Bunbury WRRS - Stage 2 Pipeline

EPBC Referral Supporting Document

Aqwest (Bunbury Water Corporation)

10 January 2022

→ The Power of Commitment

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GHD Pty Ltd | ABN 39 008 488 373

10 Victoria Street, 1st Floor

Bunbury, Western Australia 6230, Australia

T +61 8 9721 0700 | **E** bunmail@ghd.com | **ghd.com**

Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S3	A	F. Hannon V. Davies	F. Hannon				29.12.2021
S4	0	F. Hannon	F. Hannon		Paul Phillips		10.01.2022

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Attachments

1. Summary of your proposed action

1.1 Project Industry type

Select: Water Management and Use

1.2 Provide a detailed description of the proposed action, including all proposed activities

Bunbury Water Corporation trading as Aqwest proposes to provide treated wastewater (TWW) for the irrigation of existing open spaces within the City of Bunbury (Hay Park, Hands Oval and Forrest Park) and for construction water requirements of the Bunbury Outer Ring Road (BORR) project. Aqwest is a West Australian Government owned and operated water utility and its operations are regulated by the:

– Department of Water and Environmental Regulation
– Economic Regulatory Authority,
– Department of Justice, and
– Department of Health

Aqwest pumps water from the Yarragadee aquifer, which is a significant freshwater source located in the South-west of Western Australia and the only viable drinking water source within the local region. The Yarragadee is recharged by direct infiltration in areas where it directly outcrops at the surface and by leakage from overlying formations in other areas. Yarragadee water is currently used for a range of purposes in the Bunbury region, including drinking water and irrigation of public open space (POS).

In 2019, Aqwest prepared the *Greater Bunbury Urban Water Strategy*, to provide a long-term (50-year horizon) master plan for the development of Aqwest's urban services in existing and new urban areas of the Greater Bunbury region. To further the Strategy, Aqwest developed the *Greater Bunbury Integrated Water Management Strategy* (IWMS). The IWMS provides a framework for the staged consideration of new water sources, potable and non-potable water supply schemes, wastewater collection and management, and rain/stormwater collection and management. A key component of the IWMS is to provide a sustainable source of water for POS irrigation, relieving demand pressure on groundwater from the Yarragadee Aquifer, and as such is a very important initiative to the drying climate that is predicted (and reported) for the south-west region of Western Australia.

The Bunbury Water Resources Recovery Scheme (BWRRS) is a key initiative of the IWMS.

The first phase of the BWRRS – Recycled Water Treatment Plant (RWTP) (the Plant) was referred to Department of Agriculture, Water and Environment (DAWE) (EPBC 2021/8986) for construction of the Plant only. DAWE advised this Proposal was assessed as Not a Controlled Action on 3rd August 2021.

The second phase of the BWRRS provides for the construction and operation of the distribution pipelines for the treated wastewater (TWW). The distribution pipeline will be constructed in two stages:

– Water Resource Recovery Scheme (WRRS) Stage 1 – Open Space Irrigation in City of Bunbury ('Stage 1')
    - Stage 1 pipeline route lies from the RWTP to Parade Road, and north to City of Bunbury public open spaces, a distance of approximately 7 kilometres (km).
– WRRS Stage 2 – BORR construction water ('Stage 2')
    - Stage 2 pipeline route is located from Parade Road/ Washington Avenue bifurcation to BORR point-of-use at South Western Highway. The Stage 2 route covers a distance of approximately

5.5 km, and follows the boundary between the City of Bunbury and Shire of Capel along almost the entirety of its length.

Stage 1 is not included in this referral application as clearing of native vegetation is not required for the construction and operation of the pipeline. The Stage 1 pipeline route has been carefully designed by Aqwest to directly avoid areas of native vegetation where practicable, primarily utilising existing road reserves. Where native vegetation is encountered, Horizontal Directional Drilling (HDD) construction methods will be applied thereby directly avoiding clearing and potential indirect impacts to native vegetation, as shown in the detailed design drawings for the pipeline.

HDD is recognised by environmental regulators as a recommended approach in the construction of pipelines where clearing of native vegetation is to be avoided. HDD entails localised works that includes the entry and exit pits on either side of lines of stands of native vegetation. The distance of the pits and depth of HDD will be determined from AS 4970-2007, Australian Standard *Protection of Trees on development sites* and has been included in documents provided to the Contractors laying the pipeline.

This Referral provides for activities associated with construction of the Stage 2 distribution pipeline. The area being referred by Aqwest is approximately 5.5 km in length, with a total disturbance area of approximately 7.14 ha, which is referred as the **Proposal Area.** The Proposal Area includes an area of 6.62 ha of open trench construction and 0.52 ha of HDD. The Proposal Area is illustrated in Attachment 1.

This Proposal, Stage 2 pipeline, includes the following:

– Parade Road/ Washington Avenue intersection to Bussell Highway via Centenary Road: This section of pipe is within the existing cleared road reserve and avoids clearing of vegetation by reducing the width of excavations/ disturbance and minor deviations around existing native vegetation. No expected impact on Matters of National Environmental Significance (MNES).
– Centenary Road reserve (unbuilt) to Bunbury Regional Prison: This section of pipe is in an unbuilt road reserve. The Proposed Action alignment generally follows an existing old sand track (approximately 3-4 m in width with some regeneration) on the southern boundary of the road reserve. The pipe deviates north at a Clay Pans of the Swan Coastal Plain Threatened Ecological Community (TEC) location to avoid impact to the TEC, however there are unavoidable impacts to threatened communities and species. This reserve also accommodates the Dampier Bunbury Natural Gas Pipeline (DBNGP) and Telstra service line.
– Centenary Road – Bunbury Regional Prison to South Western Highway: Along this section, the pipeline alignment is within a built road reserve and avoids clearing of native vegetation. No expected direct or indirect impact on MNES.

The Stage 2 pipeline is buried infrastructure with the spoil excavated for the pipeline being used to cover the pipeline and restore the land surface. Pipe sizes range from DN375 for open trench sections to DN500 for the HDD sections, which have a nominal cover ranging from 1,000 mm on the unmade road reserve to 600 mm in the regional park/reserves.

The majority of the area is cleared for existing road reserves or services corridors. Pockets of native vegetation are present within the Proposal Area within the road reserves. The areas of disturbance and avoidance are shown in Attachment 2. Attachment 2 outlines:

– The Disturbance Area, including areas planned for laydown and vehicle movement, refer CH 400-600, CH 1700-1800 and CH 2000 – 2300.
– Location for HDD installation, CH 100-200, CH 1800-1900 and CH 2300.
– Avoidance area, where the pipeline has been re-routed to avoid clearing of native vegetation, particularly at CH 3200 – CH 3600 (refer to blue hatched areas) and specifically at CH 3500 to avoid clearing of the Clay Pans TEC.

The Proposal will entail clearing of up to 1.75 ha of native vegetation within the Proposal Area of 7.14 ha with the potential to impact species and communities listed under the EPBC Act as a result of the loss of up to:

– 0.89 ha of 'Banksia Woodlands of the Swan Coastal Plain (SCP)' TEC through direct impacts.
– 0.23 ha of the Tuart Woodlands of the Forests of the Swan Coastal Plain TEC.
– 1.31 ha habitat for Black Cockatoos (Carnaby's Cockatoo [Endangered], Baudin's Cockatoo [Endangered] and Forest Red-tailed Black Cockatoo [Vulnerable]).
– Although no known Black Cockatoo breeding hollows will be impacted, the Proposal will involve clearing of up to 18 trees considered to be Trees with a Suitable Diameter at Breast Height (DBH) Trees - none with suitable hollows.
– 1.31 ha habitat for Western Ringtail Possums (WRPs) (Critically Endangered) and displacement of up to six individual WRPs, representing less than 1 % of the regional population.

The refinement of the pipeline route and use of the HDD construction methodology has resulted in direct avoidance of impacts within the Proposal Area to the following species and communities listed under the EPBC Act:

– 0.21 ha of the Clay Pans of the Swan Coastal Plain' TEC will not be directly impacted (not cleared) as a result of refinement of the pipeline route.
– Two trees suitable for breeding for Black Cockatoos in the Proposal Area will be protected as a result of HDD construction methods.
– 0.18 ha of habitat for WRP in the Proposal Area will not be cleared as a result of using HDD construction methods.
– 0.21 ha of Tuart Woodlands of the Forests of the Swan Coastal Plain TEC in the Proposal Area will not be cleared a result of HDD method.

Detailed design drawings have been provided in this Referral and include cross sections to show that all activities associated with the construction corridor including the movement of machinery, laydown areas and temporary storage of spoil are entirely contained within the Proposal Area, Attachment 3. These drawings also map the services that utilise the Stage 2 pipeline route, including Telstra and the Dampier Bunbury Natural Gas Pipeline (DBNGP) in the Centenary Road reserve. Excavated sections of the pipeline will be refilled with the excavated spoil on the same day.

1.3 What is the extent and location of your proposed action? Upload spatial file(s) (shape file or KML file) or draw polygon on map

To be completed online

– Att-1-Proposal Area Locality and Aqwest Reserve
– Proposed Action disturbance footprint .shp file

1.4 Upload images of the Proposal Area (including disturbance footprint, avoidance footprint (if relevant) and MNES habitat area/s) and if available, a compliant GIS file. The accepted file types are: zip, .kml, .kmz, .shp or .pdf

To be completed online:

– Att-1-Proposal Area Locality and Aqwest Reserve
– Att-2-Disturbance and Avoidance areas
– Att-3-CONFIDENTIAL-DRAFT-Stage 2 Pipeline Drawings

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland)

The Proposal Area is located within the City of Bunbury and at its closest point is approximately 7 km to the south east of the Bunbury Central Business District (CBD).

The Proposal occurs within Parade Road, Centenary Road reserve, Lot 937 on Plan 220462 and Lot 9000 on Plan 61603 from the intersection of Parade Road/ Washington Avenue to just prior to South Western Highway. Lot 9000 is already cleared and the Lot is the designated section for machine access along with the trench with the adjacent Centenary Road Reserve.

Refer to Attachment 1 Proposal Area Locality and Aqwest Reserve

1.6 What is the size of the development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

The Proposal Area covers up to 7.14 ha and includes road reserves and native vegetation. Of this, 5.47 ha is within Completely Degraded area/ cleared areas with the remainder being 1.44 ha of native vegetation (0.65 ha of Degraded, 0.65 ha of Good and 0.33 ha of Very Good condition vegetation). The Proposal Area is based on Detailed Design drawings where the construction corridor has been refined to provide for:

– All excavation activities, including movement of machinery and support vehicles
– Temporary storage of spoil
– HDD to directly avoid clearing of significant native vegetation communities

All activities associated with the construction and operation of the Proposal are entirely contained within the 7.14 ha Proposal Area.

Attachment 2 shows the pipeline route, including the areas where HDD is undertaken and where the route was re-aligned to avoid direct impact to native vegetation, including the Clay Pans TEC.

Attachment 2 shows:

– The Disturbance Area, including areas planned for laydown and vehicle movement, refer CH 400-600, CH 1700-1800 and CH 2000 – 2300.
– Location for HDD installation, CH 100-200, CH 1800-1900 and CH 2300.
– Avoidance area, where the pipeline has been re-routed to avoid clearing of native vegetation, particularly at CH 3200 – CH 3600 (refer to blue hatched areas) and specifically at CH 3500 to avoid clearing of the Clay Pans TEC.

Attachment 3 provides the detailed design drawings that include the cross sections confirming that all works associated with the construction of this pipeline is entirely contained within the 7.14 ha Proposal Area.

Construction along the Centenary Road will be undertaken when the water table is at its lowest (dry months) to avoid any requirement for dewatering or impacts to surface water flow, thereby avoiding the any potential impacts to groundwater dependent vegetation, particularly the Clay Pans TEC. The pipeline will be covered with the excavated material and returned to its existing form, and therefore retain existing hydrologic and hydrogeologic function.

See Att-2 – Disturbance and Avoidance Areas

See Att-3 – CONFIDENTIAL-DRAFT—Stage 2 Pipeline Drawings

1.7 What is the proposed action location?

1.7.1 If street address, provide address.

Not applicable

1.7.2 If lot, describe the lot number and title

Table 1 lists the Lot details and land tenure for the Proposal Area.

Table 1 Lots intercepted by the Proposed Action

Land parcel identifier	Reserve number	Owner	Land parcel type
Lot 937 on Plan 220462	16044	Department of Planning, Lands and Heritage	CROWN
Lot 9000 on Plan 61603	-	State of Western Australia	V CROWN LAND
Parade Road	-	City of Bunbury	P ROAD
Centenary Road (built and unbuilt)	-	City of Bunbury	P ROAD
Bussell Highway	-	Commissioner of Main Roads	P ROAD

1.7.3 If other, describe the location.

Not applicable.

1.8 Primary jurisdiction (State or Territory)

Western Australia.

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

Yes.

1.9.1 If yes, please provide details

In September 2020, $11.9 million of funding was announced by the West Australian government for the design and construction of the BWRRS in its entirety, that is, the Plant and distribution pipelines. The funding was approved as part of the State Government Covid 19 Economic Recovery Stimulus Measures.

1.10 Is the proposed action subject to local government planning approval?

No.

Aqwest's Bunbury WRRS is being developed in accordance with licence WL2 from the Economic Regulation Authority (ERA) for the provision of non-potable water services to the Greater Bunbury Region. Accordingly, it is regulated under the *Water Services Act 2012*, and has been designated as a "Major Works" in accordance with Section 133 of that Act.

Further, Section 137(1) of the *Water Services Act 2012* defines Aqwest as "an agent of the Crown for the purposes of the *Planning and Development Act 2005* section 6, and for those purposes,

those works are to be regarded as being public works". On this basis, the Bunbury WRRS is exempt from development approval under the Local Planning Scheme No.8, (LPS8).

With respect to the Greater Bunbury Region Scheme, clause 25 of the scheme text states that the "following development on reserved land does not require the planning approval of the Commission"

– Sub-clause (f) – "development on reserved land owned by or vested in a public authority that is"
    - Sub-clause (iii) – "works for the purpose of, or in connection with, the supply of water or wastewater services, electricity or gas, or the drainage of surplus water or treatment of water, wastewater or surplus water".

On this basis, the Bunbury WRRS is exempt from approval by the WAPC under the Greater Bunbury Region Scheme.

1.10.1 If yes, Is there a local government area and council contact for the proposal?

NA

1.10.1.1 Name of relevant council contact officer:

NA

1.10.1.2 Email:

NA

1.10.1.3 Telephone Number:

NA

1.10.2 If yes attach copies of local government approvals and consent conditions

NA

1.11 Provide an estimated start and estimated end date for the proposed action

Start date: 01/03/2022

End date: 31/12/2022

1.12 Provide details of the context, planning framework and State and/or Local government requirements

Context

In 2019, Aqwest prepared the *Greater Bunbury Urban Water Strategy*, to provide a long-term (50-year horizon) master plan for the development of Aqwest's urban services in existing and new urban areas of the Greater Bunbury region. To further the Strategy, Aqwest developed the *Greater Bunbury Integrated Water Management Strategy* (IWMS). The IWMS provides a framework for the staged consideration of new water sources, potable and non-potable water supply schemes, wastewater collection and management, and rain/stormwater collection and management. A key component of the IWMS is to provide a sustainable source of water for public open space irrigation, relieving demand pressure on groundwater from the Yarragadee Aquifer, the aquifer that is the sole source of water supplying Aqwest's water scheme. The Yarragadee is a significant freshwater source in the south-west and is

directly recharged where it directly outcrops and by leakage from overlying formations. In a drying climate, developing alternative sources of water to supply fit for purpose water to irrigate POS and for use on major projects in the Bunbury region is a priority for Aqwest. The initiative has strong support from the City of Bunbury, the WA Government and the broader community.

The Bunbury WRRS is Aqwest's first major investment in developing an alternative water source to the Yarragadee is planned to produce 2 GL of high quality recycled water annually. The WRRS also directly reduces the volume of treated wastewater discharged into the Indian Ocean.

Alignment review

A planning review was completed during the design phase for the pipeline routes considering:

- Environmental values e.g. native vegetation and fauna habitat.
- Existing utilities and services.
- Road reserves.
- Distribution network.

The planning of the pipeline routes accounted for the environmental listing of significant vegetation and fauna species, particularly the Critically Endangered Western Ringtail Possum and Clay Pans TEC. Aqwest consulted with the Department of Biodiversity, Conservation and Attractions (DBCA) to refine the routes to minimise environmental impacts. One alignment option included Aqwest's water infrastructure reserve (Lot 935 on Plan 220463) that is located within Manea Park. Aqwest's water infrastructure reserve is shown in Attachment 1. During the DBCA consultation, DBCA advised its preference that Aqwest locate the pipeline in the Centenary Road reserve as services and utilities (gas and telecommunications) are already established and managed within this road reserve. DBCA recommended that the Centenary Road reserve as being preferred to the Manea Park easement as construction and operation of the pipeline in Aqwest's reserve would result in the fragmentation of vegetation within Manea Park. Aqwest rescinded its tenure of the water infrastructure reserve to DBCA as part of the draft Offset Strategy prepared for this Proposal and developed the route and design for Centenary Road. The Pipeline route selection report can be found at Attachment 4.

Further consultation, including two field trips, with DBCA, refined the Centenary Road reserve route to directly avoid the Clay Pans TEC. DBCA provided maps and advice to avoid and minimise any impact to the TEC. Dial Before You Dig mapping confirmed the location of the services within the Centenary Road reserve. These sources of information were used to refine the location of the pipeline route where it was re-routed to directly avoid any requirement to clear an area of the Clay pans.

Refer Section 1.14 of this form for further detail on the areas of MNES directly avoided as a result of the refinement of the route and HDD. The avoided areas are shown in Attachment 2 of this Referral.

See Att-1-Proposal Area Locality and Aqwest Reserve

See Att-4-CONFIDENTIAL-DRAFT-Pipeline Route Selection Stages 1 and 2

***Environmental Protection Act 1986,* Part V, s51, Clearing of native vegetation**

This Proposal is being referred to the Department of Water and Environmental Regulation for assessment of clearing of native vegetation. Granting and administration of clearing permits is regulated under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004.*

Department of Health – Guidelines for the Non-potable Uses of Recycled Water in Western Australia 2011

A Recycled Water Quality Management Plan (RWQMP) has been prepared in consultation with the Department of Health and prepared according to the 2011 *Guidelines for the use of recycled water in*

WA. The Guidelines are designed to bring Western Australian recycled water practices and schemes in line with the new National Guidelines. They seek to encourage beneficial and sustainable use of recycled water and provide guidance for planning, design, approval, operation and monitoring of recycled water supplies with regards to safeguarding public health and the environment.

Department of Water and Environmental Regulations – Dewatering and Acid Sulphate Soils Management Plan

A Dewatering and Acid Sulphate Soils (ASS) Management Plan (DASSMP) has been prepared in consultation with the DWER. The Plan has been prepared based on groundwater modelling and data provided by DWER and will be provided to the Contractor to implement as part of the Construction Environment Management Plan (CEMP). Dewatering is anticipated to be required at the base of the shored pits. Dewater will be returned to ground via direct infiltration.

Aboriginal Heritage Act 1972

The Stage 2 pipeline does not intersect any registered aboriginal sites of significance and therefore does not require formal approval under the *Aboriginal Heritage Act 1972*.

City of Bunbury

The City of Bunbury has provided a Letter of In-Principal Support for the Proposal, refer Attachment 5.

See Att-5-City of Bunbury Letter of Support

Summary

The Stage 2 pipeline is not a prescribed activity and therefore does not require a works approval or operating licence under Part V of the EP Act. All State government approval processes are currently underway. No approvals or consent conditions have been issued at this time. Refer to Attachment 6 which provides a summary of the Government approvals underway for this Project.

See Att-4-CONFIDENTIAL-DRAFT-Pipeline Route Selection Stages 1 and 2

See Att-6-CONFIDENTIAL-Government Approvals Register

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders

Engagement with stakeholders has been integral in the development of the Proposal.

The purposes of the stakeholder engagement undertaken has been to:

- Inform key stakeholders of the Proposal and its potential environmental impacts
- Develop the WRRS, including the pipeline routes, in consultation with key stakeholders
- Develop the Draft Offset Strategy
- Develop construction methodologies in consultation with key stakeholders to avoid or minimise environmental impact
- Progress commercial arrangements, and
- Facilitate land access.

A summary of consultation undertaken to date regarding the pipeline route is provided in Table 2.

Table 2 Key stakeholders

Stakeholder type	Stakeholder
Commonwealth Government	Department of Agriculture, Water and the Environment
State Government	Department of Water and Environmental Regulation

Stakeholder type	Stakeholder
	Department of Biodiversity, Conservation and Attractions Department of Housing (for the purposes of land access for environmental and aboriginal heritage surveys) Department of Planning, Lands and Heritage Department of Health Minister for Water Local Members
Local Government	City of Bunbury
Community	Gnaala Karla Booja Native Title Claim Group (WC1998/058) General public

Refer to Attachment 7 for details of consultation undertaken or planned. Community consultation is to be guided by legislation/mandatory requirements. Further community consultation requirements will be confirmed and undertaken as the approvals process progresses.

– Att-7-CONFIDENTIAL-Stakeholder Engagement Plan

Indigenous consultation

An archaeological survey of the proposed pipeline routes was completed in June 2020. The survey was conducted in consultation with, and assisted by, two representatives from the Gnaala Karla Booja Native Title Claimant group (WC1998/058). During the survey, one of the representatives provided information about the cultural values of the native flora throughout the Proposal Area. The findings of the consultation are provided in Attachment 8.

– Att-8-Aboriginal Archaeological Heritage Survey

1.13.1 Attach report(s) on any public consultations undertaken, including with Indigenous stakeholders

To be completed online:

– Att-5-City of Bunbury Letter of Support
– Att-7-CONFIDENTIAL Stakeholder Engagement Plan
– Att-8-Aboriginal Archaeology Heritage Survey

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project

Environmental studies were carried out as a component of the supporting documentation for a clearing permit application to the Department of Water and Environmental Regulation (DWER) under the *Environmental Protection Act 1986*, Part V Environmental Regulation, Division 2. An assessment against the 10 Clearing Principles under Schedule 5 of the EP Act has been prepared and will be applied in the clearing permit application process. As detailed in section 1.6, the Proposal Area has been developed during the detailed design phase of the Proposal and therefore has been developed to avoid or minimise impacts to significant environmental values. The potential impacts detailed below, as identified through the Environmental studies undertaken to support referral and assessment of the Proposal under State environmental legislation, therefore represent the maximum potential impacts. Every effort will be made to continue to reduce potential environmental impacts during construction.

The clearing of up to 1.75 Ha of native vegetation over the Proposal Area of 7.14 ha will potentially result in impacts to species and communities listed under the EPBC Act through the loss of up to:

– 0.89 ha of 'Banksia Woodlands of the Swan Coastal Plain (SCP)' TEC through direct impacts.
– 0.23 ha of the Tuart Woodlands of the Forests of the Swan Coastal Plain TEC.
– 1.31 ha habitat for Black Cockatoos (Carnaby's Cockatoo [Endangered], Baudin's Cockatoo [Endangered] and Forest Red-tailed Black Cockatoo [Vulnerable]).
– Although no known Black Cockatoo breeding hollows will be impacted, the Proposal will involve clearing of up to 18 trees considered to be Trees with a Suitable Diameter at Breast Height (DBH) Trees none with suitable hollows.
– 1.31 ha habitat for WRPs (Critically Endangered) and displacement of up to six individual WRPs, representing less than 1 % of the regional population.

The refinement of the pipeline route and use of the HDD construction methodology has resulted in direct avoidance of impacts within the Proposal Area to the following species and communities listed under the EPBC Act:

– 0.21 ha of the Clay Pans of the Swan Coastal Plain' TEC will not be directly impacted (not cleared) as a result of refinement of the pipeline route.
– Two trees suitable for breeding for Black Cockatoos in the Proposal Area will be protected as a result of HDD construction methods.
– 0.18 ha of habitat for WRP in the Proposal Area will not be cleared as a result of HDD construction methods.
– 0.21 ha of Tuart Woodlands of the Forests of the Swan Coastal Plain TEC in the Proposal Area will not be cleared a result of HDD construction methods.

All of the above species and the Clay Pans of the Swan Coastal Plain TEC (or Herb rich shrublands in clay pans FCT08 as a component of the EPBC TEC) are also listed as threatened species or communities under the WA *Biodiversity Conservation Act 2016*.

The environmental impact assessments completed for this Proposal have informed the preparation of the CEMP and DWMP and will be implemented to avoid any identified potential impacts to the environmental values described in this Proposal.

1.14.1 Attach copies of Commonwealth, State and/or Territory government approvals and consent conditions

– NA

1.15 Is this action part of a staged development (or component of a larger project)?

Yes

1.15.1 If yes, Provide information about the larger action and details of any interdependency between the stages/components and the larger action

The Project in its entirety includes:

– Construction and operation of the Wastewater Treatment Plant.
– Construction and operation of the Stage 1 pipeline to supply irrigation water for POS, and

– Construction and operation of the Stage 2 pipeline to supply for the construction of the BORR (dust suppression) and other potential major infrastructure Projects.

WRRS – Wastewater Treatment Plant

A separate application was prepared for the WRRS Bunbury Wastewater Recycled Treatment Plant (WRPT) and referred under the EPBC Act, 2021/8986. The Project was determined as Not a Controlled Action on 3rd August 2021. The construction of the Treatment Plant is proposed to commence in Q2 2022.

The Bunbury WRRS project was prepared as a separate referral for the following reasons:

– The Proposal schedule prioritises construction of the Plant to occur before construction of the distribution pipelines.
– The Plant area allows for a road connection from the Plant to enable the distribution of the treated water via trucking to the dedicated storage infrastructure until the distribution pipelines are constructed, if required.

Stage 1 pipeline

The WRRS includes the construction of a Stage 1 pipeline. Environmental approvals are not required for this pipeline as construction does not require clearing of native vegetation and fauna habitat. The Stage 1 pipeline cannot operate independently of the WRRS – WTP. The Stage 1 pipeline and WRRS-WTP can operate independently of the Stage 2 pipeline.

Stage 2 pipeline

This EPBC Act referral application includes activities associated with construction of the Stage 2 pipeline and associated infrastructure only (the Proposed Action). The Stage 2 pipeline is located from the Parade Road bifurcation to BORR point-of-use at South Western Highway. The Stage 2 pipeline cannot operate independently of the Plant or the Stage 1 pipeline as the Stage 2 pipeline is branch off the Stage 1 pipeline.

1.16 Is the proposed action related to other actions or proposals in the region?

Yes

1.16.1 If yes, Identify the nature/scope and location of the related action (Including under the relevant legislation).

This Proposal is being developed to supply treated wastewater for local infrastructure projects, including to Main Roads WA for use on the BORR project. The water will be used for purposes such as dust suppression and aiding road pavement compaction. It is planned that water provided for the BORR Southern Section project will be stored in the BORR storage facility, proposed to be a series of 500 kL storage bladders with a nominal total capacity of 6 ML. Supply of treated recycled wastewater for the BORR Southern Section project removes the requirement for Main Roads WA to apply for a licence to abstract groundwater under the *Rights in Water and Irrigation Act 1914* to provide water for the same purposes.

The location of the related projects is shown in the Attachment 9.

The BORR Southern Section is currently under assessment under both the EP Act and EPBC Act.

See Att-9-Location of BORR project and Stage 2 pipeline

2. Matters of National Environmental Significance

2.1 Is the proposed action likely to have any direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have any direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have any direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have any direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat? *

Yes

The potential impacts of the Proposed Action, habitat areas, extents and numbers of individuals for threatened species and communities provided below, have been determined based on the results of ecological surveys undertaken for the Proposed Action (and detailed in Section 7). As discussed at Section 1.6, the areas calculated using the Proposal Area represent the maximum possible extent of potential impacts from the construction of the Proposed Action. It is relevant to note that selection of the alignment has aimed to minimise the potential impact on the environment and in particular impact on any listed species, TECs or their habitat.

Of the 7.14 ha of the Proposal Area, 5.48 ha is currently cleared or highly modified (77.0%) and the remaining 1.64 ha (23.0%) is remnant native vegetation of varying quality, with 0.33 ha in Very Good, 0.65 ha Good and the remainder Degraded (0.66 ha).

In determining the significance of impacts associated with the Proposed Action, the relevant criteria listed in the Significant Impact Guidelines 1.1 (DoEE, 2013) were applied (criteria are addressed in Table 3), along with any additional species-specific policy guidance where applicable.

Since the field surveys were completed, changes to the Stage 2 pipeline alignment to avoid clearing of native vegetation such as Clay Pans have resulted in a 0.76 ha survey gap in the fauna survey and 0.02 ha survey gap in the vegetation and flora survey, compared with the Proposal Area. Desktop assessment of aerial photography indicates that the survey gaps are predominantly located in previously cleared/ Completely Degraded areas with low habitat value.

2.4.1 If yes, Impact table

Table 3 Impact table for listed species and threatened ecological communities

Species or TEC	Impact
Calyptorhynchus latirostris (Carnaby's Cockatoo) (Endangered) and *Calyptorhynchus baudinii* (Baudin's Cockatoo) (Endangered) and *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo) (Vulnerable)	Of the 7.14 ha Proposal Area, 1.49 ha is mapped as suitable habitat for Black Cockatoo species. Of the 1.49 ha , 1.31 ha of the habitat will be cleared due to the open trenching construction method and 0.18 ha of habitat will not be cleared due to HDD construction methods being utilised. Of the 1.31 ha suitable Black Cockatoo species habitat being cleared, 1.09 ha is of high-quality foraging/ potential suitable roosting habitat and 0.22 ha of moderate quality foraging habitat. No known Black Cockatoo nesting hollows were recorded within the Proposal Area. The Proposal will result in the loss of up to 18 potential breeding trees (suitable species > 500 mm DBH, none with hollows suitable for breeding) and is therefore may result in a minor residual impact to Black Cockatoo species. Two additional potential breeding trees, located within the Proposal Area, will be avoided using HDD construction methods. Lead to a long-term decrease in the size of a population: The reduction in foraging and breeding habitat is unlikely to contribute to a long-term decrease in the population. Assessment of the potential impacts on Black Cockatoo habitat using vegetation complexes within a 12 km radius indicated that the vegetation complexes which provided the highest quality foraging habitat (eg Bassendean Central and South and the Southern River vegetation complexes) were in general well represented outside of the survey area. Occurrence of the Swan Coastal Plain vegetation complexes within the survey area and vegetation fragments within a 12 km radius include the following: - Karrakatta Complex – Central and South – 2,262.9 ha - Southern River Complex – 1,999.2 ha - Yoongarillup Complex – 291.8 ha Clearing of 1.31 ha of potential habitat represents a 0.03 % reduction in potential foraging and breeding habitat for the Black Cockatoo species within the local area. Reduce the area of occupancy of the species: the Proposed Action is located within the mapped distribution of these species (DSEWPaC, 2012; DoEE, 2017), with its presence confirmed in the field. The species are known to occur throughout the greater South-West region and Southern Jarrah Forest bioregion. Given the habitat within the broader area it is unlikely to significantly reduce the area of occupancy of the species. Fragment an existing population into two or more populations: The revised draft referral guideline for the three cockatoo species (DoEE, 2017) identifies the species as mobile and highly dispersed and indicates that definition of distinct and/or important populations is not considered appropriate for these species. The Proposed Action is within an area where habitat is highly fragmented. The gap created by clearing of native vegetation for the purpose of the Proposed Action will be nominally 7 m and is unlikely to fragment an existing population into two or more populations. Adversely affect habitat critical to the survival of a species: the species were observed within the Proposal Area with foraging, roosting and potential breeding habitat present. Clearing of 1.31 ha of potential habitat represents a 0.03 % reduction in potential foraging and breeding habitat for the Black Cockatoo species within the local area (suitable remnant vegetation based on mapped vegetation complexes within a 12 km radius). The reduction in habitat is therefore not considered to affect habitat critical to the survival of the species. Disrupt the breeding cycle of a population: No known Black Cockatoo hollows were recorded within the Proposal Action Area. Implementing the Proposal will result in the loss of up to 18 trees potential breeding trees (suitable species > 500 mm DBH, none with hollows suitable for breeding). Bunbury represents a known breeding area for Baudin's Cockatoo and is within the breeding range for Carnaby's Cockatoo. No evidence of breeding was observed within the

Species or TEC	Impact
	Proposal Area during the field survey. The removal of potential breeding trees and foraging habitat may result in some disruption to the species breeding cycle. However, when considered in the context of habitat availability within the local area (based on suitable remnant vegetation within a 12 km radius), the potential loss of 1.31 ha, which represents a 0.03 % reduction in potential foraging and breeding habitat for the Black Cockatoo species within the local area, this impact is not considered significant. Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline: The Proposed Action will result in loss of up to 1.31 ha of suitable Black Cockatoo habitat and 18 trees potential breeding trees (suitable species > 500 mm DBH, none with hollows suitable for breeding). When considered in the context of habitat availability within the local area (based on suitable remnant vegetation within a 12 km radius), the potential loss of 1.31 ha, which represents a 0.03 % reduction in potential foraging and breeding habitat for the Black Cockatoo species within the local area, this impact is not considered significant. Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat: The Proposed Action is unlikely to result in the introduction of new species to the area. However, competition currently exists for nest hollows with European honeybees and other bird species. No potential breeding trees, with suitable hollows were observed within the Proposal Area during the fauna survey therefore impact of clearing of 18 potential breeding trees is not considered significant. Introduce disease that may cause the species to decline: The Proposed Action 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 population to decline and it is unlikely that any disease already exists in the Proposal Area that may be spread by the activities of the Proposed Action (as there has been no indication of any such disease). Interfere with the recovery of the species: The Recovery Plans (DBCA, 2013 and DEC, 2008) provide measures for the species recovery. These include identifying, protecting and managing important habitat. The proposed action is likely to result in minor residual impacts to habitat including potential breeding and foraging habitat, this loss is unlikely to interfere with the recovery of the species in the local area.
Western Ringtail Possum (Critically Endangered)	Of the 7.14 ha Proposal Area, 1.49 ha is mapped as suitable habitat for WRP. Of the 1.49 ha, 1.31 ha of the habitat will be cleared due to the open trenching construction method and 0.18 ha of habitat will not be cleared due to HDD construction methods being utilised. The Proposal Area has been selected to minimise the impact to the environment and threatened species with 4.72 ha of the 6.38 ha mapped habitat area, cleared or highly modified. Clearing of native vegetation within the remainder of the Proposal Area will result in the loss of up to 1.31 ha of WRP habitat, including 1.09 ha Core Habitat and 0.22 ha Supporting Habitat, and is likely to result in minor residual impact to WRPs. Lead to a long-term decrease in the size of a population: The Proposed Action involves clearing of up to 1.31 ha habitat and potential displacement of up to six individual WRPs. Based on the results of WRP Regional Surveys (Biota, 2021), the population of WRPs for the surveyed area of the Swan Coastal Plain management zone was estimated at 9,270 individuals. The potential displacement of up to 6 individuals therefore represents 0.06 % of the regional population. Effort will be made to retain WRP in the habitat abutting the Proposal Area. Based on the results of the regional population survey and the estimated maximum number of possums displaced as a result of the Proposed Action, it is considered unlikely that the Proposed Action will result in a long-term decrease in the size of the WRP population. Reduce the area of occupancy of the species: The Proposed Action involves clearing of up to 1.31 ha habitat and potential displacement of up to 6 individual WRPs. Based on results of WRP Regional Surveys (Biota, 2021), the population of WRPs for the surveyed area of

Species or TEC	Impact
	the Swan Coastal Plain management zone was estimated at 9,270 individuals. The potential displacement of up to 6 individuals therefore represents 0.06 % of the regional population. Effort will be made to retain WRP in the habitat abutting the Proposal Area. Based on the results of the regional population survey and the estimated maximum number of possums displaced as a result of the Proposed Action, it is considered unlikely that the Proposed Action will reduce the area of occupancy of the species. Fragment an existing population into two or more populations: The Proposed Action is within an area where habitat is highly fragmented. The gap created by clearing of WRP habitat, for the purpose of the Proposed Action, will be nominally 7 m wide and is unlikely to fragment an existing population into two or more populations. Adversely affect habitat critical to the survival of a species: The Proposal Area has been selected to minimise the impact to the environment and threatened species with 5.13 ha of the 6.67 ha total area, cleared or highly modified. The Proposed Action will potentially result in the loss of up to 1.31 ha of habitat for the WRP and displacement of up to 6 individuals. Based on results of WRP Regional Surveys (Biota, 2021), the population of WRPs for the surveyed area of the Swan Coastal Plain management zone was estimated at 9,270 individuals. The potential displacement of up to 6 individuals therefore represents 0.06 % of the regional population. The loss of up to 1.31 ha of habitat is considered to be unlikely to result in residual impact to the species when considered in the local and regional context. Disrupt the breeding cycle of a population: The Proposed Action involves clearing of up to 1.31 ha habitat and displacement of up to an estimated 6 individual WRPs, representing 0.06 % of the regional population. The Proposed Action is considered likely to result in disruption of the breeding cycle of the population through loss of foraging and breeding habitat and loss of individual possums. Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline: The Proposed Action involves clearing of up to 1.31 ha habitat and displacement of up to an estimated 6 individual WRPs, representing 0.06 % of the regional population. Given the extent of the regional population it is considered that the impacts are unlikely to result in decline of the species. Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat: The Proposed Action is unlikely to result in the introduction of new invasive species to the area. Introduce disease that may cause the species to decline: The Proposed Action is unlikely to result in the introduction of a disease. Interfere with the recovery of the species: The WRP Recovery Plan (DBCA, 2017) outlines the key items for the recovery of this species. The Proposed Action is not considered to result in habitat loss and fragmentation or increasing the competition for tree hollows (by reducing their availability), and therefore is likely to interfere with the recovery of the species.
Clay Pans of the Swan Coastal Plain TEC	Vegetation sub-units E1 and E2 resemble both Gibson *et al*. (1994) Floristic Community Type (FCT) 09 and FCT 07, which are considered to form the Clay Pans of the Swan Coastal Plain TEC. These two sub-units occur on shallow sandy lenses over (or directly on the) heavy clay of the Pinjarra Plain at shallow depth. The occurrence of E1 and E2 have been severely degraded. A total of 2.03 ha clay pan vegetation units (E1 and E2) were mapped within the broader survey area, these were mainly in a Degraded condition with some areas of Very Good and Good condition. Dieback surveys completed by Great Southern Bio Logic in 2020, identified the clay pan TEC area as infested. A site visit with DBCA was carried out in June 2021 to confirm the boundary of the clay pan community on Centenary Road and its condition (identified as Good – Degraded). This mapping was used to further refine the proposed alignment and construction footprint. The alignment is within an existing cleared track and will not result in clearing

Species or TEC	Impact
	or fragmentation of the community. Realignment of the pipeline has resulted in avoidance of 0.21 ha of direct impact to Clay Pans TEC. **Significance assessment against DoE (2013) guideline for Critically Endangered and Endangered TECs:** <u>Reduce the extent of this ecological community</u> Not significant - There is no direct impact (clearing) within this community. <u>Fragment or increase fragmentation of the ecological community</u> Not significant - The Proposed Action activity follows an existing cleared track that already fragments the community. No further fragmentation as a result of this Proposed Action will occur. <u>Adversely impact habitat critical to the survival of the community</u> Not significant - The recovery plan for the Clay Pans TEC (DBCA, 2019) states that there are 114 occurrences of the community (consisting of several different floristic community types) that cover approximately 909 ha. The total area of Clay Pans TEC is 298.1 ha. There are two Clay Pan TECs near the Proposal area. These will not be directly impacted and indirect impacts will be managed through a CEMP (see Section 4). <u>Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns</u> Potential impacts requiring specific management plans - A cursory review of datasets and geotechnical information indicates that in the area of the Clay Pans TEC groundwater is likely to be shallow (hand augers in the area supported groundwater depths of between 0.1 and 0.6 m). Further investigations are required to confirm the likely dewatering requirements, however if dewatering is required in the Clay Pan area this would be temporary (short-term) and in accordance with an approved Dewatering Management Plan. The distribution pipeline will be buried, and the surface water contours returned to the pre-existing levels post construction. It is not expected that the surface water patterns will be altered as a result of the Proposal. <u>Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting'</u> Not significant - The Proposed Action will be carried out in accordance with the management actions detailed in Section 4. The Proposal Area through the Clay Pan TEC lies along an existing cleared access track. On the northern side of the TEC the area has previously been cleared and contains numerous grass and herb introduced species. Given the existing disturbances including the presence of weeds and the proposed mitigation measures (see Section 4) it is unlikely that the Proposed Action will result in a substantial change to the species composition of the Clay Pan TEC. <u>Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community</u> Not significant - The Proposed Action will be carried out in accordance with the management actions detailed in Section 4. The CEMP will include management of includes weeds, dieback, topsoil and acid sulphate soils, dewatering and drainage and hydrocarbon /chemicals. <u>Interfere with the recovery of the community</u> Not significant - The National Recovery Plan for the Clay Pans TEC (DBCA, 2019) identifies changes to hydrology, weed invasion and dieback spread as possible threats. These threats will be managed through additional studies into the hydrology of the clay pan area and through a CEMP (see Section 4).

Species or TEC	Impact
Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain TEC	Vegetation sub-units A2, A3 and unit B were assessed against the Tuart TEC criteria and considered to be representative of the Tuart TEC. Aqwest has further refined the Proposal Area to reduce the extent of impact to the Tuart TEC, this includes using trenchless technologies (HDD) to avoid clearing where possible, however some impacts are unavoidable. Of the 7.14 ha Proposal Area, 0.44 ha is mapped as Tuart TEC. This, however, includes up to 0.23 ha of clearing within areas utilising a trenching construction method and an area of 0.21 ha where clearing will be avoided using HDD construction methods. 0.23 ha of Tuart TEC, that forms part of vegetation unit B: *Eucalyptus gomphocephala (Eucalyptus marginata)* Tall Woodland over *Agonis flexuosa* Low Open-forest in Good (0.19 ha) and Degraded (0.04 ha) will be directly impacted (cleared) within the Proposal Area. The area of Tuart within the Proposal Area has existing disturbances with an old track present and introduced (grass and herb species) from the adjacent agricultural land. A dieback assessment, undertaken by Great Southern Bio Logic in 2020, mapped the area as uninfested. **Significance assessment against DoE (2013) guideline for Critically Endangered and Endangered TECs:** Reduce the extent of this ecological community Not significant - The Proposed Action would require the clearing of 0.23 ha of Tuart TEC. The DoEE (2019) identifies the regional extent of the Tuart Woodlands TEC being > 17,000 ha. The loss of 0.23 ha of the known extent would result in an 0.001 % reduction. Fragment or increase fragmentation of the ecological community Not significant - The Proposed alignment requires and nominally 7 m wide corridor through the Tuart TEC, it has been positioned along the southern boundary of a broader patch of the TEC and also follows an old track that has regrowth vegetation in parts. The Proposed Action alignment will not result in further fragmentation of the TEC. Adversely impact habitat critical to the survival of the community Not significant - The Proposed Action requires minor clearing of Good and Degraded TEC, that forms part of a larger patch. The indirect impacts will be managed through a CEMP (see Section 4). Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns Not significant - The distribution pipeline will be buried, and the surface water contours returned to the pre-existing levels post construction. It is not expected that the surface water patterns will be altered as a result of the Proposed Action. Should dewatering be required in the area of the Tuart TEC, this would be managed via an approved Dewatering Management Plan and it is expected that the temporary nature of the dewatering activities would not have any long-term impacts on the Tuart community. Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting' Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community or Interfere with the recovery of the community

Species or TEC	Impact
	No significant: management actions to be applied - There is no specific recovery plan for the Tuart TEC. However, the DoEE (2019) advice lists the threats to this community as clearing and fragmentation, invasive flora and fauna, dieback and pathogens, altered fire regimes, climate change, water extraction and hydrological change and loss of fauna supporting key ecological processes. The Proposed Action requires the direct loss of 0.23 ha of Tuart TEC. This has been reduced to the minimum necessary, aligned with an old track and the edge of the Tuart TEC patch to avoid fragmentation. The CEMP will include management of includes weeds, dieback, topsoil and acid sulphate soils, dewatering and drainage and hydrocarbon /chemicals (see Section 4).
Banksia Woodlands of the Swan Coastal Plain TEC	Vegetation sub-unit C1 *Eucalyptus marginata, Banksia attenuata, Xylomelum occidentale* Woodland over *Kunzea glabrescens* Tall Shrubland community is consistent with the Banksia Woodlands TEC. This occurs along the edges of existing tracks and disturbed areas but is connected to larger continuous patches of the Banksia Woodlands TEC, satisfying patch area and condition thresholds. Aqwest has refined the Proposal Area (7.14 ha) to reduce the extent of impact to the Banksia Woodland TEC. 0.89 ha of Banksia Woodland TEC, mapped as vegetation sub-unit C1 and in Very Good (0.31 ha), Good (0.40 ha) and Degraded to Completely Degraded (0.18 ha) will be directly impacted (cleared) within the Proposal Area. The Banksia Woodland TEC occurs within the Proposal Area in two locations within the unbuilt Centenary Road Reserve; Patch 1 Central section of Centenary Road and Patch 2 eastern section of Centenary Road. The area of Banksia Woodland TEC within the Proposal Area has existing disturbances with an old track present and introduced (grass and herb species) from the adjacent agricultural land. A dieback assessment, undertaken by Great Southern Bio Logic in 2020, mapped the area as mostly un-infested. **Significance assessment against DoE (2013) guideline for Critically Endangered and Endangered TECs:** <u>Reduce the extent of this ecological community</u> Not Significant - The Proposed Action would require the clearing of 0.89 ha of Banksia Woodland TEC. The Banksia Woodlands TEC conservation advice (TSSC, 2016) estimates that > 335,000 ha of Banksia Woodlands TEC remains, with more than 253,000 ha remaining on the SCP. Based on this, the clearing of up to 0.89 ha (direct impact), would result in a reduction of up to 0.0003% in the reported extent of the Banksia Woodlands TEC. <u>Fragment or increase fragmentation of the ecological community</u> Not significant – The Proposed Action alignment requires and nominally 7 m wide corridor through the Banksia Woodland TEC, it is positioned along an old track that has regrowth vegetation in parts. Although surveys on the adjoining properties have not been carried out, field observations and aerial photography review have been analysed to extrapolate the mapping into the adjoining properties. Patch 1 (Central Section of Centenary Road Reserve – occurring at the location of quadrat AQW13 and AQW14). Banksia Woodland TEC occurs on the northern side of the Proposal area. On the southern side the Banksia Woodland TEC is not expected to occur in the agricultural land and the proposed clearing is not expected to further fragment this patch. Patch 2 (the eastern Banksia Woodland TEC occurrence along Centenary Road Reserve – quadrats AQW10 and AQW11) appears to extend on the northern and southern side of the Proposal area. The Proposed Action alignment has been positioned to follow an old track that contains some regrowth. Given the proposed clearing will be nominally 7 m wide, it will not create a gap that exceeds the Banksia Woodland TEC criteria (i.e. the TSSC, 2016 Banksia Woodland TEC acknowledges that a patch may

Species or TEC	Impact
	have small-scale (<30 m) gaps (such as tracks) that do not significantly alter the overall functionality of the ecological community). Adversely impact habitat critical to the survival of the community Not significant - The Proposed Action requires minor clearing of Good and Degraded TEC, that forms part of a larger patch. The indirect impacts will be managed through CEMP (see Section 4). Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns Not significant - The distribution pipeline will be buried, and the surface water contours returned to the pre-existing levels post construction. It is not expected that the surface water patterns will be altered as a result of the Proposed Action. Should dewatering be required in the area of the Banksia Woodland TEC, this would be managed using a Dewatering Management Plan and it is expected that the temporary nature of the dewatering activities would not have any long-term impacts on the Banksia community. Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting' Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community or Interfere with the recovery of the community Not significant: management actions to be applied - There is no specific recovery plan for the Banksia Woodland TEC. However, the TSSC (2016) advise lists the threats to this community as clearing and fragmentation, dieback disease, invasive species, altered fire regimes, climate change, hydrological degradation, decline in pollinating and seed dispersing fauna and loss of keystone species. The Proposed Action requires the direct loss of 0.89 ha of Banksia Woodland TEC, this has been reduced to the minimum necessary, aligned with an old track and will not create a gap greater than 30 m in width (reducing fragmentation impacts). The two patches of Banksia Woodland TEC are mapped as dieback un-infested, and a Dieback Management Plan will include specific mitigation measures for construction and operation activities through these patches. The CEMP will also include management of includes weeds, topsoil, acid sulphate soils, dewatering and drainage and hydrocarbon /chemicals (see Section 4).

2.4.2 Do you consider this impact to be significant?

No

2.5 Is the proposed action likely to impact on the members of any listed migratory species, or their habitat? *

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)? *

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park? *

No

2.9 Is the proposed action likely to have any direct or indirect impact on a water resource from coal seam gas or large coal mining development?

No

2.10 Is the proposed action a nuclear action? *

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas? *

No

2.13 Is the proposed action likely to have any direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

2.14 Upload any technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral

– Att-10-Fauna Study Report
– Att-11-Flora and Vegetation Report
– Att-13-Phytophthora Dieback Occurrence Survey

3. Section 3 – Description of the project area

3.1 Describe the flora and fauna relevant to the project area

Flora

The Proposal Area is situated in the South-West Botanical Province of Western Australia within the Swan Coastal Plain bioregion and Perth sub-region (SWA02) described by the Interim Biogeographic Regionalisation of Australia (IBRA). The Swan Coastal Plain bioregion is a low lying coastal plain, mainly covered with woodlands (DAWE, 2021). The Perth sub-region is characterised by colluvial and aeolian sands, alluvial river flats and coastal limestone. Heath and/or Tuart woodlands occur on limestone, Banksia and Jarrah- Banksia woodlands on Quaternary marine dunes of various ages, and Marri on colluvial and alluvial sands. The region features a complex series of seasonal wetlands.

Flora and vegetation field surveys were conducted in September, October and December 2020, and the key findings of these surveys are summarised below:

– 294 flora taxa (including subspecies and varieties) representing 67 families were recorded from the survey area during the field survey. This total comprised 229 native taxa and 65 Introduced flora taxa.
– No EPBC Act or BC Act listed flora were recorded from the survey area or identified by the desktop as likely to occur. One DBCA Priority 4 listed flora species, *Caladenia speciosa*, and two Priority 3 listed flora species, *Blennospora doliiformis* and *Lasiopetalum membranaceum* were recorded within the survey area:
    - *Caladenia speciosa* - Tuberous, perennial, herb, 0.3-0.6 m high. White-pink flowers in Sep to Oct. Commonly found in white, grey or black sand.
    - *Blennospora doliiformis* - Erect annual, herb, up to 0.15 m high. Yellow flowers in Oct to Nov. Commonly found in grey or red clay soils over ironstone. Seasonally wet flats.
    - *Lasiopetalum membranaceum* - Multi-stemmed shrub, 0.2-1 m high. Pink-blue-purple flowers in Sep to Dec. Sand over limestone.
– The survey identified six primary vegetation units (vegetation units A-F). For some of these vegetation units, sub-units with minor variation were identified. The primary and sub-units and areas identified within the Proposal Area are:
    - Primary-unit B - *Eucalyptus gomphocephala* (*Eucalyptus marginata*) Tall Woodland over *Agonis flexuosa* Low Open-forest (0.44 ha – 0.23 ha direct impact and 0.21 ha HDD).
    - Sub-unit C1 - *Eucalyptus marginata*, *Banksia attenuata*, *Xylomelum occidentale* Woodland over *Kunzea glabrescens* Tall Shrubland (0.89 ha).
    - Sub-unit C2 - *Corymbia calophylla* Open Forest over *Kunzea glabrescens* Tall Shrubland (0.11 ha).
    - Sub-unit C3 - *Corymbia calophylla*, *Eucalyptus marginata* Open Forest over *Agonis flexuosa*, *Banksia attenuata* (0.15 ha).
    - Sub-unit D1 - *Corymbia calophylla, Melaleuca preissiana, M. rhaphiophylla (Agonis flexuosa, Eucalyptus rudis)* Open Forest/Woodland (0.05 ha).
    - Sub-unit D2 - *Eucalyptus rudis* Tall Woodland over *Agonis flexuosa, Melaleuca rhaphiophylla* Low Open-forest/Woodland (0.11 ha).
– The vegetation unit ‘P’ – “roads and tracks, cleared road verges (sometimes with planted trees) and pasture and parkland with scattered trees, including areas with no vegetation”, within the Proposal

Area is 5.37 ha (approximately 75.4% of the Proposal Area) and classified as Completely Degraded.

– Six conservation significant ecological communities were within the survey area. Some of these communities share an overlapping distribution and diagnostic criteria, but are assigned differing conservation status. Of these communities, two were identified within the Proposal Area:
    - Banksia Woodlands of the Swan Coastal Plain (EPBC Act – Endangered TEC) (Sub-unit C1).
    - Tuart (*Eucalyptus gomphocephala*) woodland and forests of the Swan Coastal Plain (EPBC Act – Critically Endangered TEC) (Primary-unit B).

Fauna

A fauna field survey was conducted in October 2020 and February 2021, and the findings included the following:

– Seven fauna habitats were identified within the survey area.
– A total of 595 Black Cockatoo habitat trees were recorded within the survey area, comprising 158 Marri, 71 Jarrah, 318 Tuart, 44 Flooded Gum and four trees of indeterminate species.
– A sub-set of 28 trees supported hollows considered to warrant follow-up assessment of breeding suitability. Fourteen of these trees could be assessed with the pole-camera, although in one case, one of two hollows on the tree was inaccessible.
– A total of 91 individual (61 observations) Western Ringtail Possum were recorded during the first (October) round of sampling while fewer were recorded in February, with 69 individuals from 49 observations.

Since the fauna survey was completed changes to the Stage 2 pipeline alignment, to avoid clearing of native vegetation such as Clay Pans TEC, have resulted in a 0.76 ha survey gap in the fauna survey compared with the Proposal Area. Desktop assessment of aerial photography indicates that the survey gaps are predominantly located in previously cleared areas with low habitat value.

Based on the findings of the field survey four fauna habitat types were identified within the Proposal Area:

– Tuart/ Peppermint Woodland
    - Tuart (*Eucalyptus gomphocephala*) tall woodland over Peppermint (*Agonis flexuosa*) low forest.
– Mixed Marri/ *Eucalyptus* Woodland
    - Mixed woodland of Jarrah (*Eucalyptus marginata*), Tuart (*Eucalyptus gomphocephala*), Marri (*Corymbia calophylla*) over *Banksia* and/or Peppermint (*Agonis flexuosa*) over shrublands and open sedgelands.
– *Melaleuca* Shrubland and/ or Woodland
    - Shrubland or woodland of *Melaleuca*, typically Moonah (*Melaleuca preissiana*) or Swamp Paperbark (*M. rhaphiophylla*), typically over sedges or introduced grasses in dampland areas. Emergent Flooded Gum (*Eucalyptus rudis*) or Marri (*Corymbia calophylla*).
– Marri/ *Eucalyptus* in Paddocks and Road Reserves
    - Typically occurring as widely spaced trees or occasionally as small stands in paddocks and road reserves; comprising a mosaic of scattered trees of Marri (*Corymbia calophylla*), Jarrah (*Eucalyptus marginata*), Tuart (*Eucalyptus gomphocephala*), Flooded Gum (*Eucalyptus rudis*) and typically an understorey of introduced grasses.

An area of 4.72 ha is mapped as ‘Cleared’ within the Proposal Area which corresponds to cleared road reserves, tracks and agriculture and is of Completely Degraded condition. Attachment 12 shows the location of the TECs within and adjacent to the Proposal Area.

Suitable habitat was identified for four EPBC Act listed conservation fauna species within the Proposal Area:

– Western Ringtail Possum (Critically Endangered).
– Carnaby's Black Cockatoo (Endangered).
– Baudin's Black Cockatoo (Endangered).
– Forest Red-tailed Black Cockatoo (Vulnerable).

Habitat identified for these species, within the Proposal Area, included the following:

– Western Ringtail Possum – 1.31 ha
  - 1.09 ha Core Habitat – Tuart/ Peppermint Woodland and Mixed Marri/ Eucalyptus Woodland.
  - 0.22 ha Supporting Habitat – Marri/ Eucalyptus in paddocks and road reserves.
– Black Cockatoo species – 1.31 ha
  - 1.09 ha high quality foraging/ potential roosting – Tuart/ Peppermint Woodland and Mixed Marri/ Eucalyptus Woodland.
  - 0.22 ha moderate quality foraging – Marri/ Eucalyptus in paddocks and road reserves.
  - Loss of 18 potential breeding trees (suitable species > 500 mm DBH, none with hollows suitable for breeding).

In addition to the conservation significant species/ habitat identified, the following seven species were considered to have some potential to occur within the study area based on habitat availability and previous records in the local area:

– Likely to occur:
  - Southern Brown Bandicoot, Quenda (Department of Biodiversity, Conservation and Attractions (DBCA) Priority 4).
  - Brush-tailed Phascogale (BC Act Conservation Dependent Fauna).
– May occur:
  - Peregrine Falcon (BC Act Other specially protected fauna) – foraging visitor.
  - Coastal Plains Skink (DBCA Priority 3).
  - Swan Coastal Plain shield-backed trapdoor spider (DBCA Priority 3).
  - Western Brush Wallaby (DBCA Priority 4) –visitor.
  - Blue-billed Duck (DBCA Priority 4) –visitor to artificial and ephemeral habitats.

3.1.1 Attach copies of any flora and fauna investigations and surveys (if applicable)

– Att-10-Fauna Study Report
– Att-11-Flora and Vegetation Report
– Att-12-TECs within and Adjacent to Proposal Area

3.2 Describe the hydrology relevant to the project area (including water flows)

The Proposed Area is located within the Bunbury Groundwater Area which is proclaimed under the *Rights in Water Irrigation Act 1914* (RIWI Act). The western half of Stage 2 is located within the Bunbury Water Reserve Public Drinking Water Source Area (PDWSA) proclaimed under the *Country Area Water Supply Act 1947* (CAWS Act) which is a Priority 3 Water Source Protection Area (GoWA, 2021).

The Proposal Area does not intersect any watercourses. The closest watercourse is the Preston River proclaimed under the RIWI Act, located approximately 850 m east of the eastern most extent of the Stage 2 route (GoWA, 2021).

No surface water areas or irrigation districts intersect the Proposal Area (GoWA, 2021).

Groundwater

The uppermost aquifer at the Proposal Area is the Superficial aquifer with the Leederville and Yarragadee aquifers underlying the Superficial. Groundwater flow is generally in a north-west direction trending towards the Indian Ocean.

A hydrogeologic assessment of the Stage 2 pipeline was prepared based on the groundwater monitoring data provided by DWER hydrogeologists and reported groundwater monitoring data.

Groundwater contours for the Proposal Area and broader surrounds was provided by DWER and is shown in Attachment 14. While these contours do not reflect the seasonal groundwater level trends, they are a good reflection of groundwater levels in the Proposal Area.

A long section drawing of the pipeline and groundwater level, based on these contours is provided in Attachment 15. This drawing has been produced to show:

– DWER groundwater contours, including locations where levels are not accurate.
– Summer groundwater levels, expected to be experienced during pipe construction.
– Winter groundwater levels.
– Pipe vertical alignment.

The drawing shows the depth to the pipe invert level ranges between 1.19 m to 1.37 m and illustrates the pipe invert in relation to the groundwater level. For the majority of the length, the pipeline is above the groundwater level and therefore unlikely to impact hydrogeologic function. Groundwater may flow over the pipeline during the wetter months of the year, however, the pipeline will not impede either groundwater flow or groundwater levels due to its small diameter. This view is supported by the existing DBNGP and Telstra service lines which do not impede groundwater movement.

The Stage 2 pipeline is a buried pipeline and therefore will not impede surface water flow.

Refer to:

- Att-14-Groundwater Contours and Stage 2 pipeline

- Att-15-Pipeline long section.

Surface Water and Drainage

Ramsar and Nationally Important Wetlands

No Ramsar listed or Nationally Important wetlands occur within the Proposal Area. The closest Ramsar wetland is the Vasse-Wonnerup System, located approximately 25.8 km south-west of the Proposed Action. The closest Nationally Important Wetland is the Benger Swamp, located approximately 26.5 km north-east of the Proposed Action (GoWA, 2021).

Geomorphic Wetlands

Approximately 20% of the Proposal Area is comprised of 1.31 ha of Multiple Use Geomorphic Wetlands, including the following (GoWA, 2021):

– UFI 1104, Basin (Dampland) – 0.13 ha.
– UFI 1105, Flat (Palusplain) – 0.04 ha.
– UFI 14471, Basin (Sumpland) – 0.34 ha.
– UFI 15450, Flat (Palusplain) – 0.26 ha.

– UFI 15500, Basin (Dampland) – 0.53 ha.

3.2.1 Attach copies of any hydrological investigations

Att-14-Groundwater Contours and Stage 2 pipeline

Att-15-Pipeline long section.

3.3 Describe the soil and vegetation characteristics relevant to the project area

Soil

The Proposed Action is located within the Pinjarra System, Spearwood dune system and Bassendean dunes geomorphological elements (McArthur and Bettenay, 1960). These units are broadly described as:

– Bassendean dune and sandplain system: Pleistocene sand dunes with very low relief, leached grey siliceous sand intervening sandy and clayey swamps and gently undulating plains. These occur immediately west of, and partly overlie, the Pinjarra Plain.
– Spearwood dune and sandplain system: Pleistocene and aeolian sands overlying Tamala limestone. Low dunes and swales of shallow pale grey sands over yellow sands are characteristic of the Spearwood system. Wetlands are associated with peats and carbonate sands, occasionally with clay overlaying sands.
– Pinjarra Plain: Broad low relief plain west of the foothills, comprising predominantly Pleistocene fluvial sediments and some Holocene alluvium associated with major current drainage systems. Major soils are naturally poorly drained with many swamps.

Vegetation

Heddle *et al.* (1980) mapped the vegetation of Swan Coastal Plain at a scale of 1:250,000, describing a series of vegetation complexes that are related to plant assemblages found on particular landform-soil units. According to the mapping of Heddle et al., three vegetation complexes are present within the Proposal Area:

– Karrakatta complex – central and south. Predominantly open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) and woodland of *Eucalyptus marginata* (Jarrah) - *Banksia* species. *Agonis flexuosa* (Peppermint) is co-dominant south of the Capel River (approximately 4.00 ha within the Proposal Area).
– Southern River complex. Open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - *Banksia* species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca rhaphiophylla* (Swamp Paperbark) along creek (approximately 1.80 ha within the Proposal Area).
– Yoongarillup complex. Woodland to tall woodland of *Eucalyptus gomphocephala* (Tuart) with *Agonis flexuosa* in the second storey. Less consistently an open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri). South of Bunbury is characterised by *Eucalyptus rudis* (Flooded Gum)-*Melaleuca* species open forests (approximately 1.39 ha within the Proposal Area).

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area

There are no outstanding natural features identified as relevant to the Proposal Area.

3.5 Describe the status of native vegetation relevant to the project area

Regional vegetation extent

The extent of vegetation complexes has been determined by the south west vegetation remaining extent calculations maintained by DBCA (latest update March 2019 (GoWA, 2019)).

As shown in Table 4, the extent remaining of the Karrakatta complex - Central and South and Southern River complexes is less than 30% of pre-European extent.

Table 4 ***Extent of vegetation complex mapped within Stage 2 pipeline route for the Swan Coastal Plain IBRA bioregion (Webb et al., 2016) (GoWA, 2019)***

Vegetation Complex	Pre-European extent (ha)	Current extent (ha)	Remaining Extent (%)	Current extent remaining within all DBCA Managed Land (%)	Reduction of current extent due to the Proposed Action (%)
Karrakatta complex – Central and South	53,080.99	12,467.20	23.49	8.07	0.03
Southern River	58,781.48	10,832.18	18.43	1.60	0.02
Yoongarillup	27,977.93	10,018.14	35.81	18.41	0.01

Note: Yellow shading indicates that less than 30 % remains.

At the local government scale, as shown in Table 5, the Southern River and Yoongarillup complexes have less than 30% remaining in the City of Bunbury.

Table 5 ***Extent of vegetation complex mapped within Stage 2 pipeline route within the City of Bunbury (Webb et al., 2016) (GoWA, 2019)***

Vegetation Complex	Pre-European extent (ha)	Current extent (ha)	Remaining Extent (%)	Proportion of the vegetation complex within the Bunbury LGA (%)	Reduction of current extent due to the Proposed Action (%)
Karrakatta complex – Central and South	756.61	283.96	37.53	1.43	1.41
Southern River	2,205.16	635.67	28.83	3.75	0.28
Yoongarillup	1,435.65	156.36	10.89	5.13	0.89

Note: Yellow shading indicates that less than 30 % remains.

The Proposal will result in 0.01% – 0.03% reduction in the current extent of these vegetation complexes within the Swan Coastal Plain and 0.28% to 1.41% reduction within the City of Bunbury.

Threatened and priority ecological communities

Six conservation significant ecological communities (Commonwealth and State) were identified within the survey area. Some of these communities share an overlapping distribution and diagnostic criteria but are assigned differing conservation status. Of these, two EPBC listed TEC are intercepted by the Proposed Action:

– Banksia Woodlands of the Swan Coastal Plain (EPBC Act – Endangered TEC)

– Tuart (*Eucalyptus gomphocephala*) woodland and forests of the Swan Coastal Plain (EPBC Act – Critically Endangered TEC).

Refer to:

- Att-11-Flora and Vegetation Report.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area

The majority of the Proposal Area is flat to undulating terrain. A steeper section occurs directly east of Bussell Highway, with a moderate west facing slope. Moving east from here the slope plateaus into gently undulating terrain.

3.7 Describe the current condition of the environment relevant to the project area

The vegetation condition of the survey area ranges from Very Good to Completely Degraded.

A high proportion of the Proposal Area is cleared or has high levels of disturbance and is mapped as Completely Degraded (5.48 ha (77.0%)).

Refer to:

- Att-11-Flora and Vegetation Report.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area

No World Heritage Sites or Commonwealth Heritage Sites occur within 5 km of the Proposal (DAWE, 2021).

The State Heritage Office dataset indicated one heritage site, the BushBelt occurs within the Proposal Area. The BushBelt – Ocean-Preston Regional Park (Place No. 5670) is listed on the Municipal Inventory by the City of Bunbury (adopted on 31 July 1996) (GoWA, 2021).

3.9 Describe any Indigenous heritage values relevant to the project area

In June 2020, an Aboriginal archaeological survey was undertaken by Brad Goode and Associates (Attachment 8).

The Aboriginal archaeological survey included desktop research to identify any previously recorded Aboriginal sites and relevant previous survey data within the nominated project area. On 1st July 2020, a search was made of registered sites, other heritage places and previous surveys using the on-line Aboriginal Heritage Inquiry System of the Western Australian Department of Planning, Lands and Heritage. No Aboriginal archaeological sites and no Aboriginal Archaeological 'Other Heritage Place' were identified within the Proposal Area.

No Aboriginal archaeological sites or materials were recorded within the Proposed Action during the survey.

Refer to:

- Att-8-Aboriginal Archaeological Heritage Survey.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area

The Proposal intersects Crown land titles and easements. It also intersects dedicated and undedicated, widenings, easement and unbuilt road reserve.

Landowners include, Department of Planning, Lands and Heritage, Main Roads Western Australia and City of Bunbury (GoWA, 2021). Specifically, the landowners are:

- Department of Planning, Lands and Heritage, Lot 937 on Plan 220462
- State of Western Australia, Lot 9000 on Plan 61603
- City of Bunbury, Parade Rd and Centenary Rd (built and unbuilt)
- Commissioner of Main Roads WA, Bussell Highway.

3.11 Describe any existing or any proposed uses relevant to the project area

Land zoning within the Proposal Area, under the Greater Bunbury Regional Scheme (GBRS), includes ‘Primary Regional Roads’, ‘Regional Open Space’, ‘Rural’ and ‘Urban’(GoWA, 2021).

Only one land zone under the City of Bunbury Local Planning Scheme No. 8 is within the Proposal Area which is a ‘District Distributor Road’ (Centenary Road).

The majority of the Proposed Action is located within road reserves.

4. Measures to avoid or reduce impacts

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action

Mitigation hierarchy

Avoid

Aqwest completed a route selection process to avoid environmental impacts of the Proposed Action during the design phase.

The steps in this process involved:

– Development of route options: initially at a desktop level and then further refined through site visits and consultation with external stakeholders (City of Bunbury, DBCA, Main Roads).
– Constraints studies, including data collection, field inspections and stakeholder consultation.
– Rating and comparison of route options.
– Ecological surveys to map the environmental values as they occur along the routes.
– Identify the preferred pipeline route.

The Stage 2 alignment assessed several route options at the overall alignment scale and then assessed options within the preferred alignment to further avoid / reduce impacts. Avoidance of the Clay Pans TEC considered several potential alignments with the preferred being ground-truthed with DBCA on site.

Further avoidance of impacts has been achieved through working closely with the environmental, engineering and construction teams to identify significant environmental areas and reduce the construction impacts as far practicable. This has included minor alignment deviations to place the alignment within a previously cleared track along Centenary Road, reducing the construction footprint to the minimum extent in vegetated areas, use of trenchless techniques to avoid disturbance to the root zone of trees and minor deviations to avoid individual trees.

Minimise

Impacts of construction of the Proposal will be minimised via implementation of a CEMP, which will include management for the following:

<u>Clearing General</u>

– The extent of clearing for the pipeline route shall be the practicable minimum required for construction of the Works.
– Clearing management – including demarcate all native vegetation and fauna habitats to be retained (i.e. pegging), so that “No Go” zones are clearly delineated and noted by construction workers, and any accidental loss of vegetation is avoided.
– Trees and vegetation outside the construction corridor, and trees nominated for protection, must be protected from damage. The Contractor shall follow the guidance of AS-4970-2007 *Protection of trees on development sites*.
– The Contractor shall support and protect all trees, shrubs, pipes and structures in or adjacent to trenches and remove or cut back exposed boulders in trench bottoms. The Contractor shall avoid cutting roots and damage to trees where possible.

<u>Excavations</u>

– Trenches shall be opened in advance of the pipe laying, sufficient only to enable the work to proceed without delay. The length of open trench at any time shall not exceed 250 m and will be restored with excavated material on the same day.
– Pipe trenches and excavations where the groundwater level is above the bottom of the trench/excavation, shall be dewatered (where required) to provide stable foundations for bedding materials and enable pipeline construction in the dry. Construction will occur during the drier months of the year and as such, dewatering is not anticipated.

Dewatering

– As a contingency in the event that minor dewatering is required as a result of summer rain, dewatering will be managed in accordance with an approved Dewatering Management Plan. Dewatering is not expected to be required during the dry summer months apart from the shored pits where dewatering is necessary at the bottom of the pit in order to provide a safe work environment.

Fauna Management

– The CEMP will include the provision of a suitably qualified fauna spotter to inspect habitat areas prior, during and post clearing and open excavations / pipes and thereby minimise any harm to native fauna.
– The CEMP will detail how the excavation works will be managed to ensure fauna cannot become trapped within trenches or excavations. The plan will outline how injured fauna will be managed by qualified wildlife carers.

Hydrocarbons and hazardous materials

– Hazardous materials, consisting of fuel and oils for machinery (e.g. hydrocarbons) will be used during construction. Materials used onsite will be handled, used and disposed of in accordance with their Material Safety Data Sheet (MSDS).
– The CEMP will specify the waste management measures to be implemented, including removing waste to suitably classified waste facilities.
– There will be no storage of chemicals, fuels or refuelling within 100 m of the Clay Pans.

Dust and Noise

– The impact of dust generating activities will be minimised through utilisation of a watercart in very dry conditions. The impacts are likely to be localised to the area of the pipeline under construction at any point in time.
– Construction noise will occur due to vegetation clearing, excavation, and construction vehicle and traffic movement within the proposed alignment footprint. Noise emissions are expected to be localised to the Proposal Area footprint and within noise levels similar to that of adjacent non-related traffic.

Erosion and Sedimentation

– Erosion and sediment – Stabilisation techniques (e.g. sprays) are recommended during and post construction until vegetation begins to re-establish in cleared areas. The CEMP will outline measures required to mitigate erosion and sedimentation.

ASS risk

– The ASS risk zones associated with portions of the Proposal will have moderate to high risk of exposing ASS during the construction phase. The CEMP will identify a procedure to manage any potential exposure of soil through sampling and validation as determined in the DASSMP prepared for this Proposal and approved by DWER. This procedure should also cover the options for management of contamination once ASS has been exposed.

Dieback and weeds

– A Hygiene Management Procedure will be developed to mitigate the potential to introduce and or spread dieback or weeds across the Proposal Area. The management plan will include procedures such as machinery /vehicle clean down, weed treatments and restrictions on vehicles/machinery movements.

Fire management

– Construction will not proceed if fire bans are listed for the area.
– The CEMP will include measures to remove any risks of this Proposal igniting a fire.

Rehabilitate

The proposed pipeline will be buried, and the existing nominal 4 m wide access single vehicle access track retained for future operational maintenance. This access track will consist of the natural soil (i.e. not gravelled or bitumen) and contoured / stabilised to prevent erosion. Ground layer species will be permitted to grow along the track. This will be similar to the existing old track that the proposed alignment follows. Areas outside of the access track will have the topsoil and mulched vegetation replaced at the surface to promote natural regeneration.

Offset

Aqwest has developed a Draft Offset Strategy for the Proposed Action to counterbalance significant residual impacts on the Banksia Woodlands TEC and Tuart Woodlands TEC, and habitat for the conservation significant species black cockatoos and Western Ringtail Possums.

Aqwest has applied Commonwealth and State offset policies, recovery plans and approved conservation advice in the development of this strategy. Two offset sites have been identified, an existing Aqwest managed reserve in Manea Park (Lot 935 on Plan 220463/ Lot 935 Somerville Drive, College Grove) and an Aqwest managed reserve in College Grove (Lot 933 on Plan 220464/ Lot 933 St John Mews, College Grove). Both lots are Crown land under Reserve 36316. The offsets involve transferring Lot 935 to DBCA managed estate as part of Manea Park and a conservation covenant and on-ground rehabilitation of Lot 933.

Offset extents have been determined using the Commonwealth Offset Assessment Guide and/or State-based policies and are considered sufficient to meet offset requirements. The proposed offset extents are outlined in Table 6.

Table 6 Proposed Offset extents

Community or Species	Impact	Quantum of Impact	Proposed Offset	% of impact offset
Banksia Woodlands	0.89 ha	0.62	Lot 935 – Manea Park	100.52
Tuart Woodlands	0.23 ha	0.16	Lot 933	119.13 to 327.3
Black Cockatoo species	1.31	1.05	Lot 935 – Manea Park	180.72
			Lot 933	35.45 – 102.82
Western Ringtail Possum	1.31	1.05	Lot 935 – Manea Park	151.78
			Lot 933	17.34 – 50.29

Refer to Att-16-CONFIDENTIAL Draft Offset Strategy

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved

The Proposed Action will result in the clearing of:

– Up to 1.54 ha of native vegetation which includes the following:
  - Up to 1.31 ha of Black Cockatoo habitat.
  - Up to 1.31 ha of Western Ringtail Possum habitat.
  - Up to 0.89 ha of Banksia Woodlands TEC.
  - Up to 0.23 ha of Tuart Woodlands TEC.

The Proposal has applied avoidance measures throughout the design phase to reduce impacts to the minimum necessary to safely construct. Any areas temporarily cleared will be allowed to regenerate and suitable environmental offsets have been identified that counterbalance the residual impacts.

Through the application of the mitigation hierarchy (avoidance, minimisation, rehabilitate and offset strategies) the Proposed Action will achieve the following environmental outcomes:

– No direct or significant indirect impacts to Clay Pans.
– Minimisation of final habitat and vegetation clearing footprint.
– Minimisation of impacts to or mortality of terrestrial fauna during clearing and construction.

Overall, the Bunbury WRRS is expected to contribute positively to environmental outcomes for the region. Through the implementation of a progressive scheme of recovering wastewater and reducing use of and reliance on groundwater from the Yarragadee Aquifer, the Bunbury WRRS assists the region in addressing the impact that climate change is having on water sources. The Bunbury WRRS will assist in protecting the sustainability of the Yarragadee Aquifer and influence future water management schemes in the region.

4.3 Attach copies of any supporting documents

– Att-2-Disturbance and Avoidance Areas
– Att-4-CONFIDENTIAL-DRAFT-Pipeline Route Selection Stages 1 and 2
– Att-16-CONFIDENTIAL-DRAFT Offset Strategy

5. Conclusion on the likelihood of significant impacts

5.1 In Section 2 you indicated the below checked boxes to be of significant impact and therefore you consider the action to be a controlled action.

It is considered unlikely that the Proposal would have a significant impact on MNES protected under the EPBC Act. Therefore, the Proposed Action is considered unlikely to be a Controlled Action.

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action

The significance of impacts associated with the Proposed Action has been assessed against the relevant criteria listed in the Significant Impact Guidelines 1.1 (DoEE, 2013) (Section 2.4.2), along with any additional species-specific policy guidance, where applicable.

The Proposal Area and construction methodology has been selected to minimise the impact to the environment and threatened species and ecological communities with 4.72 ha of the 7.14 ha of mapped fauna habitat, located in previously cleared or highly modified areas. Following the avoidance, minimisation, rehabilitation and offset measures outlined in Section 4, the Proposed Action is not considered likely to have a significant impact.

Key reasons why the Proposed Action is considered unlikely to comprise a significant impact for each MNES identified as relevant to the Proposal are discussed below.

Black Cockatoo species

The Proposal involves clearing of up to 1.31 ha suitable Black Cockatoo species habitat, including 1.09 ha of high-quality foraging/ potential suitable roosting habitat and 0.22 ha of moderate quality foraging habitat.

No known Black Cockatoo nesting hollows were recorded within the Proposal Area. Loss of up to 18 potential breeding trees (suitable species > 500 mm DBH, none with hollows suitable for breeding). Clearing of two additional potential breeding trees will be mitigated using HDD construction methods.

Assessment of the potential impacts on Black Cockatoo habitat, using vegetation complexes within a 12 km radius, indicated that the vegetation complexes which provided the highest quality foraging habitat were in general well represented outside of the survey area. Clearing of 1.31 ha of potential habitat represents a 0.03 % reduction in potential foraging and breeding habitat for the Black Cockatoo species within the local area and is considered unlikely to results in long-term decrease in the size of the local population or area of occupancy.

Due to the small area of clearing, the Proposal is considered unlikely to result in fragmentation or adversely impact habitat, breeding cycle, introduction of invasive species or disease, or interfere with recovery of these species and the Proposed Action is therefore likely to result in minor residual impact to Black Cockatoo species.

Western Ringtail Possum

Clearing of native vegetation within the Proposal Area will result in the loss of up to 1.31 ha of WRP habitat, including 1.09 ha Core Habitat and 0.22 ha Supporting Habitat, and displacement of up to six individuals.

Based on results of WRP Regional Surveys (Biota, 2021), the population of WRPs for the surveyed area of the Swan Coastal Plain management zone was estimated at 9,270 individuals. The potential displacement of up to six individuals therefore represents 0.06 % of the regional population. The loss of up to 1.31 ha of habitat, when considered in the local and regional context, is likely to result in minor residual impact to WRPs.

Clay Pans TEC

The Proposal's alignment has been planned in consultation with DBCA, to avoid all clearing or fragmentation of Clay Pans TEC. Construction of the pipeline will occur during the driest months of the year thereby avoiding any direct impact to surface water and groundwater flow to the TEC. The TEC is adjacent to the Centenary Road reserve where services are already located, including the DBNGP. The location of these services within the road reserve has not impacted groundwater or surface water movement.

Tuart Woodland TEC

Aqwest refined the Proposal Area to reduce the extent of impact to the Tuart TEC, this includes using trenchless technologies (HDD) to avoid clearing where possible, however 0.23 ha of Tuart TEC will be directly impacted (cleared) within the Proposal Area.

The area of Tuart within the Proposal Area has existing disturbances with an old track present and introduced (grass and herb species) from the adjacent agricultural land.

Significance assessment of criteria in the DoE (2013) guideline for Critically Endangered and Endangered TECs has identified that clearing of 0.23 ha of Tuart Woodland TEC would not be significant and would only result in minor residual impacts.

Banksia Woodland TEC

The Proposal Area has been designed to reduce the extent of impact to the Banksia Woodland TEC, however 0.89 ha of Banksia Woodland TEC, will be directly impacted (cleared) within the Proposal Area. The Banksia Woodland TEC occurs within the Proposal Area in two locations both occurring within the unbuilt Centenary Road reserve.

The area of Banksia Woodland TEC within the Proposal Area has existing disturbances with an old track present and introduced (grass and herb species) from the adjacent agricultural land.

Significance assessment of criteria in the DoE (2013) guideline for Critically Endangered and Endangered TECs has identified that clearing of 0.89 ha of Banksia Woodland TEC would not be significant and would only result in minor residual impacts.

Conclusion

Given the relatively small extent of clearing of native vegetation/ fauna habitat within the Proposal Area and the mitigation hierarchy measures, including offset of minor residual impacts (suitable and proportionate), and construction management measures (CEMP) to be implemented, it is considered unlikely that the Proposal would have a significant impact on MNES protected under the EPBC Act. Consultation with DBCA identified the pipeline route as having least environmental impact to the environmental values within and adjacent to the Proposal Area. Therefore, the Proposal is considered unlikely to be a Controlled Action.

6. Environmental record of the person proposing to take the action

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail

Mark Crabtree represents Aqwest and has an environmentally responsible record with no previous actions taken against him. Aqwest do not have any current or historic proceedings under Commonwealth or WA State law that pertain to the protection of the environment or the conservation and sustainable use of natural resources. Aqwest undertakes all operation in compliance with state and commonwealth regulations.

6.2 Provide details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if the permit has been applied for in relation to the action – the person making the application

No past or present proceedings are underway.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If YES, If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Aqwest is committed to providing sustainable high quality water services whilst acting in an environmentally responsible way. Aqwest undertakes its projects following the Environmental Sustainability Policy Statement, Attachment 17 and the Environmental Sustainability Plan, Attachment 18. Aqwest is currently developing a formal Environmental Framework and aims to achieve ISO 14001 Certification.

6.3.2 Attach copies of any environmental policy and planning framework (If applicable)

– Att-17-Environmental Sustainability Policy Statement
– Att-18-Environmental Sustainability Plan 2019_20-2023_24

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

Yes

6.4.1 If YES, EPBC Act number and/or name of proposal

The Bunbury Water Resources Recovery Scheme – Recycled Water Treatment Plant was referred to DAWE (EPBC 2021/8986) for construction of the Plant.

7. Information sources

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source)

Table 7 Information sources

Reference source	Reliability	Uncertainties
Beard, JS 1979, *Vegetation Survey of Western Australia: Perth Map and Explanatory Memoir 1:250,000 series*, Perth, Vegmap Publications.	Good	As stated in reference document
Biota 2020, *Western Ringtail Possum Pseudocheirus occidentalis Regional Surveys*, Report prepared for Main Roads Western Australia.	Good	As stated in reference document
Department of Agriculture, Water and the Environment (DAWE) 2021, *Interim Biogeographic Regionalisation of Australia*, Version 7. Available from: http://www.environment.gov.au/land/nrs/science/ibra/australias-bioregions-maps.	Good	As stated in reference document
Department of Biodiversity, Conservation and Attractions (DBCA) 2013. *Carnaby's cockatoo (Calyptorhynchus latirostris) Recovery Plan.* Department of Parks and Wildlife, Perth, Western Australia.	Good	As stated in reference document
Department of Biodiversity, Conservation and Attractions (DBCA) 2017, *Western Ringtail Possum (Pseudocheirus occidentalis) Recovery Plan.* Wildlife Management Program No. 58. Formerly: Department of Parks and Wildlife, Perth, WA.	Good	As stated in reference document
Department of Biodiversity, Conservation and Attractions (DBCA) 2019, *National Recovery Plan for the Clay pans of the Swan Coastal Plain Ecological Community*. Department of Biodiversity, Conservation and Attractions, Perth, Western Australia.	Good	As stated in reference document
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Department of Sustainability, Environment, Water, Population and Communities (*DSEWPaC*) 2012, *EPBC Act referral guidelines for three threatened black cockatoo species*, Canberra, Australia, Department of Sustainability, Environment, Water, Population and Communities.	Good	As stated in reference document
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Department of the Environment and Energy (DoEE) 2017, *Revised draft referral guidelines for three threatened black cockatoo species.* Available from: http://www.environment.gov.au/epbc/pmst/index.html.	Good	As stated in reference document
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Department of Water 2009, *Bunbury and South West Coastal: Groundwater areas*. Government of Western Australia. Available from: https://www.water.wa.gov.au/__data/assets/pdf_file/0020/4439/84016.pdf	Good	As stated in reference document

Reference source	Reliability	Uncertainties
EPBC Act 1999, *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), in: Government, A. (Ed.), Office of Legislative Drafting and Publishing (OLDP), Canberra.	Good	As stated in reference document
Gibson, N, Keighery, BJ, Keighery, GJ, Burbridge, AH and Lyons, MN 1994, *A Floristic Survey of the Southern Swan Coastal Plain, Perth*, Unpublished Report for the Australian Heritage Commission prepared by Department of Conservation and Land Management and the Conservation Council of Western Australia (Inc).	Good	As stated in reference document
Government of Western Australia (GoWA) 2019, *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full report)*, Current as of March 2019, Perth, Australia, Department of Biodiversity, Conservation and Attractions. Available from: https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics.	Good	As stated in reference document
Government of Western Australia (GoWA) 2021 *data.wa.gov.au.* Available from: https://catalogue.data.wa.gov.au/ - Directory of Important Wetlands in Australia – Western Australia (DBCA-045) - Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) - Heritage Council WA – State Register (DPLH-006) - Heritage List (DPLH-090) - Pre-European Vegetation (DPIRD-006) - Public Drinking Water Source Areas (DWER-033) - Ramsar Sites (DBCA-010) - RIWI Act, Groundwater Areas (DWER-034) - RIWI Act, Rivers (DWER-036) - RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037) - Vegetation Complexes, Swan Coastal Plain (DBCA-046)	Good	As stated in reference document
Heddle, EM, Loneragan. OW and Havel JJ 1980, *Vegetation Complexes of the Darling System, WA, in Atlas of Natural Resources, Darling System WA*, Department of Conservation and Environment.	Good	As stated in reference document
McArthur, WM and Bettenay, E 1960, *The development and distribution of soils on the Swan Coastal Plain, Western Australia*. CSIRO Soil Publication No. 16.	Good	As stated in reference document
Shedley, E., and Williams, K. 2014, *An assessment of habitat for western ringtail possums (Pseudocheirus occidentalis) on the southern Swan Coastal Plain. Bunbury, WA*: Unpublished report for the Department of Parks and Wildlife.	Good	As stated in reference document
Threatened Species Scientific Community (TSSC) 2016, *Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community*, Department of the Environment and Energy, Canberra. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/87808-conservation-advice-15022018.pdf	Good	As stated in reference document
Webb, A., Kinloch, J., Keighery, G. and Pitt, G. 2016, *The extension of vegetation complex mapping to landform boundaries within the Swan Coastal Plain landform and forested region of south-west Western Australia.* Department of Parks and Wildlife	Good	As stated in reference document

8. Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

A feasible alternative may include, but is not limited to, alternative timeframes, locations or activities for the proposed action.

Do you have any feasible alternative to taking the proposed action?

No

If yes, various parts of section 8.1 to 8.25 must be filled out.

8.1 Provide a description of the feasible alternative

8.2 Select the relevant alternatives related to your proposed action:

☐ Timeframes

☐ Locations

☐ Activities

8.3 Provide an estimated start and estimated end date for the proposed alternative action

Not applicable

8.4 What is the extent and location of your proposed alternative action?

Not applicable

8.5 Provide a brief physical description of the property on which the alternative proposed action will take place and the project location (e.g. Proximity to major towns, or for off-shore projects, shortest distance to mainland).

Not applicable

8.6 What is the size of the development footprint or work area of the alternative?

Not applicable

8.7 Is the alternative proposal a street address or lot?

Not applicable

8.8 Is there a different local government area and council contact for the alternative?

Not applicable

8.9 Provide details of the context, planning framework and State/Local Government requirements.

Not applicable

8.10 Describe any public consultation that has been, is being or will be undertaken (including with Indigenous stakeholders).

Not applicable

8.11 Describe any environmental impact assessment that have been, is being or will be carried out under the Commonwealth. State or Territory legislation including relevant impacts of the project for the alternative.

Not applicable

8.12 Is the alternative activity part of a staged development or a component of a larger project?

Yes/No

8.13 Nominate any matters of National Environmental Significance that are likely to be impacted by this alternative proposal by ticking the relevant checkboxes:

☐ World Heritage properties

☐ National Heritage places

☐ Wetlands of international importance (declared Ramsar wetlands)

☐ Listed threatened species or any threatened ecological community

☐ Listed migratory species

☐ Marine environment outside Commonwealth marine areas

☐ Protection of the environment from actions involving Commonwealth land

☐ Great Barrier Reef Marine Park

☐ A water resource, in relation to coal seam has development and large coal mining development

☐ Protection of the environment from nuclear actions

☐ Protection of the environment from Commonwealth actions

☐ Commonwealth Heritage places overseas

☐ Commonwealth marine areas

8.14 Describe any impacts on the flora and fauna relevant to the alternative proposal.

Not applicable

8.15 Describe the hydrology relevant to the alternative proposal (including water flows)

Not applicable

8.16 Describe the soil and vegetation characteristics relevant to the alternative proposal.

Not applicable

8.17 Describe any outstanding natural features and/or unique values relevant to the alternative proposal.

Not applicable

8.18 Describe the remnant native vegetation relevant to the alternative proposal.

Not applicable

8.19 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the alternative proposal.

Not applicable

8.20 Describe the current state of the environment relevant to the alternative proposal.

Not applicable

8.21 Describe any commonwealth Heritage places or other places recognised as having heritage values relevant to the alternative proposal.

Not applicable

8.22 Describe any Indigenous heritage values relevant to the alternative proposal.

Not applicable

8.23 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the alternative proposal.

Not applicable

8.24 Describe any existing or any proposed uses relevant to the alternative proposal.

Not applicable

8.25 What are the proposed measures for any alternative action to avoid or reduce the impact?

Not applicable

8.26 Do you have another alternative

No

8.26.1 If YES, describe the details of the proposed alternative proposal

9. Section 9 – Contacts, signatures and declarations

9.1 Person proposing the action

9.1.1 Is the person proposing to take the action a member of an organisation or a business?

Yes

- Organisation name (as registered for ABN/CAN): Bunbury Water Corporation
- Organisation type: Australian
- ABN/CAN: ABN 18568918143
- Business name: Aqwest
- Primary address: 5 MacKinnon Way, East Bunbury 6230 WA Australia
- Main phone number: (08) 9780 9500
- Primary email address: Mark.Crabtree@aqwest.com.au

9.1.2 I qualify to exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

NA

9.1.2.1 I would like to apply for a waiver of full or partial fees under Regulation 5.21A of the EPBC Regulations

No

9.1.3 Contact

- First name: Mark
- Last name: Crabtree
- Job title: General Manager Water Services
- Phone: (08) 9780 9526
- Mobile:
- E-mail: Mark.Crabtree@aqwest.com.au
- Address: 5 MacKinnon Way, East Bunbury 6230 WA Australia

9.2 Proposed designated proponent

9.2.1 Is the proposed designated proponent a member of an organisation?

Yes

- Organisation name (as registered for ABN/CAN): Bunbury Water Corporation
- Organisation type: Australian
- ABN/CAN: ABN 18568918143

- Business name: Aqwest
- Primary address: 5 MacKinnon Way, East Bunbury 6230 WA Australia
- Main phone number: (08) 9780 9500
- Primary email address: mark.crabtree@aqwest.com.au

9.2.2 Contact

- First name: Mark
- Last name: Crabtree
- Job title: General Manager Water Services
- Phone: (08) 9780 9526
- Mobile:
- E-mail: Mark.Crabtree@aqwest.com.au
- Address: 5 MacKinnon Way, East Bunbury, 6230, WA, Australia

9.3 Referring party (person preparing the information)

9.3.1 Is the referring party a member of an organisation?

Yes

- Organisation name (as registered for ABN/CAN): GHD Pty Ltd
- Organisation type: Australian
- ABN/CAN: 39008488373
- Primary address: Level L 15 133 Castlereagh Street Sydney, 2000, NSW Australia
- Main phone number: (08) 9239 7100
- Primary email address: mail@ghd.com

9.3.2 Contact

- First name: Fionnuala
- Last name: Hannon
- Job title: Technical Director - Environment
- Phone: (08) 9721 0711
- Mobile: 0417 091 169
- E-mail: fionnuala.hannon@ghd.com
- Address: 10 Victoria Street, Bunbury, 6230, WA, Australia

10. Section 10 – Submit your EPBC Act referral

Once your referral has been submitted, you cannot make any changes. If you wish to review your application, you can download a copy of your EPBC Act referral from *My applications* at any time.

Attachment 1

Proposal Area

Attachment 2

Disturbance and Avoidance Area

Attachment 3

CONFIDENTIAL-DRAFT-Stage 2 Pipeline Drawings

Attachment 4

CONFIDENTIAL-DRAFT-Pipeline Route Selection Stages 1 and 2

Attachment 5

City of Bunbury Letter of Support

Attachment 6

CONFIDENTIAL-Government Approvals Register

Attachment 7

CONFIDENTIAL-Stakeholder Engagement Plan

Attachment 8

Aboriginal Archaeological Heritage Survey

Attachment 9

Location of BORR project and Stage 2 pipeline

Attachment 10

Fauna Study Report

Attachment 11

Flora and Vegetation Report

Attachment 12

TECs Within and Adjacent to Proposal Area

Attachment 13

Phytophthora Dieback Occurrence Survey

Attachment 14

Groundwater Contours and Stage 2 pipeline

Attachment 15

Pipeline long section

Attachment 16

CONFIDENTIAL-DRAFT Offset Strategy

Attachment 17

Environmental Sustainability Policy Statement

Attachment 18

Environmental Sustainability Plan 2019_20-2023_24

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