

Construction Environmental Management Plan
Sassafras Wesley Vale Irrigation Scheme Augmentation
(SWISA)

EPBC Number: 2023/09666



Project details

Project name: Sassafras Wesley Vale Irrigation Scheme
Augmentation

EPBC Number: 2023/09666

Location: Northwest Tasmania (Sassafras, Harford,
Thirlstane, Moriarty, Wesley Vale, Northdown,
Pardoe, East Devenport)

Proponent details

Proponent: Tasmanian Irrigation Pty Ltd

Responsible person: Gordon Williams ABN: 95 722 799 075

CAN 133 148 384

Declaration of accuracy

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

Signed: 

Full name: Gordon Williams

Organisation: Tasmanian Irrigation Pty Ltd

Date: 30/4/2026

Version	Date	Author	Reviewer	Comments
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Glossary and definitions

Abbreviation	Definition
Acoustic specialist	A person with relevant professional qualifications and at least three years of experience designing and implementing noise management strategies. They must be able to provide authoritative assessment and advice using relevant protocols, standards, methods and/or literature.
Active eagle nest	Any Tasmanian wedge-tailed eagle nest unless an activity check has been conducted by either the Forest Practices Authority or a suitably qualified eagle specialist and determined to be inactive.
Aerial nest search	Aerial searches conducted using helicopters to identify and record the locations of Tasmanian wedge-tailed eagle nests. These searches must be undertaken between 1 March and 30 June in accordance with <i>Fauna Technical Note 1: Eagle Nest Searching, Activity checking and Nest Management</i> (FPA, 2024).
AHT	Aboriginal Heritage Tasmania
AMM	Approved Management Method
ASF	Freshwater aquatic sedgeland and rushland
ASS	Acid sulphate soils
Background noise level (LA90,T)	The noise level exceeded 90% of the time during each measurement interval when measured in the absence of noise from the subject site.
BCF	Burrowing crayfish
CEMP	Construction Environmental Management Plan
CEP	Construction Environmental Plan
CET	Construction Environmental Table
CNBC	Central north burrowing crayfish
Construction corridor	The impact area of construction activities including: • Permanent impact areas (e.g. buildings, access roads, and minor infrastructure such as scour valves and property outlets). • Temporary impact areas (e.g., pipeline alignment and temporary laydown areas that will be reinstated post construction).

Abbreviation	Definition
	Nominally, the construction corridor is a 30 m zone around the pipeline alignment, plus any permanent infrastructure and temporary impact areas. The corridor represents the maximum extent of the construction impact area and has been minimised in areas containing natural values to reduce impact. Impacts on the natural values due to construction are assessed based on the construction corridor.
Construction project area	The outer limits where construction may deviate from the approved corridor due to unforeseen circumstances. This area corresponds to the survey area. Any deviations within the construction project area do not require additional surveys (unless surveys are more than 2 years old) but must be assessed for potential impact on Matters of National Environmental Significance (MNES). Work can only proceed if there is no change or a reduction in the quantum of impact to MNES. The construction project area represents the boundary for the application of this CEMP.
DAC	<i>Eucalyptus amygdalina</i> coastal forest and woodland
DAM	<i>Eucalyptus amygdalina</i> forest on mudstone
Daylight hours	The period between one hour after dawn and one hour before dusk.
DCCEEW	Department of Climate Change, Energy, the Environment and Water
Devil management constraint period	The breeding season for the Tasmanian devil between the 31st August and the 1st February each year. During this period no works are to be carried out on the Great Bend Pump Station and along Devil Road that exceed existing background ambient noise levels set at 36dBA. The exact period must be confirmed in writing by a suitably qualified ecologist supported by monitoring evidence. This period may fluctuate due to Devil Facial Tumour Disease.
DOB	<i>Eucalyptus obliqua</i> dry forest
DOV	<i>Eucalyptus ovata</i> forest and woodland
DSC	<i>Eucalyptus amygdalina</i> - <i>Eucalyptus obliqua</i> damp sclerophyll forest
Eagle management constraint period	The period from 1 July to 31 January of the same financial year, unless adjusted and publicly advised by the Forest Practices Authority in November.

Abbreviation	Definition
EMPCA	<i>Environmental Management and Pollution Control Act 1994 (Tas)</i>
Environmental nuisance	A defined in Section 3 of the <i>Environmental Management and Pollution Control Act 1994 (Tas)</i> .
EPA	Environment Protection Authority (Tasmania)
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999 (Cth)</i>
EPR	Environment Protection Requirement
ESCP	Erosion and Sediment Control Plan
Exclusion zones	Areas containing identified values with required buffers where no works are permitted. These must be clearly marked in the field. Exclusion zones prevent human encroachment but do not restrict animal movement into the construction corridor.
GBPS	Great Bend Pump Station
GGF	Green and gold frog
ha	Hectare
HDD	Horizontal directional drilling
HDPE	High-density polyethylene
km	Kilometre
Maintenance	Refers to the systematic and routine activities carried out to ensure the optimal performance, reliability, and longevity of irrigation infrastructure. This includes regular inspections, cleaning, repairs, and replacements of components such as pumps, pipes, valves, and control systems. Its purpose is to prevent breakdowns, minimize downtime, and ensure efficient water delivery.
ML	Megalitre (one million litres)
MNES	Matters of National Environmental Significance
NAD	<i>Acacia dealbata</i> forest
NAF	<i>Acacia melanoxylon</i> swamp forest
Nest activity assessment	A check of known eagle nests by a suitably qualified eagle specialist during the eagle management constraint period to determine nest activity. Surveys must be conducted in the breeding season, with optimal timing

Abbreviation	Definition
	(typically October – November) informed by either the FPA or an eagle specialist.
Night-time hours	The period between one hour before dusk and one hour after dawn.
Noise sensitive premises	Residences, schools, hospitals, caravan parks and similar land uses where individuals are present for extended periods, excluding workplaces or recreational places.
NME	<i>Melaleuca ericifolia</i> swamp forest
NRE Tas	Department of Natural Resources and Environment Tasmania
OEMP	Operational Environmental Management Plan
PAM	Passive acoustic monitoring
PASS	Potential acid sulphate soils
Relocation management area	A habitat that cannot be avoided by construction and requires salvage and relocation measures.
SBPS	Sassafras Booster Pump Station
SHBT	Saggers Hill Balance Tank
SRZ	Structural Root Zone
Suitably qualified arborist	A person with a Certificate V in Arboriculture and at least three years of experience in assessing and advising on arboriculture in development landscape (e.g. TPZs, SRZs), in accordance with AS 4970-2009.
Suitably qualified aquatic fauna expert	A person with relevant qualifications and at least three years of experience conducting aquatic fauna surveys. They must be able to provide authoritative assessment of Australian grayling using relevant protocols and literature.
Suitably qualified bioacoustics analyst	An ecologist experienced in bioacoustics collection and analysis, specifically for the swift parrot, blue-winged parrot and Tasmanian masked owl.

Abbreviation	Definition
Suitably qualified ecologist	A person with relevant professional qualifications and: - at least three years of experience writing, implementing and reporting on management plans for the habitat of protected matters, - has implemented and reported on management plans for the habitat of protected matters and can demonstrate the implementation of those plans achieved the desired habitat quality for habitat of protected matters.
Suitably qualified eagle specialist	A person who has completed an eagle management course approved by the Forest Practices Authority and has at least five years of experience in eagle nest management.
Suitably qualified wildlife carer	A person who has completed wildlife rescue training through a certified provider (e.g. WIRES or Bonorong Wildlife Sanctuary).
SWIS	Sassafras Wesley Vale Irrigation Scheme
SWISA / the Project	Sassafras Wesley Vale Irrigation Scheme Augmentation
TI	Tasmanian Irrigation Pty Ltd
TPZ	Tree Protection Zone
TSP Act	<i>Threatened Species Protection Act 1995</i>
WDMP	Weed and Disease Management Plan
WOB	<i>Eucalyptus obliqua</i> forest with broad-leaf shrubs
WOL	<i>Eucalyptus obliqua</i> forest over <i>Leptospermum</i>

1. Introduction

The Sassafras Wesley Vale Irrigation Scheme Augmentation Project (SWISA / the Project) is the proposed redevelopment of the existing Sassafras Wesley Vale Irrigation Scheme (SWIS) by Tasmanian Irrigation Pty Ltd (TI). The SWIS currently provides 5,660 megalitres (ML) of water to 99 irrigators located in the north-west of Tasmania in Sassafras, Harford, Thirlstane, Moriarty, Wesley Vale, Northdown, Pardoe, and East Devonport. The Project aims to meet increased demand for irrigation water in the north-west region and to replace existing SWIS assets that are nearing the end of their serviceable life. The Project will increase the capacity of the irrigation scheme to supply an additional 9,200 ML of water (bringing the total capacity to 14,860 ML) and service 132 irrigators.

The Project involves the refurbishment of the existing Great Bend Pump Station (GBPS), and the construction of the Saggars Hill Balance Tank (SHBT), Sassafras Booster Pump Station (SBPS), and approximately 100 kilometres (km) of new pipeline. It also includes the cut-over of all SWIS customers to SWISA. The decommissioning of existing SWIS assets that have reached the end of their serviceable life will be completed under a separate package of works, to be assessed separately, and is therefore not included in the scope of the Project. An overview of the Project is depicted in **Figure 1-1**, with a detailed Project description provided in Section 3.

The Project was referred to the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in 2023 and was determined to be a controlled action, with the controlling provision of listed threatened species and communities (section 18 and section 18A) (EPBC 2023/09666). The Project is also subject to assessment under relevant state legislation, including a Reserve Activity Assessment under the *National Parks and Reserves Management Act 2002* for works within the Warrawee Conservation Area, and approval from the Latrobe Council under the *Land Use Planning and Approvals Act 1993*. A summary of approval requirements is provided in Section 2.

This Construction Environmental Management Plan (CEMP) has been prepared in accordance with the Environmental Management Plan Guidelines issued by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) (DCCEEW, 2024), and forms part of the Preliminary Documentation submitted for the Project. The CEMP outlines potential construction-phase impacts and proposed management and mitigation measures for Matters of National Environmental Significance (MNES) protected under the EPBC Act, as well as environmental and heritage matters protected under state legislation. Operational-phase impacts and mitigation measures are presented separately in an Operational Environmental Management Plan (OEMP).

Management and mitigation measures are contained within the overarching Environmental Protection Requirements (EPRs) developed for the Project (see Annex E to Preliminary Documentation), and site-specific requirements presented in the Construction Environmental Plans and Tables (CEPs/CETs) (see Appendix B – Construction Environmental Tables and Construction Environmental Plans).

Environmental management measures, including adaptive management and corrective actions are summarised in Section 10. TI will require the construction contractor to adhere to the provisions of this CEMP, which describes all TI commitments. The construction contractor will also be required to comply with any additional requirements identified as the project progresses, including any approval conditions under permits to be obtained for the Project. The key potential construction-phase impacts of the Project on MNES and values protected under state legislation are summarised in Table 1-1.

Potential impacts will be managed and mitigated through the measures outlined in the relevant EPRs. Further information on potential impacts and risks is provided in Section 9. A full assessment of the potential impacts of the Project on MNES, including residual impacts after the mitigation measures have been applied, is provided in the Preliminary Documentation (BMT, 2024).

A high-level overview of the construction activities, potential impacts, and proposed management and mitigation measures is provided in Figure 1-2.

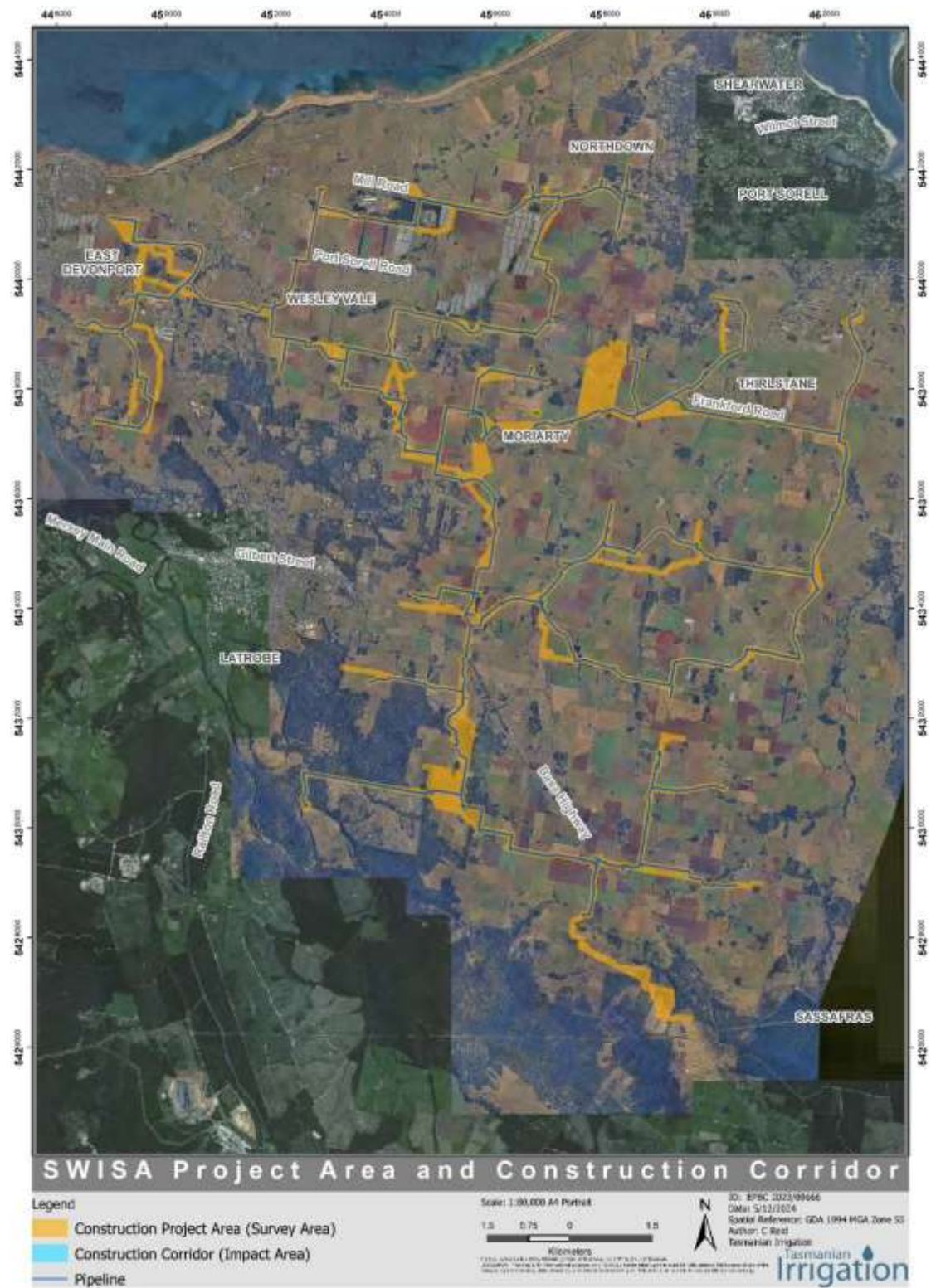


Figure 1-1 Project overview

Table 1-1 Summary of potential impacts and mitigation measures

Value	Conservation rating (Cwth/state) ¹	Potential impact summary	Mitigation measures (EPR reference)
Threatened fauna			
Dasyurids			
Tasmanian devil (<i>Sarcophilus harrisii</i>)	EN/en	Temporary impact to 11.35 ha of potential denning habitat ² (consisting of 8.46 ha optimal denning habitat and 2.89 ha sub-optimal denning habitat) and 308.49 ha of foraging habitat.	EPR 1 – Flora and fauna EPR 1E – Den management EPR 13 – Rehabilitation and reinstatement
eastern quoll (<i>Dasyurus viverrinus</i>)	EN/-		
spotted-tail quoll (<i>Dasyurus maculatus</i>)	VU/r	Permanent impact to 0.11 ha of potential denning habitat ² (consisting of 0.06 ha optimal denning and 0.05 ha sub-optimal denning habitat) and 0.91 ha of foraging habitat.	
		Trench entrapment	EPR 1 – Flora and fauna (EPR 1.9)
		Strike by machinery or vehicles	EPR 1H – Roadkill management
		Destruction of dens and lay-ups	EPR 1E – Den management
		Noise disturbance and vibration impacts to maternal dens at GBPS, resulting in den abandonment and/or disruption of breeding activities.	EPR 1F – Tasmanian devil management - Great Bend Pump Station and Devil Road

¹ EPBC Act conservation ratings: CE (critically endangered), EN (endangered), VU (vulnerable)

TSP Act conservation ratings: e (endangered), v (vulnerable), r (rare)

² Optimal denning habitat and sub-optimal denning habitat is also suitable for foraging.

		Interaction with domestic dogs	EPR 1 – Flora and fauna (EPR 1.16)
Eastern barred bandicoot (<i>Perameles gunnii</i>)	VU/-	319.83 ha of potential temporary habitat impacts, including 1.02 ha of habitat loss.	EPR 1 – Flora and fauna EPR 13 – Rehabilitation and reinstatement
		Trench entrapment	EPR 1 – Flora and fauna
		Strike by machinery or vehicles	EPR 1H – Roadkill management
		Increased predation risk	EPR 1 – Flora and fauna
Tasmanian wedge-tailed eagle (<i>Aquila audax</i> subsp. <i>fleayi</i>)	EN/e	Disturbance of an active nest during breeding season (eagle management constraint period).	EPR 1A Tasmanian wedge tailed eagle
		Clearance of potential nesting habitat	EPR 1A Tasmanian wedge tailed eagle
Tasmanian masked owl (<i>Tyto novaehollandiae</i> subsp. <i>castanops</i>)	VU/e	Habitat loss through the clearance of up to 28 nesting and/or foraging trees and TPZ incursion >10% for a further 35 trees that may result in mortality. See Table 9-1.	EPR 1 – Flora and fauna EPR 1G – Hollow-bearing tree management EPR 13 – Rehabilitation and reinstatement
Swift parrot (<i>Lathamus discolor</i>)	EN/e		
Blue-winged parrot (<i>Neophema chrysostoma</i>)	VU/-		
Green and gold frog (GGF) (<i>Litoria raniformis</i>)	VU/v	1.71 ha of potential temporary impacts to dispersal habitat.	EPR 1 – Flora and fauna EPR 1C – Green and gold frog

			EPR 13 – Rehabilitation and reinstatement
		Degradation of aquatic habitat	EPR 3 – Watercourses EPR 4 – Sediment and erosion
		Strike by machinery or vehicles	EPR 1H – Roadkill management
		Spread of waterborne pathogens, including chytrid fungus.	EPR 2 – Weeds, pests and disease
		Altered hydrology, including modified flow regimes and groundwater extraction.	EPR 3 – Watercourses
Australian grayling (<i>Prototroctes maraena</i>)	VU/v	Habitat degradation, through changes to surface water quality	EPR 1D – Australian grayling EPR 3 – Watercourses and EPR 4 – Sediment and erosion.
		Direct entrainment and mortality can occur at GBSP	EPR 1D – Australian grayling
Central north burrowing crayfish (CNBC) (<i>Engaeus granulatus</i>)	EN/en	Direct and indirect impacts to individuals through the destruction of nine individual CNBC chimneys in five locations.	EPR 1B – Central north burrowing crayfish
		Temporary impact to 1.92 ha of known potential CNBC habitat, including 1.81 ha of suboptimal habitat and 0.11 ha of optimal and damp remnant habitat.	EPR 1 – Flora and fauna EPR 1B – Central north burrowing crayfish EPR 13 – Rehabilitation and reinstatement

		Degradation of aquatic habitat through soil compaction at the edge of waterways, introduction/spread of weeds, and alteration to water quality and quantity.	EPR 3 – Watercourses EPR 4 – Sediment and erosion EPR 8 – Environmentally hazardous materials
Threatened flora			
Tailed spider-orchid (<i>Caladenia caudata</i>) VU/v		Degradation of habitat through introduction/spread of weeds and disease (<i>Phytophthora</i>).	EPR 1 – Flora and fauna EPR 2 – Weeds, pests and disease
		Permanent impact to 1.20 ha of potential/buffer habitat.	EPR 1.1 – Threatened flora and vegetation communities EPR 13 – Rehabilitation and reinstatement
Robust fingers (<i>Caladenia tonellii</i>) CE/e		Degradation of habitat through introduction/spread of weeds.	EPR 1 – Flora and fauna EPR 2 – Weeds, pests and disease
		Habitat fragmentation through vegetation clearance	EPR 11 – Threatened flora and vegetation communities
		Permanent impact to 1.20 ha of potential/buffer habitat.	EPR 13 – Rehabilitation and reinstatement
Wrinkled dollybush (<i>Cassinia rugata</i>) VU/e		Habitat loss through vegetation clearance	EPR 1 – Flora and fauna EPR 2 – Weeds, pests and disease
		Degradation of habitat through introduction/spread of weeds.	EPR 13 – Rehabilitation and reinstatement

Slender waterpepper (<i>Persicaria decipiens</i>)	-/v	Direct impact through clearance of 415 m ² of slender waterpepper.	EPR 1 – Flora and fauna EPR 1.1 – Threatened flora and vegetation communities EPR 13 – Rehabilitation and reinstatement
Threatened native vegetation communities / threatened ecological communities			
<i>Melaleuca ericifolia</i> swamp forest (NME)	Nature Conservation Act 2002 threatened native vegetation community	Direct impact through clearance of 0.13 ha of NME.	EPR 1 – Flora and fauna EPR 1.1 – Threatened flora and vegetation communities EPR 13 – Rehabilitation and reinstatement
<i>Eucalyptus ovata</i> forest and woodland (DOV)	Nature Conservation Act 2002 threatened native vegetation community	Direct impact through clearance of 0.03 ha of DOV. This area of DOV does not qualify for listing under the EPBC Act.	EPR 1 – Flora and fauna EPR 1.1 – Threatened flora and vegetation communities EPR 13 – Rehabilitation and reinstatement
	EPBC Act threatened ecological community (CE)	Degradation of habitat through works within 30 m of Tasmanian Forests and Woodland Dominated by Black Gum (<i>Eucalyptus ovata</i>) or Brookers Gum (<i>Eucalyptus brookeriana</i>)	EPR 1 – Flora and fauna EPR 1.1 – Threatened flora and vegetation communities EPR 13 – Rehabilitation and reinstatement
Native flora and fauna			
Native fauna		Entrapment in trenches	EPR 1 – Flora and fauna

	<i>Nature Conservation (Wildlife) Regulations 2021 (schedule 1,2, 8, 5)</i>	Strike by machinery/vehicles	EPR 1H – Roadkill management
Native vegetation		Temporary impact to 3.76 ha of native vegetation. Permanent loss of 0.06 ha of native vegetation.	EPR 1 – Flora and fauna EPR 13 – Rehabilitation and reinstatement
Heritage			
Historic heritage		Impacts to unanticipated historic heritage.	EPR 7 – Heritage
Aboriginal heritage		Impacts to known and unanticipated Aboriginal heritage.	
Aquatic values		• Disruption of hydraulic patterns • Temporary impact, loss, degradation and fragmentation of aquatic habitat • Sedimentation/watercourse pollution • Introduction/spread of weeds/pests/disease	EPR 2 – Weeds, pests and disease EPR 3 – Watercourses EPR 4 – Sediment and erosion EPR 8 – Environmentally hazardous materials

Construction activities

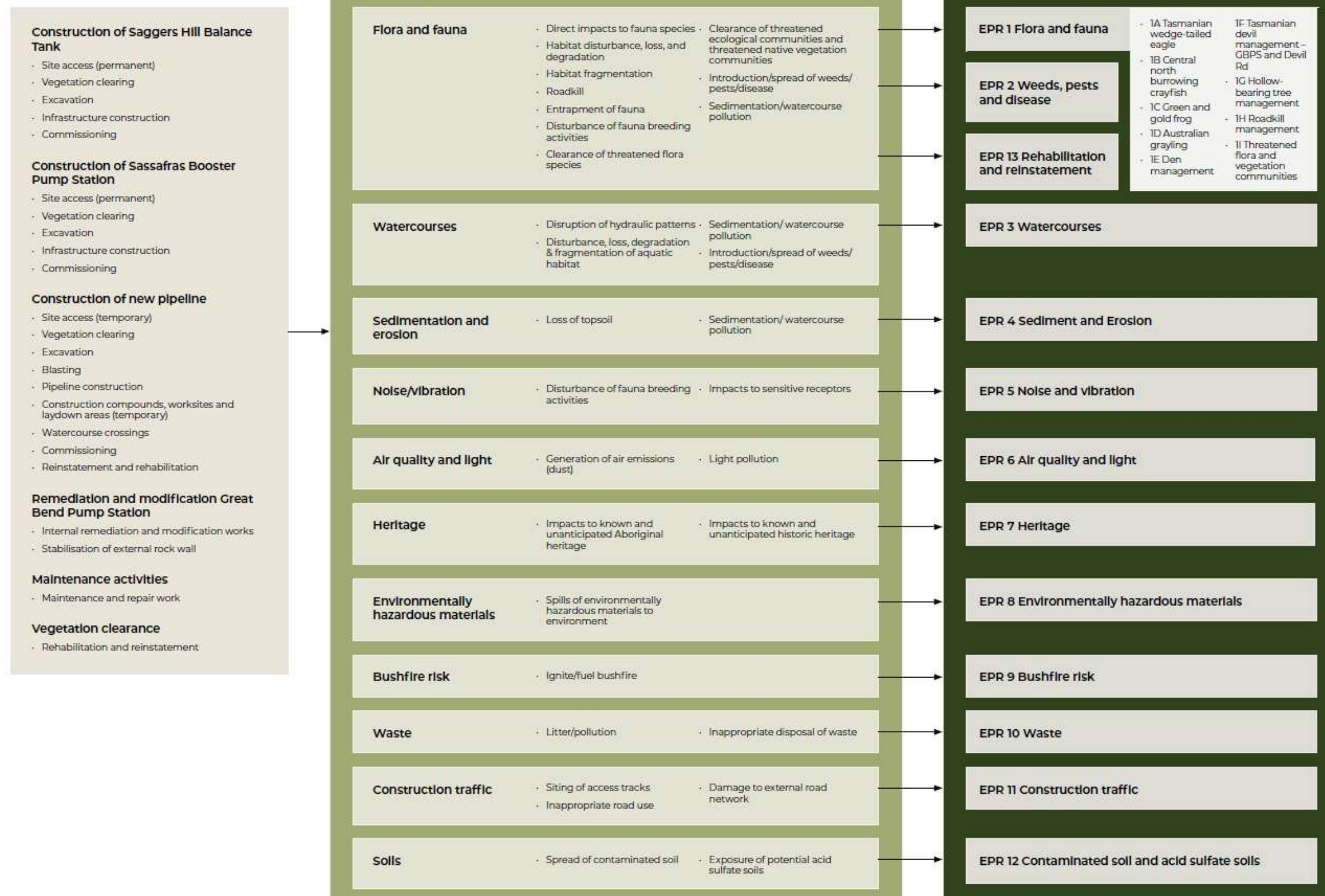


Figure 1-2 Overview of construction activities, potential risks/impacts, and proposed management and mitigation measures

2. Approval requirements

In addition to obtaining approval under the EPBC Act, it is anticipated that several state approvals will be required for the construction of the Project. A summary of approval requirements relevant to the CEMP is provided in Table 2-1. Any resulting approval conditions must be adhered to, in addition to the measures outlined in this CEMP.

Table 2-1 Summary of approval requirements for the Project

Legislation	Approval	Status
<i>Aboriginal Heritage Act 1975</i>	Permit required for potential impacts to AH6130	To be obtained
<i>Crown Lands Act 1976</i>	Works permits – Bass Highway, Port Sorell Road, Frankford Road	To be obtained
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	Approval of EPBC 2023/09666	Assessment process underway
<i>Land Use Planning and Approvals Act 1993</i>	Planning permits from Latrobe and Devonport Councils	To be obtained
<i>National Parks and Reserves Management Act 2002</i>	Level 2 Reserve Activity Assessment (for works within the Warrawee Conservation Area)	Assessment process underway
<i>Nature Conservation Act 2002</i>	Permit to take wildlife (dens and burrows)	To be obtained
<i>Threatened Species Protection Act 1995 (TSP Act)</i>	Permit to take threatened fauna and flora (GGF, CNBC, <i>persicaria decipiens</i> (slender waterpepper)	To be obtained

3. Project description

3.1 Project components

As outlined in Section 1, the Project is for the redevelopment of the existing SWIS in the north-west region of Tasmania.

The Project consists of the following key components:

- Refurbishment of the existing GBPS
- Construction of the following new infrastructure:
 - Saggars Hill Balance Tank (SHBT)
 - Sassafras Booster Pump Station (SBPS)
 - approximately 100 kilometres (km) of pipeline
- Commissioning of SWISA, including the cut-over of all SWIS customers to the augmented scheme.

The decommissioning of existing SWIS assets that have reached the end of their serviceable life, including the reservoir located near the GBPS site, SWIS pipeline network, and three booster pump stations will be completed under a separate assessment/approval and is therefore not included in the scope of the Project.

The locations of the various Project elements are shown in Figure 1-1. As much of the Project infrastructure is linear, the Project will have a defined construction corridor, with a width of 30 m along the proposed pipeline alignment. The construction corridor also includes parcels of land for the GBPS, SHBT and SBPS. Operation of the Project will allow the irrigation of a much broader area of approximately 18,000 ha (noting that not all this area is irrigable land). Further description of the Project elements, including high-level information on the existing environment is provided below.

3.1.1 Great Bend Pump Station

The GBPS is an existing SWIS asset, located on an approximately 1,200 m² site off Devil Road within the Warrawee Conservation Area. Condition assessments undertaken for the GBPS estimated a remaining serviceable life of approximately 100 years, however significant modifications are required to service the augmented scheme.

Refurbishment works at the GBPS will include:

- Remediation and modification work, including the replacement of existing pumps with higher capacity pumps, SCADA integration, replacement of existing hydraulic system with new electric systems, installation of a new HVAC system, and access upgrades (new/upgraded doors and internal staircase).
- General repair work to internal and external structures, including application of coating to provide protection and longevity.
- Site electrical/transmission upgrades (internal and external).

- Stabilisation of an external rock wall.

The footprint of the refurbishment works is contained within the existing GBPS site, located within modified land (North Barker Ecosystem Services, 2024).

3.1.2 Saggars Hill Balance Tank

The SHBT will be located on an approximate 1,478 m² site, between Devil Road and Native Plains Road at Saggars Hill. An approximately 4 m wide access road will be constructed to the SHBT site from Native Plains Road. The SHBT site and access road is located within modified land on the margins of a patch of eucalypt forest with minimal impact to native vegetation. Infrastructure to be constructed at the site includes a balance tank (2.1 ML capacity) and small shed. The site will be fenced, with an access gate for maintenance.

3.1.3 Sassafras Booster Pump Station

The SBPS will be located on an approximate 625 m² site to the west of Native Plains Road, approximately 650 m south-east of the SHBT. Access to the SBPS will be via a new 4 m wide access road off the SHBT access road. The site (including the new access road) will be located on modified land. The SBPS will comprise five pumps housed within a shed, with a combined flow rate of 137 L/s to provide 41 m of additional head. A HVAC system will be installed to cool the pumps. The site will be fenced, with an access gate for maintenance.

3.1.4 Pipeline network

The pipeline network includes the construction of approximately 100 km of large diameter (predominantly 1 metre) high-density polyethylene (HDPE) pipeline. Since referral of the proposed Action TI have undertaken significant design changes to the pipeline alignment to avoid impacts on MNES.

The construction corridor (impact area) is typically 30 m wide and has been narrowed at strategic locations to protect MNES and other environmental and heritage values (as identified in the EPRs and CEPs/CETs).

Water for the SWISA is sourced from the Mersey River at the GBPS. From the GBPS, the pipeline alignment runs north and east to the SHBT, where it branches to provide water to irrigators to the east. The trunk main continues roughly north, with branches, loops, and spurs running off to the east and west as required.

The first section of the pipeline alignment from the GBPS is located within native forest within the Warrawee Conservation Area. The first 600 m of pipeline at this location is installed underground within the existing access road (Devil Road), then winds through the open areas of forest to minimise impacts on native forest. This design element is intentional and will reduce clearing requirements. An above ground pipeline was considered for this initial section to

reduce environmental impacts; however, this would preclude the use of the existing road, necessitating substantial permanent clearing in the adjacent Warrawee Conservation Area.

The next section of the pipeline alignment from Warrawee Conservation Area to SHBT is approximately 4.4 km and runs predominantly through cleared plantation forestry. After SHBT, the remainder of the pipeline network is predominantly located within non-forest agricultural land, with small patches of remnant native vegetation. The existing environment within the construction corridor consists of 3.74 ha of native vegetation, and 317.12 ha of modified land (including agricultural land, other modified land, and water).

3.2 Project activities

A description of activities to be undertaken during construction and operation of the Project is provided below. Potential impacts of Project activities on MNES are discussed in Section 9.

3.2.1 Construction activities

General construction activities undertaken as part of the Project will include:

- Vegetation clearance
- Earthworks, including excavation, grading, trenching, blasting, horizontal directional drilling (HDD), and backfilling.
- Establishing temporary site offices.
- Watercourse, road and infrastructure crossings
- Stringing, joining, laying, and testing of the pipeline
- Commissioning
- Rehabilitation and reinstatement

Permanent vegetation clearance and temporary impact will result from the Project. Temporarily cleared areas will be rehabilitated and revegetated following completion of construction activities.

Earthworks will occur throughout the construction corridor. Grading will be undertaken to establish access roads. Trenching will be undertaken along the length of the pipeline alignment, excluding sections where the pipeline is to be installed using trenchless methods such as HDD. Trenching width will vary between 1-3.5 m, depending on the diameter of the pipeline. The depth of the trench will range from 1-3.5 m, with an average depth of 1.5 m. Measures to manage the risk of fauna entrapment during trenching works will be implemented.

Blasting may be required to facilitate excavation and trenching, depending on ground conditions. The pipeline will be laid in lengths alongside the prepared trench, with gaps to allow movement of fauna. The strung pipe will then be joined and inspected, prior to being laid in the trench. Dewatering of the trench may be required prior to laying the pipeline. Testing of the pipeline may involve hydrostatic testing. Following installation of the pipeline, the trench will be backfilled using excavated soil and compacted to minimise subsidence following construction.

Construction site offices and worksites will be established within construction corridor in appropriate locations to provide amenities for construction personnel, as well as storage and laydown areas for construction equipment and consumables.

Construction of the Project will require several watercourses crossings; however, these are predominantly irrigation ditches and drains. There are no major watercourses crossings required. Watercourse crossings will be undertaken via HDD at locations specified in the EPRs and CEPs/CETs to mitigate potential impacts to threatened species.

The existing SWIS scheme will continue to operate throughout the construction of SWISA through the installation of a temporary manifold at GBPS that will tie-in to the existing scheme. Commissioning of SWISA will involve gradual filling of the pipeline with water to test the integrity of the network. The pipeline will then be flushed. All other components will be subject to testing, including the pump stations, balance tanks, and individual property outlets. Following testing, a permanent manifold will be installed at GBPS to tie-into SWISA. All property outlets will simultaneously be cut over to SWISA.

Rehabilitation and reinstatement are the final major construction activities and will be undertaken in accordance with the Rehabilitation and Reinstatement Plan, to be prepared by the selected Contractor (see EPR 13).

3.2.2 Operational activities

Operational activities include the irrigation of approximately 18,000 ha of land, and ongoing maintenance and repair work. An Operational Environmental Management Plan (OEMP) has been prepared to cover the irrigation activities under SWISA.

This CEMP covers all capital works required through the construction and operation of SWISA, including any ongoing maintenance works/upgrades throughout the life of the scheme.

Ongoing maintenance is expected to be minimal, with operations and maintenance typically requiring a single light vehicle (operating in daylight hours, weekdays only). The scope of maintenance will vary from scheme-wide to individual sites. Major maintenance will be periodic at the primary asset sites (pump stations and balance tank). This will include the use of light and heavy vehicles over a period of up to a week, in daylight hours. Pump stations will typically require scheduled maintenance once a year, requiring 2-3 light vehicles, and significant maintenance involving some heavy vehicles (1-2) every 5-10 years. The balance tank will typically require additional vehicles every ten years, which may include heavy vehicles and heavy plant for up to a week.

3.3 Timing

The anticipated project schedule is summarised in Table 3-1 below. Construction is planned to commence in May 2025 and will be completed in November 2027.

Table 3-1 Project schedule summary

Construction activity	Planned commencement	Planned completion
GBPS refurbishment	May 2025	August 2027
Construct SBPS	October 2025	August 2027
Construct SHBT	October 2025	August 2027
Install pipework	May 2025	May 2027
Install outlets	October 2025	June 2027
SWIS cutovers	June 2027	October 2027
Commissioning – pipeline	May 2027	October 2027
Commissioning – GBPS	September 2027	October 2027
Commissioning – SHBT & SBPS	September 2027	October 2027
Commissioning - outlets	October 2027	November 2027

A detailed construction schedule, including any contingency schedules required, will be prepared by the Contractor. Timing of the environmental management measures to be implemented is outlined in Section 10.

4. Environmental objectives

The objective of this CEMP is to outline clear measures to avoid, minimise, and manage the potential for the Project to result in environmental harm, including harm to relevant MNES protected under the EPBC Act.

In relation to the protection of MNES, harm means to cause any measurable direct or indirect disturbance or deleterious change because of any activity associated with the Action (i.e. the Project). The controlling provision of EPBC 2023/09666 is listed threatened species and communities (section 18 and section 18A), with the relevant MNES as follows:

Threatened fauna³

- Tasmanian devil (*Sarcophilus harrisii*) (EN/en)
- Eastern quoll (*Dasyurus viverrinus*) (EN/-)
- Spotted-tail quoll (*Dasyurus maculatus maculatus*) (VU/r)
- Eastern barred bandicoot (*Perameles gunnii gunnii*) (VU/-)
- Tasmanian wedge-tailed eagle (*Aquila audax fleayi*) (EN/e)
- Tasmanian masked owl (*Tyto novaehollandiae castanops*) (VU/e)
- Swift parrot (*Lathamus discolor*) (EN/e)
- Blue-winged parrot (*Neophema chrysostoma*) (VU/-)
- Green and gold frog (*Litoria raniformis*) (VU/v)
- Australian grayling (*Prototroctes mareana*) (VU/v)
- Central north burrowing crayfish (*Engaeus granulatus*) (EN/e)

Threatened flora³

- Tailed spider-orchid (*Caladenia caudata*) (VU/v)
- Robust fingers (*Caladenia tonellii*) (CE/e)
- Wrinkled dollybush (*Cassinia rugata*) (VU/e)

Threatened ecological communities

- Tasmanian Forests and woodlands dominated by black gum (*E. ovata*) or Brookers gum (*E. brookeriana*)

Environmental outcomes/performance targets have been set for the potential impacts/risks to be managed for the Project, including specific performance targets for each of the above MNES. The environmental outcomes/performance targets are outlined in Section 10.1. The mitigation measures outlined in Section 0 and monitoring and corrective actions set out in Section 0 have been developed to achieve the above objectives for the Project.

³ EPBC Act conservation ratings: CE (critically endangered), EN (endangered), VU (vulnerable)

TSP Act conservation ratings: e (endangered), v (vulnerable), r (rare)

5. Roles and responsibilities

The TI Project Manager has the overall responsibility for the Project, including liaising with the contractor to ensure compliance with relevant permits and approvals. Any non-compliance will be reported to the TI Project Manager, who will then notify the TI General Manager Environment, Health and Safety to notify DCCEEW and/or other relevant regulatory authorities.

The TI Environmental Team is responsible for the overall environmental management of the Project. The TI Environmental Team is responsible for undertaking site visits and audits to ensure the controls outlined in the CEMP are implemented.

Roles and responsibilities for the Project are presented in Table 5-1.

Table 5-1 Roles and responsibilities

Role	Responsibility
TI General Manager Project Development and Delivery	Liaise with DCCEEW and other regulatory authorities in relation to compliance with permits and approvals including reporting of any non-compliance.
TI Project Manager	Overall responsibility for the Project, including liaising with the contractor to ensure compliance with permits and approvals.
TI Environment Team	• Reviewing contractor documents and management plans to ensure compliance with legislative requirements and the EPRs. • Auditing of contractor compliance with the EPRs and the CEMP. TI will document compliance to an appropriate level to ensure that an external audit by a regulatory authority can be completed. • Implementing a compliance process to ensure that environmental requirements are upheld throughout the entire construction period. • Arranging for periodic aerial nest searches and nest activity assessments to be completed by a suitably qualified eagle specialist.
Contractor	• Understand and comply with relevant environmental permits and legislation, including keeping informed about any legislative amendments or changes. • Ensure that all site personnel comply with all management, mitigation and monitoring measures outlined in this CEMP, EPRs and CEP/CETs, including visitors under the contractor's control. • Develop management plans required by the EPRs, including: ○ Rehabilitation and reinstatement plan (EPR 13) ○ Weed and disease management plan (EPR 2.1) ○ Erosion and sediment control plan (EPR 4.1) ○ Emergency response procedure (EPR 8.10 and 9.13) ○ Vehicle management plan (EPR 11.1)

	○ ASS management plan (EPR 12.1) ○ Water quality monitoring plan (EPR 1D.2) • Ensure all site personnel are suitably trained and supported to comply with the measures outlined in the CEMP, EPRs and CEP/CETs and legislative requirements. • Assist TI in periodic reviews of the CEMP. • Comply with all reporting and notification requirements outlined in this CEMP. • Schedule regular internal audits of environmental management systems and processes. • Minimise environmental harm in the event of an incident.
Contractor's Project Environmental Advisor	The contractor must employ or engage a Project Environmental Advisor for the duration of the Project to facilitate compliance with the CEMP, EPRs and CEP/CETs. The Project Environmental Advisor must have a minimum of five years construction environmental management experience.
Suitably qualified ecologist	TI must engage a suitably qualified ecologist to undertake tasks as required by the EPRs. Suitably qualified ecologist means a person with relevant qualifications and: • at least 3 years of work experience writing and implementing management plans for the habitat of protected matters; and • has implemented and reported on management plans for the habitat of protected matters, and can demonstrate the implementation of those plans achieved the desired habitat quality for habitat of protected matters.
Suitably qualified eagle specialist	TI must engage a suitably qualified eagle specialist to undertake tasks as required by the EPRs. Suitably qualified eagle specialist means a person who has attended and passed an eagle management course organised or approved by the Forest Practices Authority with at least five years' experience in eagle nest management.
Suitably qualified aquatic fauna expert	TI must engage a suitably qualified aquatic fauna expert to undertake tasks as required by the EPRs. Suitably qualified aquatic fauna expert means a person who has relevant professional qualifications and at least 3 years of work experience designing and implementing surveys for aquatic fauna and can give an authoritative assessment and advice on the presence of Australian grayling using relevant protocols, standards, methods and/or literature.
Suitably qualified wildlife carer	The contractor or TI must engage a suitably qualified wildlife carer to undertake tasks as required by the EPRs. Suitably qualified wildlife carer means a person who has attended wildlife rescue and rehabilitation training through a certified training agent (e.g. WIRES or Bonorong Wildlife Sanctuary).

Suitably qualified arborist	TI must engage a suitably qualified arborist to undertake tasks as required by the EPRs. Suitably qualified arborist means a person with relevant professional qualifications (Certificate V in Arboriculture) and at least three years of work experience in assessing and providing arboriculture advice in the development landscape (e.g. TPZs, SRZs) in accordance with AS 4970-2009.
Suitably qualified bioacoustics analyst	TI must engage a suitably qualified bioacoustics analyst to undertake tasks as required by the EPRs. Suitably qualified bioacoustics analyst means an ecologist with relevant experience in bioacoustics collection and analysis, specifically for the swift parrot, blue-winged parrot and Tasmanian masked owl.

6. Reporting requirements

A summary of the reporting requirements for the Project is provided in Table 6-1. Records of all reports will be maintained by TI throughout the life of the Project.

Table 6-1 Reporting requirements

Type	Responsibility	Details	Reporting trigger
Monthly Health, Safety and Environment report	Contractor	The Contractor will provide a monthly Health, Safety and Environment report to TI. The report will detail: • daily and weekly environmental inspections • non compliances & corrective actions • status of compliance with EPBC condition requirements and other approval requirements. • all data collected as part of the environmental monitoring requirements detailed in Section 0.	Required monthly
Annual compliance report	Tas Irrigation	TI will provide DCCEEW with annual compliance reports. The report will detail compliance against each of the approval conditions.	Regular 12-month reporting requirement commencing from date of approval.
Non-compliance notifications	Contractor	The Contractor must notify TI Project Manager immediately when becoming aware of a non-compliance event. The notification must specify: • the commitment or condition which has not been (or may not have been) complied with; and • a short description of the event, including the location, time and date.	Non-compliance with conditions of EPBC approval or state approval.

	Tas Irrigation	TI must notify DCCEEW or relevant statutory authority within 2 business days of becoming aware of a non-compliance event. The notification must specify: • The commitment or condition which has not been (or may not have been) complied with. • A short description of the event, including the location, time and date.	Non-compliance with conditions of EPBC approval or state approval.
Non-compliance reports	Contractor	The contractor is to provide TI Project Manager a non-compliance report within 14 business days of becoming aware of a non-compliance event. This must specify: • All details of the event. • All corrective measures and investigations which have already been undertaken in respect of the event. • Potential impacts of the event. • Method and timing of any corrective measures that the approval holder proposes to undertake to address the event. • Any variation of the action, or revision of a plan that will be required to prevent recurrence of the event and/or to address its consequences.	Non-compliance with conditions of EPBC approval or state approval.
	Tas Irrigation	TI must provide a non-compliance report to DCCEEW or relevant statutory authority within 20 business days of becoming aware of a non-compliance event. This must specify • All details of the event. • All corrective measures and investigations which have already been undertaken in respect of the event. • Potential impacts of the event. • Method and timing of any corrective measures that the approval holder proposes to undertake to address the event. • Any variation of action or revision of a plan that will be required to prevent recurrence of the event and/or to address its consequences.	Non-compliance with conditions of EPBC approval or state approval.

Internal Audit	Contractor	The contractor will undertake internal audits of the CEMP.	Within 3 months of commencement of construction and every 6 months thereafter
	Tas Irrigation	Internal audit of the CEMP	Within one month of construction commencement and a minimum of every six months thereafter.
Independent audit	Tas Irrigation	As required by approval conditions.	As required by approval conditions.
MNES	Tas Irrigation	TI will notify DCCEEW in writing of the presence and likely extent of any protected matter or the habitat of any protected matter not previously reported to within 10 business days of detecting the presence of any protected matter or the habitat of any protected matter not previously reported to DCCEEW.	Potential impacts to unreported MNES

7. Environmental training

The contents of this CEMP will be communicated to construction personnel through a mandatory site induction. Environmental aspects of the site induction will be delivered by either the Contractors Project Environmental Advisor or suitably qualified ecologist and will include:

- Legislative and other requirements, including approvals and resulting conditions (summarised in Section 2), relevant guidelines and standards referenced by the EPRs and CEMP.
- Environmental objectives to be achieved for the Project (Section 4).
- Environmental responsibilities and individual roles relevant to environmental management (Section 5), including potential consequences of not meeting environmental responsibilities.
- Environmental reporting requirements relevant to individual roles (Section 0).
- Potential environmental risks and impacts relevant to construction of the Project (Section 9). This will include specific training on identification and management of MNES during construction, including (but not limited to):
 - Identification of CNBC and habitat elements (EPR 1B.1).
 - Identification of GGF, GGF habitat elements and signs, symptoms of chytrid fungus infection, and measures to be followed if a GGF is identified during works (EPR 1C.2).
 - Identification of potential den sites and the measures to be followed if a potential den site is confirmed during construction works (EPR 1E.1).
- Environmental management measures under the EPRs and CEP/CETs. Including (but not limited to):
 - The location of the final construction corridor, which will be the limit of temporary impact (EPR 1.1), and exclusion zones (EPR 1.2). Including how these areas will be marked on site.
 - Information on Aboriginal heritage and historic heritage, including unanticipated discovery plans (EPR 7.3).
 - Management of environmentally hazardous materials (EPR 8.7)
 - Access routes to access the construction corridor (EPR 11.1).
 - Known areas of acid sulphate soils and potential acid sulphate soils (PASS).
- Environmental management measures under the management plans to be prepared by the contractor, including:
 - Weed and Disease Management Plan (WDMP) and training on hygiene protocols, exclusion areas, and washdown procedures (see EPR 2.1).
 - Erosion and sediment control plan (ESCP) and information on the function, installation and maintenance of erosion and sediment controls (EPR 4.1).

- Environmental incident and emergency response procedure (EPR 8.10) (see Section 8).

Additional environmental training for supervisory staff will be undertaken in relation to the protection of MNES. Select staff will undergo spill response training, as well as safe handling and storage training (EPR 8.7)

In addition to being communicated through the site induction, copies of the CEMP, CEP/CETs and any management plans prepared by the contractor will be made available in site offices. The contractor will be provided with spatial files showing the construction corridor and exclusion zones to assist in maintaining these on site.

The contractor will be required to maintain records of all training conducted, including:

- the person receiving the training
- the date the training was received
- the name of the person conducting the training
- a summary of the training.

8. Emergency contacts and procedures

8.1 Environmental incidents

Environmental incidents for the Project include any event that results in potential or actual environmental harm, including harm to relevant MNES protected under the EPBC Act (see Section 4).

As outlined in Section 4, in relation to the protection of MNES, harm means to cause any measurable direct or indirect disturbance or deleterious change because of any activity associated with the Action (i.e. the Project).

Environmental incidents include:

- Any event that results in actual or potential serious or material environmental nuisance or harm (as defined under Section 5 of the EMPCA).
- Works undertaken outside of the approved construction corridor or within an exclusion zone.
- Fauna death or injury caused by construction activities.
- Disturbance of an active Tasmanian wedge-tailed eagle nest
- Unauthorised clearance of state and nationally threatened flora species.
- Unauthorised clearance of threatened native vegetation communities (Tas) and threatened ecological communities (Cwth).
- Unauthorised clearance of state and nationally threatened fauna habitat, including:
 - optimal denning habitat for the Tasmanian devil, eastern quoll, and spotted-tail quoll.
 - known potential habitat for the CNBC habitat and GGF.
 - hollow-bearing trees and forest habitat areas (swift parrot, blue-winged parrot and Tasmanian masked owl).
 - trees containing Tasmanian wedge-tailed eagle nest
- Unauthorised in-stream construction works in known habitat for the Australian grayling during peak migration periods.
- Spills of environmentally hazardous materials to land or waterways.
- Failure of sediment and erosion controls causing unauthorized discharge of sediment to land or waterways.
- Damage to historic heritage or Aboriginal heritage values.
- Community or stakeholder complaints received by the contractor, regulator, or TI.
- Any other non-compliance with the CEMP, EPRs, and CETs/CEPs identified through environmental audits and/or environmental monitoring.

The responses/corrective actions for these potential incidents are outlined in Section 0.

8.2 Emergency contacts

Emergency contacts will include the Contractor Project Manager and the **TI** Project Manager, who will either stop or direct works as required to manage the emergency. The Environment Protection Authority Tasmania (EPA) will be notified where there is a risk of environmental harm (including environmental nuisance), as defined under the EMPCA. If the environmental emergency has the potential to harm a MNES, DCCEEW will also be notified through the TI General Manager Environment, Health and Safety (see Section 5). Key contacts for environmental emergencies are outlined in Table 8-1.

Table 8-1 Key contacts for environmental emergencies

Emergency contact	Contact number
Contractor Project Manager	TBC
TI Project Manager	0475 108 660
EPA (incident response)	1800 005 171
WIRES Wildlife Rescue	1300 094 737
Bonorong Wildlife Rescue	0447 264 625

9. Potential environmental impacts and risk

The following impact assessments have been completed to identify the potential environmental impacts of the Project:

- Sassafras-Wesley Vale Irrigation Scheme Augmentation Natural Values Assessment (North Barker Ecosystem Services, 2024)
- Sassafras Wesley Vale Irrigation Scheme Augmentation (SWISA) Project Aboriginal Heritage Assessment Report (CHMA, 2023)
- Sassafras Wesley Vale Irrigation Scheme Augmentation (SWISA) Project Historic Heritage Assessment Report (CHMA, 2023a)
- Sassafras Wesley Vale Irrigation Scheme Geotechnical Investigation (Pitt & Sherry, 2023)
- Preliminary Traffic Assessment Sassafras-Wesley Vale Irrigation Scheme Augmentation (SWISA) Project (Ratio, 2024)
- Sassafras Wesley Vale Irrigation Scheme Augmentation – Australian grayling (*prototroctes maraena*) Species impact assessment (Elgin associates, 2024)
- Tasmanian devil impact assessment, Sassafras Wesley Vale Irrigation Scheme Augmentation (enviro-dynamics, 2024)

Potential environmental impacts relevant to MNES are presented in the Preliminary Documentation completed for the Project by BMT Group Ltd (BMT, 2024). A summary of the potential impact relevant to the controlling provisions of EPBC 2023/09666 (listed threatened species and communities), as well as environmental and heritage matters protected under state legislation, is provided below. Full details are available in the Preliminary Documentation and the impact assessments referenced above.

A risk assessment for potential impacts to environmental values is presented in Table 9-6. The EPRs containing relevant management and mitigation measures for each impact are also summarised in Table 9-6.

9.1 Potential impacts

9.1.1 Fauna

9.1.1.1 *Dasyurids (Tasmanian devil, eastern quoll and spotted-tail quoll)*

Potential impacts of the Project on the Tasmanian devil (EN/en), eastern quoll (EN/-), and spotted-tail quoll (VU/r) include temporary impacts to habitat, habitat loss, trench entrapment, strike by machinery or vehicles, the destruction of dens and lay-ups, noise disturbance and vibration impacts to maternal dens at GPBS, resulting in den abandonment and/or disruption of breeding activities, and potential interaction with domestic dogs.

Habitat temporary impact and permanent loss

Den habitat modelling predicts that 11.46 ha of the 320.86ha construction corridor contains potential denning habitat for quolls and devils (8.52 ha of which is classed as optimal, with the remaining 2.94 ha classed as sub-optimal). The remaining 309.39 ha of habitat within the Construction corridor is classed as unsuitable for denning and represents foraging habitat only (noting areas of optimal and sub-optimal denning suitability are also suitable for foraging).

Construction of the Project will result in the temporary impact of 11.35 ha of potential denning habitat (consisting of 8.46 ha optimal denning habitat and 2.89 ha sub-optimal denning habitat).

The footprint of the permanent above-ground infrastructure to be constructed as part of the Project is expected to result in a permanent loss of 0.11 ha of potential denning habitat, including 0.06 ha of optimal habitat and 0.05 ha of suboptimal habitat. A further 2.07 ha will be converted from sub-optimal to unsuitable due to vegetation changes and buffer areas from native vegetation.

Trench entrapment

Temporary impacts during construction will include trenching and excavation. Fauna egress measures will be implemented to ensure that if devils or quolls enter an open trench or excavation, they can readily vacate (see EPR 1.9).

Vehicle strike

Based on an analysis of the traffic data collated for the Project by Ratio: (2024), NBES conclude that the construction of the Project is not expected to result in a substantial (>10%) in roadkill mortality, provided the measures under EPR 1H – Roadkill mitigation are implemented effectively (North Barker Ecosystem Services, 2024).

Destruction of dens and lay-ups

Camera surveys undertaken by North Barker Ecosystem Services (NBES) confirmed one active maternal den near the GBPS site, approximately 11 m outside of the construction corridor within a disused mine shaft. A further seven potential den sites were found within the construction project area, with three showing signs of usage by devils (scats detected at entrances), including a second mine shaft approximately 12 m from the Construction Corridor near the GBPS (North Barker Ecosystem Services, 2024).

Ground surveys did not identify any active or potential dens within the construction corridor. However, given the spread of the species across the region and the number of Tasmanian devil detections within and close to the construction corridor, it is possible that active dens may be present. As a result, the pre-clearance checks throughout the construction corridor are required, in accordance with EPR 1E – Den management.

Disturbance of breeding activities

As noted above, an active maternal Tasmanian devil den was confirmed approximately 11 m outside of the construction corridor near the GBPS site. Construction works at this site will involve noise and vibration generating activities. Through restricting works at this site to outside of the devil management constraint period and implementing the controls under EPR 1F – Tasmanian devil management – Great Bend Pump Station and Devil Road, noise and vibration is unlikely to disturb breeding activities (enviro-dynamics, 2024).

Interaction with domestic dogs

Predation by introduced predators, including domestic dogs, represents a potential impact pathway for quolls. Uncontrolled dogs could also harass or kill young devils (enviro-dynamics, 2024). The Project is not expected to increase interactions between dasyurids and dogs as no domestic pets will be allowed on site (see EPR 1.16).

9.1.1.2 *Eastern barred bandicoot*

The Eastern barred bandicoot (VU/-) is known to occur within the vicinity of the Construction Corridor.

The key impacts to this species from the construction of the Project are the clearance of habitat and the removal of ground cover that may provide shelter for bandicoots; mortality due to collision with vehicles; entrapment within construction trenching; and predation by introduced predators such as feral cats and domestic dogs.

Temporary impacts to habitat and permanent habitat loss

The entire Construction Corridor is considered potential habitat for the species. A total of 319.83 ha represents temporary impacts to habitat, and 1.02 ha represents permanent habitat loss, due to permanent infrastructure. The permanent loss of habitat is considered extremely minor in the context of the broader area. Temporary impacts to habitat will be restored through the Rehabilitation and Revegetation Plan (see EPR 13).

Trench entrapment

Construction related impacts will include trenching and excavation. Fauna egress measures will be implemented during trenching and excavation to ensure that fauna can readily vacate (see EPR 1.9).

Vehicle strike

Construction of the Project is not expected to result in a substantial (>10%) in roadkill mortality, provided the measures under EPR 1H – Roadkill mitigation are implemented effectively (North Barker Ecosystem Services, 2024).

Predation risk

Clearance of the construction corridor has the potential to increase the activity of feral and free roaming cats, the high abundance of cats may already be contributing to the scarcity of bandicoots in throughout the construction project area. With the implementation of the Rehabilitation and Revegetation Plan (see EPR 13) this is expected to be a temporary impact. The Project is not expected to increase predation from dogs as no domestic pets will be allowed on site (see EPR 1.16).

9.1.1.3 *Tasmanian wedge-tailed eagle*

Potential impacts to Tasmanian wedge-tailed eagles (EN/e) during construction include disturbance of an active nest during the eagle management constraint period and clearance of potential nesting habitat. The natural values assessment identified five Tasmanian wedge-tailed eagle nests within 1,000 m line of site of the construction corridor, four of which are also within 500 m direct distance (North Barker Ecosystem Services, 2024). Works will be limited surrounding these nests during the eagle management constraint period (see EPR 1A – Tasmanian wedge-tailed eagle. Construction activities will not directly impact on any known nests.

9.1.1.4 *Tasmanian masked owl, Swift Parrot, and Blue-winged Parrot*

The construction corridor contains 28 trees of potential nesting and foraging trees for the Tasmanian masked owl, and Swift and Blue-winged parrots. A further 35 trees have a TPZ incursion >10 % and may be at risk of mortality. This is not considered significant in the context of the broader area. These are summarised in Table 9-1.

There are no known nests in within the construction corridor. Potential construction impacts include temporary impacts to habitat and fragmentation and the loss of nesting habitat.

Clearance associated with the construction of the Project is unlikely to significantly detract from the quality of habitat available in the impact areas. Temporary impacts to habitat generally occur on the margins of existing roads and are unlikely to require the removal of any canopy trees.

All impacted trees are subject to the mitigation measures under EPR 1G – Hollow-bearing tree management to ensure direct impacts are avoided.

Table 9-1: Breeding and Habitat Trees

Number	Individual tree ID	Swift parrot	Blue-winged parrot	Tasmanian masked owl
Habitat trees within Construction Corridor				
1	TFHpt 111/TFHpt 303*	Potential breeding	Potential breeding	Potential breeding
2	TFHpt 132/TFHpt 015*	Potential breeding	Potential breeding	Potential breeding
3	TFHpt 243/TFHpt 244*	Potential breeding	Potential breeding	Potential breeding
4	TFHpt 017	Potential breeding	Potential breeding	
5	TFHpt 018	Foraging and potential breeding	Potential breeding	
6	TFHpt 055	Potential breeding	Potential breeding	
7	TFHpt 155	Potential breeding	Potential breeding	
8	TFHpt 160	Potential breeding	Potential breeding	
9	TFHpt 162	Foraging and potential breeding	Potential breeding	
10	TFHpt 164	Foraging and potential breeding	Potential breeding	
11	TFHpt 253	Potential breeding	Potential breeding	
12	TFHpt 257	Potential breeding	Potential breeding	

13	TFHpt 258	Foraging and potential breeding	Potential breeding	
14	TFHpt 338	Potential breeding	Potential breeding	
15	TFHpt 152	Foraging habitat		
16	TFHpt 163	Foraging habitat		
17	TFHpt 169	Foraging habitat		
18	TFHpt 170	Foraging habitat		
19	TFHpt 171	Foraging habitat		
20	TFHpt 172	Foraging habitat		
21	TFHpt 173	Foraging habitat		
22	TFHpt 181	Foraging habitat		
23	TFHpt 339	Foraging habitat		
25	TFHpt 340	Foraging habitat		
25	TFHpt 341	Foraging habitat		
26	TFHpt 342	Foraging habitat		
27	TFHpt 343	Foraging habitat		
28	TFHpt 344	Foraging habitat		
Total number of trees	28	28	14	3

Habitat trees with >10% TPZ incursion				
1	TFHpt 130/TFHpt 014*	Foraging and potential breeding	Potential breeding	Potential breeding
2	TFHpt 312/TFHpt 306*	Foraging and potential breeding	Potential breeding	Potential breeding
3	TFHpt 034/TFHpt 035*	Potential breeding	Potential breeding	Potential breeding
4	TFHpt 142/TFHpt 073*	Potential breeding	Potential breeding	Potential breeding
5	TFHpt 229/TFHpt 228*	Potential breeding	Potential breeding	Potential breeding
6	TFHpt 234/TFHpt 233*	Potential breeding	Potential breeding	Potential breeding
7	TFHpt 199			Potential breeding
8	TFHpt 241			Potential breeding
9	TFHpt 336			Potential breeding
10	TFHpt 168	Foraging and potential breeding	Potential breeding	
11	TFHpt 259	Foraging and potential breeding	Potential breeding	
12	TFHpt 282	Foraging and potential breeding	Potential breeding	
13	TFHpt 299	Foraging and potential breeding	Potential breeding	

14	TFHpt 311	Foraging and potential breeding	Potential breeding
15	TFHpt 016	Potential breeding	Potential breeding
16	TFHpt 021	Potential breeding	Potential breeding
17	TFHpt 115	Potential breeding	Potential breeding
18	TFHpt 131	Potential breeding	Potential breeding
19	TFHpt 143	Potential breeding	Potential breeding
20	TFHpt 158	Potential breeding	Potential breeding
21	TFHpt 159	Potential breeding	Potential breeding
22	TFHpt 230	Potential breeding	Potential breeding
23	TFHpt 231	Potential breeding	Potential breeding
24	TFHpt 232	Potential breeding	Potential breeding
25	TFHpt 235	Potential breeding	Potential breeding
26	TFHpt 236	Potential breeding	Potential breeding
27	TFHpt 242	Potential breeding	Potential breeding

28	TFHpt 245	Potential breeding	Potential breeding	
29	TFHpt 337	Potential breeding	Potential breeding	
30	TFHpt 174	Foraging habitat		
31	TFHpt 179	Foraging habitat		
32	TFHpt 345	Foraging habitat		
33	TFHpt 346	Foraging habitat		
34	TFHpt 347	Foraging habitat		
35	TFHpt 348	Foraging habitat		
Total number of trees	35	32	26	9
Combined totals	63	60	40	12

9.1.1.5 Green and gold frog

Potential impacts to GGFs (VU/v) include temporary impacts to habitat, direct impacts (though vehicle/machinery strike and/or trench entrapment), degradation of aquatic habitat, and spread of waterborne pathogens, including chytrid fungus.

Construction will involve temporary impacts to 1.71 ha of potential dispersal. Construction will not impact any waterbodies that constitute potential breeding habitat.

Temporary impacts to habitat are during the construction phase only, with the extent of the construction corridor becoming viable dispersal habitat post-construction. There is no permanent infrastructure within 500 m of any GGF dispersal or breeding habitat.

Construction earthworks for pipeline and scour valves around water bodies and watercourses have the potential to increase water pollution and sediment loads. The measures within EPR 2 – Weeds, pests and disease, EPR 3 – Watercourses, EPR 4 – Sediment and erosion and EPR 8 – Environmentally hazardous materials will be implemented to mitigate potential degradation of aquatic habitat.

Based on desktop records, chytrid fungus is assumed to be present within the construction project area. The measures under EPR 2 - Weeds, pests and disease will be implemented to mitigate potential spread of chytrid fungus.

9.1.1.6 Australian grayling

The construction corridor contains waterways that are suitable for the Australian grayling (VU/v). Potential construction phase impacts to this species include habitat degradation, through changes to surface water quality, and direct entrainment and mortality at the intake at GBPS. Water crossing where Australian grayling are or could be present are shown in Table 9-2, with the associated crossing method and survey requirements. If a fish survey identifies fish are present, method will be changed to HDD unless technical factors prevent this. Where fish are not present, normal trenching methodology can be used.

Where earthworks are required to stabilise the streambank at the site, sediment mobilisation is a risk. Sediment mobilisation may result in temporary movement of individuals and may disturb feeding behaviours while visibility is reduced. However, suspended sediment levels resulting from construction operations are unlikely to exceed levels experienced regularly within the reach during rainfall events.

Direct entrainment and mortality can occur at pump intakes. To mitigate potential entrainment of Australian Grayling at GBPS, a fish screen will be installed on the outer face of the pump wells, parallel to the direction of river flow. The screen will be sized so that approach velocities are no greater than 0.1 m/s (Elgin associates, 2024) (see Appendix C – GBPS fish screen concept design).

In addition to the design mitigation, potential impacts to the Australian grayling will be managed through EPR 1D – Australian grayling, EPR 3 – Watercourses and EPR 4 – Sediment and erosion.

Table 9-2 Water crossing grayling presence and suitability

Water Crossing	Present	Suitability	Survey	Method	Notes
WC-016		Yes	Yes	HDD	Survey only required if method changes
WC-022		Yes	Yes	Trench	HDD not possible due to pipe material (DACL)
WC-027	Yes	No	Yes	Trench	Survey Required
WC-028	Yes	No	Yes	Trench	Survey Required
WC-056		Yes	Yes	HDD	Survey only required if method changes
WC-057	Yes	Yes	Yes	HDD	Survey only required if method changes

WC-059	Yes	No	Yes	HDD	Survey only required if method changes
WC-074		Yes	Yes	Trench	Alignment may change to remove water crossings. Suitable but connectivity unlikely due to barriers

9.1.1.7 Central north burrowing crayfish

Potential construction phase impacts for the CNBC (EN/e) includes direct and indirect impacts to individuals, temporary impacts to habitat, and potential habitat degradation.

The construction of the Project is expected to have direct and indirect impacts to individuals through the destruction of nine individual CNBC chimneys in five locations.

The construction corridor contains 3.16 ha of potential burrowing crayfish (BCF) habitat. However, the use of HDD for pipeline installation at specified locations will reduce temporary impacts to 1.92 ha, including 1.81 ha of suboptimal habitat and 0.11 ha of optimal and damp remnant habitat. As the CNBC can utilise disturbed areas following construction and rehabilitation, the Project is not expected to result in any habitat loss.

Construction activities may cause potential degradation of habitat through:

- drainage of swampy areas
- potential introduction/spread of weed species
- compaction of soil at the edge of waterways by machinery
- water pollution and increased sediment loads

Potential impacts to CNBC will be managed through EPR 1 – Flora and fauna, EPR 1B – Central north burrowing crayfish, EPR 3 – Watercourse, EPR 4 – Sediment and erosion and EPR 8 – Environmentally hazardous materials.

9.1.2 Flora

9.1.2.1 Tailed spider-orchid

Potential habitat and known occurrences of tailed spider-orchid (*caladenia caudata*) (VU/v) are present in the Warrawee Conservation Area, however there are no occurrences of this species within the construction corridor. There are no direct impacts to this species however construction activities have the potential to introduce/spread weed species, resulting in increased competition and reduced habitat quality. This species is also susceptible to the spread of *Phytophthora*.

9.1.2.2 Robust fingers

Potential habitat and known occurrences of robust fingers (*caladenia tonellii*) (CE/e) are present in the Warrawee Conservation Area, however there are no occurrences of this species within the

construction corridor. There are no direct impacts to this species however construction activities have the potential to introduce/spread weed species, resulting in increased competition and reduced habitat quality.

9.1.2.3 Wrinkled dollybush

Potential impact pathways to the wrinkled dollybush (*Cassinia rugata*) (VU/e) identified in the natural values assessment are habitat loss through vegetation clearance and the degradation of habitat through introduction/spread of weeds. This species was not recorded within the construction corridor. Construction is unlikely to have a direct or indirect impact on this species.

9.1.2.4 Slender waterpepper

Slender waterpepper (*Persicaria decipiens*) (-/v) is listed as vulnerable under the *Threatened Species Protection Act 1995* (TSP Act). A total of 4,492 m² of this species was recorded within the construction project area. The pipeline alignment has been modified to reduce potential impacts to this species, however due to its widespread distribution, complete avoidance was not possible. The proposed Construction Corridor will impact on 415 m² of slender waterpepper (4,077 m² avoided). Impact to this species will be mitigated through EPR 11 – Threatened flora and vegetation communities.

9.1.3 Vegetation communities

As outlined in Section 3.1.4, the construction corridor is predominantly located within agricultural land or other modified land, with remnant patches of native vegetation. The design of the Project has sought to reduce impacts to native vegetation communities. A total of 3.74 ha of native vegetation will be impacted within the construction corridor, with most of this being temporary impacts associated with the construction of the pipeline. The footprint of the permanent above-ground infrastructure to be constructed as part of the Project is expected to result in a loss of 0.06 ha of native vegetation.

The natural values assessment undertaken for the Project identified eleven native vegetation communities within the construction project area, as follows:

- Freshwater aquatic sedgeland and rushland (ASF)
- *Eucalyptus amygdalina* coastal forest and woodland (DAC)
- *Eucalyptus amygdalina* forest on mudstone (DAM)
- *Eucalyptus obliqua* dry forest (DOB)
- *Eucalyptus ovata* forest and woodland (DOV)
- *Eucalyptus amygdalina* - *Eucalyptus obliqua* damp sclerophyll forest (DSC)
- *Acacia dealbata* forest (NAD)
- *Acacia melanoxylon* swamp forest (NAF)
- *Melaleuca ericifolia* swamp forest (NME)

- *Eucalyptus obliqua* forest with broad-leaf shrubs (WOB)
- *Eucalyptus obliqua* forest over *Leptospermum* (WOL)

The ASF vegetation community is listed as threatened under the *Nature Conservation Act 2002* (NC Act). However, this community does not occur within the construction corridor and will not be impacted by the Project.

The DOV vegetation community is listed as threatened under the NC Act and can correspond to a critically endangered threatened ecological community under the EPBC Act; the Tasmanian Forests and Woodland Dominated by Black Gum (*Eucalyptus ovata*) or Brookers Gum (*Eucalyptus brookeriana*). The construction corridor contains 0.03 ha of DOV. This area of DOV does not qualify for listing under the EPBC Act. The construction corridor is also within the 30 m of a DOV patch that does qualify for listing under the EPBC Act and will be reduced to the minimum width within this area (see EPR 11.7).

The NME vegetation community is listed as threatened under the NC Act; however, it does not correspond to any threatened ecological community under the EPBC Act. A total of 0.13 ha of this the NME community is located within the construction corridor.

As the Project requires assessment and approval under the *Land Use Planning and Approvals Act 1993*, a Forest Practices Plan will not be required for clearance of the DOV and NME vegetation communities.

Temporarily disturbed areas will be revegetated in accordance with the Rehabilitation and Reinstatement Plan, to be prepared by the selected Contractor (see EPR 13).

Overall, NBES conclude that the impact of the Project on native vegetation communities is minor due to the relatively narrow footprint and the prevalence of modified land (North Barker Ecosystem Services, 2024).

9.1.4 Weeds, pests and disease

Twelve introduced plants listed as declared weeds under the Tasmanian *Biosecurity Act 1999* occur within the Construction Project Area. No evidence of *Phytophthora cinnamomic* (PC) was recorded during the surveys undertaken by NBES, however it may be present in low abundance. It is assumed that the chytrid fungus is already present within the construction project area based on desktop records.

Construction activities have potential to introduce/spread weeds and diseases. Temporary clearance of vegetation may provide opportunities for pest fauna species, such as cats. A Weed and Disease Management Plan will be prepared for the Project (see EPR 2.1). A Rehabilitation and Reinstatement Plan will be prepared to rehabilitate temporarily cleared areas (see EPR 13).

9.1.5 Watercourses

Potential impacts to watercourses during construction of the Project include:

- Disruption of hydraulic patterns
- Temporary impacts, permanent loss, degradation, and fragmentation of aquatic habitat
- Sedimentation/watercourse pollution
- Introduction/spread of weeds/pests/disease

9.1.6 Sedimentation and erosion

Potential sedimentation and erosion impacts of the Project include:

- loss of topsoil
- sedimentation/watercourse pollution

9.1.7 Noise and vibration

Potential noise and vibration impacts during construction of the Project include the disruption of breeding activities for threatened fauna species and disturbance at sensitive receptors. The potential for the works to disrupt breeding activities is discussed under Section 9.1.1.1 (dasyurids) and Section 9.1.1.3 (Tasmanian wedge-tailed eagles) above.

Potential noise and vibration impacts to sensitive receptors are considered low with the implementation of the measures outlined in EPR 5 – Noise and vibration.

9.1.8 Air quality and light

The key potential air quality impact associated with the construction of the Project is dust generation. Construction activities undertaken at night (if required) also have the potential to result in light pollution.

9.1.9 Aboriginal heritage

No aboriginal heritage sites, suspected features, or specific areas of elevated archaeological potential were identified during the field survey assessment undertaken by Cultural Heritage Management Australia for the Project (CHMA, 2023). The field survey assessment confirmed that there are no rock shelter features that occur within or in the immediate vicinity of the Project. The field survey was also able to confirm that there were no stone resources detected that would be suitable for stone artefact manufacturing. It is considered that there is very little potential for quarry/procurement sites to be present, given the nature of the underlying geology.

The construction corridor has been adjusted since the Aboriginal heritage assessment was completed. As a result, an updated survey is currently underway.

Search results from the Aboriginal Heritage Register show that there are potentially five registered sites within the construction corridor, however none of these sites were identified during the survey. Four of the sites are presumed to have been destroyed through the construction of SWIS. The fifth site was recorded over 30 years ago, and the location recorded is

assumed to be inaccurate. A permit will be obtained in case the fifth site is discovered during construction works.

The project has the potential to disturb Aboriginal heritage sites through unanticipated discoveries.

9.1.10 Historic heritage

No listed Tasmanian heritage register sites are located within or adjacent to the construction corridor. Three local heritage places listed on the Latrobe Interim Planning Scheme 2013 are located adjacent to the construction corridor:

- 'Oulton' - 1062 Port Sorell Road, Northdown (CT 144681/1)
- 'Roche Vale' - 90 Churchills Road, Sassafras (CT 131093/1)
- 'Skelbrook' - 35 Skelbrook Lane, Sassafras (CT 124818/1)

Construction of the Project will avoid all structures at CT 144681/1 (Oulton). The construction corridor has been adjusted since the historic heritage assessment was completed by CHMA (CHMA, 2023a). As a result, an updated survey is currently underway and will include assessment of potential impacts to the 'Roche Vale' and 'Skelbrook' properties.

9.1.11 Environmentally hazardous materials

Environmentally hazardous materials present a risk to the environment and human health if used, stored or disposed of incorrectly. Spills of these materials to watercourses and drainage lines can present significant risks to aquatic flora and fauna, ranging from direct toxicity impacts to smothering effects (e.g. from hydrocarbons). Spills of these materials to ground can present similar risks if the water table is reached by the spilt materials or if they are washed into drainage lines during rains.

9.1.12 Bushfire risk

Bushfire risk during the construction phase of the Project is associated with the use of fuel and other flammable liquids, hot works use of machinery and inappropriate disposal of cigarettes.

9.1.13 Waste

Potential wastes likely to be generated during construction include:

- Excess rock and clean fill from excavations.
- Hydrotest water
- Waste from decommissioned infrastructure at GBPS that is unable to be recycled/reclaimed.
- Minor quantities of general waste, including recyclables.
- Waste oil or hydraulic fluid from construction equipment, machinery and vehicle.

- Waste from temporary toilet facilities.

Potential waste impacts during the construction phase of the Project are litter/pollution and inappropriate disposal of waste.

9.1.14 Construction traffic

A Preliminary Traffic Assessment was completed for the Project by Ratio (2024) which estimated that construction of the Project is likely to generate around 53,655 total traffic movements.

Potential impacts associated with construction traffic include the siting of access tracks and impact on the surrounding road networks, inappropriate road use, and damage to the external road network. Roadkill impacts are discussed separately in Section 9.1.1.1.

9.1.15 Soils

A geotechnical investigation has been completed for the Project by Pitt and Sherry (2023) (Pitt & Sherry, 2023). The SWISA alignment may intersect some low-risk and medium-risk landslide hazard zones. Management of potential landslide hazard areas will be addressed during detailed design of the Project (pitt&sherry, 2024).

There are no known potentially contaminating activities (PCA) within the construction corridor, however there are potentially contaminating activities located adjacent to the construction corridor (including abattoir, processing facilities, and underground fuel storages). Potentially contaminated materials encountered during construction will be managed in accordance with EPR 12.5.

PASS were identified from four samples within the construction corridor. An acid sulfate soil management plan will be developed by the contractor to manage PASS (see EPR 12.1).

9.2 Risk assessment

Potential impacts to environmental and heritage values and from the Project are summarised in Table 9-6. A residual risk rating is assigned for each impact based on the application of the controls within the relevant EPRs. With the application of mitigation measures, the potential impacts, including impacts to MNES are low-medium risk.

Risk is evaluated in accordance with the likelihood and consequence criteria and risk ratings outlined in the Environmental Management Plan Guidelines issued by DCCEEW, shown in Table 9-3, Table 9-4, and Table 9-5.

Table 9-3: Likelihood descriptors

Qualitative measure of likelihood	How likely is it that this event/issue will occur after control strategies have been put in place
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances

Table 9-4: Consequence descriptors

Qualitative measure of consequences	What will be the consequence/result if this issue does occur rating
Minor	Minor incident of environmental damage that can be reversed
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts
High	Substantial instances of environmental damage that could be reversed with intensive efforts
Major	Major loss of environmental amenity and real danger of continuing
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage

Table 9-5: Risk ratings

	Minor	Moderate	High	Major	Critical
Highly Likely	Medium	High	High	Severe	Severe
Likely	Low	Medium	High	High	Severe
Possible	Low	Medium	Medium	High	Severe
Unlikely	Low	Low	Medium	High	High
Rare	Low	Low	Low	Medium	High

Table 9-6: Risk assessment for potential impacts following application of management and mitigation measures

Value	Potential impact	Mitigation measure	Residual likelihood	Residual consequence	Residual risk
Threatened fauna					
Dasyurids (Tasmanian devil, eastern quoll and spotted-tail quoll)	Temporary impact of 11.35 ha of potential denning habitat ⁴ (consisting of 8.46 ha optimal denning habitat and 2.89 ha sub-optimal denning habitat) and 308.49 ha of foraging habitat.	EPR 1 – Flora and fauna EPR 1E – Den management	Likely	Minor	Low
	Permanent loss of 0.11 ha of potential denning habitat ² (consisting of 0.06 ha optimal denning and 0.05 ha sub-optimal denning habitat) and 0.91 ha of foraging habitat.		Likely	Moderate	Medium
	Trench entrapment	EPR 1 – Flora and fauna	Possible	Minor	Low
	Strike by machinery or vehicles	EPR 1H – Roadkill management	Unlikely	Moderate	Low
	Destruction of dens and lay-ups	EPR 1E – Den management	Possible	Moderate	Medium
	Noise disturbance and vibration impacts to maternal dens at GBPS, resulting in den abandonment and/or disruption of breeding activities.	EPR 1F – Tasmanian devil management - Great Bend Pump Station and Devil Road	Possible	Moderate	Medium
	Interaction with domestic dogs	EPR 1 – Flora and fauna (EPR 1.16)	Unlikely	Moderate	Low

⁴ Optimal denning habitat and sub-optimal denning habitat is also suitable for foraging.

Eastern barred bandicoot	319.83 ha of potential temporary impact to habitat, and 1.02 ha of permanent impact.	EPR 1 – Flora and fauna	Likely	Moderate	Medium
	Trench entrapment	EPR 1 – Flora and fauna	Likely	Moderate	Medium
	Strike by machinery or vehicles	EPR 1H – Roadkill management	Unlikely	Moderate	Low
	Increased predation risk	EPR 1 – Flora and fauna	Possible	Minor	Low
Tasmanian wedge-tailed eagle	Disturbance of an active nest during breeding season (Eagle management constraint period).	EPR 1A Tasmanian wedge tailed eagle	Unlikely	Moderate	Low
	Clearance of potential nesting habitat	EPR 1A Tasmanian wedge tailed eagle	Unlikely	Moderate	Low
Tasmanian masked owl	Habitat loss through the clearance of: • 0.23 ha of potential nesting habitat • 3 potential habitat trees (nesting) • TPZ incursion >10% for an additional 9 potential habitat trees (nesting).	EPR 1 – Flora and fauna EPR 1G – Hollow-bearing tree management	Likely	Moderate	Medium
Swift parrot	Habitat loss through the clearance of: • 0.43 ha of potential habitat (including 0.2 ha of foraging habitat and 0.23 ha of nesting habitat) • 28 potential habitat trees (including 14 foraging trees, 10 nesting trees, and 4 nesting and foraging trees) • TPZ incursion >10% for an additional 32 potential habitat trees (including 6 foraging trees, 19 nesting trees, and 7 nesting and foraging trees).	EPR 1 – Flora and fauna EPR 1G – Hollow-bearing tree management	Likely	Moderate	Medium

Blue-winged parrot	Habitat loss through the clearance of: • 0.23 ha of potential habitat • 14 potential habitat trees • TPZ incursion >10% for an additional 26 potential habitat trees.	EPR 1 – Flora and fauna EPR 1G – Hollow-bearing tree management	Likely	Moderate	Medium
	Degradation of foraging habitat	EPR 1 – Flora and fauna	Unlikely	Moderate	Low
Green and gold frog (GGF)	• 1.71 ha of potential temporary impact to dispersal habitat. •	EPR 1 – Flora and fauna EPR 1C – Green and gold frog	Likely	Minor	Low
	Degradation of aquatic habitat	EPR 3 – Watercourses EPR 4 – Sediment and erosion	Unlikely	Minor	Low
	Strike by machinery or vehicles	EPR 1H – Roadkill management	Unlikely	Moderate	Low
	Spread of waterborne pathogens, including chytrid fungus.	EPR 2 – Weeds, pests and disease	Unlikely	Minor	Low
	Altered hydrology, including modified flow regimes and groundwater extraction.	EPR 3 – Watercourses	Unlikely	Moderate	Low
Australian grayling	Habitat degradation, through changes to surface water quality	EPR 1D – Australian grayling EPR 3 – Watercourses and EPR 4 – Sediment and erosion.	Unlikely	Moderate	Low

	Direct entrainment and mortality can occur at GBPS	EPR 1D – Australian grayling	Unlikely	Moderate	Low
Central north burrowing crayfish	Direct and indirect impacts to individuals through the destruction of nine individual CNBC chimneys in five locations.	EPR 1B – Central north burrowing crayfish	Likely	Moderate	Medium
	Temporary impact to 1.92 ha of known potential CNBC habitat, including 1.81 ha of suboptimal habitat and 0.11 ha of optimal and damp remnant habitat.	EPR 1 – Flora and fauna EPR 1B – Central north burrowing crayfish	Likely	Minor	Low
	Degradation of aquatic habitat through soil compaction at the edge of waterways, introduction/spread of weeds, and alteration to water quality and quantity.	EPR 3 – Watercourses EPR 4 – Sediment and erosion EPR 8 – Environmentally hazardous materials	Unlikely	Minor	Low
Threatened flora					
Tailed spider-orchid	Degradation of habitat through introduction/spread of weeds and disease (<i>Phytophthora</i>). Potential for unanticipated direct clearance.	EPR 1 – Flora and fauna EPR 2 – Weeds, pests and disease EPR 1.I – Threatened flora and vegetation communities	Unlikely	Minor	Low
Robust fingers	Degradation of habitat through introduction/spread of weeds.	EPR 1 – Flora and fauna EPR 2 – Weeds, pests and disease	Unlikely	Minor	Low
	Habitat fragmentation through vegetation clearance		Unlikely	Minor	Low

		EPR 1.I – Threatened flora and vegetation communities			
Wrinkled dollybush	Habitat loss through vegetation clearance	EPR 1 – Flora and fauna	Unlikely	Minor	Low
	Degradation of habitat through introduction/spread of weeds.	EPR 2 – Weeds, pests and disease	Unlikely	Minor	Low
Slender waterpepper (TSP Act vulnerable)	Direct impact through clearance of 415 m ² of slender waterpepper.	EPR 1 – Flora and fauna EPR 1.I – Threatened flora and vegetation communities	Likely	Minor	Low
Threatened native vegetation communities / threatened ecological communities					
<i>Melaleuca ericifolia</i> swamp forest (NME)	Direct impact through clearance of 0.13 ha of NME.	EPR 1 – Flora and fauna EPR 1.I – Threatened flora and vegetation	Likely	Minor	Low
<i>Eucalyptus ovata</i> forest and woodland (DOV)	Direct impact through clearance of 0.03 ha of DOV. This area of DOV does not qualify for listing under the EPBC Act.	EPR 1 – Flora and fauna EPR 1.I – Threatened flora and vegetation	Likely	Minor	Low
	Degradation of habitat through works within 30 m of Tasmanian Forests and Woodland Dominated by Black Gum (<i>Eucalyptus ovata</i>) or Brookers Gum (<i>Eucalyptus brookeriana</i>)	EPR 1 – Flora and fauna EPR 1.I – Threatened flora and vegetation	Unlikely	Minor	Low
Native flora and fauna					
Native fauna	Entrapment in trenches	EPR 1 – Flora and fauna	Possible	Minor	Low
	Strike by machinery/vehicles	EPR 1H – Roadkill management	Unlikely	Moderate	Low

Native vegetation	Temporary impact to 3.76 ha of native vegetation. Permanent loss of 0.06 ha of native vegetation.	EPR 1 – Flora and fauna	Likely	Minor	Low
Heritage					
Historic heritage	Impacts unanticipated historic heritage.	EPR 7 – Heritage	Unlikely	Moderate	Low
Aboriginal heritage	Impacts to known and unanticipated Aboriginal heritage.		Unlikely	Moderate	Low
Aquatic values					
Aquatic values	• Disruption of hydraulic patterns • Temporary impact, permanent loss, degradation and fragmentation of aquatic habitat • Sedimentation/watercourse pollution • Introduction/spread of weeds/pests/disease	EPR 2 – Weeds, pests and disease EPR 3 – Watercourses EPR 4 – Watercourses EPR 8 – Environmentally hazardous materials	Unlikely	Moderate	Low

10. Environmental management measures

10.1 Performance targets

The following performance targets have been defined for the Project during the construction phase to minimise potential impacts to relevant MNES. Best endeavours will be made to further reduce impacts below these limits:

- Zero non-compliances (i.e. 100 % compliance) with the EPRs (see Appendix A- Environmental Protection Requirements).
- Temporary impact to no more than 11.35 ha of potential denning habitat (8.46 ha of optimal habitat and 2.89 ha of sub-optimal habitat), and permanent impact to no more than 0.11 ha (consisting of 0.06 ha optimal and 0.05 sub-optimal) for the Tasmanian devil, eastern quoll, and spotted-tail quoll will be disturbed. All dens for the Tasmanian devil, eastern quoll, and spotted-tail quoll will be decommissioned prior to commencement of clearance and construction. No active dens will be decommissioned during the construction phase of the Project.
- No indirect disturbance (via noise or vibration) of maternal Tasmanian devil dens during the devil management constraint period.
- Roadkill frequency must not exceed the estimated roadkill rates outlined in the Preliminary Traffic Assessment. The following performance targets apply:
 - Tasmanian devil <1 individuals
 - Eastern quoll <1 individual
 - Spotted-tail quoll <1 individuals
 - All other native fauna species (collectively) <4 individuals
- No more than twelve potential habitat trees suitable for the Tasmanian masked owl, and 0.23 ha of potential habitat for the Tasmanian masked owl will be impacted.
- No more than 60 potential habitat trees (consisting of 20 foraging, 29 breeding, and 11 foraging and breeding) suitable for the swift parrot and 0.43 ha of potential habitat (consisting of 0.20 ha of foraging habitat and 0.23 ha breeding habitat) for the swift parrot will be impacted.
- No more than 40 potential habitat trees for the blue-winged parrot and 0.23 ha of potential habitat for the blue-winged parrot will be impacted.
- For every habitat tree removed, a minimum of **20 seedlings** shall be replanted in a suitable location that maximises survival and provides the greatest benefit to vegetation communities and fauna habitat.
- All hollows suitable for nesting for the Tasmanian masked owl, swift parrot and/or blue-winged parrot will be decommissioned prior to commencement of clearance and construction.
- No active hollows will be decommissioned during the construction phase of the Project.
- No clearance or construction within 200 m of any tree that contains an active Tasmanian wedge-tailed eagle nest will occur.

- No disturbance of active Tasmanian wedge-tailed eagle nests will occur during the eagle management constraint period (defined as the beginning of July to the end of January). No incursion of the buffer zones outlined in EPR 1A – Tasmanian wedge-tailed eagle will occur.
- Temporary impact to no more than 1.7 ha of potential dispersal habitat.). No mortalities of GGFs.
- Construction works must not impact surface water quality, including within known potential habitat for the Australian grayling.
- Temporary impact to no more than 1.92 ha of known potential CNBC habitat. No mortalities of CNBC.
- No impacts to the tailed spider-orchid, robust fingers or wrinkled dollybush will occur.
- No more than 415 m² of slender waterpepper will be cleared.
- No more than 0.13 ha of the state threatened native vegetation community *Melaleuca ericifolia* swamp forest (NME) will be cleared. No more than 0.03 of the state threatened native vegetation community *Eucalyptus ovata* forest and woodland (DOV) will be cleared.
- The revegetation strategy will result in the restoration of 3.67ha of temporarily impacted native vegetation within the Construction Corridor outline in EPR 1.13.
- Zero fauna deaths due to trench entrapment.
- No impacts to historic or Aboriginal heritage values.

The effectiveness of the environmental management measures in achieving the above performance targets will be monitored through the environmental monitoring and corrective actions described in Section 0.

Table 9.4

10.2 Management and mitigation measures

Environmental management and mitigation measures for the construction of the Project and maintenance activities requiring onsite works during operation are established through the following Project documentation:

- Environmental Protection Requirements (EPRs) (see Appendix A- Environmental Protection Requirements). The EPRs provide the minimum management and mitigation measures to protect MNES and the broader environment during construction and maintenance of the Project.
- Appendix B – Construction Environmental Tables and Construction Environmental Plans. The CETs and CEPs identify the relevant generic controls for a section of the Construction Corridor as well as site-specific controls.
- Sassafras Wesley Vale Irrigation Scheme Preliminary Documentation EPBC 2023/09666 (BMT, 2024) and resulting approval conditions.

Where there is a discrepancy between the EPRs and the site-specific measures outlined in the CEP/CET, the site-specific measure shall prevail. Any additional management and mitigation

measures identified in statutory approval conditions issued for the Project will be incorporated into the CEMP and CEPs/CETs.

A summary of the relevant EPRs containing the management and mitigation measures for each of the potential impacts identified in Section 9 is provided in Table 9-6.

The management and mitigation measures specified in the EPRs will apply throughout the construction phase. Where specific timing/frequency requirements apply, these are specified in the EPR. Specific timing constraints relevant to managing potential impacts MNES are summarised in Table 10-1.

Table 10-1 Timing and frequency of measures related to MNES

Value	Relevant EPRs	Timing/frequency
Dasyurids (Tasmanian devil, eastern quoll and spotted-tail quoll)	EPR 1 – Flora and fauna	Throughout the construction phase
	EPR 1E – Den management	Throughout the construction phase
	EPR 1F – Tasmanian devil management - Great Bend Pump Station and Devil Road (1F.1, 1F.2, 1F.4, 1F.5, 1F.7, 1F.8)	Outside of devil management constraint period
	EPR 1H – Roadkill management	Throughout the construction phase
Eastern barred bandicoot	EPR 1 – Flora and fauna	Throughout the construction phase
	EPR 1H – Roadkill management	
Tasmanian wedge-tailed eagle	EPR 1A – Tasmanian wedge-tailed eagle (1A.1, 1A.3, 1A.4, 1A.5, 1A.7)	Eagle management constraint period (1 July to 31 January)
	EPR 1A – Tasmanian wedge-tailed eagle (1A.2)	At least once every two years.
Tasmanian masked owl, Swift parrot. Blue-winged parrot	EPR 1 – Flora and fauna	Throughout the construction phase
	EPR 1G – Hollow-bearing tree management (1G.1)	During spring immediately preceding construction
	EPR 1G – Hollow-bearing tree management (1G.5, 1G.7)	During spring and summer immediately preceding construction
Green and gold frog (GGF)	EPR 1 – Flora and fauna	Throughout the construction phase
	EPR 1C – Green and gold frog	

	EPR 1H – Roadkill management	
	EPR 2 – Weeds, pests and disease	
	EPR 3 – Watercourses	
	EPR 4 – Sediment and erosion	
Australian grayling	EPR 1D – Australian grayling (1D.1)	Outside of peak migration periods (March-April and November-January)
	EPR 3 – Watercourses	Throughout the construction phase
	EPR 4 – Sediment and erosion.	Throughout the construction phase
Central north burrowing crayfish	EPR 1 – Flora and fauna	Throughout the construction phase
	EPR 1B – Central north burrowing crayfish (1B.2)	Between May and November, no more than six months prior to construction commencing within a given area.
	EPR 3 – Watercourses	Throughout the construction phase
	EPR 4 – Sediment and erosion	Throughout the construction phase
	EPR 8 – Environmentally hazardous materials	Throughout the construction phase
Tailed spider-orchid, Robust fingers	EPR 1 – Flora and fauna EPR 2 – Weeds, pests and disease	Throughout the construction phase
	EPR 1.I – Threatened flora and vegetation communities (1I.1)	During the peak flowering period (15 October to 30 November) preceding clearance in a given area.
Wrinkled dollybush	EPR 1 – Flora and fauna EPR 2 – Weeds, pests and disease	Throughout the construction phase
Slender waterpepper (TSP Act vulnerable)	EPR 1 – Flora and fauna EPR 1.I – Threatened flora and vegetation communities	Throughout the construction phase

<i>Melaleuca ericifolia</i> swamp forest (NME)	EPR 1 – Flora and fauna EPR 1.1 – Threatened flora and vegetation	Throughout the construction phase
<i>Eucalyptus ovata</i> forest and woodland (DOV)	EPR 1 – Flora and fauna EPR 1.1 – Threatened flora and vegetation	Throughout the construction phase

10.3 Rehabilitation and reinstatement

Rehabilitation of disturbed vegetation will commence within 30 days of construction completion to ensure the fastest possible recovery and minimise habitat disruption. A staged rehabilitation and reinstatement program will be implemented throughout the construction phase, focusing on replacing or enhancing impacted habitat areas.

Revegetation will use propagules sourced from the corresponding vegetation community to restore optimal and suboptimal habitat. Site-specific plans will guide species selection, planting density, and long-term ecological recovery. Measures will also be in place to control invasive species, reinstate habitat structures, and protect young plants from herbivores.

Special consideration will be given to watercourse restoration, acid sulphate soils, and threatened species habitats, with rehabilitation tailored to site conditions. Long-term monitoring will track progress to ensure rehabilitation objectives are met (see EPR 13 – Rehabilitation and reinstatement).

10.3.1 Remediation for loss of habitat trees

Any habitat trees that cannot be avoided and must be removed will require a comprehensive remediation plan. A 20:1 replanting ratio will be applied to account for mortality and the time required for replacement trees to develop similar ecological value.

Revegetation will use local provenance species, including a mix of blue gum (*Eucalyptus globulus*) and black gum (*Eucalyptus ovata*), white gum (*Eucalyptus viminalis*) and black peppermint (*Eucalyptus amygdalina*) to restore foraging resources for both swift parrots and blue-winged parrots. If the removed tree contained hollows, nest boxes will be installed, or salvaged hollows will be relocated to nearby trees to maintain nesting hollow.

Additionally, fallen timber will be retained and redistributed to support ground-dwelling fauna. Replanting will take place adjacent to existing remnant vegetation to strengthen habitat connectivity and promote success of revegetation. Environmental monitoring and corrective actions

Monitoring and inspections will be undertaken to measure the effectiveness of the implementation of this plan and to facilitate continuous improvement. General and species-specific monitoring and corrective actions are summarised in Table 10-2.

Monitoring data relevant to MNES, including surveys, maps, other spatial and metadata, and all species occurrence data (sightings and evidence of presences) will be maintained and submitted to DCCEEW with the regular compliance report (see Section 0).

Table 10-2: Summary of environmental monitoring and corrective actions

Value	Performance target/trigger value	Monitoring	Corrective action	Timing/frequency
General	Zero non-compliances (i.e. 100 % compliance) with EPRs		Any non-compliances that do occur must be reported to DCCEEW.	Throughout the construction phase
Dasyurids (Tasmanian devil/ eastern quoll/ spotted-tail quoll)	Temporary impact to no more than 11.35 ha of potential denning habitat (8.46 ha of optimal habitat and 2.89 ha of sub-optimal habitat), and permanent impact to no more than 0.11 ha (0.06 optimal and 0.05 sub-optimal) for the Tasmanian devil, eastern quoll, and spotted-tail quoll will be disturbed.	Clearance within areas of denning habitat will be monitored by the Project Environmental Advisor. The contractor will maintain an ArcGIS file which records the cumulative total area of denning habitat cleared. This will be reviewed when seeking authorisation from TI to clear denning habitat. The area of denning habitat cleared will be reported by the contractor weekly to TI.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken. Authorisation to commence works must be sought from TI.	Throughout the construction phase, prior and during vegetation clearance
	All dens for the Tasmanian devil, eastern quoll, and spotted-tail quoll will be decommissioned prior to commencement of clearance and construction. No active dens will be decommissioned during the construction phase of the Project	A den monitoring assessment will be completed for dens with the potential to be occupied by a devil or quoll in accordance with EPR 1E.6.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken. Authorisation to commence works must be sought from TI.	Throughout the construction phase, prior to den decommissioning,

	No indirect disturbance (via noise or vibration) of maternal Tasmanian devil dens during the devil management constraint period.	Monitoring will be undertaken for dens at GBPS in accordance with EPR 1F – Great Bend Pump Station and Devil Road	If monitoring shows signs of behavioural change/stress from baseline data, or changes in roof/entrance stability, the ecologist will direct works to stop and advise corrective action to be implemented Authorisation to commence works must be sought from TI.	Prior to commencement of noise generating works at GBPS for a minimum of two weeks. Monitoring will be ongoing during works at this location.
Fauna - general	Roadkill frequency must not exceed the estimated roadkill rates outlined in the Preliminary Traffic Assessment. The following performance targets apply: ○ Tasmanian devil <1 individuals ○ Eastern quoll <1 individual ○ Spotted-tail quoll <1 individuals All other native fauna species (collectively) <4 individuals	Roadkill monitoring will be undertaken in accordance with EPR 1H.9. The results of the roadkill monitoring will be recorded and reported to TI on a weekly basis.	Exceedance of the performance targets for roadkill frequency will result in an immediate review of EPR 1H – Roadkill management. Additional controls will be implemented as directed by TI.	Weekly, throughout the construction phase

Tasmanian masked owl / swift parrot / blue-winged parrot	No more than twelve potential habitat trees suitable for the Tasmanian masked owl, and 0.23 ha of potential habitat for the Tasmanian masked owl will be impacted.	Clearance of potential hollow-bearing trees and areas of potential will be monitored by the Project Environmental Advisor. The contractor will maintain an ArcGIS file which records the cumulative total area hollow-bearing trees and habitat areas cleared. This will be reviewed when seeking authorisation from TI to clear hollow-bearing trees and habitat areas.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken.	Throughout construction
	No more than 60 potential habitat trees suitable for the swift parrot and 0.23 ha of potential habitat for the swift parrot will be impacted.		Authorisation to commence works must be sought from TI.	
	No more than 40 potential habitat trees for the blue-winged parrot and 0.23 ha of potential habitat for the blue-winged parrot will be impacted.	The number of hollow-bearing trees/ area of habitat cleared will be reported by the contractor weekly to TI.		
	All hollows suitable for nesting for the Tasmanian masked owl, swift parrot and/or blue-winged parrot will be decommissioned before the commencement of clearance and construction.	Hollow-bearing trees that cannot be retained will be subject to the monitoring requirements outlined in EPR 1G – hollow-bearing tree management.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken.	Passive monitoring – twice a day for a minimum of five consecutive days, during spring immediately preceding construction.
	No active hollows will be decommissioned during the construction phase of the Project.	Hollow-bearing trees that cannot be retained will be subject to the monitoring	Authorisation to commence works must be sought from TI. A stop works notice must be issued if a non-compliance	Active visual monitoring – following passive monitoring, between 1 April and 31 July of the same year.

		requirements outlined in EPR 1G – hollow-bearing tree management.	occurs and an internal investigation undertaken. Authorisation to commence works must be sought from TI.	
Tasmanian wedge-tailed eagle	No clearance or construction within 200 m of any tree that contains an active Tasmanian wedge-tailed eagle nest will occur. No disturbance of active Tasmanian wedge-tailed eagle nests will occur during the Eagle management constraint period (defined as the beginning of July to the end of January). No incursion of the buffer zones outlined in EPR 1A – Tasmanian wedge-tailed eagle will occur.	Periodic aerial nest searches will be undertaken to detect any new nests in proximity to the Construction corridor, in accordance with EPR 1A2. Implementation of exclusion zones will be monitored by the Project Environmental Advisor.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken. Authorisation to commence works must be sought from TI.	Aerial nest searches will be undertaken at least once every two years during the construction phase. Exclusion zones will be monitored during the Eagle management constraint period, throughout the construction phase.
Green and gold frog (GGF)	Temporary impact to no more than 1.7 ha of potential dispersal habitat. No mortalities of GGF.	Clearance of potential habitat will be monitored by the Project Environmental Advisor. The contractor will maintain an ArcGIS file which records the cumulative total area of habitat cleared. This will be reviewed when seeking authorisation from TI to clear areas of GGF habitat.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken.	Prior to vegetation clearance, throughout the construction phase.

		The area of GGF habitat cleared will be reported by the contractor weekly to TI.	Authorisation to commence works must be sought from TI.	
Australian grayling	Construction works must not prejudice surface water quality, including within known potential habitat for the Australian grayling.	A water quality monitoring plan must be developed and implemented to ensure suspended sediment and turbidity remain within Default Guideline Values for Aquatic Ecosystems of the Mersey Catchment (see EPR 1D – Australian grayling).	Corrective actions will be included within the water quality monitoring plan.	Throughout the construction phase, as specified by the water quality monitoring plan
		All water crossings are to be inspected after at least 12 months, and within 24 months of completion of works during low-flow conditions to ensure that: • Revegetation is likely to be successful • No significant erosion of the bed and banks is occurring because of the works • No infrastructure installed under or adjacent to the waterway has been exposed because of erosion.	Corrective action will be determined based on the results of monitoring	12-24 months post construction

		Where works have resulted in a change to hydrology, a suitably qualified aquatic fauna expert is engaged and remedial works conducted (if appropriate) to ensure no ecological impacts that may impact Australian Grayling occur.		
Central north burrowing crayfish	Temporary impact to no more than 1.92 ha of known potential BCF habitat. No mortalities of CNBC.	Clearance of potential habitat will be monitored by the Project Environmental Advisor. The contractor will maintain an ArcGIS file which records the cumulative total area of habitat cleared. This will be reviewed when seeking authorisation from TI to clear areas of CNBC habitat. The area of CNBC habitat cleared will be reported by the contractor weekly to TI.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken. Authorisation to commence works must be sought from TI.	Prior to vegetation clearance, throughout the construction phase
Tailed spider-orchid / Robust fingers	No impacts to the tailed spider-orchid, robust fingers or wrinkled dollybush will occur.	Implementation of exclusion zones will be monitored by the Project Environmental Advisor.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken.	Prior to vegetation clearance, throughout the construction phase

			Authorisation to commence works must be sought from TI.	
Slender waterpepper	No more than 415 m ² of slender waterpepper will be cleared.	Clearance of slender waterpepper will be monitored by the Project Environmental Advisor. The contractor will maintain an ArcGIS file which records the cumulative total area of this species that has been cleared. This will be reviewed when seeking authorisation from TI to clear areas containing this species The area of slender waterpepper cleared will be reported by the contractor weekly to TI. Any additional monitoring/reporting requirements associated with a Permit to Take for this species will be adhered to.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken. Authorisation to commence works must be sought from TI.	Prior to vegetation clearance, throughout the construction phase
Threatened native vegetation communities	No more than 0.13 ha of the state threatened native vegetation community <i>Melaleuca ericifolia</i> swamp forest (NME) will be cleared. No more than 0.03 of the state threatened native vegetation community <i>Eucalyptus ovata</i> forest	Clearance of potential threatened native vegetation communities will be monitored by the Project Environmental Advisor. The contractor will maintain an ArcGIS file which records the cumulative total area of threatened native vegetation	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken.	Prior to vegetation clearance, throughout the construction phase

	and woodland (DOV) will be cleared.	communities cleared. This will be reviewed when seeking authorisation from TI to clear within a threatened native vegetation community. The area of threatened NME and DOV cleared will be reported by the contractor weekly to TI.	Authorisation to commence works must be sought from TI.	
Native vegetation	The revegetation strategy will result in the restoration of 3.67ha of temporarily impacted native vegetation within the construction corridor.	The Rehabilitation and Revegetation Plan will include a monitoring plan to ensure effective revegetation.	The Rehabilitation and Revegetation Plan will outline measures to be taken if revegetation is not successful.	As outlined by the Rehabilitation and Revegetation Plan
General fauna	Zero fauna deaths due to trench entrapment.	Trenches and excavations will be monitored daily, prior to the commencement of works each morning. Any trapped wildlife will be removed by a suitably qualified wildlife carer.	A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken. Authorisation to commence works must be sought from TI.	Daily, throughout the construction phase.
Heritage	No impacts to historic or Aboriginal heritage values.	The measures within EPR 7 – Heritage will be implemented in the event of unanticipated impacts to historic or Aboriginal heritage.	A stop works notice must be issued if a non-compliance occurs and an internal	Throughout the construction phase.

investigation
undertaken.

Authorisation to
commence works must
be sought from TI.

11. Audit and review

11.1 Environmental auditing

This CEMP shall be regularly audited by the contractor, TI, and the regulator to ensure its effectiveness, and compliance with the conditions. The following table outlines the schedule for auditing relevant to the construction phase only.

Table 11-1 Auditing schedule – construction

Audit	Responsibility	Frequency	Corrective Action
Internal audit of the CEMP	Contractor	Undertake monthly audit	If non-compliance is identified, immediately suspend works and undertake assessment of construction activity and controls. Determine appropriateness of controls and determine if additional controls required. Report non-compliance to relevant regulator, if required by permit conditions.
Internal audit of the construction environmental management plan	TI	Within 3 months of commencement of construction and every 6 months thereafter	If non-compliance identified, immediately stop works and issue contractor with a notice to undertake internal investigation. Determine appropriateness of controls and if additional controls required prior to recommencing work. Report non-compliance to relevant regulator, if required by permit conditions.

Independent audit in accordance with EPBC 2023/09666	TI (independent audit)	As required by approval conditions	N/A
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11.2 Environmental management plan review

A review of the CEMP may be triggered by the corrective actions outlined in Table 11-1, depending on the outcomes of internal investigations undertaken. If the review identified areas where the plan does not meet the approval requirements, a variation to the approved plan will be prepared and submitted for approval.

12. References

- BMT. (2024). *Sassafras-Wesley Vale Irrigation Scheme Augmentation EPBC Preliminary Documentation Report*. BMT.
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- pitt&sherry. (2024). *Sassafras Wesley Vale Scheme Augmentation - Soil and Water Management Plan*. pitt&sherry.
- Ratio. (2024). *Preliminary Traffic Assessment*. Ratio Consultants Pty Ltd.
- Standards Australia . (2009). *AS 4970-2009 Protection of trees on development sites*.

Appendix A- Environmental Protection Requirements

See Annex E to Preliminary Documentation.

Appendix B – Construction Environmental Tables and Construction Environmental Plans

Appendix C – GBPS fish screen concept design

