City of Busselton and Main Roads WA and the Contractor must prepare a detailed Traffic Management Plan (including staging traffic management plans during the course of construction period) in compliance (at minimum) with the City of Busselton and Main Roads endorsed *Traffic Management Plan: Busselton Vasse Diversion Drain Upgrade (Adjacent to Queen Elizabeth Ave, College Ave and Chapman Hill Road) Vasse, WA* (Edge Transport Solutions, 2020).

Objective: Compliance of Traffic Management Plan and any Directives Issued by City of Busselton and Main Roads Western Australia.

Performance Indicator(s)

Approval from City of Busselton and Main Roads Western Australia

Notification to the affected external stakeholders such as community, schools and residents

Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.10.1	Incorporate an approved Traffic Management Plan into the CEMP. This should include, but not be limited to: <ul style="list-style-type: none"> • Management of access to the project area by construction vehicles • Identification of designated site access locations. • Identification and management of potential conflicts between users of local roads and construction vehicles • Identification and management of potential conflicts between the public and construction activities 	Contractor	Prior to commencement



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.10.2	<p>Following a joint site inspection with the Principal, the Contractor will install temporary public exclusion gates, fencing and appropriate signposts, at all access points to the project site to warn and deter the public.</p> <ul style="list-style-type: none"> Upstream of Busselton Bypass (rural land with existing stock fencing). The contractor will install pennant tape or other visual barrier along the stock fencing that demarcates the site of the works. Any significant excavations (>1m) within the site should have local 1800mm high fencing installed around them at the end of each shift/day. Downstream of Busselton Bypass (adjacent residential land with no existing fencing) Where there is any excavation and/or fill taking place the area of work should be fenced with 1800mm high rigid frame fencing. All other areas (i.e. where light vehicles are traversing, or earthworks plant is moving through but not undertaking work) should be fenced with a temporary stock fence with pennant tape or other visual barrier. 	Contractor	Prior to commencement
4.2.10.3	Contractor will ensure speed limits within the project area are consistent with Worksafe guidelines	Contractor	All
4.2.10.4	Principal will place advertisements in local community newspapers and distributions two weeks prior to the commencement of works advising local residents of the impending works and routes to be used by construction vehicles.	Principal	Prior to commencement.
4.2.10.5	Ensure all light vehicles, construction vehicles, plant and machinery access the project site via designated construction access areas.	Contractor	All

Monitoring Requirement	Responsibility	Frequency
Maintain a register to record public complaints and actions taken.	Contractor	As required

Reporting Requirement	Responsibility	Frequency
As soon as possible (within 24 hours) the Contractor will inform the Principal of traffic related complaints or incidents.	Contractor	<ul style="list-style-type: none"> As requested At completion



4.2.11 Communication and Stakeholder Engagement

The project is considered 'high profile' and sections of the project area occur within residential settings with environmentally sensitive receptors. There are a number of active community groups that have expressed ongoing interest in the project, and three schools are located in areas adjacent to the project site.

Objective: *Prevent impacts to areas outside the project footprint and fulfil commitments negotiated with stakeholders*

Performance Indicator(s)

No unauthorised activity outside the project area footprint.

% completion of all stakeholder commitments at project completion.

End of project work survey score (completed by community members)

Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.11.1	Communication management is to be included in the CEMP. This will be compliant with the Communications Strategy developed for the project.	Contractor	Prior to commencement
4.2.11.2	Contractor will provide training to all personnel during an initial safety and environment induction course, which will include Stakeholder engagement protocols	Contractor	Prior to construction
4.2.11.3	All community complaints will be recorded and conveyed in writing to the Water Corporation Senior Communications Advisor within 24 hours of the complaint occurring.	Contractor	All

Monitoring Requirement	Responsibility	Frequency
Not applicable		

Reporting Requirement	Responsibility	Frequency
Register of community enquiries and complaints to be recorded and maintained.	Contractor	<ul style="list-style-type: none"> Weekly As requested



4.2.12 Reinstatement and Revegetation

The Principal's Revegetation SME has prepared the *Vasse Diversion Drain Upgrade: Revegetation Plan* (Tranen, 2020), where applicable, the Contractor will comply with the management and reinstatement requirements for the site.

The Contractor will include a strategy to progressively reinstate areas covered in the Revegetation Plan (Tranen, 2020) to allow for access by the Principal's Revegetation SME. Digital shapefiles of these areas will be provided by the Principal.

Objective: Achieve stabilisation and minimise erosion and sedimentation.

Performance Indicator(s)

Compliance with management controls below.

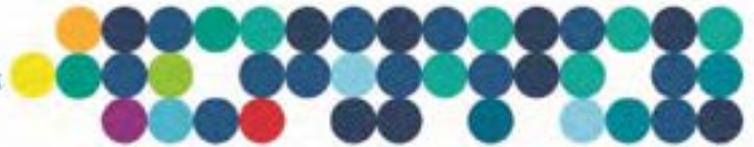
Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.12.1	Principal to provide DWER and AWE with Project Offset Revegetation Plan for Approval, in compliance with Condition 16 and Condition 17 of CPS8191/1 and Condition 8 of EPBC 2017/7932.	Principal	Appendix I
4.2.12.2	Principal to provide contractor with digital shapefiles of areas included in the project revegetation plan (Tranen 2020), Appendix I	Principal	Prior to Construction
4.2.12.3	Include a procedure to progressively reinstatement to pre-existing, or otherwise acceptable condition, as work components are completed in areas included in the <i>Vasse Diversion Drain Upgrade: Revegetation Plan</i> in the CEMP.	Contractor	Prior to commencement
4.2.12.4	The Contractor shall undertake weed suppression and stabilisation of the levees progressively, as construction completes. This will be complimentary to any management measures included by the Contractor in Section 4.2.1 and Section 4.2.3 , and incorporated into the Contractor CEMP. This excludes any areas included in the Revegetation Plan (Tranen, 2020).	Contractor	All
4.2.12.5	Principal to provide confirmation that the site is progressively returned to pre-disturbance or otherwise acceptable condition prior to Item 4.2.12.5 .	Principal	Prior to Item 4.2.12.5



Minimum Management Requirements			
Item	Action	Responsibility	Phase
4.2.12.6	The Contractor shall allow access (where safe to do so), to the completed areas for the Principal's Revegetation SME, to facilitate progressive weed suppression and management.	Contractor	Progressively as the construction front leaves an area.
4.2.12.7	Sediment control measures to be installed in areas prone to erosion by wind or water.	Contractor	During construction
4.2.12.8	Principal to provide confirmation that the site is returned to pre-disturbance or otherwise acceptable condition	Principal	Prior to handover

The following is applicable to the Construction lay-down areas

Item	Action	Responsibility	Phase
4.2.12.8	<ul style="list-style-type: none"> Remove the hardstand at the completion of the works Tyne the ground surface (under the hardstand and stockpiles) with a grader Respread the topsoil 	Contractor	Post construction
4.2.12.9	For stockpiles: <ul style="list-style-type: none"> Remove all stockpiles to the original surface level; scarify the surface to a depth of between 50-100mm; break up any compacted surface materials; spread topsoil; and grade the surface consistent with the pre-lease condition. 	Contractor	Post construction
4.2.12.10	Re-establishment of vegetation as specified below: <ul style="list-style-type: none"> Cobra balansa clover, or similar white clover balansa that is a perennial aerial seeded type, suitable for self-regeneration 2 perennial ryegrass. A tetraploid variety and a separate diploid would be beneficial A phalaris spread at an extremely low rate 	Contractor	After completion of Item 4.2.12.6 and 4.2.12.7
4.2.12.11	Principal will advise the Contractor if there is a change to the species type/mix prior to commencing 4.2.12.10	Principal	After completion of Item 4.2.12.6 and 4.2.12.7
4.2.12.12	Principal to provide confirmation that the site is returned to pre-disturbance or otherwise acceptable condition	Principal	Prior to handover



Monitoring Requirement	Responsibility	Frequency
Monitoring and Maintenance of the areas indicted in Condition 16 of CPS8191/1 will be monitored in accordance with Tranen (2020) and Condition 17 of CPS8191/1 and Condition 13 of EPBC 2017/7932	Principal	As specified in CPS8191/1 and EPBC 2017/7932

Reporting Requirement	Responsibility	Frequency
Principal to provide monitoring and maintenance reports to DWER and AWE in accordance with Condition 18(b) and Condition 19(c) of CPS8191/1 and EPBC 2017/7932 Condition 9 , Condition 12 , Condition 13 and Condition 14 .	Principal	Annually
Principal to report non-compliance in accordance with Condition 15 and Condition 16 of EPBC 2017/7932	Principal	As required



5 Definitions

Terms	Definitions
Approved clearing area	<p>The area in which clearing of vegetation is approved to occur as defined in a Native Vegetation Clearing Form (NVCF) issued by the Water Corporation. This includes both native and non-native (e.g. planted vegetation, parklands, etc.) vegetation.</p> <p>Note: this area may be different to the Development Area Footprint.</p>
Clearing	<p>The killing, destruction, removal, severing or ringbarking of trunks and stems; or doing of any substantial damage to some or all the native vegetation in an area.</p> <p>This includes the draining or flooding land, the burning of vegetation, the grazing of stock, or any other act or activity that causes the above.</p> <p>An example of clearing includes trampling, driving over, stockpiling spoil on top of, severing of roots that comprises the survivability of some or all the native vegetation in an area.</p>
Construction Environmental Management Plan (CEMP)	<p>A site- or project-specific plan developed to meet the requirements and objectives of the Construction Environment Management Framework and ensure that appropriate environmental management practices are followed during the construction phase of the project.</p>
Contractor	<p>A company or person that has contracted with the Corporation to provide goods and/or services including Suppliers, Consultants and Vendors. The term includes direct employees of the contractor, subcontractors engaged by the contractor, and any other persons who have been engaged by the Contractor to perform work on behalf of the contractor.</p>
Development area footprint (DAF)	<p>The authorised extent of disturbance for the project. The authorised extent includes any:</p> <ul style="list-style-type: none"> existing or proposed infrastructure (e.g. pipelines, waste water treatment plants, dams, weirs or Water Corporation assets, etc.) any equipment laydown areas off-road access ways or access tracks and turnaround points for vehicles and machinery, tracking back to a gazetted road any project requirements such as dewatering sumps, infiltration/discharge areas, hygiene control points, areas for spoils, temporary buildings and any other areas. <p>Note: this area may be different from the Approved Clearing Area.</p>
Environmental incident	<p>means any event or impact on the environment involving the Water Corporation and/or its contractor's actions or assets that are capable of:</p> <ul style="list-style-type: none"> causing harm to the environment or any person or property causing pollution coming to the attention of an environmental regulatory agency. <p>An unplanned event that results in or has the potential to result in injury, harm to health, damage or loss to person (including members of the public), property or the environment. This includes injury/illness, near miss, property damage and traffic infringements, whether in a Water Corporation supplied, hired vehicle or privately owned vehicle.</p> <p>It also includes any Public Safety Incidents and instances where a Regulatory Notice has been issued involving any Water Corporation worker, contractor, activity or workplace.</p>



Terms	Definitions
Fauna	means native animals.
Flora	means native plants.
Native vegetation	As defined in the <i>Environmental Protection Act 1986</i> and <i>Regulations (2004)</i> , native vegetation is indigenous aquatic or terrestrial vegetation and includes dead vegetation but does not include vegetation that was intentionally sown, planted or propagated.
Principal	is the Water Corporation
Project area	Includes the Development Area Footprint, Approved Clearing Area, Approved Native Vegetation Clearing Area, infiltration ponds, laydown and stockpile areas, site office locations, access tracks and public roads within 500 m from the DAF boundary that are used for access or transport to and from construction activities.
Worker	<p>A person who carries out work in any capacity for or on behalf of the Water Corporation. A worker agrees to perform work at Water Corporation's direction, instruction or request (whether express, implied, oral or in writing).</p> <p>These includes employees, contractor, subcontractors, employees of contractors and subcontractors, labour hire employees, apprentice and trainees, work experience student, outworker, or volunteer.</p>



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Appendix A – Water Corporation Environment Policy

Environment Policy



Environmental leadership and improvement

Water Corporation provides essential water, wastewater and drainage services to our customers across Western Australia. We take water from the environment and then return drainage water, treated wastewater and by-products to the environment.

We are committed to protecting and improving the environments in which we work or influence by complying with our environmental obligations, reducing our environmental impact and improving our environmental performance.



**Taking
personal
ownership**

We are all responsible for protecting the environment as well as understanding and meeting our environmental obligations while improving performance.



**Managing
risks**

We identify, manage and eliminate risks to the environment. We seek to prevent pollution and enhance the environments in which we work.



**Governance
and
performance**

We have strong governance structures supporting our environmental objectives.

Our objectives include

- no net greenhouse gas emissions by 2050
- protecting the oceans and waterways we influence
- increasing reuse of treated wastewater
- reducing water use per capita to conserve resources
- sustainable use of resources with no net clearing of native vegetation.

We regularly review our environmental objectives and targets to ensure they remain relevant and reported internally and publicly to measure our performance.

Pat Donovan
Chief Executive Officer, Water Corporation

This policy applies to all Water Corporation workers and includes all activities and services we provide in accordance with our operating license. We will provide the necessary resources, systems, training and mechanisms to improve our environmental performance.

PCY230 Environment Policy
Date: January 2020
Next review: January 2023



Appendix B – Department of Water and Environmental Regulations: Purpose Permit CPS8191/1



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8191/1
Permit Holder:	Water Corporation
Duration of Permit:	From 28 July 2020 to 28 July 2035

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

1. Purpose for which clearing may be done

Clearing for the purpose of upgrading the Vasse Diversion Drain, including the reconstruction of the Vasse Diversion Dam and duplication of the culverts.

2. Land on which clearing is to be done

Lot 866 on Diagram 4170 (Crown reserve 16061), West Busselton
Lot 80 on Deposited Plan 70429, Bovell
Lot 61 on Plan 5399, West Busselton
Lot 59 on Plan 5399, West Busselton
Lot 58 on Plan 5399, Bovell
Lot 57 on Plan 5399 (Crown reserve 16061), West Busselton
Lot 56 on Plan 9868, Bovell
Lot 56 on Plan 9868, West Busselton
Lot 56 on Plan 5399, Bovell
Lot 55 on Plan 9868, West Busselton
Lot 553 on Plan 23463 (Crown reserve 48018), West Busselton
Lot 5337 on Plan 23318, Bovell
Lot 5210 on Plan 22191 (Crown reserve 45170), West Busselton
Lot 5209 on Plan 22630 (Crown reserve 45170), West Busselton
Lot 5190 on Deposited Plan 220139 (Crown reserve 41460), West Busselton
Lot 5136 on Diagram 42478 (Crown reserve 45588), Bovell
Lot 5068 on Plan 20855 (Crown reserve 44380), Busselton
Lot 5067 on Plan 20770 (Crown reserve 43250), West Busselton
Lot 5067 on Plan 20362 (Crown reserve 43250), West Busselton
Lot 505 on Deposited Plan 417589, West Busselton
Lot 501 on Deposited Plan 417589, West Busselton
Lot 4989 on Plan 18644 (Crown reserve 43250), West Busselton
Lot 4607 on Diagram 40995, West Busselton
Lot 4348 on Diagram 27395 (Crown reserve 26555), West Busselton
Lot 2594 on Deposited Plan 400537 (Crown Reserve 52132), West Busselton
Lot 2593 on Deposited Plan 400537 (Crown Reserve 52132), West Busselton
Lot 1 on Diagram 39001, West Busselton

Lot 100 on Diagram 9165, Bovell
Unallocated Crown Land (PIN 11993547), Bovell
Water Feature (PIN 11725451), Bovell
Road Reserve - 1172836, West Busselton
Road Reserve - 11440716, West Busselton
Road Reserve - 1183896, West Busselton
Deposited Plan 37514 - Easement J140752 (5067)
Deposited Plan 37514 - Easement J140752 (5209)
Deposited Plan 37514 - Easement J140752 (5210)

3. Area of clearing

The Permit Holder must not clear more than 2.16 hectares of native vegetation within the area hatched yellow on attached Plan 8191/1a and 8191/1b.

4. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 28 July 2025.

5. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

6. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the *project activities* described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those *project activities* under the *Water Corporation Act 1995* or any other written law.

7. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in 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.

8. Dieback and weed management

When undertaking any clearing authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the 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.

9. Flora management – *Caladenia procera*

- (a) Prior to undertaking any clearing, the Permit Holder must engage a *botanist* to conduct a *targeted flora survey* within *suitable habitat(a)* within the areas cross-hatched yellow on attached Plan 8191/1a for the presence of *Caladenia procera*;
- (b) The Permit Holder shall ensure no clearing of any *Caladenia procera* individuals identified through the surveys required by condition 9(a);
- (c) The Permit Holder shall ensure that no clearing occurs within 10 metres of *Caladenia procera* individuals identified through the surveys required by condition 9(a), unless the clearing is done in accordance with condition 9(d) of this Permit;
- (d) Where clearing within 10 metres of individuals of *Caladenia procera* is unavoidable, the Permit Holder must:

- (i) install clearly demarked temporary fencing around the individuals of *Caladenia procera* prior to undertaking any clearing and maintain the fencing until the *project activities* have ceased; and
 - (ii) Adhere to the Flora Management Plan required under condition 10 which has been approved by the *CEO*.
- (e) Within two months of undertaking any clearing authorised under this Permit within the areas cross-hatched yellow on Plan 8191/1a, the Permit Holder must provide the results of the *targeted flora survey*, as required by condition 9(a), in a report to the *CEO*; and
- (f) If *Caladenia procera* are identified within 10 metres of the areas cross-hatched yellow on Plan 8191/1a, the *targeted flora survey* report must include the following:
- (i) the location of each *Caladenia procera* identified under condition 9(a), either as the location of individual plants, or where this is not practical, the areal extent of the population and an estimate of the number of plants, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) map/s showing the location of any identified population of *Caladenia procera* cleared and the remaining population; and
 - (iii) the methodology used to survey the Permit area.

10. Flora Management Plan

Where clearing within 10 metres of individuals of *Caladenia procera* is unavoidable, the Permit Holder must submit a Flora Management Plan to the *CEO* for approval, prior to clearing commencing. The management plan must contain the following:

- (i) Details of the Permit Holder's attempts to avoid and minimise impacts to *Caladenia procera*; and
- (ii) Proposed methods of minimising and mitigating any indirect impacts to *Caladenia procera*.

11. Fauna management – other approvals

Prior to clearing, the Permit Holder must provide to the *CEO*:

- (a) a copy of the fauna licence(s) obtained under the *Biodiversity Conservation Act 2016* for the *relocation* and/or *translocation* of Carter's freshwater mussel (*Westralunio carteri*) and the dispersion of western ringtail possum (*Pseudocheirus occidentalis*) individuals; and
- (b) a copy of the approved exemption from the Department of Primary Industries and Regional Development under the *Fish Resources Management Act 1994* and *Fish Resources Management Regulations 1995* for the collection of Carter's freshwater mussel for translocation.

12. Fauna management – Carter's freshwater mussel

- (a) Prior to commencement of any clearing activities authorised under this Permit, the Permit Holder must submit a Carter's freshwater mussel (*Westralunio carteri*) Management Plan to the *CEO* for approval. The management plan must contain the following:
 - (i) Removal, transportation and *relocation* method, and where required, temporary storage method;
 - (ii) Location of the *relocation* site, including a field assessment confirming the suitability of the *relocation* site;
 - (iii) Stocking densities; and
 - (iv) The success rate monitoring plan.

13. Fauna management – western ringtail possum

- (a) In relation to the area cross-hatched yellow on attached Plans 8191/1a and 8191/1b, the Permit Holder must engage a *fauna specialist* to inspect that area, including all trees and tree hollows present, within 24 hours prior to, and for the duration of clearing, for the presence of western ringtail possum(s) (*Pseudocheirus occidentalis*).
- (b) Clearing must cease in any area where fauna referred to in condition 13(a) above are identified until the western ringtail possum(s) has moved out of the development area to adjoining *suitable habitat*(b).
- (c) Where fauna is identified under condition 13(a) of this Permit, the Permit Holder must provide the following records to the *CEO* as soon as practicable:

- (i) the number of individuals identified;
- (ii) the date each individual was identified;
- (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (iv) the number of individuals displaced;
- (v) the relevant qualifications of the *fauna specialist* undertaking the displacement;
- (vi) the date each individual was displaced;
- (vii) the method of dispersal;
- (viii) the date each individual was dispersed;
- (ix) the location where each individual dispersed to, recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
- (x) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

14. Fauna management – western ringtail possum rope bridges

Prior to commencement of any clearing activities authorised under this Permit, the Permit Holder must at a minimum install six rope bridges within the area cross-hatched red on the attached Plan 8191/1c, in accordance with the following requirements:

- (i) the end of each rope bridge must be connected to at least two mature trees, or two different locations in the canopy of a single mature tree, at a height of at least three metres above ground level;
- (ii) the rope bridges must be placed in areas that provide canopy connectivity for western ringtail possum movement across the local area, i.e. across roadways and other gaps in the canopy;
- (iii) be monitored annually and maintained for a period of at least ten years; and
- (iv) Within two months of undertaking any clearing authorised under this Permit within the combined areas cross-hatched yellow on Plan 8191/1a and 8191/1b, the Permit Holder must provide to the *CEO*, the locations where each rope bridge was placed using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees.

15. Fauna management – western ringtail possum nest boxes

Prior to commencement of any clearing activities authorised under this Permit, the Permit Holder must, at a minimum, install 12 nest boxes within the area cross-hatched red on the attached Plan 8191/1c, in accordance with the following requirements:

- (i) be designed and placed in accordance with the specifications detailed in the Project Revegetation Plan required by condition 17(a);
- (ii) be placed at least three metres above ground level in a mature tree facing the shadiest side of the tree;
- (iii) be monitored annually and maintained for a period of at least ten years; and
- (iv) within two months of undertaking any clearing authorised under this Permit within the combined areas cross-hatched yellow on Plan 8191/1a, the Permit Holder must provide to the *CEO*, the locations where each nest box was placed using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees.

16. Revegetation and rehabilitation – mitigation

- (a) Within 12 months of the commencement of clearing, the Permit Holder must undertake revegetation within 0.55 hectares of the area hatched red on attached Plan 8191/1d in accordance with condition 17 of this permit.

17. Offset – revegetation and rehabilitation

- (a) Within 3 months of clearing commencing, the Permit Holder must submit a Project Revegetation Plan to the *CEO* for approval for the *revegetation* of 10.34 hectares of land within the areas cross-hatched red on Plan 8191/1e, which shall be developed in accordance with *A Guide to Preparing Revegetation Plans for Clearing Permits* (Department of Water and Environmental Regulation (DWER) 2018).
- (b) The Project Revegetation Plan must be prepared by an *environmental specialist*.
- (c) The Project Revegetation Plan must include the following:
- (i) *site preparation*;
 - (ii) deliberate planting of native vegetation that will provide *suitable habitat(b)* for western ringtail possum;
 - (iii) deliberate planting of species associated with the *Eucalyptus rudis* (flooded gum), *Corymbia calophylla*, *Agonis flexuosa* Closed Low Forest (near Busselton) priority ecological community (PEC) in areas as outlined in the Project Revegetation Plan;
 - (iv) deliberate planting of up to 300 seedlings of *Conospermum caeruleum var.* Busselton;
 - (v) planting of *local provenance* native understorey species at an *optimal time* so as to achieve the *completion criteria* specified in condition 17(a)(xii) below;
 - (vi) a biannual weed control program within the area hatched red on Plan 8191/1e to achieve the *completion criteria* outline under condition 17(a)(xii), criterion 2;
 - (vii) establishment of a total of 34, 5 x 5 metre monitoring *quadrats* within the area hatched red on Plan 8191/1e;
 - (viii) maintenance of sufficient fencing to protect revegetation areas adjacent to areas most impacted by public access as outlined in the Project Revegetation Plan;
 - (ix) implementation of hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the site;
 - (x) installation of signage to educate reserve users of the revegetation activities being undertaken;
 - (xi) achieve the below *completion criteria* within the ten year monitoring period for the area hatched red on Plan 8191/1e;

Criterion	Aspect	Scale	Completion criteria description	Monitoring frequency
1	Per cent <i>weed</i> cover	Average of <i>quadrat</i> data and site traverse	<15 per cent weed cover across all sites	Bi-annually in the first 2 years, and annually for the next 8 years
2	Declared <i>weeds</i>	Site traverse	Absence of declared weeds	Bi-annually in the first 2 years, and annually for the next 8 years
3	Per cent bare ground	Average of <i>quadrat</i> data and site traverse	Per cent of bare ground to be no greater than that recorded in the <i>pre clearing surveys</i> .	Bi-annually in the first 2 years, and annually for the next 8 years
4	Vegetation condition	Site traverse	The condition of the vegetation to be in a good to very good condition on average across the revegetation area (Keighery 1994).	Bi-annually in the first 2 years, and annually for the next 8 years
5	Native vegetation cover/density	Average of <i>quadrat</i> data and site traverse	>70 per cent native cover	Bi-annually in the first 2 years, and annually for the next 8 years
6	Species richness	Average of <i>quadrat</i> data	>70 per cent of species planted represented across all sites respectively (PEC sites, Geographe coastal wetland	Bi-annually in the first 2 years, and annually for the next 8 years

			system sites and Quindalup dune sites) as outlined in the species list provided in the Project Revegetation Plan	
7	<i>Conospermum caeruleum</i> var. Busselton	Site traverse and direct survival observation	>50 per cent survival rate to be achieved	Bi-annually in the first 2 years, and annually for the next 8 years

(xii) remedial actions to be undertaken if *completion criteria* are not met; and

(xiii) management commitments that will be achieved.

(d) The Permit Holder shall implement the Project Revegetation Plan as approved by the *CEO*.

18. Record keeping

The Permit Holder must maintain the following records:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
- (i) the boundaries of clearing undertaken on each date, recorded using a Global Positioning System GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the size of the area cleared (in hectares);
 - (iii) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 7 of this Permit;
 - (iv) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 8 of this Permit;
 - (v) details required in accordance with flora management conditions 9 and 10 of this Permit; and
 - (vi) details required in accordance with fauna management conditions 11, 12, 13, 14 and 15 of this Permit.
- (b) In relation to revegetation activities undertaken pursuant to conditions 16 and 17 of this Permit:
- (i) the date(s) each area was revegetated;
 - (ii) the location of each area revegetated recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (iii) at least two photographs of each area revegetated taken on an annual basis at the same location each year;
 - (iv) a description of the revegetation activities undertaken each year for each area revegetated; and
 - (v) a description of the tree density and native understorey vegetation cover for each area revegetated recorded on an annual basis.

19. Reporting

- (a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
- (i) of records required under condition 18 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit has been undertaken, a written report confirming that no clearing under this Permit has been undertaken, must be provided to the *CEO* on or before 30 June of each year.
- (c) Prior to 30 March 2030, the Permit Holder must provide to the *CEO* a written report of records required under condition 18 of this Permit where these records have not already been provided under condition 19(a) of this Permit.

Definitions

The following meanings are given to terms used in this Permit:

botanist means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of two (2) years work experience in Western Australian flora identification and undertaking flora surveys native to the bioregion being inspected or surveyed, or who is approved by the CEO as a suitable environmental specialist for the bioregion, and who holds a valid flora licence issued under the *Biodiversity Conservation Act 2016*;

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

completion criteria (quantitative) means a measurable outcome based on a suitable reference site, used to determine revegetation/rehabilitation success;

dieback means the effect of *Phytophthora* species on native vegetation;

environmental specialist means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of 2 years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist;

fill means material used to increase the ground level, or fill a hollow;

local provenance means native vegetation seeds and propagating material from natural sources within 100 kilometres where practical, based on a species specific assessment and availability of sufficient propagation material and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.

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;

optimal time means the most suitable period for undertaking direct seeding and planting based on species availability, as set out in the Project Revegetation Plan;

pre clearing surveys means those surveys undertaken by the applicant prior to the permit being granted, which informed the assessment of the clearing permit application;

quadrat means a sample plot established for the purpose of data collection and monitoring vegetation characteristics, for example species composition, structure, density and condition;

rehabilitate/ed/ion/ing means actively managing an area containing native vegetation in order to improve the ecological function of that area;

relocation means moving an individual animal (or family group) from one location within its home range to another location within the same home range for the purpose of resolving a human-wildlife conflict;

revegetate/ed/ion/ing means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

reference site means a site used to provide baseline data for planning a revegetation project. Measurements from fixed reference points or plots where biodiversity components are measured are used to set measurable completion criteria for revegetation projects. Reference sites are to be in at least very good condition (Keighery 1994);

revegetation plan means a plan prepared by the Permit Holder, or an appropriate *environmental specialist* delegated by the Permit Holder, for the *revegetation* of a site in accordance with a Permit condition;

site preparation means management of existing site topsoil and preparation of the finished soil surface, for example by ripping or tilling the soil surface and respreading site topsoil and chipped native vegetation.

suitable habitat(a) means habitat known to support Carburnup king spider orchid (*Caladenia procera*) within the known current distribution of the species, typically characterised by jarrah (*Eucalyptus marginata*), marri (*Corymbia calophylla*) and peppermint (*Agonis flexuosa*) woodland on alluvial sandy-clay loam flats, with Mangles kangaroo paw (*Anigozanthos manglesii*) amongst dense heath and sedges or low dense shrubs. Other associated species include *Acacia stenoptera* and *Pimelea sylvestris*.

suitable habitat(b) means habitat known to support western ringtail possums (*Pseudocheirus occidentalis*) within the known current distribution of the species, typically characterised by abundant foliage, presence of suitable nesting structures such as tree hollows, as well as high canopy cover and continuity. Known habitat includes peppermint (*Agonis flexuosa*) dominated woodlands, jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) forests, riparian vegetation with a canopy of Bullich (*Eucalyptus megacarpa*) or flooded gum (*Eucalyptus rudis*), karri (*Eucalyptus diversicolor*) forests, sheoak (*Allocasuarina fraseriana*) dominated woodlands, and other stands of myrtaceous trees growing near swamps, watercourses or floodplains;

targeted flora survey means a field-based investigation, including a review of established literature, of the biodiversity of flora and vegetation of the permit area, focusing on habitat suitable for *Caladenia procera* and carried out during the optimal time to identify the species, which is during the flowering period between September and October. Where target flora are identified in the or in close proximity to the permit area, the survey must also include a minimum of a 10 metre radius of the surrounding areas to place the permit area into local context;

translocation means deliberate, human-mediated movement of living organisms from one area, with release in another for the purpose of establishing, re-establishing or augmenting a population. Movement includes between wild locations and populations, from a captive facility or ex situ population to a wild location, and/or from the wild to a captive facility for population growth, with an intention to return the individuals or their progeny to the wild;

vegetation condition means the rating given to native vegetation which refers to the impact of disturbance on each of the layers and the ability of the community to regenerate (Keighery 1994);

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*;
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.

fauna specialist means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the Biodiversity Conservation Act 2016.

Adrian Wiley
SENIOR MANAGER
NATIVE VEGETATION REGULATION

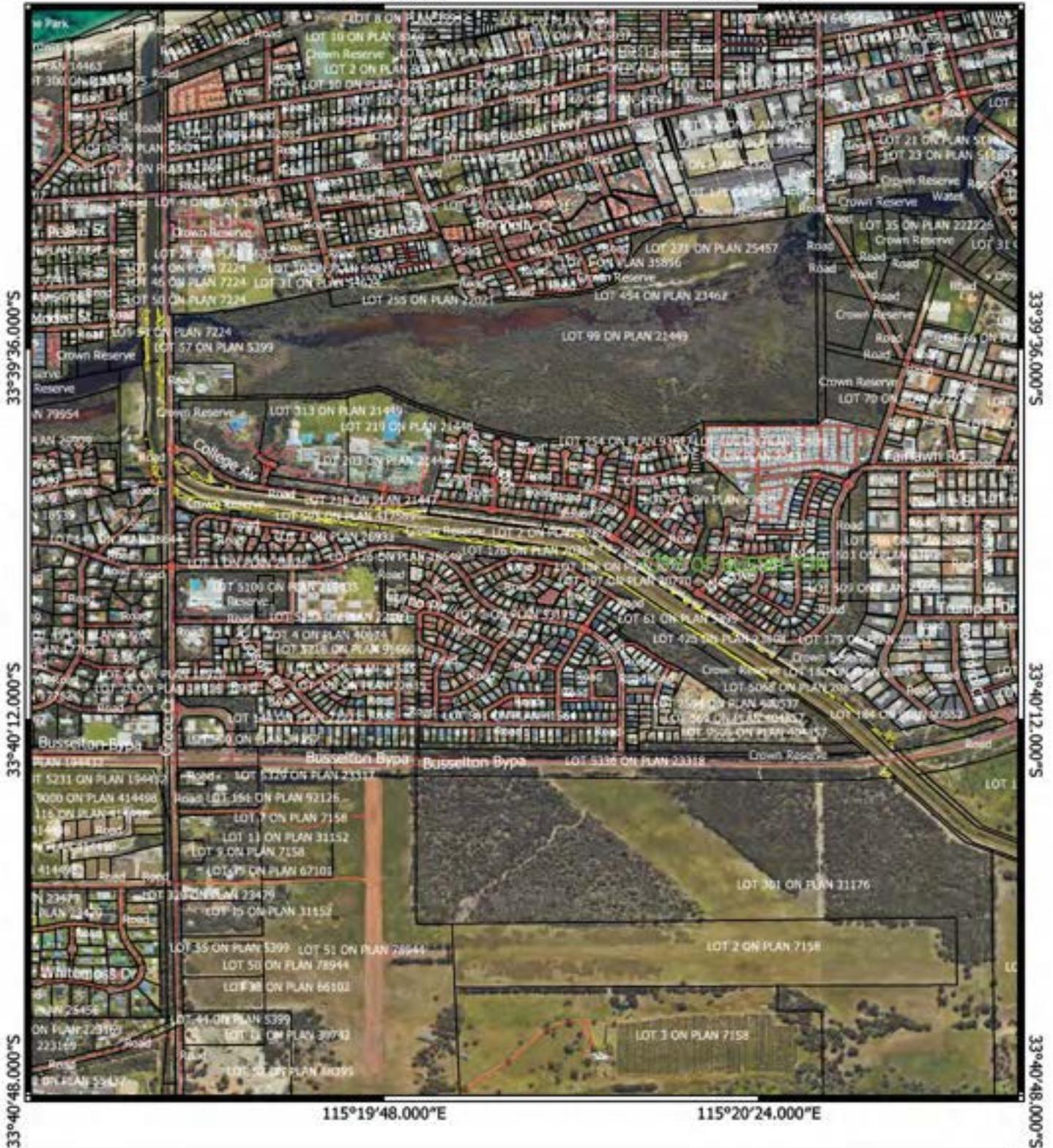
*Officer delegated under Section 20
of the Environmental Protection Act 1986*

3 July 2020

Plan 8191/1 a

115°19'48.000"E

115°20'24.000"E



Legend

-  CPS areas approved to clear
-  Road Centrelines
-  Local Government Authorities

100 0 100 m



Officer delegated under section 20 of the
Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 8191/1 b



Legend

-  CPS areas approved to clear
-  Road Centrelines
-  Local Government Authorities

0 100 200 m



Officer delegated under section 20 of the
Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 8191/1 c

115°19'48.000"E



115°19'48.000"E

Legend

-  Road Centrelines
-  Local Government Authorities
-  CPS subject to conditions

100 0 100 m



Officer delegated under section 20 of the
Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 8191/1 d

115°19'48.000"E

115°20'24.000"E



Legend

-  CPS subject to conditions
-  Local Government Authorities
-  Road Centrelines

Image

100 0 100 m

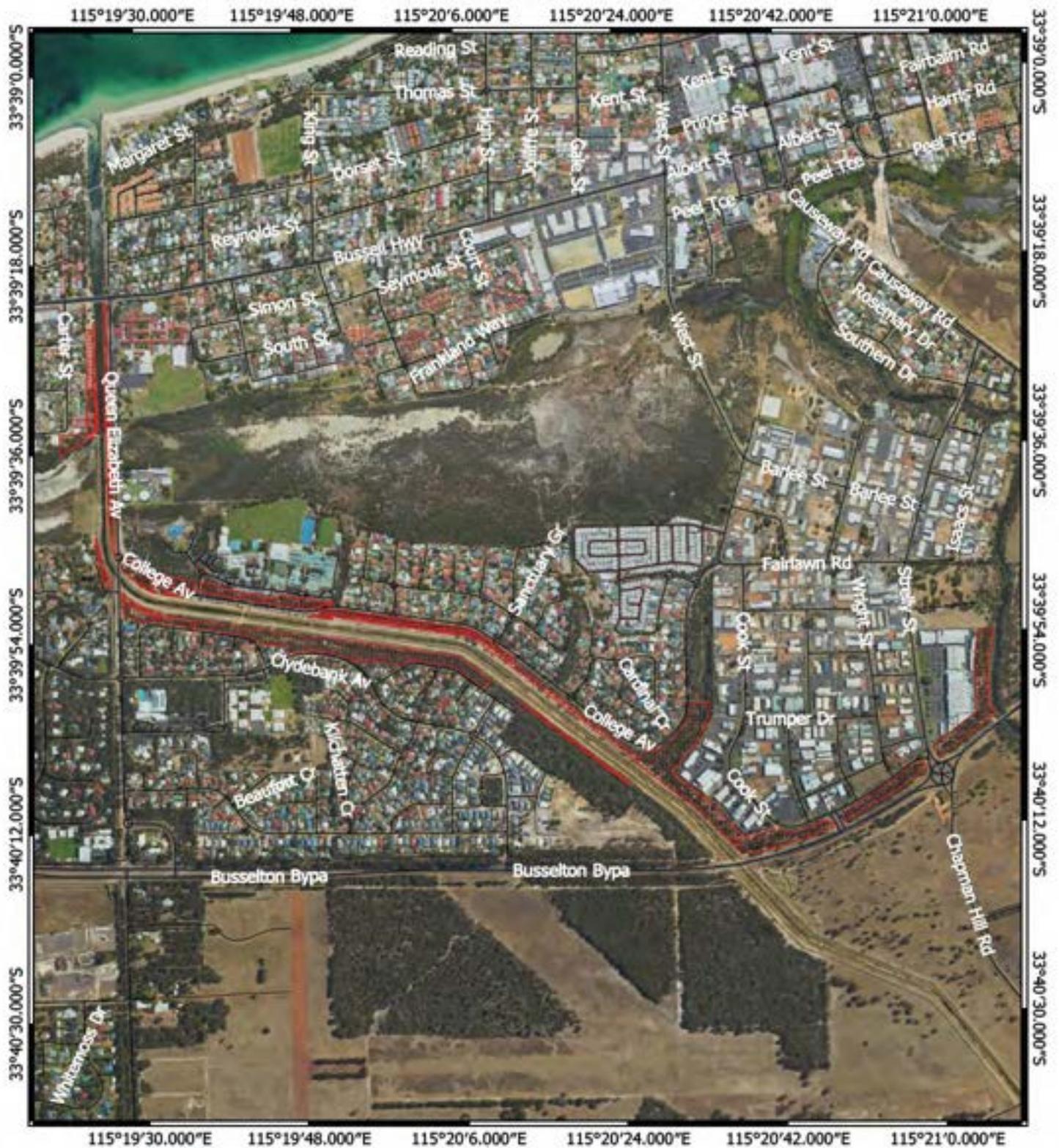


Officer delegated under section 20 of the
Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 8191/1 e



Legend

-  CPS subject to conditions
-  Road Centrelines
-  Local Government Authority

Image

0 250 500 m



Officer delegated under section 20 of the Environmental Protection Act 1986



GOVERNMENT OF WESTERN AUSTRALIA



Appendix C – Department of Agriculture, Water and Environment: Approval Conditions 2017/7932



APPROVAL

Vasse Diversion Drain Upgrade, Busselton, Western Australia (EPBC 2017/7932)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*. Note that section 134(1A) of the EPBC Act applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Water Corporation WA
ACN or ABN of approval holder	ABN: 28003434917
Action	To upgrade the Vasse diversion drain within the City of Busselton approximately 220 km south of Perth, WA (EPBC 2017/7932) subject to the variation of the action accepted by the Minister under section 156B of the EPBC Act on Wednesday, 18 July 2018.

Approval decision

My decision on whether or not to approve the taking of the action for the purposes of the controlling provision for the action is as follows.

Controlling Provisions

Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve

Period for which the approval has effect

This approval has effect until 28 July 2035

Decision-maker

<i>Name and position</i>	Kylie Calhoun Assistant Secretary Environment Assessments West (WA, SA, NT) Branch Department of Agriculture, Water and the Environment
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Signature

<i>Date of decision</i>	24 September 2020
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Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

1. To minimise impacts to **EPBC Act listed species**, the approval holder must:
 - a. **clear** no more than 2.16 hectares (ha) of **Western Ringtail Possum habitat** within the **project area** (hatched yellow in Attachment A and Attachment B);
 - b. comply with and implement the conditions of the **clearing permit CPS 8191/1** or as varied from time to time; and
 - c. notify the **Department** in writing of any variations of the conditions of **clearing permit CPS 8191/1** within 10 business days of such a change being approved by the **State Government**.
2. To avoid and mitigate impacts to the **Western Ringtail Possum**, the approval holder must:
 - a. implement condition 14 of the **clearing permit CPS 8191/1** by installing a minimum of six rope bridges. The installation of the rope bridges must be in accordance with advice from a **suitably qualified ecologist**;
 - b. implement condition 15 of the **clearing permit CPS 8191/1** by installing a minimum of 12 nest boxes suitable for **Western Ringtail Possum**. If the **action** results in the removal of more than six **dreys**, the **approval holder** must install two nest boxes for each additional **drey** being removed. Installation of the nest boxes must be in accordance with advice from a **suitably qualified ecologist**; and
 - c. reposition rope bridges and nest boxes in accordance with advice from a **suitably qualified ecologist** if they are not being utilised by **Western Ringtail Possum** within six months of installation.
3. The approval holder must maintain the following records and provide them to the **Department** within two months of the installation or repositioning of rope bridges and nesting boxes:
 - a. the date(s) and the **location** where the rope bridges and nest boxes for **Western Ringtail Possum** (conditioned under 2 and the **clearing permit CPS 8191/1**) were installed or repositioned;
 - b. an in-situ photograph of each rope bridge and nest box installed or repositioned;
 - c. evidence that a **suitably qualified ecologist** has approved the design and placement of each rope bridge and nest box; and
 - d. provide the **Department** with an annual monitoring and maintenance report for the installed and repositioned rope bridges and nest boxes for at least ten years from the date of approval.
4. The approval holder must notify the **Department** within two **business days** if any **Western Ringtail Possum** is killed as a result of the **action**.
5. To minimise impacts to the **Carbunup King Spider Orchid**, the approval holder:
 - a. must implement condition 9 of the **clearing permit CPS 8191/1**. The **targeted flora survey** as required by condition 9 (a) of the **clearing permit CPS 8191/1**, must be conducted between September and October 2020;
 - b. must not **clear** any **Carbunup King Spider Orchid** individuals identified through the **targeted flora survey** required by condition 5a; and
 - c. develop and implement a **translocation proposal** for all **Carbunup King Spider Orchid** individuals identified through the **targeted flora survey** required under condition 5a located within the **clearing area**. This **translocation proposal** must be endorsed in writing by a **suitably qualified biologist** as appropriate to ensure the successful survival of the translocated individuals without posing a risk to the receiving area(s) prior to implementation

of the proposal. The **translocation proposal** must be implemented once endorsed by a **suitably qualified biologist** as appropriate.

- d. documentary evidence of the endorsement of the **translocation proposal** and implementation of the **translocation proposal** must be provided to the **Department** within 14 business days of the endorsement.
6. Within two months of conducting a **targeted flora survey** for **Carbunup King Spider Orchid** and as required by condition 5a, the approval holder must provide the **Department** the results of the **targeted flora survey** which must contain the following information:
 - a. the date(s) **targeted flora survey** was conducted and the methodology used; and
 - b. a photograph of each individual of **Carbunup King Spider Orchid** identified during the **targeted flora survey** and map/s showing their **location**.
7. Prior to the **commencement of the action**, the approval holder must implement the weed management and soil hygiene management measures as mentioned in the **Construction Environmental Management Framework** provided to the **Department** on 2 July 2020.
8. The approval holder must implement the **fauna management plan** provided to the **Department** on 10 September 2020.
9. The approval holder must implement a **flora management plan** as required by condition 10 of the **clearing permit CPS 8191/1**.
10. To compensate for the **residual significant impacts** on the **Western Ringtail Possum**, the approval holder must implement condition 17 of the **clearing permit CPS 8191/1**.

Part B – Standard administrative conditions

Notification of date of commencement of the action

11. The approval holder must notify the **Department** in writing of the date of **commencement of the action** within 10 **business days** after the date of **commencement of the action**.

Compliance records

12. The approval holder must maintain accurate and complete **compliance records**.
13. If the **Department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request.

Note: **Compliance records** may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department's** website or through the general media.

Preparation and publication of plans

14. The approval holder must:
 - a. submit **plans** electronically to the **Department** for approval by the **Minister**;
 - b. publish each **plan** on the **website** within 20 **business days** of the date the **plan** is approved by the **Minister** or of the date a revised action management plan is submitted to the **Minister** or the **Department**, unless otherwise agreed to in writing by the **Minister**;
 - c. exclude or redact **sensitive ecological data** from **plans** published on the **website** or provided to a member of the public; and
 - d. keep **plans** published on the **website** until the end date of this approval.

15. The approval holder must ensure that any **monitoring data** (including **sensitive ecological data**), surveys, maps, and other spatial and metadata required under condition 5 of this approval, is prepared in accordance with the **Department's Guidelines for biological survey and mapped data** (2018) and submitted electronically to the **Department**.

Annual compliance reporting

16. The approval holder must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or otherwise in accordance with an annual date that has been agreed to in writing by the **Minister**. The approval holder must:
 - a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;
 - b. notify the **Department** by email that a **compliance report** has been published on the **website** and provide the weblink for the **compliance report** within five **business days** of the date of publication;
 - c. keep all **compliance reports** publicly available on the **website** until this approval expires;
 - d. exclude or redact **sensitive ecological data** from **compliance reports** published on the **website**; and
 - e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: **Compliance reports** may be published on the **Department's** website.

Reporting non-compliance

17. The approval holder must notify the **Department** in writing of any: **incident**; non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification must be given as soon as practicable, and no later than two **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:
 - a. any condition which is or may be in breach;
 - b. a short description of the **incident** and/or non-compliance; and
 - c. the location (including co-ordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.
18. The approval holder must provide to the **Department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:
 - a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;
 - b. the potential impacts of the **incident** or non-compliance; and
 - c. the method and timing of any remedial action that will be undertaken by the approval holder.

Independent audit

19. The approval holder must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**.
20. For each **independent audit**, the approval holder must:
 - a. provide the name and qualifications of the independent auditor and the draft audit criteria to the **Department**;

- b. only commence the **independent audit** once the audit criteria have been approved in writing by the **Department**; and
 - c. submit an audit report to the **Department** within the timeframe specified in the approved audit criteria.
21. The approval holder must publish the audit report on the **website** within 10 **business days** of receiving the **Department's** approval of the audit report and keep the audit report published on the **website** until the end date of this approval.

Completion of the action

22. Within 30 days after the **completion of the action**, the approval holder must notify the **Department** in writing and provide **completion data**.

Part C - Definitions

In these conditions, except where contrary intention is expressed, the following definitions are used:

Approval holder means Western Australian Water Corporation.

Business day means a day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.

Carbunup King Spider Orchid means the **EPBC Act** listed critically endangered *Caladenia procera*.

Clear/Clearing means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation (but not including weeds – see the *Australian weeds strategy 2017 to 2027* for further guidance, or for the purpose of translocation under condition 5c).

Cleared area/s means an area/s (in hectares) within the **project area** where loss or long-term modification of habitat has occurred.

Clearing area means the area (in hectares) where loss or long term modification of habitat will occur within the **project area**.

Clearing permit CPS 8191/1 means the clearing permit granted on 3 July 2020 under section 51E of the *Environmental Protection Act 1986 (WA)*, and any subsequent versions.

Commencement of the action means the first instance of any specified activity associated with the action including clearing of vegetation and **construction** of any infrastructure. **Commencement of the action** does not include minor physical disturbance necessary to:

- i. undertake pre-clearance surveys or monitoring programs;
- ii. install signage and /or temporary fencing to prevent unapproved use of the project area;
- iii. protect environmental and property assets from fire, weeds and pests, including **construction** of fencing, and maintenance of existing surface access tracks;
- iv. install temporary site facilities for persons undertaking pre-commencement activities so long as these are located where they have no impact on the **protected matters**.

Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met. The **Department's** preferred spatial data format is **shapefile**.

Completion data should include, but not be limited to, information detailing the date and location of **clearing**; the actual total **cleared area/s** within the **project area** (in hectares); the total area and type of **Western Ringtail Possum** habitat **cleared** within the **project area** (in hectares); and the total area and type of **Western Ringtail Possum** habitat within **retention area/s** (in hectares). **Completion data** must also include information on the location of rope bridges and nest hollows installed under the conditions of this approval.

Completion of the action means all specified activities associated with the action have permanently ceased.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the approval holder's power to obtain lawfully.

Compliance reports means written reports:

- i. providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions and the **plans**;
- ii. consistent with the **Department's Annual Compliance Report Guidelines (2014)**;
- iii. include a **shapefile** of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period; and
- iv. annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

Construction means the erection of a building or structure that is or is to be fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; preliminary site preparation work which involves breaking of the ground (including pile driving); the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding the installation of temporary fences and signage.

Construction Environmental Management Framework means the document provided by Western Australian Water Corporation to the **Department** on 2 July 2020.

Department means the Australian Government's agency responsible for administering the **EPBC Act**.

Drey means a nest for the **Western Ringtail Possum** typically formed from a mass of twigs.

Dieback and weed management methods mean various methodologies applied to control dieback of Western Australian native vegetation from *Phytophthora* species and multiple **weeds**.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*.

EPBC Act listed species Threatened fauna and flora listed under Section 178 of the **EPBC Act**.

Fauna management plan means a management **plan** for fauna species including **Western Ringtail Possum** occurring within the **project area** prepared by Western Australian Water Corporation.

Flora management plan means a management **plan** for flora species including **Carbunup King Spider Orchid** occurring within the **project area** prepared by Western Australian Water Corporation.

Incident means any event which has the potential to, or does, impact on one or more **protected matter(s)**.

Independent audit: means an audit conducted by an independent and **suitably qualified person** as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines (2019)*.

Life of the approval means the period for which this approval has effect.

Location means the exact position recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA 1994), expressing the geographical co-ordinates in decimal degrees.

Monitoring data means the data required to be recorded under the conditions of this approval.

Minister means the Australian Government Minister administering the **EPBC Act** including any delegate thereof.

Plan(s) means any of the documents required to be prepared, approved by the **Minister**, and/or implemented by the approval holder and published on the **website** in accordance with these conditions (includes action management plans and/or strategies).

Project area means all of the areas approved to clear overlain with yellow in Attachment A and Attachment B and areas subject to conditions overlain with yellow and blue in Attachment C.

Protected matter means a matter protected under a controlling provision in Part 3 of the **EPBC Act** for which this approval has effect.

Residual significant impacts mean the residual impacts on the protected matters that are still likely to occur after the proposed activities to avoid and mitigate all impacts are taken into account.

Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) *Sensitive Ecological Data – Access and Management Policy V1.0*.

Shapefile means location and attribute information of the action provided in an Esri shapefile format. Shapefiles must contain '.shp', '.shx', '.dbf' files and a '.prj' file that specifies the projection/geographic co-ordinate system used. Shapefiles must also include an '.xml' metadata file that describes the shapefile for discovery and identification purposes.

State Government means the Government of Western Australia.

Suitably qualified biologist means a person who has professional qualifications and at least three years of work experience surveying for **Carbunup King Spider Orchid** and can give authoritative assessment, advice and analysis on performance relative to the subject matter using relevant protocols, standards, methods and/or literature. If the person does not have appropriate professional qualifications, the person must have at least five years of work experience related to the subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using relevant protocols, standards, methods and/or literature.

Suitably qualified ecologist means a person who has professional qualifications and at least three years of work experience surveying for **Western Ringtail Possum** and can give authoritative assessment, advice and analysis on performance relative to the subject matter using relevant protocols, standards, methods and/or literature. If the person does not have appropriate professional qualifications, the person must have at least five years of work experience related to the subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using relevant protocols, standards, methods and/or literature.

Suitably qualified person means a person who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

Targeted flora survey means a field-based investigation, including a review of established literature, of the biodiversity of flora and vegetation of the permit area, focusing on habitat suitable for **Carbunup King Spider Orchid** and carried out during the optimal time to identify the species, which is during the flowering period between September and October. Where target flora are identified in the or in close proximity to the permit area, the survey must also include a minimum of a 10 metre radius of the surrounding areas to place the permit area into a local context.

Translocation proposal means a written plan that details the deliberate, human-mediated movement of **Carbunup King Spider Orchid** from one area, with a release in another for the purpose of establishing, re-establishing or augmenting a population.

Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

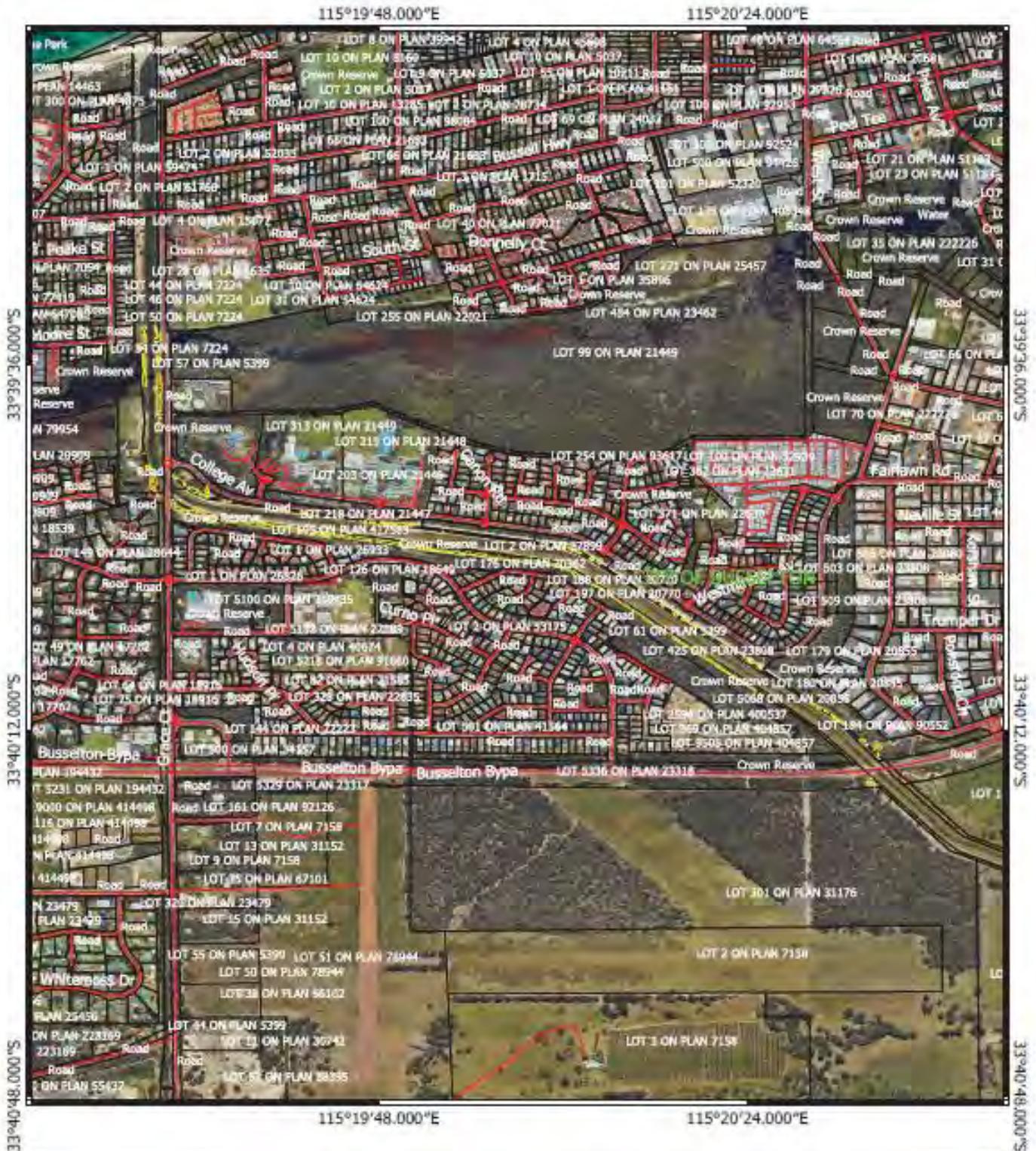
Weed/s means any plant species included in the Australian Government Weeds of National Significance or any other species defined as a weed in **clearing permit CPS 8191/1**.

Western Ringtail Possum means the **EPBC Act** listed critically endangered species *Pseudocheirus occidentalis*.

Western Ringtail Possum habitat means any areas where **Western Ringtail Possum** occurs naturally.

ATTACHMENTS

Attachment A



Attachment B

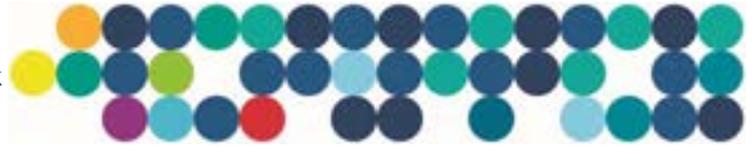


Attachment C





Appendix D – 5c Dewatering Licence



Appendix E

DWER Letter of Approval

Acid Sulfate Soil and Dewatering Management Plan: CD00116 – Vasse Diversion Drain EEC19269.001-3



Appendix F - Vasse Diversion Drain Upgrade, *Westralunio carteri* (Carter's Freshwater Mussel) Relocation Management Plan (IndoPacific, 2020a)



Appendix G - Vasse Diversion Drain Upgrade: Water Quality Monitoring and Management Plan (IndoPacific, 2020b)



Appendix H - Fauna management Plan for the Vasse Diversion Drain Upgrade (Bamford Consulting Ecologists, 2020)



Appendix I - Vasse Diversion Drain Upgrade: Revegetation Management Plan (Tranen Revegetation Southwest, 2020)



Appendix J – Phytophthora Dieback Risk Assessment – Vasse River Diversion Drain reconstruction works (Great Southern BioLogic, 2020)



Appendix K – Waste Characterisation CD00116 – Vasse Diversion Drain – Levee Soils and Sediments (RPS 2020b)