



**Water Corporation**  
Greenbushes to Kirup Link  
Annex C7 - Supporting Information

December 2017

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# 1. Introduction

## 1.1 Background

The Water Corporation is planning to construct a pipeline and associated infrastructure to create a single water supply scheme that will deliver water from a storage facility in Greenbushes to the towns of Balingup, Mullalyup and Kirup.

As the proposed clearing has the potential to impact upon matters of national environmental significance, a referral to the Commonwealth Department of the Environment and Energy (DEE) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) has been submitted (EPBC 2017/8059). EPBC 2017/8059 has recently been determined as a controlled action due to the potential impacts upon black cockatoo habitat. In light of this determination, the Water Corporation is seeking an assessment under the bilateral agreement.

The Annex C7 application form has been completed to support the clearing permit application for the Project.

## 1.2 Purpose of report

The purpose of this report is to provide additional information to supplement the Annex C7 application form. This report is structured to align with the Annex C7 form and it is intended this report will be submitted with the clearing permit application to the Department of Water and Environmental Regulation (DWER).

Additional information can be sourced from the EPBC Act referral documentation and the flora, vegetation and fauna assessment reports by Astron (2013) and GHD (2017a,b). These documents have been provided as part of the clearing permit application.

## 1.3 Report limitations

This report has been prepared by GHD for the Water Corporation and may only be used and relied on by the Water Corporation for the purpose agreed between GHD and the Water Corporation as set out in the accepted GHD proposal.

GHD otherwise disclaims responsibility to any person other than the Water Corporation arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to the preparation of the Annex C7 supporting information for the Greenbushes to Kirup Link.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by the Water Corporation and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

## 2. Part 2 – Proposed clearing action and impact assessment details

### 2.1 Description of the proposed clearing action

The Water Corporation proposes to construct new infrastructure to improve the supply of water to the towns of Balingup, Mullalyup and Kirup, and as a component of the broader Warren Blackwood Water Supply Scheme (the Project). This infrastructure includes:

- approximately 5 km of 180–200 mm nominal diameter water supply main from the Greenbushes summit tank to the Balingup Dam tanks (Southern Alignment parts A and B)
- approximately 8 km of 150–200 mm nominal diameter water supply main, from Balingup to the Mullalyup tank (Northern Alignment)
- a pump station for the town of Mullalyup, located in Balingup (within the 'Northern Alignment' footprint)
- a 70 m, 125 mm nominal diameter bypass main near Kirup Dam site (Kirup Bypass).

A summary of the pipe details and lengths are provided in Table 1. All the pipelines will be constructed by open trench with the exception of the two rail crossings which will be constructed using trenchless techniques.

**Table 1 Summary of pipe details and lengths**

Pipeline Section	Stage 1 Pipe Details	Stage 1 Approximate Length
<b>Greenbushes to Balingup Link</b>		
Summit Tank to Chainage 6937 m	DN180 PE100 PN12.5	3.76 km
Chainage 6937 m to Balingup Dam Tank Site	DN200 PE100 PN20	1.14 km
<b>Balingup to Kirup Link</b>		
Balingup Town to Chainage 1711 m	DN150 DICL/MSCL PN35	1.71 km
Chainage 1711 m to Chainage 3610 m	DN200 PE100 PN25	1.90 km
Chainage 3610 m to Chainage 4489 m	DN180 PE100 PN20	0.88 km
Chainage 4489 m to Chainage 8114 m	DN200 PE100 PN25	3.63 km
Kirup Dam Bypass	DN125 PE100 PN12.5	0.07 km

The Project area primarily encompasses a pipeline corridor approximately 13.3 km long, with an average width of less than 10 m. The Project area is located 230 km south of Perth and 50 km south of Bunbury. Much of the Project area occurs along existing gravel tracks that were created as a result of previous infrastructure development (e.g. road, water and railway). The total Project area is 13.23 hectares, of which 4.81 ha contains native vegetation.

The Project will likely be installed in two phases due to budget constraints. Phase one will include the installation of the pipelines and phase two will consist of the pump stations and chlorinators. Construction is expected to start in January 2019 and the scheme operational by June 2020.

## 2.2 Detailed descriptions, including surveys reports and methodologies, of the matter/s of national environmental significance (matters of NES) prescribed through the EPBC Act controlled action decision and any other relevant matters:

The proposed action is the clearing of 4.81 ha of native vegetation that is suitable foraging habitat and potential breeding and roosting habitat for the three threatened species of black cockatoo:

- Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) – Endangered (EPBC Act)
- Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) – Vulnerable (EPBC Act)
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable (EPBC Act).

### 2.2.1 Previous surveys

A flora and fauna survey of most of the Project area was completed in 2013 (Astron 2013) but since then the location of some components of the Project have changed. An additional flora and fauna survey of the areas not previously covered was undertaken by GHD (2017a). Additionally GHD was engaged to revisit the areas previously surveyed by Astron and repeat the Black Cockatoo Habitat Assessment in these locations to ensure consistency in methodology and completeness of results. A summary of the results of these surveys is provided in Table 2.

Based on the results of these surveys, the proposed alignment was further refined to reduce impacts to black cockatoo habitat trees and to reduce the clearing footprint.

**Table 2 Summary of flora and fauna surveys undertaken within the project area**

Report	Survey Area	Survey results
Astron Environmental Services(2013) Greenbushes to Kirup Pipeline Route Vegetation, Flora and Fauna Assessment	35.66 ha (approximately 20 km long corridor and approximately 10 m wide)	Baudin's Black Cockatoo and Forest Red-tailed Black Cockatoo were recorded within the survey area and evidence of foraging was recorded within the survey area. All jarrah-marri woodland within the survey area (10.52 ha) was considered medium to high value foraging habitat. The flooded gum creek habitat and cleared areas were considered low value foraging habitat. 185 potential breeding trees (>500 mm DBH) were recorded within the proposed alignment of which 7 contained hollows that would be potentially suitable for cockatoos. No evidence of breeding identified during the survey.
GHD (2017a) Greenbushes to Kirup Link Biological Assessment	5.76 ha (included a re-survey of some of Astron (2013) survey area)	All three species of black cockatoo were recorded during the survey. Total of 253 potential breeding trees were recorded, including 16 with hollows currently suitable for black cockatoo breeding. No evidence of current or previous black cockatoo use was evident. Old and fresh black cockatoo foraging evidence was recorded scattered throughout the survey area.

Report	Survey Area	Survey results
		A total of 2.98 ha of suitable foraging habitat mapped within the survey area.
GHD (2017b) Additional Survey Area – Targeted Black Cockatoo Tree Survey	4.6 km corridor, approximately 10–12 m wide (re-survey of all of the Astron (2013) survey areas that remained in the new alignment	222 potential breeding trees were recorded from within and immediately adjacent to the survey area. Of the 222 trees, 36 were identified with potentially suitable hollows for black cockatoo nesting. No signs of breeding or roosting were identified during the survey. Old and fresh foraging evidence on marri nuts were observed along the survey area.

## 2.3 Impacts of the action on matters of NES

### 2.3.1 Significance of impacts

To determine if the proposal will have a significant impact on the Carnaby's Black Cockatoo, Baudin's Black Cockatoo and Forest Red-tailed Black Cockatoo an assessment against the Significant Impact Guidelines (Commonwealth of Australia 2013) was undertaken (Table 3).

**Table 3 Assessment against significant impact criteria for Carnaby's Black Cockatoo, Baudin's Black Cockatoo and Forest Red-tailed Black Cockatoo.**

Significant Impact Criteria	Outcome
An action is likely to have a significant impact to an endangered or vulnerable species if there is real chance or possibility that it will	
Lead to a long-term reduction in the size of a population	<p>The Project will result in the removal of up to 4.81 ha of suitable foraging habitat and 64 potential habitat trees, of which 12 are hollow bearing. The Project area is located within the modelled breeding range of all three black cockatoo species (Commonwealth of Australia 2012) but no evidence of breeding activity has been recorded. The closest known breeding sites for Carnaby's Cockatoo are along the coast near Bunbury, approximately 40 km north-west of the Project area (WAPC 2011). Black cockatoo habitat is well represented within the locality. The estimated area of suitable foraging habitat available within the Shire of Donnybrook-Balingup and Shire of Bridgetown-Greenbushes (based on current extent of Smith (1974) vegetation associations) is estimated to be 157,807 ha (GoWA 2016). The Project may reduce the overall area of habitat by less than 0.005% within the Shires of Donnybrook-Balingup and Bridgetown-Greenbushes as a result of direct loss of habitat from clearing. The vegetation is largely contained in DBCA-managed land, including State Forest (approximately 84%).</p> <p>The proposed action, without the implementation of species-specific mitigation measures, is unlikely to result in a long-term decrease in the size of a population of this species as it is unlikely to substantially:</p> <ul style="list-style-type: none"> <li>• reduce the overall area of available habitat to the population</li> <li>• reduce the overall area of occupancy of the population</li> <li>• exacerbate existing barrier effects or create new barrier effects</li> </ul>

Significant Impact Criteria	Outcome
	<ul style="list-style-type: none"> <li>• disrupt the breeding cycle of part of the population. Therefore, it is considered that clearance of 4.81 ha of suitable foraging and potential breeding and roosting habitat is unlikely to lead to a long-term decrease in the size of the local population of black cockatoos.</li> </ul>
Reduce the area of occupancy of the species	<p>The Project is unlikely to substantially reduce the area of occupancy of the populations of black cockatoos within the local area or region. All three species are known to occur throughout the greater south-west region and Swan Coastal Plain bioregion.</p> <p>The estimated area of suitable foraging habitat available within the Shire of Donnybrook-Balingup and Shire of Bridgetown-Greenbushes is estimated to be 157,807 ha (GoWA 2016). The Project may reduce the overall area of habitat by less than 0.005% within the Shires of Donnybrook-Balingup and Bridgetown-Greenbushes as a result of direct loss of habitat from clearing. The vegetation is largely contained in surrounding DBCA-managed land, including State Forest (approximately 84%). There are large blocks of suitable foraging habitat immediately adjacent to the Project area.</p> <p>The removal of 4.81 ha of habitat within the Project area is not considered to be substantial for the species in a regional context, due to the extent of the known habitat adjacent to the Project area as well as the availability of known and modelled suitable habitat within the locality and region.</p>
Fragment an existing population into two or more populations	<p>The Project is unlikely to fragment the populations into two or more populations. The Project proposes widening areas of existing tracks or other cleared areas within the majority of the alignment, which has an average width of less than 10 m including the previous cleared areas. As such, the Project is unlikely to substantially fragment the habitat or impose a physical barrier to the movement of black cockatoos between the habitat within the Project area and surrounding habitat areas.</p> <p>The proposed clearing for the Project area is primarily a long linear strip of vegetation along an existing track. Therefore clearing for the Project is unlikely to significantly fragment the habitat available in the local area and/or regional area. The three cockatoo species are highly mobile and capable of traversing the small gaps between patches of habitat. Based on the mobility of the species and the availability of suitable habitat adjacent to the Project area, fragmentation of existing populations is considered unlikely.</p>
Adversely affect habitat critical to the survival of the species	<p>The Project is unlikely to affect habitat critical to the survival of the species. Up to 4.81 ha of suitable foraging and potential breeding habitat will be cleared for the Project. The habitat located within the Project area does not consist of habitat described by the recovery plan as critical for the survival of the Carnaby's Black Cockatoo (DPaW 2013), nor is the habitat listed on the Register of Critical Habitat maintained by the Minister under the EPBC Act (Commonwealth of Australia 2013). The recovery plan for the Baudin's Black Cockatoo and the Forest Red-tailed Black Cockatoo identifies all marri, karri and jarrah forests, woodlands and remnants in the south-west of Western Australia receiving more than 600 mm of annual average rainfall as habitat critical to survival for these species (DEC 2008). Therefore the vegetation within the Project area would be classified as critical habitat but since this habitat type is well represented adjacent to the Project area and in the</p>

Significant Impact Criteria	Outcome
	greater locality, the impact of this clearing is not considered significant.
Disrupt the breeding cycle of a population or important population	<p>The Project is located within the modelled breeding range for the Carnaby's Cockatoo, Baudin's Cockatoo and Forest Red-tailed Black Cockatoo. Sixty-four potential breeding trees, including 12 hollow bearing trees, have been recorded within the Project area. However, no current or historical evidence of breeding was observed during the field surveys (Astron 2013, GHD 2017a,b). Moreover, an additional 413 potential breeding trees were recorded immediately adjacent to the Project area within the survey area (Astron 2013, GHD 2017a,b). Given the extent of remaining habitat in the region, it is reasonable to assume that significantly more potential breeding trees exist throughout the broader area.</p> <p>Considering there have been no known black cockatoo breeding records within the Project area, it is unlikely that black cockatoos will initiate breeding in the Project area prior to the clearing of the habitat (assuming clearing commences within the next 12 months). Given the lack of breeding evidence within the Project area, it is likely that the breeding cycle of the local population occurs in other locations across the district and is not limited to this area.</p> <p>The vegetation within the Project area is not likely to hold significant breeding value so as to disrupt the breeding cycle of a population of the three cockatoo species.</p>
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	<p>The works associated with the Project will modify or destroy a small proportion of potential habitat for the three cockatoo species, but unlikely to the extent that the species would decline significantly. The Project may reduce the overall area of habitat by up to 4.81 ha as a direct loss of habitat from construction. The small scale of this habitat loss within a regional context (i.e. less than 0.005% within the Shires of Donnybrook-Balingup and Bridgetown-Greenbushes) is considered unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitats to the extent that the species are likely to decline.</p>
Result in invasive species that are harmful to the species becoming established in the endangered or critically endangered species' habitat	<p>The Project may potentially exacerbate existing invasive species (such as weeds and introduced predators) that already occur within the Project area. However, the potential incremental change is considered to be minor and unlikely to significantly impact the value of the black cockatoo habitat adjacent to the Project area or black cockatoo individuals.</p> <p>The European Honey Bee was recorded within the Project area during the field survey. European Honey Bees are listed as a threat to several fauna species because of competition for tree hollows. Given the availability of suitable habitat both locally and regionally, the removal of 12 hollow bearing trees within a Project area that stretches over 13 km is not expected to exacerbate the distribution or impact of the European Honey Bee.</p> <p>The Project is unlikely to result in an invasive species becoming established in the Project area to the extent that black cockatoos are substantially impacted.</p>
Introduce a disease that may cause the species to decline	<p>Dieback mapping conducted by Glevan Consulting (2017) identified much of the Project area as 'Infested'. Parts of the alignment were classified as 'Uninterpretable' with one section of the southern alignment (Part B) classified as 'Uninfested and Uninterpretable'. There is potential that the presence/introduction of dieback could reduce the flora</p>



Significant Impact Criteria	Outcome
	species diversity and density, and potentially impact on the habitat quality for black cockatoos. Dieback management controls will be implemented during the construction phase of the Project in line with the findings of the dieback assessment. The Project is unlikely to introduce a disease (e.g. beak and feather disease virus) that may cause the species to decline. There are no known diseases that may be introduced to the area that may cause the black cockatoo populations to decline and it is unlikely that any disease already exists in the Project area that may be spread by the activities of the Project.
Interfere with the recovery of the species	The Project is unlikely to interfere substantially with the recovery of the three species of black cockatoos, as it is unlikely to interfere with the recovery actions outlined in the recovery plan for these species (DEC 2012, DPaW 2013).

### 2.3.2 Description of relevant impacts

#### Environmental:

Implementation of the proposed action will result in the loss of habitat for three species listed under the EPBC Act as matters of NES:

- Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) – Endangered
- Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) – Vulnerable
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable.

The proposed Project may result in the loss of habitat for these species including:

- up to 4.81 ha of black cockatoo foraging habitat
- 64 potential black cockatoo breeding trees (including 12 hollow bearing trees).

#### Social:

The proposed Project will:

- Improve supply – Water Corporation is currently tankering water to Kirup from Donnybrook as the current demand for potable water cannot be met.
- Improve water quality – the Kirup dam catchment does not have suitable protection and water quality is questionable. Water from Millstream is of much better quality.
- Reduce heavy vehicle traffic – reduction of heavy vehicle traffic on local roads for tankering water. The tankering places a cost on the Kirup and Donnybrook community due to the truck traffic on residential streets (including past the Kirup school). In the future about 1000 truck loads would be required per year. Driving is one of the highest risk activities undertaken by the Water Corporation and therefore removing the need to tanker reduces the risk to the Corporation.

#### Economic:

The Project is cost neutral from a Water Corporation perspective. However, if the demand for water increases and more water needs to be tankered the cost increases along with the risk of an accident. Additionally, the impacts of the traffic and wear and tear on the local roads is a cost on the community and Shire that the Project will avoid.

### 2.3.3 Nature and extent of impacts

The proposed action (clearing of habitat) is unlikely to result in negative long-term impacts to these species or interfere substantially with the breeding cycle of any of these species. Black

cockatoo habitat is considered to be well represented in the local region. The estimated area of suitable foraging habitat available within the Shire of Donnybrook-Balingup and Shire of Bridgetown-Greenbushes is estimated to be 157,807 ha (GoWA 2016). The Project may reduce the overall area of habitat by less than 0.005% within the Shires of Donnybrook-Balingup and Bridgetown-Greenbushes as a result of direct loss of habitat from clearing. The vegetation remaining in the region is largely contained in DBCA-managed land, including State Forest (approximately 84%).

An assessment against the significant impact criteria (Commonwealth of Australia 2013) for Endangered Species (Carnaby's Black Cockatoo) and the significant impact criteria for Vulnerable Species (Baudin's Black Cockatoo and Forest Red-tailed Black Cockatoo) was undertaken and summarised as follows:

- None of the hollow bearing trees were observed to be 'active' nesting trees (Astron 2013, GHD a,b).
- No evidence of roosting was identified during the surveys (Astron 2013, GHD 2017a.b).
- Evidence of foraging was recorded throughout the extent of the Project area (Astron 2013, GHD a,b).
- The loss of 4.81 ha of fauna habitat is unlikely to further fragment local ecological linkages or seriously impact vegetation corridors.
- Clearing comprises a narrow strip of native vegetation across the majority of the Project area, predominantly adjacent to existing roads/tracks.
- The total length of the Project area is approximately 13.3 km, with an average width of less than 10 m (including previously cleared areas).
- With the availability of suitable habitat in the surrounding region and highly mobile nature of black cockatoos, the loss of this relatively small area of suitable habitat is not considered to have a significant impact on the species survival.
- There is no habitat within the survey area that would be considered specific to, or solely relied upon by, the three black cockatoo species known to occur within the area.

## **2.4 Alternatives to the proposed action**

There are no feasible alternatives to the proposed action. Alternate pipeline alignments were considered to have similar or greater associated environmental impacts and therefore not feasible. A number of factors have also limited the location of the proposed alignment including:

- The ARC (formerly Brookfield) denied the Water Corporation access from the Rail Reserve.
- Rail reserves are avoided unless it is necessary to cross them, in which case it is done at right angles.
- The Water Corporation aim for a 2.1 m offset from the edge of the road reserve. Although this is not always possible (e.g. the Water Corporation deviate from this alignment to avoid removing a cockatoo habitat tree, etc).
- There is an existing water main running from Summit Tank (Greenbushes) to Balingup. It is necessary for the Water Corporation to replace this as the current size is not sufficient to meet the increasing demand for potable water.
- A new pipeline is required from Balingup to Mullalyup to join existing assets.
- Consultation with private land owners indicated that it would be preferable to install the pipeline within state land.

## 2.5 Mitigation measures

### Impact avoidance

Potential impacts to matters of NES have been considered during Project design and minimised as far as practical. The Project area has been refined to avoid potential breeding trees as much as possible. Approximately 413 potential black cockatoo habitat trees that were recorded during the fauna surveys (including some outside the survey boundary) have been avoided during the design phase of the Project.

The Project area represents the maximum area to be cleared. Within this footprint, opportunities to further reduce clearing will be considered, where practicable. Only the area absolutely necessary for the Project will be disturbed; this will be ascertained by adequate construction planning prior to Project implementation. To date, Water Corporation has made considerable effort to minimise the amount of clearing of native vegetation and removal of black cockatoo potential breeding trees required for the Project.

### Impact reduction

The Water Corporation will prepare a number of management plans for implementation during the Project, including a Construction Environmental Management Framework (CEMF). Environmental management actions that will be addressed in the CEMF and which are associated with fauna and their habitat include:

- Minimise vegetation clearing and the area of disturbance on the ground by utilising existing cleared areas where possible.
- 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.
- 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 will be avoided until such time nestlings have left the nest without human intervention.
- Compliance with internal clearing procedures and standards.
- All vegetation proposed to be cleared will be clearly demarcated on site prior to the commencement of Project activities. Any vegetation or trees that are to be retained will be marked accordingly.
- Clearing of vegetation shall not exceed the limits of clearing and mature trees shall be conserved as far as practicable.
- 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.
- In the event that sick, injured or orphaned native wildlife are located on the Project site, the WILDCARE Helpline ((08) 9474 9055) will be contacted for assistance.
- Millable timber will be identified and salvaged for re-use.
- No pets, traps or firearms are allowed within the Project area.
- Fauna are not to be fed or intentionally harmed or killed.

- Dieback management controls will be implemented during the construction phase of the Project in line with the findings of the dieback assessment and include controls such as cleaning earth moving machinery of soil and vegetation prior to entry and departure to avoid the introduction and/or spread of weeds and dieback.
- Restrict movement of machines and other vehicles to the limits of the areas cleared.
- Identify areas to undertake weed control to stop spread of weeds.
- Control/spray identified significant weeds species within the Project area prior to construction to limit the amount of propagative material that may be spread during disturbance.
- Remove or kill any other weeds growing in Project area that are likely to spread and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.

## **2.6 Proposed Offset**

Refer to the Offsets Proposal that is included as an attachment to the Clearing Permit application.

## 3. Part 3 – Consultation

Prior to 2016 the (then) proposed affected landowners were visited in person by the previous Water Corporation Project Manager, Ron Mclean. There was a mixed response to this consultation with some landowners supporting the proposal and others opposing it.

Within the last 12 months the following landowners were consulted:

- Martino Tosana (Lot 362 South Western Highway, Mullayup) – Martino was not supportive of the proposed pipe route within his property and we did not come to agreement on this.
- Peter and Neil Gubler (Lot 3, South Western Highway, Mullayup) – Peter and Neil were comfortable with the proposed pipe route within their property.
- Kim Butler (7794 Cundinup-Kirup Rd, Mullayup) – Kim Butler and his parents are supportive of the Water Corporation using their property to construct the access track and pipe to the existing Mullalyup water tank site. Ian has continued to work closely with Kim's father, Keith Butler, who is the landowner.
- Mr Guido Betti (Lot 8115, Steere St) – The Water Corporation were proposing to set up the Balingup Repeater Site for this Project. At that time, the Water Corporation needed to conduct a radio survey on the site to test for communications strength. A good working relationship was formed with this stakeholder.

Following this consultation the alignment was further refined to avoid most of the opposing landowner's properties.

The remaining private landowners still impacted by the refined pipeline route are:

- Bruno Moreschi (Lot 6, on Plan 102673, Balinga Drive, Balingup – Easement has been signed off in this section (by the landowner) but we haven't had contact with them for some time.
- Mecca Holdings (Lot 25 South Western Highway) – Tony Giumelli – Supportive of project.
- Humphreys & Owen (last names) (Lot 10) 30 Hawkville Rd Mullayup – Pipe will be constructed in gazetted road although road has never been made, owners of Lot 10 have incorporated road into their lot and fenced road reserve, further discussion with this landowner will be required.

### 3.1 Aboriginal heritage considerations

The Project area intersects the Aboriginal Heritage Site 20434 (Blackwood River) at two locations, Balingup River and Spring Creek. A Section 18 permit is currently being sought from the Department of Planning, Lands and Heritage to allow works to occur in these areas.

### 3.2 Public comment period

The Water Corporation is aware the clearing permit application process involves an advertising and public comment period. The Water Corporation will provide DWER with a written response to any public comments received, including how they have been considered in relation to the Project and proposed action.

## 4. References

Astron (2013) *Greenbushes to Kirup Pipeline Route Vegetation, Flora and Fauna Assessment*, Prepared for Water Corporation by Astron Environmental Services, Perth, Western Australia.

Commonwealth of Australia (2012) *EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's Black Cockatoo, Baudin's Black Cockatoo and Forest red-tailed Black Cockatoo*, Department of Sustainability, Environment, Water, Population and Communities Canberra, ACT.

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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.

Glevan Consulting (2017) *Greenbushes to Kirup Link: *Phytophthora Dieback Occurrence Assessment* – Version 0.4*, Prepared for GHD on behalf of Water Corporation, Perth, Western Australia.

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Western Australia Planning Commission (WAPC) (2011) *Greater Bunbury Region Scheme (GBRS) – potential habitat for the Carnaby's Black Cockatoo which may require further assessment*, Government of WA

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Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	E Lynch	D Farrar		D Farrar		19/12/2017

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