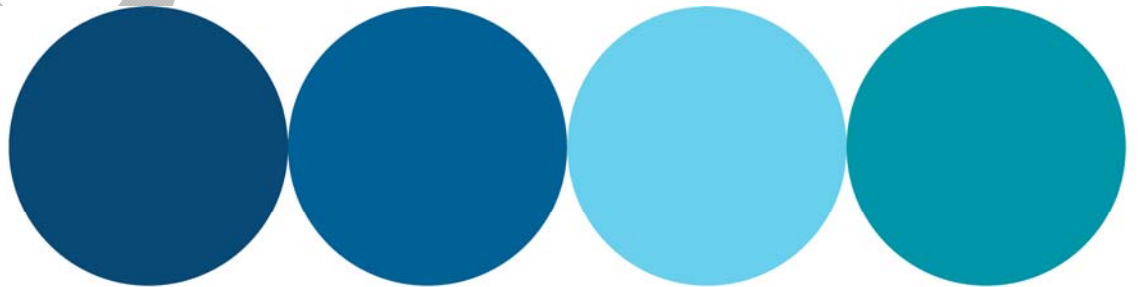


CW00860 Greenbushes to Kirup Link

Construction Environment Management Framework
February 2019

DRAFT





Contents

1	Purpose	3
2	Scope	3
3	The Project	3
3.1	Project Overview.....	3
4	System Requirements	6
4.1	Leadership and Planning	6
4.2	Risk Management.....	6
4.3	Compliance.....	6
4.4	Relevant Legislation and Approvals	6
4.5	People Management.....	7
4.6	Stakeholders, Communication, and Consultation	8
4.7	Systems of Work.....	8
4.8	Land Facilities, Plant and Equipment	9
4.9	Land.....	9
4.10	Contractors and Suppliers	9
4.11	Environment Incident Management, Reporting and Investigation.....	9
4.12	Performance Monitoring, Audit and Improvement.....	11
5	Environmental Management	12
5.1	Flora and Vegetation	12
5.2	Terrestrial Fauna	16
5.3	Terrestrial Environmental Quality	20
5.4	Inland Waters Environmental Quality	25
5.5	Other Environmental Factors.....	27
6	Definitions and References	29

Tables

Table 1:	Pipeline details and lengths.....	Error! Bookmark not defined.
Table 2:	Minimum inspection requirements.....	12
Table 3:	Flora and vegetation management objectives and performance criteria	13
Table 4:	Flora and vegetation management actions	13
Table 5:	Flora and vegetation monitoring requirements.....	15
Table 6:	Flora and vegetation reporting requirements	15
Table 7:	Terrestrial fauna management objectives and performance criteria	16
Table 8:	Terrestrial fauna management actions.....	17
Table 9:	Terrestrial fauna monitoring requirements	20
Table 10:	Terrestrial fauna reporting requirements	20
Table 11:	Terrestrial environmental quality management objectives and performance criteria.....	21
Table 12:	Terrestrial environmental quality management actions.....	22
Table 13:	Terrestrial environmental quality monitoring requirements	24
Table 14:	Terrestrial environmental quality reporting requirements.....	25
Table 15:	Inland waters environmental quality management objectives and performance criteria.....	25
Table 16:	Inland waters environmental quality management actions	26



Table 17: Inland waters environmental quality monitoring requirements.....27
Table 18: Inland waters environmental quality reporting requirements.....27
Table 19: Other environmental factors objectives and performance criteria.....28
Table 20: Definitions.....29

Figures

Figure 1 Project locality and extent.....5

Attachments

Attachment A – Water Corporation’s Environment Policy31
Attachment B – Vegetation Clearing Maps.....32

DRAFT



1 Purpose

The purpose of this document is to provide a framework to manage environmental risks associated with the construction of the CW00860 – Greenbushes to Kirup Pipeline Link (the project).

This framework sets the environmental objectives and minimum requirements for the project to prevent and minimise environmental impacts arising from the works. These requirements must be addressed by Contractors when developing their Construction Environmental Management Plan (CEMP).

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

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

2 Scope

The Water Corporation proposes to construct new infrastructure to improve the supply of water to the towns of Balingup, Mullalyup and Kirup, as a component of the broader Warren Blackwood Water Supply Scheme. The project is described in greater detail in Section 3 and includes a water supply main from Greenbushes summit tank to the Balingup Dam tanks and from Balingup to the Mullalyup tank, a pump station to supply the town of Kirup (located at Mullalyup Tank site), a bypass main near Summit Tank site and a bypass main near Kirup Dam site.

This document applies to all Contractors conducting work associated with the construction phase of the project.

3 The Project

3.1 Project Overview

The project is located within the Shires of Donnybrook–Balingup and Bridgetown–Greenbushes. The project consists of two distinct areas (pipeline corridor and the Kirup dam bypass) between the towns of Kirup and Greenbushes, approximately 230 km south of Perth (Figure 1). The project area is a corridor approximately 16 km long, with an average width of less than 10 m. The total project footprint is 15.3 hectares (ha).

The project will install around 16 km of pipeline and associated works to create a single water supply scheme to deliver water from a storage facility in Greenbushes to the towns of Balingup, Mullalyup and Kirup. This infrastructure includes:

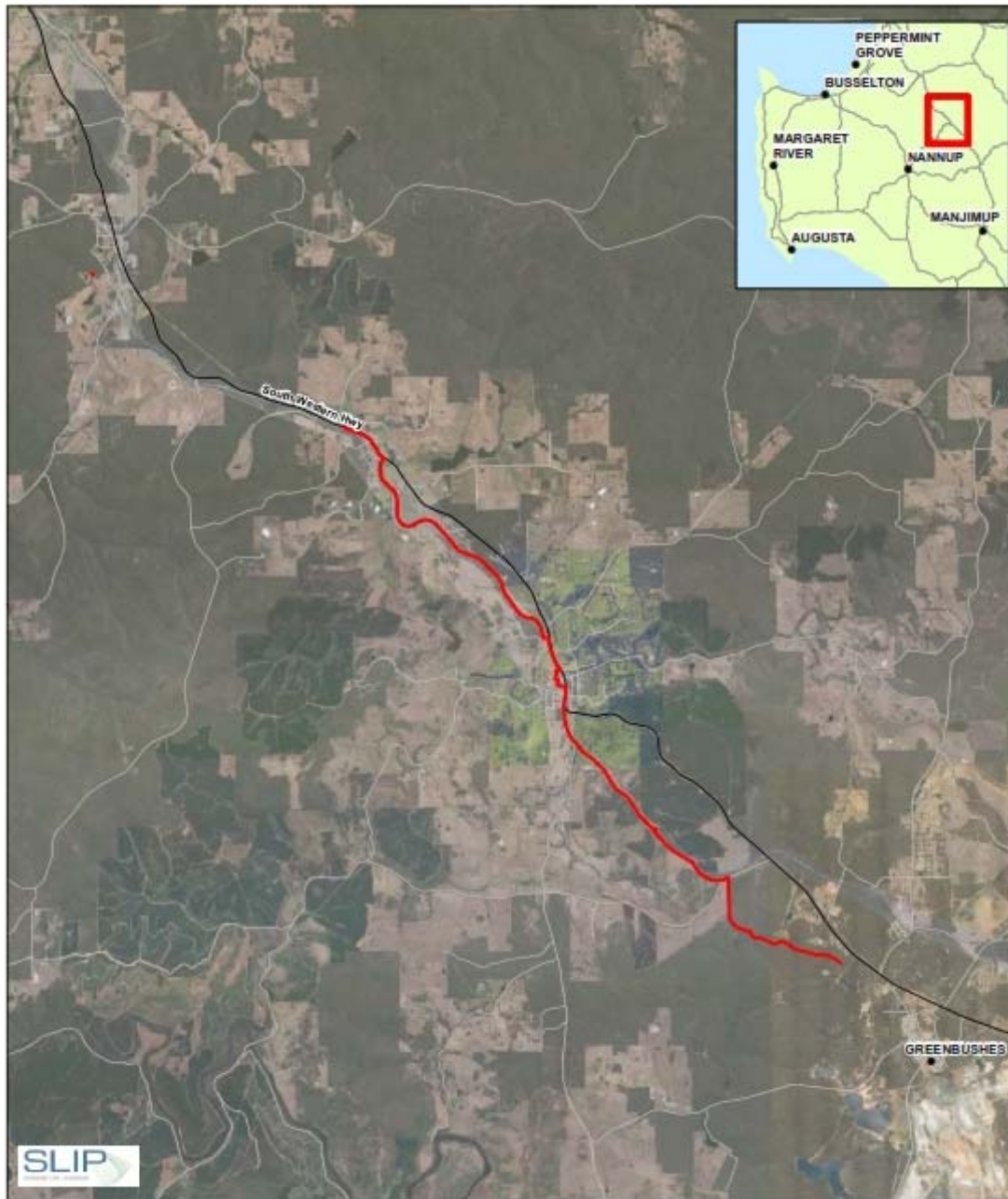
- Approximately 5 km of 150 mm nominal diameter water supply main from the Greenbushes Summit Tank to the Balingup Dam Tanks
- Approximately 3.1 km of 150 mm nominal diameter water supply main from the Balingup Dam tanks to Balingup Town (intersection of Southampton Rd and SW Hwy)
- Water supply main within Balingup Town (from the intersection of Southampton Rd and SW Hwy to the intersection of Forrest St and Spencer St):
 - Option A: approximately 540 m of 150 mm nominal diameter water supply main (375 m pipeline in the road reserve along South West Highway and 165 m in the road reserve along Forrest St) (preferred option).
 - Option B: approximately 580 m of 150 mm nominal diameter water supply main (170 m pipeline in the rail reserve (including two rail crossing) and approximately 410 m in the road reserve along local roads).(n.b. neither of the two options require clearing of native vegetation. Figure 6 outlines the two options)



- Approximately 7.6 km of 150 mm nominal diameter water supply main, from Balingup Town (intersection of Forrest St and Spencer St) to the Mullalyup PRV site in Gublers Rd
- A cross connection and an underground pressure reducing valve for emergency supply to the town of Balingup, located in Balingup
- A 70 m, 125 mm nominal diameter bypass main near Kirup Dam site (Kirup Bypass);
- A 22 m, 150 mm nominal diameter bypass main near Greenbushes Summit tank site (Summit Tank Bypass).

All pipelines will be installed using open trench techniques with the exception of option b, the two rail crossings will be constructed using trenchless techniques if this option is selected, and one section of pipeline that runs through a waste disposal site with unknown contaminants.

DRAFT



LEGEND

- Local Road
- State Road
- Impact area

<p>Paper Size A4</p> <p>0 1 2 3 Kilometres</p> <p>Map Projection: Transverse Mercator Horizontal Datum: GDA 1984 Grid: GDA 1984 MGA Zone 50</p>				<p>Water Corporation Greenbushes to Kirup Link EIA and Approvals</p>	<p>Job Number: 61-35763 Revision: 0 Date: 18 Dec 2018</p>
<p>Project Locality</p>				<p>Figure 1</p>	
<p>Q:\6135763\GIS\Map\MXD\6135763_001_Locality_Final.mxd 969 Hay Street, Perth WA 6000 Australia T 61 8 6222 8555 F 61 8 6222 8555 E perth@ghd.com.au W www.ghd.com.au © 2018. Whilst every care has been taken to prepare this map, GHD, Water Corporation, GHD and Landgate make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason. Data source: Landgate: Imagery (Virtual Mosaic), Roads - 20170225, Water Corporation: Survey Area - 20181218, GA: Geobase Topo Series II - 2006 Created by tjpm2</p>					

Figure 1 Project locality and extent



4 System Requirements

Water Corporation has an Environmental 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.

4.1 Leadership and Planning

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

4.1.1 Requirements

- The Contractor must have an environmental policy that aligns with the Water Corporation's Environment Policy. Both policies must be suitably displayed at the project site for the duration of the project.
- The Contractor must document the key roles and responsibilities associated with environmental management of this project.
- The Contractor must develop project-specific environmental objectives and performance indicators. At a minimum, these must include any objectives and performance indicators identified in Section 5.

4.2 Risk Management

Water Corporation has undertaken an environmental impact assessment of the project and identified the key environmental factors associated with this project. The environmental objectives, performance indicators, and minimum management requirements for the key environmental factors has been documented in Section 5.

4.2.1 Requirements

- The Contractor must develop and maintain a process to ensure environmental risks are identified and assessed throughout the project.
- The Contractor must establish and maintain a risk register for all stages of the project.
- The Contractor must develop a CEMP detailing how the identified environmental risks associated with the project will be managed. At a minimum the CEMP must:
 - include the management actions, monitoring requirements and reporting requirements listed for the key environmental factors
 - document any additional management actions required to ensure the environmental objectives for the project are met
 - document how the requirements of this CEMP are being met.

4.3 Compliance

4.4 Relevant Legislation and Approvals

The project must be constructed in a manner that complies with the requirements of the following legislation and regulations:

- *Biodiversity Conservation Act 2016* (BC Act)
- *Bush Fires Act 1954*



- *Conservation and Land Management Act 1984*
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth)
- *Environmental Protection Act 1986* (EP Act)
- Environmental Protection (Unauthorised Discharges) Regulations 2004
- Environmental Protection (Noise) Regulations 1997
- *Contaminated Sites Act 2003*
- *Biosecurity and Agricultural Management Act 2007*
- *Rights in Water and Irrigation Act 1914* (RIWI Act)
- *Aboriginal Heritage Act 1972*.

4.4.1 Project's Environmental Approvals

The project must be constructed in compliance with the approvals and conditions gained for the project:

- Referral under the Commonwealth EPBC Act (EPBC 2017/8059)
- Native Vegetation Clearing Permit (with conditions) under a Commonwealth EPBC Act Accredited Process, Assessment bilateral agreement – Annex 7
- Bed and Banks Permit under the RIWI Act to be issued by the Department of Water and Environmental Regulation (DWER)
- Regulation 4 Authority to access State Forest
- Section 18 of the *Aboriginal Heritage Act 1972*.

Once the necessary approvals have been obtained, this CEMF will be reviewed and updated to reflect possession of the necessary environmental approvals/permits and their relevant conditions.

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

4.4.2 Requirements

- The Contractor must ensure that compliance obligations from environmental approvals are documented in the Contractor's CEMP and have appropriate management actions identified.
- The Contractor must identify and document any actions required to meet obligations in environmental legislation associated with any key environmental factors.
- The Contractor must document a process for ensuring that any communicated changes to compliance obligation are assessed and identify any required changes to documentation or management practices.
- The Contractor must document how records demonstrating compliance are retained and made available to the Principal.
- Any instances of a compliance obligation not being met must be reported and investigated as an incident (refer section 4.11).

4.5 People Management

4.5.1 Requirements

- The Contractor must identify any roles/activities within the project scope that require specific environmental training and document the training requirements for these roles/activities.
- The Contractor must identify a method for ensuring that workers meet any identified training requirements and that adequate records of this training are retained.



- Contractors must develop and implement induction material specific to the works they are undertaking. At a minimum the material must include:
 - information related to key environmental factors within this document and any additional environmental factors identified in the CEMP
 - specific management requirements for activities with potential high environmental risks
 - incident management
 - general awareness of environmental other issues associated with the activities.
- All workers must 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).

4.6 Stakeholders, Communication, and Consultation

4.6.1 Requirements

- The Contractor must document method(s) for communicating environmental information to workers and other internal stakeholders.
- The Contractor must 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.
- The Contractor must document a process that details how external stakeholder can raise concerns/queries on project activities, and the method for recording and responding to them.

4.7 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.

4.7.1 Requirements

- The Contractor must develop a CEMP that, at a minimum:
 - addresses the management, monitoring and reporting actions listed for each key environmental factor (refer section 5)
 - identifies any additional management actions required to meet environmental objectives that have been identified for these environmental factors
 - identifies any additional environmental factors not included in this CEMF and the actions required to manage these factors.
- The Contractor must identify and document any construction activities within the project scope that may potentially impact the environment, and the manner in which they may impact on the environment.
- The Contractor must identify the work processes and actions that are required to manage the construction activities.
- The Contractor must develop a process to ensure that variations to these processes and actions are controlled and adequately assessed and approved.
- The Contractor must retain records to demonstrate compliance with system of works procedures and monitoring requirements.



4.8 Land Facilities, Plant and Equipment

4.8.1 Requirements

- The Contractor must identify any plant and equipment that is critical to meeting Health, Safety, Environment and Aboriginal Affairs (HSEAA) obligations and requirements. This includes:
 - plant and equipment that will be used to meet the obligations and requirements
 - plant and equipment that, when used, may affect meeting HSEAA obligations and 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, or maintained to ensure performance criteria are being met.

4.9 Land

In accordance with Regulation 8(1) of the Conservation and Land Management Regulations 2002, a Regulation 4 Authority to access the State Forest for the works will be sought prior to construction. Access to all timber materials cleared will be made available to the Forest Products Commission.

4.10 Contractors and Suppliers

4.10.1 Requirements

- The Contractor(s) must establish a process to ensure that any subcontractors or suppliers are assessed for their capability prior to undertaking work.

4.11 Environment Incident Management, Reporting and Investigation

Environmental incidents have the potential to occur on construction sites due to the scale and type of works being undertaken. An environmental incident is:

Any event or impact on the environment involving actions or assets associated with the project that is capable of:

1. *causing harm to the environment or any person*
2. *causing pollution; and/or*
3. *coming to the attention of the public or an environmental regulatory agency.*

The following credible emergency scenarios have been identified for this project:

- uncontrolled release of substances, including dust, noise and vibration without approvals
- chemical spills (including hydrocarbons)
- fires
- breach of hygiene procedures
- unauthorised clearing of vegetation or clearing of vegetation outside of permitted boundaries
- non-compliance with environmental approvals
- failure to obtain approvals
- failure to implement a Construction Environmental Management Plan
- disturbance of suspected artefacts of Aboriginal heritage.

The relevant Emergency Response Plan for this project is detailed below.



4.11.1 Emergency Response Plan

Suspected environmental incidents must be reported within 24 hours. This can be via phone call or email and will provide the information required in the Contractor's Environmental Incident Report Form to the Principal's Superintendent's Representative or the Project Manager. The Superintendent's Representative or the Project Manager will then report the suspected environmental incident to the Principal's Environmental Officer.

Subsequently, the Principal's Environmental Officer will assess the impact site and make a determination (based upon professional experience) on whether the suspected environmental incident is confirmed and are required to be reported to the DWER.

If the environmental incident has caused or is likely to cause pollution, or material or serious environmental harm, emergency response procedures must be implemented immediately and the responsible party must report it to the DWER as soon as reasonably practicable following the environmental incident (in accordance with s72(1) of the EP Act).

To report a life-threatening incident or emergency:

Call 000
and ask for Fire

The Department of Fire and Emergency Services will call out the DWER for major pollution/hazardous materials incidents.

To report a pollution emergency that is not life-threatening:

Call DWER 24 hour
Pollution Watch Hotline
1300 784 782

Pollution emergencies include discharge of hazardous materials or incidents that threaten public health or the environment. The Pollution Watch hotline is staffed by a DWER officer between 8:30 am and 5 pm weekdays.



Outside these hours, you will be directed to an automated message with two options:

1. **Leave a message about a pollution issue.** If you select this option, an officer will contact you the following day.
2. **Speak to an operator.** Select this option if you are reporting a pollution emergency requiring immediate response.

4.11.2 During a Confirmed Environmental Incident

The Contractor's Environmental Officer will determine if the incident is likely to have a continued environmental impact if construction work continues. Based on that advice, construction work that would continue to have an environmental impact will temporarily cease. Other construction works not related to the environmental incident and environmental impact will continue.

Construction works at the affected area will only recommence on the approval of the Principal's Environmental Officer.

All incident reports will be logged on a file retained at the Contractor's construction site office.

4.11.3 Remediation of an Environmental Incident

The Principal's Environmental Officer will determine any requirement to undertake remediation works, and the manner in which any remediation works will be undertaken. Additional advice may be sought from other Principal staff, Department of Health, DWER, or other sources when making that determination.

4.11.4 Post Environmental Incident Training

A briefing will follow the investigation of a confirmed environmental incident and will include any identified improvements to the construction process that could prevent recurrence of the same environmental incident.

4.11.5 Requirements

- The Contractor must document the process for responding to, investigating and reporting environmental incidents. This process must include the key roles, equipment and resources required.
- The Contractor must report all actual or potential environmental incidents to the Principal within the following time periods:
 - for incidents involving wastewater: within 30 minutes
 - for all other incidents: as soon as practical but within 24 hours.

4.12 Performance Monitoring, Audit and Improvement

4.12.1 Inspections and Audits

- The Contractor must document how performance will be monitored against environmental objectives, performance criteria, and management requirements and compliance obligations. The minimum frequency of inspections and audits is outlined in Table 1.
- The Contractor must participate in inspections or audits conducted by the Principal or regulators. The minimum frequency of inspections and audits is outlined in Table 1.
- The Contractor must establish a process that:
 - determines the cause of any/each non-conformance or non-compliance
 - identifies and implements corrective action
 - identifies any actions required to prevent recurrence
 - records any changes in written procedures resulting from the corrective action.



Table 1 presents the minimum compliance monitoring requirements applicable to the project, categorised as 'High Risk'.

Table 1: Minimum inspection requirements

Auditor	Type	Frequency
Principal	Operational compliance audit	24 months (or as required by the instrument)
	Project compliance audit	Minimum 3 monthly from commencement of construction activities
Regulatory agency	Audit/inspection	As requested by the regulator
External certification agency	Audit of Principal's Environmental Management System	12 months

5 Environmental Management

A risk assessment of the project has identified the following key environmental factors for the project:

- Flora and Vegetation
- Terrestrial Fauna
- Terrestrial Environmental Quality (Pathogens, Weeds and Contaminated Sites)
- Inland Waters Environmental Quality (Water Quality and Watercourse Crossing).

Sections 5.1 - 5.4 include background information, management objectives, performance criteria and the minimum requirements for managing these key environmental factors. The Contractor must include the management actions within their CEMP along with any other actions determined necessary to meet the management objective.

5.1 Flora and Vegetation

5.1.1 Background

A spring flora and vegetation survey was undertaken in October 2013, covering the majority of the project area (Astron 2013). A further two additional flora and vegetation surveys were completed in May 2017 (GHD 2017a) and October 2018 (GHD 2018) to account for project footprint changes and additions.

No significant ecological communities or Threatened or Priority flora species were identified within the project area during these survey. The primary impacts to vegetation will occur as a result of clearing activities. Vegetation may also be impacted by interactions between mobile plant and equipment and uncleared vegetation. The surveys did identify the following potential impacts to flora and vegetation communities:

- The project area is 15.3 ha, of which 5.8 ha is remnant native vegetation. The remaining area (9.5 ha) has previously been cleared. The proposed clearing will be predominantly within a narrow strip of vegetation extending along the majority of the project area, which is adjacent to existing roads/tracks.
- Three of the vegetation complexes mapped by Matiske and Havel (1998) within the project area (Balingup (BL), Balingup (BLf), and Mumballup (ML)) have less than 30% extent remaining (29%, 9.2% and 13.08%, respectively) (GoWA 2018). The mapped area of the Mumballup complex does not contain any remnant vegetation within the project area. No impact to this complex is proposed. The project area does traverse through some remnant vegetation mapped as the Balingup BL and BLf complexes which have been assessed by GHD (2018) to be in degraded condition. The alignment will be confined within previously cleared areas (such as fire breaks, road verge and other tracks) and will require very minimal clearing of native vegetation.



- Clearing of a small area of riparian vegetation will be required at Spring Creek. It has been advised by DWER (after being lodged in February 2018) that a Bed and Banks permit for this interference is not required.

Water Corporation has submitted a clearing application to the DWER. This CEMF will be updated once a final Clearing Permit is received and will detail the Clearing Permit instrument number, area (in hectares) of approved clearing and location of approved clearing (Attachment B).

5.1.2 Management Objectives

Environmental objectives for managing flora and vegetation, and the performance criteria to measure success against these objectives, are outlined in Table 2.

Table 2: Flora and vegetation management objectives and performance criteria

Objective	Performance Criteria
Limit clearing and associated works, activities and indirect impacts (such as facilities, parking, stockpiling, etc.) to within the approved clearing area.	<ul style="list-style-type: none"> • No unauthorised vegetation clearing or vegetation disturbance beyond the approved clearing area limit. • Clearing of native vegetation undertaken in accordance with the project's Clearing Permit CPS XXX and conditions. • All construction work and associated impacts remain within the construction footprint area. This includes entrance to and from the construction site.
Protect vegetation outside the approved clearing area limits.	<ul style="list-style-type: none"> • Cleared vegetation not be pushed or dumped on vegetation to be retained.
Promote the natural regeneration of native vegetation within the temporary cleared areas.	<ul style="list-style-type: none"> • Topsoil stockpiles are maintained and protected against contamination. • Following construction activities, topsoil is evenly re-spread along areas adjoining retained native vegetation.

5.1.3 Management Actions

Table 3 outlines the minimum management actions to be implemented for the protection of flora and vegetation.

Table 3: Flora and vegetation management actions

Reference	Action	Responsibility	Phase
5.1.3.1	Prior to clearing all relevant permit and approvals shall be reviewed and any clearing requirements identified and communicated to Contractors.	Contractor/Principal	Prior to clearing
5.1.3.2	At least 5 days prior to planned clearing the clearing area limit must be delineated by the use of pegs, fencing and/or continuous flagging tape by a qualified engineering surveyor. Ensure that the clearing area limit delineated is the approved clearing area limit.	Contractor	Prior to clearing
5.1.3.3	Hazard tape/fencing/barricading is to be used as a buffer at least 1 m inside the approved clearing area limit to avoid unauthorised clearing. The digital shapefiles are to be supplied to the Contractors by the Water Corporation to allow a qualified engineering surveyor to undertake this task.	Contractor	Prior to clearing



Reference	Action	Responsibility	Phase
5.1.3.4	Contractor to accommodate the Water Corporation Environmental Officer or representative to review the clearing boundary. Any inconsistencies found are to be rectified prior to the commencement of any clearing activities.	Contractor/Principal	Prior to clearing
5.1.3.5	Habitat trees (>500 mm DBH) to be retained within the clearing boundary are to be clearly identified, demarcated and measures put in place to prevent clearing, damage or disturbance to the tree.	Contractor	Prior to clearing
5.1.3.6	Trees which are to be removed for construction are to be clearly identified and flagged prior to clearing. Following demarcation of the approved clearing area and flagging of trees, a count will be undertaken of the total trees to be removed.	Contractor	Prior to clearing
5.1.3.7	Where possible, the distance of excavation to protect the structural root zone of an identified habitat tree (distance to protect the main structural roots of a tree) shall be calculated using the formula (Diameter in meter x 50) ^{0.42} x 0.64). Therefore, for example, excavation should not occur within 2.5 m from the base a tree with a DBH of 500 mm. The tree's survivability and stability (i.e. root zone disturbance) shall not be compromised.	Contractor	Prior to clearing/ during clearing
5.1.3.8	Photographic records and video recording (as appropriate) of land and vegetation conditions and features on or around the site, such as trees and shrubs, will be stored as a record that the approved clearing area limit was not breached.	Contractor	Prior to clearing
5.1.3.9	Site Plan is to be incorporated into the approved CEMP detailing location/s for project aspects such as overburden (soil), topsoil and mulched vegetation, vehicles access, construction laydown areas, stockpiling, fencing, signage, temporary vehicle parking areas, site offices and ablution facilities, etc. within existing/ proposed cleared areas (within the construction footprint).	Contractor	Prior to clearing
5.1.3.10	Construction staff to be educated during an initial safety and environment induction that includes issues relating to clearing activities to ensure the project's approved CEMP is understood by all parties involved.	Contractor	Prior to clearing
5.1.3.11	No clearing/disturbance of vegetation is to be undertaken outside the approved clearing area limit. This includes felling of large trees, which is to be contained to the approved clearing area or adjacent existing cleared areas.	Contractor	During clearing
5.1.3.12	Millable timber will be identified and salvaged and made available to the Forest Products Commission for re-use.	Contractor	During clearing
5.1.3.13	Ensure that cleared vegetation or spoil is not felled, pushed, dumped, stockpiled on vegetation to be retained to minimise damage to surrounding vegetation not included within the approved Clearing Permit areas.	Contractor	During clearing



Reference	Action	Responsibility	Phase
5.1.3.14	Approval from the Principal is to be obtained prior to cutting tree roots within the approved clearing area limit, which may comprise the survivability/stability of the tree located outside of the clearing area limit. An arborist is to be employed (to be contracted by the Contractor upon direction from the Principal) to assist in the excavation and cutting of tree roots to ensure safety is not compromised and to ensure root cutting will not affect adjacent tree health.	Contractor/Principal	During clearing
5.1.3.15	No burning of vegetation in-situ or cleared vegetation shall occur.	Contractor	During clearing
5.1.3.16	Vegetation clearing logs are maintained and made available at the request of the Principal	Contractor	During clearing
5.1.4.17	All topsoil from areas identified as weed infested and/or dieback infested shall be stripped separately and deposited in the nominated spoil sites for offsite removal.	Contractor	During clearing
5.1.4.18	Within 2 weeks following the completion of clearing activities, the total cleared area must be determined by an engineering surveyor, mapped and reported to the Principal (including start and end dates of clearing activities).	Contractor	Post clearing
5.1.4.19	Removal of all flagging tape post construction.	Contractor	Post clearing
5.1.4.20	Within 3 months of completion of works, ensure that any areas that are not required for continued maintenance to be backfilled and restored with top soil to pre-existing contours to promote the natural regeneration of native vegetation.	Contractor	Post clearing

5.1.4 Monitoring and Reporting

The minimum monitoring and reporting requirements for the protection of flora and vegetation are outlined in Table 4 and Table 5 respectively.

Table 4: Flora and vegetation monitoring requirements

Monitoring Requirement	Frequency
Clearly delineate clearing area.	<ul style="list-style-type: none"> Prior to and during clearing
Monitor and record area cleared.	<ul style="list-style-type: none"> At the end of each week

Table 5: Flora and vegetation reporting requirements

Reporting Requirement	Frequency
Provide pre-clearing and post-clearing photographs to the Principal.	<ul style="list-style-type: none"> Within 2 weeks of the completion of the project or prior to the end of the financial year (whichever is sooner)
The clearing log is to be provided to the Principal.	<ul style="list-style-type: none"> Monthly and within 2 weeks of the completion of the clearing



Reporting Requirement	Frequency
Clearing record forms from the Clearing Permit CPS XXX .	<ul style="list-style-type: none"> As specified on the permit

5.2 Terrestrial Fauna

5.2.1 Background

A fauna and targeted black cockatoo habitat survey was undertaken in October 2013, covering the majority of the project area (Astron 2013). Further fauna surveys and targeted black cockatoo habitat assessments were undertaken in May 2017 (GHD 2017a), August 2017 (GHD 2017b) and October 2018 (GHD 2018) to account for changes to the project alignment.

The primary impacts to fauna will occur as a result of clearing activities. Fauna may also be impacted by interactions with mobile plant and equipment. The surveys identified the following threatened fauna and habitat:

- Five conservation significant fauna species were identified within the project area:
 - Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*)
 - Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) (Endangered)
 - Forest Red-tailed Black Cockatoo (*Calyptorhynchus naso banksii*)
 - Quenda (*Isoodon obesulus fuscicenter*) (Priority 4).
- The project area contains 5.8 ha of suitable habitat for conservation significant fauna, of which 2.2 ha is in good or better condition.
- A total of 91 potential black cockatoo breeding trees (jarrah, marri, blackbutt and flooded gum) are located within the project area. Of these, 15 are hollow-bearing although none had evidence of current or previous black cockatoo use (i.e. old chew marks). Of the 91 trees within the project area, 64 trees will be cleared for the project, avoiding a total of 27 trees.
- Old and fresh black cockatoo foraging evidence was recorded scattered throughout the project area (on marri nuts) and there is 5.8 ha of suitable foraging habitat.

Water Corporation has submitted a clearing application to the DWER and has received clearing approval (CPS XXX) which permits the clearing of XXX hectares of native vegetation within the project area. The approved clearing area is shown in Attachment B.

5.2.2 Management Objectives

Environmental objectives for managing terrestrial fauna and performance criteria to measure success against these objectives are outlined in Table 6.

Table 6: Terrestrial fauna management objectives and performance criteria

Objective	Performance Criteria
Prevent impacts to native fauna resulting from project activities.	<ul style="list-style-type: none"> No injury or death to fauna as a result of project activities. No native fauna are trapped in excavated trenches. All construction work and associated impacts must remain within the construction footprint. This includes access to and from the construction work site. No unauthorised vegetation clearing or vegetation disturbance beyond the approved clearing area limit



Objective	Performance Criteria
	<ul style="list-style-type: none"> No injury or harm to workers attributable to fauna interactions.
Ensure impacts on protected fauna (in particular black cockatoo habitat) are adequately minimised during construction.	<ul style="list-style-type: none"> No clearing of black cockatoo habitat trees outside the approved clearing area. No damage to key protected fauna habitat outside the approved clearing areas during construction. No injury to or death of threatened fauna. No disturbance of breeding black cockatoos. No unapproved disturbance of black cockatoo habitat.

5.2.3 Management Actions

Table 7 outlines the minimum management actions to be implemented for the protection of terrestrial fauna.

Table 7: Terrestrial fauna management actions

Reference	Action	Responsibility	Phase
5.2.3.1	Minimise vegetation clearing and the area of disturbance on the ground by utilising existing cleared areas where possible.	Principal/Contractor	Prior to clearing
5.2.3.2	Retention, where possible, of potential black cockatoo habitat trees (particularly hollow-bearing trees). A pre-clearance survey will be undertaken to flag the potential black cockatoo trees within the project footprint (using distinctive flagging for those with hollows) to allow Contractors to see which trees should be avoided where possible.	Contractor	Prior to clearing
5.2.3.3	The project schedule will plan for clearing to take place outside the typical breeding season for black cockatoos (i.e. when breeding birds and their young are not using hollows) (peak breeding season is August–January).	Principal/Contractor	Prior to clearing
5.2.3.4	If clearing is unavoidable during the typical breeding season of black cockatoos, a pre-clearing inspection of trees to be cleared will be undertaken to ensure there are no breeding activities present in the trees. If breeding activities are identified, clearing is to be avoided until such time nestlings have left the nest without human intervention.	Contractor	Prior to clearing
5.2.3.5	Prior to each day's clearing, the Contractor is to check underneath all logs, rocks, in trees and any other habitat/microhabitat that may be used by fauna within the project area to allow the removal and relocation of any discovered fauna. Any person removing and relocating native fauna must hold a licence to take specially protected fauna in accordance with the <i>Biodiversity Conservation Act 2016</i> .	Contractor	Prior to clearing



Reference	Action	Responsibility	Phase
5.2.3.6	All staff and Contractors involved in clearing activities will be inducted on the potential impacts to fauna and advised to stop works in the vicinity of any injured or shocked animals that are encountered.	Contractor	Prior to clearing
5.2.3.7	Compliance with internal clearing procedures and standards.	Contractor	Prior to clearing/ during clearing
5.2.3.8	Clearing is to be undertaken in a directional manner that will ensure that native fauna can move into uncleared/larger areas of intact native vegetation and away from areas of hazard such as major roads, car parks, etc.	Contractor	During clearing
5.2.3.9	Traffic is to be controlled to prevent fauna collisions, such as the installation of Wildlife Warning Signs to warn drivers that wildlife may stray onto roads.	Contractor	During clearing
5.2.3.10	Construct barriers at the ends of installed pipes at the end of each working day to prevent access by fauna.	Contractor	During clearing
5.2.3.11	Fauna ladders and ramps must be installed where necessary within open excavations to allow fauna to exit.	Contractor	During clearing
5.2.3.12	Daily inspections of all open trenches and pipes must be undertaken prior to commencing work and at the end of each day to ensure that there are no trapped fauna.	Contractor	During clearing
5.2.3.13	In the event of injury to any fauna, a suitable qualified person (e.g. veterinarian, DBCA ranger, trained snake catcher) must be contacted to provide appropriate treatment, including euthanasia, as necessary. If injured wildlife is found, call Wildcare Helpline on (08) 9474 9055 for advice on the nearest registered wildlife rehabilitator. Wildcare Helpline phone number is to be displayed in the site office.	Contractor	During clearing
5.2.3.14	Injured fauna will not be harmed or killed unless a decision to euthanase by approved methods by a suitably qualified person is made (e.g. a veterinarian). Relevant contact numbers for the authorised persons is to be documented within the approved CEMP.	Contractor	During clearing
5.2.3.15	Any fauna found within the construction footprint area will be removed by an approved fauna handler and relocated to a minimum of 50 m outside of the project area, but within vegetated areas. The fauna removed will be recorded in a fauna removal log that shall be retained at the site office.	Contractor	During clearing
5.2.3.16	Dead fauna will be removed to prevent attracting other fauna to source food and the dead fauna will be disposed of as putrescibles waste (to landfill). The details of the dead fauna will be recorded in a Fauna Removal Log that shall be retained at the site office.	Contractor	During clearing
5.2.3.17	Dogs, cats and other domesticated animals and firearms will not be allowed within the project site, other than those having business at the site.	Contractor	During clearing



Reference	Action	Responsibility	Phase
5.2.3.18	Contractors to be instructed not to feed fauna.	Contractor	During clearing

DRAFT



5.2.4 Monitoring and Reporting

The minimum monitoring and reporting requirements for terrestrial fauna are outlined in Table 8 and Table 9, respectively.

Table 8: Terrestrial fauna monitoring requirements

Monitoring Requirement	Frequency
Inspect open excavations for the presence of fauna.	<ul style="list-style-type: none"> At the commencement of each shift At the end of each shift
Flagging/temporary fencing surrounding the significant trees to be retained.	<ul style="list-style-type: none"> Weekly during clearing activities
Clearly delineate clearing area.	<ul style="list-style-type: none"> Prior to and during clearing

Table 9: Terrestrial fauna reporting requirements

Reporting Requirement	Frequency
Report any instances of injured, killed or relocated fauna to the Principal.	<ul style="list-style-type: none"> As required

5.3 Terrestrial Environmental Quality

5.3.1 Background

A dieback assessment has been conducted across the majority of the project area in August 2017 (Glevan Consulting 2017). The assessment classified the Kirup Dam Bypass as Infested. One section of the northern alignment was uninterpretable. The southern alignment Part B had two infested sections, two sections being temporarily uninterpretable (recently burnt), and one section of uninfested and uninterpretable. **The central section of the alignment has not currently been surveyed and is scheduled to be completed by Glevan Consulting in mid 2019.** The remaining areas were excluded from the assessment as these areas were devoid of vegetation at the time of the assessment.

Flora and vegetation surveys of the project area (Astron 2013, GHD 2017a and GHD 2018) identified a number of weed species, most of which are commonly occurring species. Due to the highly disturbed nature over much of the project area, weed species were a dominant component of the taxa identified. Two of the weed species recorded within the project area are listed as Declared Pests under the *Biosecurity and Management Act 2007* and as Weeds of National Significance:

- **Asparagus asparagoides* (Bridal Creeper)
- **Rubus ulmifolius* (Blackberry).

A Preliminary Site Inspection (PSI) (GHD 2017c) was undertaken at the Balingup Waste Transfer Station (transfer station), which was formerly used as a landfill. This portion of the project area was classified by the DWER as 'Possibly contaminated – investigation required' in 2008 due to historical use as a landfill and current use as a waste transfer station. The PSI found:

- There is potential for contamination of asbestos, metals, nutrients, TRH, PAH, MAH, PCB and landfill gases from previous landfilling activities at the transfer station. The types of previously accepted waste and landfill cell(s) construction details remain unknown.
- There is potential for contamination of metals, TRH, PAH, MAH and PCB from waste recovery operations within the northern and southern waste recovery compounds at the transfer station. The current waste recovery and transfer operations at the transfer station were observed to be well maintained, with good housekeeping practices noted during the site inspection.



- There were no visual indications of contamination at the transfer station at the time of the inspection, with the exception of some staining around a waste oil drum in the western green waste disposal area, and fragments of potential ACM at the site surface to the south-west of the green waste disposal area adjacent to a gravel access road
- The area of surface ACM impact is noted to fall within the proposed pipeline easement along the southern boundary of the transfer station.
- A Detailed Site Investigation (DSI) was recommended to be undertaken at the transfer station. If a DSI is not completed, an Asbestos Management Plan should be developed as a precautionary approach.

5.3.2 Management Objectives

Environmental objectives for managing land and soil and performance criteria to measure success against these objectives are outlined in Table 10.

Table 10: Terrestrial environmental quality management objectives and performance criteria

Objective	Performance Criteria
Manage the indirect impacts of pathogens on vegetation.	<ul style="list-style-type: none"> • Compliance with the minimum prescribed management actions as specified below (this table) to minimise the spread and introduction of weeds and diseases.
Prevent the introduction and spread of weed species into vegetated areas to be retained/ protected.	<ul style="list-style-type: none"> • No introduction or spread of significant weed species as a result of project activities. • Eradication of any Declared Pests identified within the project area.
Prevent the introduction and spread of pathogen disease into areas that are free of disease and into vegetated areas to be retained/ protected.	<ul style="list-style-type: none"> • No evidence of the spread of pathogen diseases associated with construction works within 1 year of construction.
Prevent the disturbance of potentially contaminated sites.	<ul style="list-style-type: none"> • No disturbance of contaminated sites.
Comply with the <i>Contaminated Site Act 2003</i> .	<ul style="list-style-type: none"> • No non-compliance with the <i>Contaminated Site Act 2003</i>.
Minimise impacts on the environment, community and personnel upon discovery and remediation of contaminated land.	<ul style="list-style-type: none"> • No incidents of environmental damage or personnel harm as a result of existing contaminated land.





5.3.3 Management Actions

Table 11 outlines the minimum management actions to be implemented for the protection of terrestrial environmental quality.

Table 11: Terrestrial environmental quality management actions

Reference	Action	Responsibility	Phase
5.3.3.1	Clearly demarcate the areas of the site that are Infested and Un-infested with dieback. The boundaries between the management zones will be clearly marked in the field prior to earthworks commencing.	Contractor	Prior to clearing
5.3.3.2	Incorporate Site Plan into the approved CEMP, detailing location/s for Hygiene inspection points (Clean on Entry (COE) Points – wash down/brush down areas, inspection points, access areas) within the existing clearing/ approved clearing areas	Contractor	Prior to clearing
5.3.3.3	All site personnel and construction staff will be educated during an initial safety and environment induction that includes issues relating to hygiene control to ensure the project’s approved CEMP is understood by all parties involved.	Principal/Contractor	Prior to clearing
5.3.3.4	All project staff and Contractors to be aware of the dieback management plan (TBD) and the specific obligations as detailed in the plan	Principal/Contractor	Prior to clearing
5.3.3.5	Strictly avoid the movement of soils and plant material into the uninfected and un-mappable areas within the project area.	Contractor	During clearing
5.3.3.6	Reduce vehicle and plant movement into and within the site as much as possible, particularly during wet conditions.	Contractor	During clearing
5.3.3.7	As far as practical, schedule the clearing phase of the project to occur during the dry months to reduce the risk of spreading the disease.	Contractor	Prior to clearing
5.3.3.8	Identify areas of weed infestation and peg for removal to spoil. Identified infestations of Declared Plants (weeds) will be chemically treated or manually removed.	Contractor	Prior to clearing
5.3.3.9	Establish adequate hygiene control inspection points (COE Points) and signage on existing cleared areas so that vehicles, footwear and equipment can be inspected and appropriately cleaned (i.e. air hosing with brushing during dry conditions and low volume, high pressure water hosing for wet/boggy conditions). COE points are to be located close to the site entry and exit points. Additional COE points may be required to be proposed by the Contractor depending on construction planning. Cleaning of vehicles/plant/ machinery will occur:	Contractor	Prior to clearing



Reference	Action	Responsibility	Phase
	<ul style="list-style-type: none"> • prior to mobilising to the site • after working in an area affected by weeds or plant pathogens (on exiting) • before moving machinery between worksites or properties (on entering) • before and after using machinery alongside roadsides, controlled access tracks or in remote areas. 		
5.3.3.10	<p>Cleaning areas will be:</p> <ul style="list-style-type: none"> • included on the site plan • fit for purpose and engineered where required • designed to ensure there is a physical separation between object being cleaned and effluent produced (i.e. grate over a sump), and cleaning wastewater is infiltrated off-site and does not enter bushland • designed to ensure the object being cleaned does not become recontaminated by the used water • mud free; boggy sites lead to machinery being recontaminated • clear of waterways and drainage lines • runoff bunded and contained • on level ground to reduce runoff • free of contamination from fuel oils and grease from vehicles • spacious enough to allow manoeuvring of vehicles during cleaning. 	Contractor	Prior to clearing
5.3.3.11	All plant is inspected immediately prior to entering site to ensure it is free of weeds and soil material. Any vehicles not complying with this requirement will be turned away. The Site Manager or a designated representative will inspect all plant and equipment prior to commencement of work on site.	Contractor	Prior to clearing
5.3.3.12	All imported fill shall comply with AS 4454. The Contractor shall supply to the Principal an analysis of its content as undertaken by a certified laboratory to confirm that the imported mulch to be used in the works are dieback free and comply with AS 4454.	Contractor	Prior to clearing/ post construction
5.3.3.13	Prior to mobilisation, provide a system of documentation and field controls to enable hygiene to be managed effectively and to ensure the minimum prescribed management measures are met.	Contractor	Prior to clearing
5.3.3.14	Excavated soils shall be placed as close as possible to their source area, and within the same weed status area.	Contractor	During clearing



Reference	Action	Responsibility	Phase
5.3.3.15	Documentary evidence of material certification will be available in an auditable file.	Contractor	During clearing
5.3.3.16	A COE Hygiene Inspection log will be filled out for vehicles/plant/machinery entering and exiting the site.	Contractor	During clearing
5.3.3.17	All hygiene breaches must be reported to the Site Manager or representative within 24 hours. An environmental incident report will be completed by the person reporting the hygiene breach. Further training and awareness will be required where there is a non-compliance with management tasks or for personnel who do not fill out the Hygiene Inspection Log.	Contractor	During clearing
5.3.3.18	An asbestos management plan to be developed prior to commencement of construction works to reduce the potential risk to workers during construction of the pipeline at the transfer station.	Contractor	Prior to clearing
5.3.3.19	During intrusive works such as digging, if visual and/or olfactory evidence suggests potential for contamination (e.g. fill material, building rubble, odours, soil staining), works will cease, the Site Manager will be notified, and the material sampled has been confirmed and corrective actions implemented (if required).	Contractor	During clearing
5.3.3.20	Determination of contamination and requirements for remediation will be undertaken on advice from the Environmental Officer. The site of potential contamination will be contained (i.e. banded) to prevent any spread of contaminants, and will be fenced to prevent any unauthorised access.	Contractor	During clearing

5.3.4 Monitoring and Reporting

The minimum monitoring and reporting requirements for terrestrial environmental quality are outlined in Table 12 and Table 13, respectively.

Table 12: Terrestrial environmental quality monitoring requirements

Monitoring Requirement	Frequency
Use of hygiene/wash down standards on vehicles and machinery.	<ul style="list-style-type: none"> Ongoing – at least weekly
Visual inspection for weeds.	<ul style="list-style-type: none"> Fortnightly environmental inspection (including prior to and after clearing)
Visual monitoring of construction works area to ensure weed and dieback hygiene is maintained.	<ul style="list-style-type: none"> Daily inspection during clearing
Inspect topsoil stockpiles for weed germination.	<ul style="list-style-type: none"> Fortnightly



Table 13: Terrestrial environmental quality reporting requirements

Reporting Requirement	Frequency
Site environmental inspection checklist.	<ul style="list-style-type: none"> Fortnightly
Entry/exit hygiene inspection log.	<ul style="list-style-type: none"> As required
Undertake periodic audits/inspections.	<ul style="list-style-type: none"> As required

5.4 Inland Waters Environmental Quality

5.4.1 Background

The alignment intersects three creeks and a few minor drainage lines. The three creeks are Spring Creek, Balingup Brook and Mullalyup Brook. Of these watercourses, only one was still vegetated with native vegetation (Spring Creek – Very Good condition) (Astron 2013). Spring Creek is not located within a proclaimed water resource management area but is located within Greenbushes State Forest. Balingup Brook is located in an unproclaimed area but access is via crown land. DWER has advised that none of the crossings will require a Bed and Banks permit.

No dewatering is required for the project.

5.4.2 Management Objectives

Environmental objectives for managing water quality and watercourse crossing and performance criteria to measure success against these objectives are outlined in Table 14.

Table 14: Inland waters environmental quality management objectives and performance criteria

Objective	Performance Criteria
Avoid erosion.	<ul style="list-style-type: none"> No significant erosion along the banks of creeks attributed to clearing and construction activities.
Minimise impacts on bed and banks of watercourses.	<ul style="list-style-type: none"> No unauthorised vegetation clearing or vegetation disturbance beyond the approved clearing area limit.
Prevent the spillage of hazardous materials to the adjacent environment, particularly watercourses.	<ul style="list-style-type: none"> No hazardous material spills during construction.
Reduce runoff and sedimentation into watercourses.	<ul style="list-style-type: none"> No significant runoff or sedimentation into adjacent creeklines attributed to clearing and construction activities.

5.4.3 Management Actions

Table 15 outlines the minimum management actions to be implemented for the protection of inland waters environmental quality.



Table 15: Inland waters environmental quality management actions

Reference	Action	Responsibility	Phase
5.4.3.1	Identify criteria against which the monitoring will be compared.	Contractor	Prior to clearing
5.4.3.2	Compliance with the Section 18 Aboriginal Heritage Permit requirements – including, but not limited to, allowing for the presence of Traditional Owner monitors during clearing at the watercourse crossings.	Principal/Contractor	Prior to clearing/ during Clearing
5.4.3.3	The induction shall include information on surface water and groundwater protection.	Contractor	During clearing
5.4.3.4	All disturbance activities will be contained and restricted to within approved cleared areas.	Contractor	During clearing
5.4.3.5	Monitor, manage/control and remediate erosion as a direct result of the project.	Contractor	During clearing
5.4.3.6	Any evidence of erosion, disturbance to natural drainage flow or impact on vegetation is required to be reported to the Site Manager and be remediated as required.	Contractor	During clearing
5.4.3.7	Location and set up of service areas to prevent surface and groundwater contamination (e.g. refuelling, storage, equipment wash down, parking areas, servicing/repairs).	Contractor	During clearing
5.4.3.8	Implementation of surface water control structures (sediment traps/bales) where necessary.	Contractor	During clearing
5.4.3.9	Any surface water control structures installed in a watercourse to address turbidity issues associated with the construction activities will be removed within 7 days of the turbidity returning to the pre-construction state.	Contractor	During clearing
5.4.3.10	A Spill Response Procedure shall be prepared and implemented for an oil, chemical or hazardous material spill event to ensure the spill is contained effectively and cleaned up appropriately and efficiently with approved materials.	Contractor	During construction
5.4.3.11	All fuel storage shall comply with the relevant regulations and legislation.	Contractor	During construction
5.4.3.12	No re-fuelling of equipment (with the exception of stationary plant) shall be conducted within 50 m of a watercourse.	Contractor	During construction



Reference	Action	Responsibility	Phase
5.4.3.13	All hydrocarbon spills shall be cleaned up immediately and recorded using the internal project incident reporting tool.	Contractor	During construction
5.4.3.14	Banks of watercourses will be re-contoured such that they are returned to original pre-construction profiles with equivalent pre-construction stability.	Contractor	Post construction

5.4.4 Monitoring and Reporting

The minimum monitoring and reporting requirements for inland waters environmental quality are outlined in Table 16 and Table 17, respectively.

Table 16: Inland waters environmental quality monitoring requirements

Monitoring Requirement	Frequency
Site inspections.	<ul style="list-style-type: none"> Weekly
Effectiveness of erosion controls.	<ul style="list-style-type: none"> Weekly/opportunistically

Table 17: Inland waters environmental quality reporting requirements

Reporting Requirement	Frequency
Incident report of occurrence of spills.	<ul style="list-style-type: none"> As required

5.5 Other Environmental Factors

In addition to addressing the key environmental factors detailed in Section 5.1 - 5.4, the Contractor must ensure that, at a minimum, their CEMP also outlines management actions for the additional environmental factors listed in Table 18. The management actions within the Contractor's CEMP must be sufficient to achieve the environmental objective and performance criteria for the additional environmental factors (Table 18).



Table 18: Other environmental factors objectives and performance criteria

Factor	Objective	Performance Criteria
Aboriginal Heritage	Minimise impacts of construction activities on the heritage values in the project area.	No disturbance of heritage values outside the approved disturbance area. No complaints or allegations of unauthorised disturbance of heritage values.
Acid Sulfate Soils and Dewatering	To prevent contamination of land or water resulting from disturbances of Acid Sulfate Soils.	100% compliance with an Acid Sulfate Soils and Dewatering Management Plan.
Waste Management	Prevent contamination of land or soils as a result of waste disposal.	No waste/waste disposal outside the development area. All waste removed from development area on the completion of works. Waste receipts for specific category waste disposal.
Noise and Vibration Management	Ensure that activities do not unreasonably affect the amenity of surrounding landowners.	No substantiated noise complaints. Construction activities undertaken in accordance with Environmental Protection (Noise) Regulations 1997.
Chemical Management	Prevent impacts to land, surface water or groundwater resulting from chemical storage or use.	No spills of dangerous goods or hazardous substances. Any spills recorded and reported. All chemicals stored appropriately.
Dust	Ensure impacts of dust on adjacent areas and the community are minimised.	Ensure no substantial dust complaints or dust related OSH issues.
Traffic	Minimise impacts associated with construction activities and vehicles on public roads.	No road safety incidents associated with project activities. Traffic management utilised where construction activities directly occur on public roads
Fire	Minimise the risk of preventable fires.	No incidents of fire resulting from clearing and construction activities. Implement sufficient measures to prevent, control and manage fires on site.
Asbestos	Any asbestos materials identified prior to or during construction activities to be managed in a way that prevents adverse impacts to human health and the environment.	Contractors are not inadvertently exposed to asbestos. Handling of asbestos occurs in accordance with relevant legislation, regulations, guidelines and/or procedures.





6 Definitions and References

Table 19: Definitions

Terms	Definitions
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 project-specific plan developed to meet the requirements and objectives of the Construction Environment Management Framework (this document) and to ensure 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>
Environmental Incident	<p>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, and/or 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>
Fauna	Native animal/s.
Flora	Native plant/s.
Native Vegetation	<p>As defined in the <i>Environmental Protection Act 1986</i> and Regulations (2004), native vegetation is indigenous aquatic or terrestrial vegetation and includes dead vegetation but does not include vegetation that was intentionally sown, planted or propagated.</p>
Principal	Water Corporation.
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>Workers include employees, Contractors, subcontractors, employees of Contractors and subcontractors, labour hire employees, apprentices and trainees, work experience students, outworkers, and volunteers.</p>



Reference List

- Astron 2013, *Greenbushes to Kirup Pipeline Route Vegetation, Flora and Fauna Assessment*, Prepared for Water Corporation by Astron Environmental Services, Perth, Western Australia
- GHD 2017a, *Greenbushes to Kirup Link Biological Assessment*, Prepared for Water Corporation by GHD Pty Ltd, Perth, Western Australia
- GHD 2017b, *Additional Black Cockatoo Tree Survey*, Memorandum prepared for Water Corporation by GHD Pty Ltd, Perth, Western Australia
- GHD 2017c, *CS02767 Greenbushes to Kirup Link Preliminary Site Investigation – Balingup Waste Transfer Station*, Prepared for Water Corporation by GHD Pty Ltd, Perth, Western Australia
- GHD (2018) *Greenbushes to Kirup Link Flora and Fauna Survey and Black Cockatoo targeted Assessment*, Prepared for Water Corporation by GHD Pty Ltd, Perth, Western Australia
- Glevan Consulting 2017, *Water Corporation - Greenbushes to Kirup Link Phytophthora Dieback occurrence assessment – Version 0.4*, Prepared for GHD, Perth, Western Australia
- Local Biodiversity Program 2013, *2013 Native vegetation by vegetation complex dataset for the South West of Western Australia*, retrieved May 2017, from <http://pbp.walga.asn.au/Publications.aspx>.
- Mattiske, EM and Havel, JJ 1998, *Vegetation Mapping in the South West of Western Australia*, Department of Conservation and Land Management, Perth, Western Australia
- Molloy, S, O'Connor, T, Wood, J and Wallrodt, S 2007, *Addendum for the South West Biodiversity Project Area*, South West Biodiversity Project, Western Australian Local Government Association

DRAFT



Attachment A – Water Corporation’s Environment Policy

Environment Policy

Striving for Zero Footprint

The Water Corporation provides essential water, wastewater and drainage services to the people of Western Australia. These services include construction, operation and maintenance of assets. We take water from the environment and return drainage water, treated wastewater and its by-products to the environment. We are committed to protecting and enhancing the environment. We will comply with our environmental obligations, reduce our environmental impact, prevent pollution and continually improve our environmental performance.

We will strive for Zero Footprint by:



1

Managing risks

We are all responsible for identifying and addressing environmental risks and potential incidents.



2

Taking personal responsibility

We are all responsible for protecting the environment and understanding and meeting our environmental obligations.



3

Improving performance

Our environmental objectives include reducing native vegetation clearing, reducing greenhouse gas emissions, reducing water use and increasing recycling of wastewater. We set targets to continually reduce our environmental impact and improve our environmental performance. We regularly review performance against targets.



4

Maintaining an effective system

Our Environmental Management System provides the framework for setting and reviewing our environmental objectives and targets and continually improving our environmental performance.

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

Sue Murphy
Chief Executive Officer, Water Corporation

PCY230 Environment Policy Date: October 2015 Doc#: 5908380 Next Review: October 2018





Attachment B – Vegetation Clearing Maps

Water Corporation has submitted a clearing application to the DWER. This CEMF will be updated once a final Clearing Permit is received and will detail the location of approved clearing.

DRAFT