

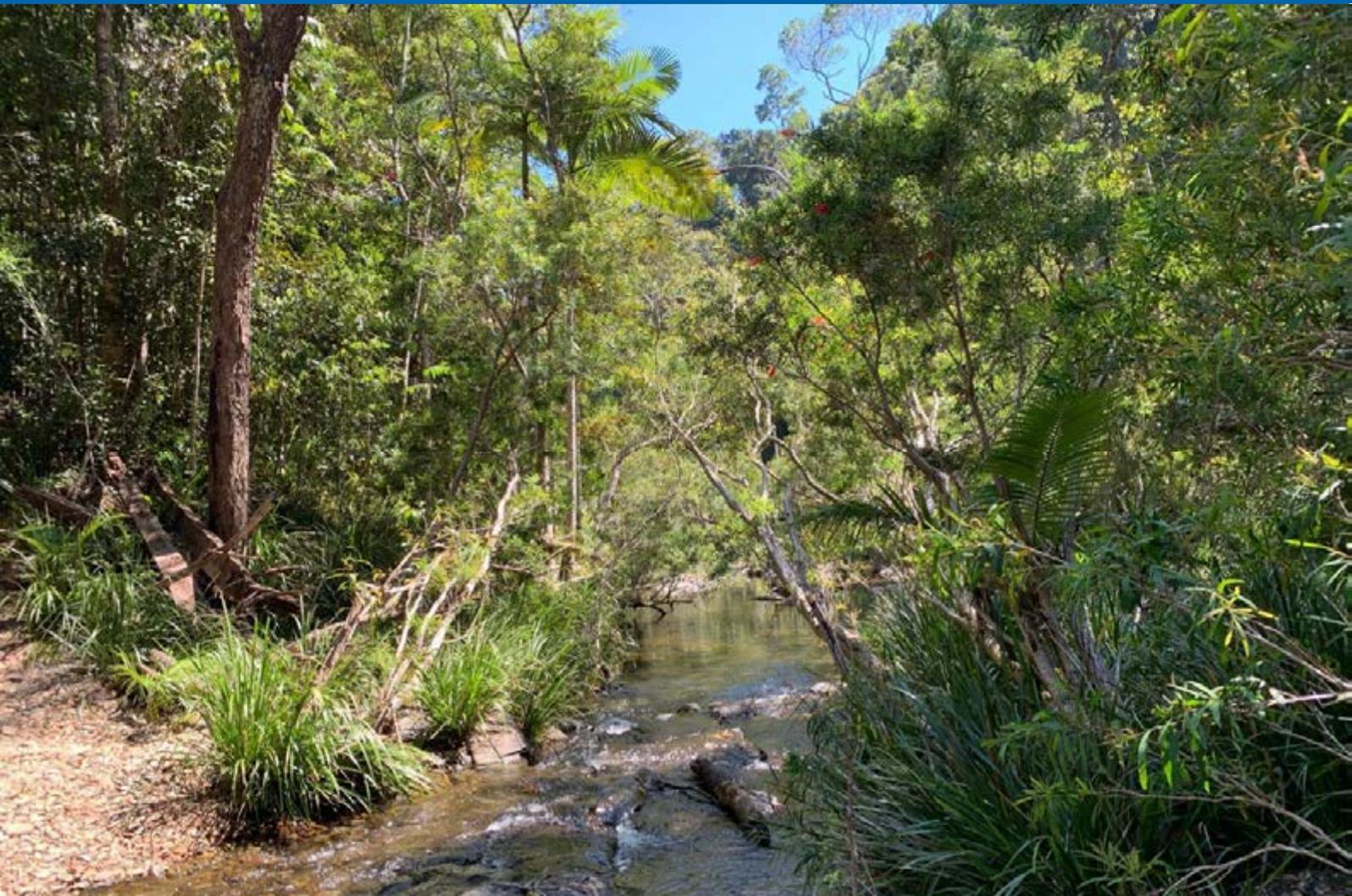


Department of State Development, Tourism, and Innovation

Wangetti Trail South Section (Wangetti to Palm Cove)

Preliminary Environmental Management Plan

July 2021



Abbreviation and acronyms

Abbreviation/acronym	Definition
ACH Act	<i>Aboriginal Cultural Heritage Act 2003</i>
AHD	Australian height datum
AS	Australian Standard
AWTGS	Australian Walking Track Grading System
CEMP	Preliminary Construction Environmental Management Plan
CESCP	Concept Erosion and Sediment Control Plan
CHMA	Cultural Heritage Management Agreement
CMP	Cassowary Management Plan
DAF	Department of Agriculture and Fisheries
DATSIP	The Department of Aboriginal and Torres Strait Islander Partnerships'
DAWE	Department of Agriculture, Water and the Environment
DEMP	Department of the Environment – Environmental Management Plan
DES	Department of Environment and Science
DR	Department of Resources (previously referred to as Department of Natural Resources Energy and Mines)
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning (previously referred to as Department of State Development, Manufacturing, Infrastructure and Planning)
DSDTI	Department of State Development, Tourism and Innovation
DTMR	Department of Transport and Main Roads
EMP	Environmental Management Plan
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EP Act	<i>Environmental Protection Act 1994</i>
ESCP	Erosion and Sediment Control Plan
GBO	General Biosecurity Obligation
GED	General Environmental Duty
GHD	GHD Pty Ltd
ILUA	Indigenous Land Use Agreement
km	Kilometre
m	Metre
MNES	Matters of national environmental significance
MOU	Memorandum of understanding
MSES	Matters of state environmental significance
MTBA TRDS	the Australian Mountain Bike Trail Guidelines Trail Difficulty Rating System
NC Act	<i>Nature Conservation Act 1992</i>

Abbreviation/acronym	Definition
QPWS	Queensland Parks and Wildlife Service
RPP	Riverine protection permit
SMP	Species Management Plan
TDPD	Tourism Development Projects Division
TI Act	<i>Transport Infrastructure Act 1994</i>
TMP	Preliminary Traffic Management Plan
WPDMP	Preliminary Weed, Pest and Disease Management Plan
WTWHA	Wet Tropics World Heritage Area
YGAC	Yirrganydji Aboriginal Corporation

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Appendix F – Matters of national environmental significance flora pre-clearance survey methodology
Appendix G – Wangetti Trail Construction Methodology Manual April 2020

1. Introduction

1.1 Background

The Department of State Development, Tourism and Innovation (DSDTI) – Tourism Development Projects Division (TDPD) is proposing to establish the Wangetti Trail – Wangetti South (Project) Section, a 29.7 kilometre (km) shared use trail to accommodate both mountain bike users and hikers from the southern boundary Lot 2 SP309094 in the township of Wangetti, to Palm Cove (refer to Figure 2-1).

The Wangetti South Section will comprise of the following components:

- 29.7 km shared use trail to accommodate both mountain bike users and hikers, consisting of natural ground and surface treatments, which will be a maximum of 1.5 m wide. The 1.5 m wide trail will be located within a 40 metre (m) survey corridor, referred to as the construction allowance corridor, to allow flexibility for the placement of infrastructure during the construction phase. The trail has been designed to be a 'Mountain Biking – intermediate (blue square with blue outline) as defined in the Australian Mountain Bike Trail Guidelines Trail Difficulty Rating System (MTBA TDRS) and grade 3 for hikers, as defined in the Australian Walking Track Grading System (AWTGS), which also equates to Class 3 in the Australian Standard (AS) for Walking Tracks, Part 1: Classification and Signage (AS 2156.1-2001). The trail will have an average gradient of <10% and a maximum gradient no greater than 15% (for short distances only). Built structures proposed as part of the trail include gully crossings, bridges, staircases, platforms, rock armouring and signage, where appropriate and required.
- A number of waterway crossings along the shared use trail that will comprise of the following: rock armouring, boulder crossings and low-level bridge (minor water crossing).
- Dark Jungle (public camping node and amenities block)
- The formalisation of existing access tracks into service tracks to provide restricted access to the shared use trail and Dark Jungle for construction purposes, operational purposes, maintenance purpose and for emergency purposes.

The Wangetti South Section is being proposed over four properties located within the Douglas Shire Council and Cairns Regional Council local government areas. The project area intersects both the Macalister Range National Park and the Wet Tropics World Heritage Area (WTWHA).

The project is being delivered by TDPD as part of an adventure-based ecotourism development in north Queensland. The shared use trail will provide walkers and mountain bike riders with a unique experience to traverse through natural areas of north Queensland covering bushland and coastal areas, including the Wet Tropics of Queensland (Wet Tropics), and national parks.

Development of an Environmental Management Plan (EMP) to detail the performance objectives, actions and procedures to be carried out to minimise potential environmental impacts during construction phase and operational phase of the Wangetti South Section.

1.2 Purpose of this report

GHD Pty Ltd (GHD) has prepared this EMP as a means to guide responsible environmental management during the construction and operation phases of the Wangetti Trail – Wangetti South section. Conformance to this EMP will ensure that the Project meets the general environmental duty of Section 319 of the *Environmental Protection Act 1994*:

“A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm.”

The EMP is a stand-alone, dynamic, document which will be reviewed and updated as required to reflect changes in processes, controls and procedures. This EMP has been developed with information that was available at the time of compilation and has considered the requirements in the Department of the Environment – Environmental Management Plan (DEMP) Guidelines 2014. This EMP is the key reference document which identifies actions and commitments to be followed during the Project. This EMP will serve as a benchmark for measuring the effectiveness of environmental protection and management. This will be achieved by specifying monitoring and reporting requirements, with nominated responsibilities and timing to ensure necessary performance objectives are met.

The contractors assigned to the Project will use the information in this document to develop environmental management system and documentation for the construction and operational phase of the Project.

This EMP is structured according to an overarching framework EMP (this document) supported by the following sub-plans:

- Preliminary Construction Environmental Management Plan (CEMP)
- Concept Erosion and Sediment Control Plan (CESCP)
- Preliminary Weed, Pest and Disease Management Plan (WPDMP) for the construction and operational phases of the Project.
- Matters of National Environmental Significance flora pre-clearance survey methodology
- Preliminary Traffic Management Plan (TMP) for the construction and operational phases of the Project.
- Cassowary Management Plan (CMP) for the construction and operational phases of the Project.

This is a continuously evolving document that should take into account changes in construction techniques and statutory requirements. This EMP has also been prepared in response to Chapter 5 of the Request for Information from Department of Agriculture, Water and the Environment (DAWE). The EMP provides a summary of measures to be adopted for the Project to avoid, mitigate, and manage impacts from the construction and operational phases of the project on matters of national environmental significance (MNES) and matters of state environmental significance (MSES).

1.3 Scope of works

This EMP covers the construction and operation of the Wangetti Trail – Wangetti South Section, from the southern boundary Lot 2 SP309094 in the township of Wangetti, to Palm Cove and includes all activities such as:

- Preclearance surveys for protected fauna and flora
- Construction of the 1.5m wide shared use trail within a 40m wide construction allowance corridor and ancillary infrastructure including vegetation clearance along the trail (1.5m wide permanent with 0.5m on either side for temporary disturbance.). Including the trail head at the intersection of the shared use trail and the Captain Cook Highway at Ellis Beach.
- Operation of the shared use trail

- Construction of Dark Jungle public camp site
- The operation of Dark Jungle public camp site.
- Formalisation and maintenance of service tracks.

1.4 Assumptions and limitations

This report: has been prepared by GHD for The Department of State Development, Tourism and Innovation and may only be used and relied on by The Department of State Development, Tourism and Innovation for the purpose agreed between GHD and theThe Department of State Development, Tourism and Innovation as set out in section 1.3 of this report.

GHD otherwise disclaims responsibility to any person other than The Department of State Development, Tourism and Innovation arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

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

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

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2. Site Description

2.1 Location

The South Section of Wangetti Trail is located between Wangetti Township and Palm Cove in Far North Queensland. The land parcels that Wangetti South Section intersects are outlined in Table 2-1.

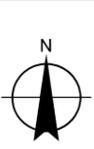
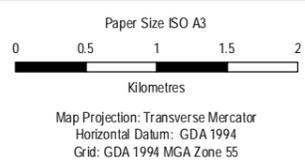
Table 2-1 Wangetti South Section land parcels details

Affected property	Address / Coordinates	Owner Details	Tenure	Locality	Proposed works
Reserves					
31SP129117	Captain Cook Highway, Ellis Beach, South Reserve	State of QLD (Department of Resources (DR))	Reserve	Ellis Beach	Trail
6SP309107	Captain Cook Highway Wangetti	State of QLD (DR)	Reserve	Wangetti	Service track Trail
Lot 39 on SP309107	Captain Cook Highway, Wangetti	State of QLD (DR)	Reserve	Wangetti	Service track
State Land					
2SP309094	Captain Cook Highway Wangetti	State of QLD (DR)	Unallocated state land Proposed to be declared as transferable land under the <i>Aboriginal Land Act 1992</i>	Wangetti	Trail
National Park					
174NPW930	Macalister Range National Park	State of QLD (DR)	National Park	Macalister Range	Trail Service track Dark Jungle
Road Reserves					
Road Reserve	Captain Cook Highway	DTMR	Road Reserve	Palm Cove – Port Douglas	Trail
Leasehold					
13NR5512	Captain Cook Highway Ellis Beach	Lessee – Bellbird Park Developments Pty Ltd	State Leasehold Land Non-competitive lease 9/2568 – Tourism purposes namely tourist accommodation and ancillary facilities	Ellis Beach	Service track

The Wangetti South Section is located within Douglas Shire Council local government area and Cairns Regional Council local government area. The shared use trail within Wangetti South Section extends 29.7 km and is constrained by the Coral Sea to the east and the Macalister Ranges to the west and is almost entirely located within the Macalister Range National Parks and the WTWHA (refer to Figure 2-1 for a locality plan of the trail).



Based on or contains data provided by the State of QLD (DNRME) 2020. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.



DITID
Environment Assessment Stage 2 Wangetti Trail

Wangetti South Section
Project Locality Plan

Project No. 41-32458
Revision No. 5
Date 1/12/2020

FIGURE 2-1

2.2 Existing Environment

The Wangetti Trail is to be developed partly within Macalister Range National Park which consists of rugged, forested range along the far northern coastline of Queensland and forms part of the WTWHA. This area is intersected by a number of waterways including ephemeral waterways which some providing fish passage for protected species. The area contains regional ecosystems supporting threatened and protected species. Given the sensitivity of the environment it is imperative that appropriate environmental management processes are implemented on site to minimise impact to the immediate and surrounding environment.

The project has been assessed and approved under the Wet Tropics Management Plan 1998 (Wet Tropics Permit No: WTMA20001a). Under the 1998 Plan, the project area is located within Zones B and C.

Zone B generally has a high degree of ecological integrity and it is in a natural state but is not necessarily remote from disturbance. Lands in zone B are less than 500 metres from all roads, cableways, power lines, pipelines, towers, mines, quarries and other structure; or, less than 700 metres from clearings; or include an area of up to 150 hectares of undisturbed habitat and have some obvious signs of disturbance in the last 40 years (WTMA, 2019).

Zone C contains disturbances and is generally associated with existing community infrastructure. Zone C includes areas where there are clearings, roads, power lines, pipelines, dams and cableways and also includes quarries, gravel scrapes, paddocks, building or home sites, orchards and plantations, forestry camps and parking areas (WTMA, 2019).

For the Wangetti trail construction to be compliant with the management of these areas, the environmental practices outlined in this document require implementation.

2.3 Key Environmental Issues

2.3.1 Soil and land management

The Wangetti South Section alignment is comprised of coastal floodplains, volcanic mountain ranges and estuarine mudflats. The alignment intersects coastal plains of 5 m – 30 m AHD at Buchan Point before traversing the eastern edges of the Macalister Ranges. The highest point of the alignment is approximately 570 m AHD at Mt Charlie. Largely, the alignment follows the eastern edge of the Macalister Ranges, at a topography of 250 – 300 m AHD.

The location of the trail on the slopes of the Macalister range, has a high probability of erosion and sedimentation. Works are to comply with the Concept Erosion and Sediment Control Plan (refer to Appendix A).

2.3.2 Biodiversity – Fauna

Nine distinct fauna habitat types have been recorded within the Wangetti South survey area during the field surveys completed by GHD in 2019. These include the following:

- *Acacia* woodland
- Disturbed rainforest
- Ephemeral waterways
- Eucalypt woodland on steep rocky slopes
- *Melaleuca* swamp

- Mixed *Melaleuca viridiflora* woodlands on inundated plains
- Open woodland over grasses on undulating plains
- Permanent streams
- Vine forest
- Modified landscapes.

These fauna habitats can support a wide variety of terrestrial and aquatic fauna species. The MNES and MSES fauna species that are known, likely of may occur within the Wangetti South Section are outlined below in Table 2-2.

Table 2-2 MNES and MSES fauna species that are known, likely or may occur within Wangetti South Section

MNES and MSES bird species	MNES and MSES amphibian species	MNES and MSES mammal species	MNES and MSES aquatic species
<p>MNES and MSES bird species that are known, likely or may occur:</p> <ul style="list-style-type: none"> • <i>Casuarus casuarius</i> (Southern cassowary) • Migratory birds (e.g. eastern curlew, great sand plover) • Non-migratory species (e.g. masked owl) 	<p>MNES and MSES amphibian species that are known, likely or may occur in the Wangetti South Section</p> <ul style="list-style-type: none"> • <i>Litoria dayi</i> (Australian lace lid) • <i>Litoria nannotis</i> (Waterfall frog) • <i>Litoria nyakalensis</i> (Mountain mistfrog) • <i>Litoria rheocola</i> (Common mistfrog) • <i>Litoria serrata</i> (Tapping green eyed frog) 	<p>MNES and MSES mammal species that are known, likely or may occur in the Wangetti South Section</p> <ul style="list-style-type: none"> • <i>Dasyurus maculatus gracilis</i> (Spotted-tailed quoll) • <i>Dasyurus hallucatus</i> (Northern quoll) • <i>Dendrolagus lumholtzi</i> (Lumholtz's tree-kangaroo) • <i>Hipposideros semoni</i> (Semon's leaf-nosed bat) • <i>Phascolarctos cinereus</i> (Koala) • <i>Pteropus conspicillatus</i> (Spectacled flying-fox) • <i>Rhinolophus robertsi</i> (Large-eared horseshoe bat) • <i>Saccolaimus saccolaimus nudicluniatus</i> (Bare-rumped sheath-tailed bat) 	<p>MNES and MSES aquatic species that are known, likely or may occur in the Wangetti South Section</p> <ul style="list-style-type: none"> • <i>Stiphodon semoni</i> (Opal cling goby) • <i>Stiphodon rutilarueus</i> (Orange cling goby) • <i>Stiphodon pelewensis</i> (Emerald cling goby) • <i>Stiphodon sarrufus</i> (Birdsong cling goby)

MNES and MSES bird species	MNES and MSES amphibian species	MNES and MSES mammal species	MNES and MSES aquatic species
		<ul style="list-style-type: none"> <i>Xeromys myoides</i> (Water mouse) 	

To minimise impacts to protected fauna species, pre-clearance surveys will be undertaken during the construction phase prior to any vegetation clearing and will involve an appropriately qualified ecologist/botanists. Trail routing will take place along the alignment of least disturbance and trail watercourse crossing points should be sited where there is minimal disturbance to stream banks and riparian vegetation and preferably over exposed bedrock. Manual construction methods will be encouraged over mechanised methods and only existing access roads are to be utilised, with no new access roads constructed.

Of the above mentioned fauna species, two *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed species were considered to 'likely to occur' within Wangetti South Section based on the presence of potentially suitable habitat and previous records and they include the southern cassowary and opal cling goby (GHD, 2020).

The Southern cassowary is listed as endangered under the EPBC Act has the potential to be impacted by the Wangetti trail development by habitat reduction and a possible increase in interactions with people. The impact to the Southern Cassowary has been assessed and details can be found in the Cassowary Management Plan (Appendix B).

Opal cling gobies are listed as critically endangered under the EPBC Act and therefore steps need to be taken to protect their highly favourable habitat located along short, steep coastal streams in the Wet Tropics. Several of these streams will be crossed as part of the shared use trail and management of the sediment and limiting impact to these waterways is required to ensure the gobies habitat is maintained. Eliminating waterway barrier works will reduce the impact on the opal cling goby as waterway passages used by this fish will therefore not be interrupted. The impact to the Opal Cling Goby has been assessed and details can be found in Section 2 of the Wangetti South Preliminary Documentation.

2.3.3 Biodiversity – Flora

No EPBC Act listed flora species, threatened ecological communities and/or Queensland State listed flora species have been confirmed present within the construction allowance corridor during field surveys for Wangetti South Section completed by GHD in 2019 (GHD, 2020). However, the following EPBC listed and Queensland State listed flora species were considered likely to occur within Wangetti South Section based on the presence of potentially suitable habitat and previous records:

- Ant Plant (*Myrmecodia beccarii*) - Vulnerable
- Dwarf butterfly orchid (*Vappodes lithocola*¹) (also known as *Dendrobium lithocola*, and the Queensland Flora Census 2019 groups this species into *Dendrobium biggibum*) – Endangered
- Orange Tamarind (*Toechima pterocarpum*) - Endangered
- Velvet jewel orchid (*Zeuxine polygonoides*²) (also known as *Rhomboda polygonoides*) – Vulnerable
- *Randia audasii* – Likely to occur

- *Rhomboda polygonoides* – Likely to occur

Other MNES and MSES flora species that may occur in the Wangetti South Section are outlined below:

- *Phaius pictus* – May occur
- *Phalaenopsis amabilis* subsp. *rosenstromii* (Native moth orchid) – May occur
- *Polyscias bellendenkerensis* – May occur
- *Archontophoenix myolensis* (Myola palm) – May occur
- *Anoectochilus yatesiae* (Marbled jewel orchid) – May occur
- *Canarium acutifolium* – May occur
- *Dendrobium mirbelianum* (Dark-stemmed antler orchid) – May occur
- *Diplazium cordifolium* – May occur

To minimise impacts to protected flora species, pre-clearance surveys will be undertaken during the construction phase prior to any vegetation clearing and will involve an appropriately qualified ecologist/botanists. Trail routing will take place along the alignment of least disturbance and trail watercourse crossing points should be sited where there is minimal disturbance to stream banks and riparian vegetation and preferably over exposed bedrock. Manual construction methods will be encouraged over mechanised methods and only existing access roads are to be utilised, with no new access roads constructed.

In addition, the Wangetti South Matters of National Environmental Significance flora pre-clearance survey methodology has been developed and outlines the pre-clearance survey methodology to be adopted before starting construction works. It also outlines how protected flora species will be identified and managed as part of the project (refer to Appendix F).

2.3.4 Biosecurity

Invasive plants and pest species considered to be present or have the potential to occur within the Wangetti South Section project area have been identified in the Wangetti South Section Preliminary Weed, Pest and Disease Management Plan which has been developed for Wangetti South Section (refer to Appendix C). In addition, there are three environmental diseases (pathogens) that pose a high risk to the Wangetti South project area

- Myrtle rust (*Puccinia psidii*) – fungal disease affecting plants in the Myrtaceae family. This pathogen is known to be threat to WTWHA (WTMA, 2020).
- Root rot fungus (*Phytophthora* fungus) – kills all plant species rooted in soil. Commonwealth listed 'key threatening process'. This pathogen is known to be threat to WTWHA (WTMA, 2020).
- *Chytridiomycosis* disease – frog disease caused by the chytrid fungus. Commonwealth listed 'key threatening process'. This pathogen is known to be threat to WTWHA (WTMA, 2020) Frog chytrid fungus has been identified as a primary cause of massive mortality of stream-dwelling frogs in the Wet Tropics bioregion (WTMA, 2020).

There are also several Queensland Biosecurity Zones which are mapped over the Wangetti South Section according to the Queensland Government – Business Queensland Maps of Queensland biosecurity zones (2020) and they include the electric ant biosecurity zone, Asian honey bee infested area and Northern banana biosecurity zone.

Weed and pest species and pathogens identified onsite are to be managed in accordance with the WPDMP which is been prepared for the construction and operational phases of the project (refer to

Appendix C). Hygiene procedures and ongoing monitoring to detect incursions are to be carried out to minimise transfer of invasive species.

2.3.5 Waterways

Watercourses are to be protected where practically possible. Given the sensitive nature of the site, it is imperative that that erosion and sediment control measures are to be implemented in accordance with Appendix A.

The trail will intersect a number of waterways which are protected under the *Water Act 2000* and *Fisheries Act 1994* and are shown on the map in Appendix A, As a result, a number of structures over waterways will need to be constructed to provide safe passage for trail users. The exact locations and type of structure proposed at the waterways will be determined by the trail builder and will comprise of the following options:

- Rock armouring
- Boulder crossings
- Low level bridge (single span bridges).

Construction and operational activities that could potentially impact on waterways are outlined in Table 2-3. Environmental controls to reduce impacts to waterways are outlined in the CEMP in Appendix E and CESC in Appendix A.

2.3.6 Cultural heritage

Segments of the Wangetti South Section are considered to have high heritage and cultural heritage values. The Wangetti South Section is also located within the Wet Tropics World Heritage Area, which is recognised as a national heritage place for both natural and Indigenous values. The Wet Tropics rainforests contain an almost complete record of the major stages in the evolution of plant life on earth.

The Wangetti South Section was altered to avoid culturally sensitive areas based on advice from Traditional Owner Rangers (GHD, 2020). The location of the shared use trail, camp site and service tracks have been selected as they are considered to avoid the areas of cultural heritage values based on information collected during discussions with Traditional Owners and collected during cultural heritage surveys (GHD, 2020).

The Yirrganydji People are recognised Traditional Owners for the country on which the Wangetti Trail traverses (Yirrganydji Gurabana Aboriginal Corporation, 2018). Engagement with the Yirrganydji Aboriginal Corporation (YGAC) and their Land and Sea Rangers Corporation was formalised through a memorandum of understanding (MOU) that outlined the project vision, objectives, governance framework, business case activities and responsibilities and commercial compensation (GHD, 2021). This agreement and the working relationship developed with the Yirrganydji People has established a strong relationship of trust and productivity, which has continued throughout the project phases as part of a process to agree and register an Indigenous Land Use Agreement for the Wangetti Trail (GHD, 2021).

To date, the following activities have been undertaken/are in development with the Yirrganydji people relating to the assessment and delivery of the Wangetti Trail Project (GHD, 2021):

- Execution of an MOU with the YGAC to participate in the business case development process including definition of overall aspirations for business opportunities for the trail as a precursor to an Indigenous Land Use Agreement (ILUA) and the engagement of Yirrganydji Land and Sea Rangers to provide cultural heritage advice during ground-truthing activities.
- Development of a statutory structure plan for the Wangetti Land Trust Aboriginal Land Act freehold land to be developed as a trail hub for the Wangetti Trail. Establishment of Traditional

Owner owned and operated auxiliary trail infrastructure in this location is strongly supported by the Project Team and Douglas Shire Council by way of formal Council resolution.

Execution of a Cultural Heritage Agreement protocol and engagement of cultural heritage monitors for the construction of the Mowbray River pedestrian bridge

- Drafting of an ILUA for the Wangetti Trail to be agreed and finalised before works commence in early 2021.

Engagement with the Traditional Owner Groups is ongoing and paramount to the successful delivery of the Wangetti Trail. Traditional Owners will be involved throughout all stages of the project – particularly during the procurement process for the eco-accommodation operator.

2.3.7 Public amenity and health

Sensitive receptors (e.g. existing residences, places of work, schools, agricultural or ecologically significant areas/species that could be impacted) within and surrounding the Project that may be potentially affected by the proposed works associated with Wangetti South Section include:

- Wet Tropics World Heritage Area
- National Parks
- Residential communities within Palm Cove and Wangetti.

The Project is predominantly within an area which has been subjected to very limited disturbance. Wangetti South Section is also characterised by steep terrain, is home to dangerous animals and plants and there is the potential for extreme weather events to occur in the area. All of these matters could have adverse impacts on construction personnel working within Wangetti South Section during the construction phase.

Construction and operational activities that could potentially impact on public amenity are outlined in Table 2-3.

2.4 Key environmental factors

Eight preliminary key environment factors have been identified in the referral for Wangetti South Section and they include:

- Biodiversity – Flora
- Biodiversity – Fauna
- Waterways
- Soil and land management
- Public amenity and health
- Waste management
- Biosecurity
- Cultural heritage.

Table 2-3 presents the eight preliminary key environmental factors relevant to construction and operation, the proposal activities that would affect the factors and the site-specific environmental values, uses and sensitive components that will be affected. Table 2-3 also identifies MNES and MSES that could be potentially impacted by construction and operational activities.

Table 2-3 Key environmental factors relevant to construction and operation

Key environmental factor	Activities that could affect the factor	Applicable MNES and MSES
Biodiversity – Flora	<ul style="list-style-type: none"> • Vegetation clearing - permanent and temporary loss of vegetation and habitat (direct impact) • Construction and operational vehicle movements • Construction and maintenance plant operation • Soil erosion and sediment generated from earthworks • Illegal collection of flora species by construction crew and/or trail users • Introduction and spread of invasive species from material brought into the project area • Damage to flora species by trail users not using designated routes. 	<p>MNES and MSES flora species that are known, likely or may occur in the Wangetti South Section:</p> <ul style="list-style-type: none"> • <i>Archontophoenix myolensis</i> (Myola palm) • <i>Anoetochilus yatesiae</i> (Marbled jewel orchid) • <i>Canarium acutifolium</i> • <i>Dendrobium fellowsii</i> • <i>Dendrobium mirbelianum</i> (Dark-stemmed antler orchid) • <i>Diplazium cordifolium</i> • <i>Diplazium pallidum</i> • <i>Myrmecodia beccarii</i> (Ant plant) • <i>Phaius pictus</i> • <i>Phalaenopsis amabilis</i> subsp. <i>rosenstromii</i> (Native moth orchid) • <i>Polyscias bellendenkerensis</i> • <i>Randia audasii</i> • <i>Rhomboda polygonoides</i> • <i>Toechima pterocarpum</i> (Orange tamarind) • <i>Vappodes lithocola</i> (Dwarf butterfly orchid) (also known as <i>Dendrobium lithocola</i>, and the Queensland Flora Census 2019 groups this species into <i>Dendrobium biggibum</i>) • <i>Vappodes phalaenopsis</i> (Cooktown orchid) (Also known as <i>Dendrobium phalaenopsis</i> and the Queensland Flora Census 2019 groups this species into <i>Dendrobium biggibum</i>) • <i>Zeuxine polygonoides</i> (Velvet jewel orchid) (also known as <i>Rhomboda polygonoides</i>)
Biodiversity – Fauna	<ul style="list-style-type: none"> • Vegetation clearance resulting in injury and mortality to the local fauna • Vegetation clearance has the potential to impact on breeding areas for local fauna • Construction and operational vehicle movements in the project area, outside of nominated areas 	<p>MNES and MSES bird species that are known, likely or may occur:</p> <ul style="list-style-type: none"> • <i>Casuaris casuaris</i> (Southern cassowary) • Migratory birds (e.g. eastern curlew, great sand plover) • Non-migratory species (e.g. masked owl)

Key environmental factor	Activities that could affect the factor	Applicable MNES and MSES
	<ul style="list-style-type: none"> • Soil erosion and sediment generated from earthworks • Storage and management of waste from construction crew • Injury and mortality of wildlife resulting from direct collision with mountain bike riders • Illegal taking of wildlife • Disturbance of wildlife behaviour by increased noise from hikers and mountain bike riders • Introduction and spread of invasive species by the movement of hikers, cyclists and maintenance vehicles • Barrier effects and reduced movement to wildlife. 	<p>MNES and MSES amphibian species that are known, likely or may occur in the Wangetti South Section</p> <ul style="list-style-type: none"> • <i>Litoria dayi</i> (Australian lace lid) • <i>Litoria nannotis</i> (Waterfall frog) • <i>Litoria nyakalensis</i> (Mountain mistfrog) • <i>Litoria rheocola</i> (Common mistfrog) • <i>Litoria serrata</i> (Tapping green eyed frog) <p>MNES and MSES mammal species that are known, likely or may occur in the Wangetti South Section</p> <ul style="list-style-type: none"> • <i>Dasyurus maculatus gracilis</i> (Spotted-tailed quoll) • <i>Dasyurus hallucatus</i> (Northern quoll) • <i>Dendrolagus lumholtzi</i> (Lumholtz's tree-kangaroo) • <i>Hipposideros semoni</i> (Semon's leaf-nosed bat) • <i>Phascolarctos cinereus</i> (Koala) • <i>Pteropus conspicillatus</i> (Spectacled flying-fox) • <i>Rhinolophus robertsi</i> (Large-eared horseshoe bat) • <i>Saccolaimus saccolaimus nudicluniatus</i> (Bare-rumped sheath-tailed bat) • <i>Xeromys myoides</i> (Water mouse) <p>MNES and MSES aquatic species that are known, likely or may occur in the Wangetti South Section</p> <ul style="list-style-type: none"> • <i>Stiphodon semoni</i> (Opal cling goby) • <i>Stiphodon rutilarueus</i> (Orange cling goby) • <i>Stiphodon pelewensis</i> (Emerald cling goby) • <i>Stiphodon surrufus</i> (Birdsong cling goby)
Waterways	<ul style="list-style-type: none"> • Earthworks - Soil erosion and sediment • Installation of waterway crossings 	WTWHA

Key environmental factor	Activities that could affect the factor	Applicable MNES and MSES
	<ul style="list-style-type: none"> • Earthworks and other construction activities have the potential to cause indirect degradation of aquatic habitats, particularly to opal cling goby habitat • Use of construction machinery in and around aquatic habitat • The shared use trail has potential to contribute to sedimentation to the environment. The movement of hikers and mountain bike riders have the potential to cause localised habitat degradation through exposure to run-off and sedimentation, and trail widening to avoid muddy or puddled areas • Disturbance to surface waterways by hikers and cyclists the shared use trail and the operation of the public camp have the potential to cause indirect degradation of aquatic habitats. 	<p>Amphibian and aquatic species as outlined in Biodiversity – Fauna row above.</p> <p>Waterways protected under the <i>Fisheries Act 1994</i> and <i>Water Act 2000</i> and coastal management districts protected under the <i>Coastal Protection and Management Act 1995</i>.</p>
Soil and land management	<ul style="list-style-type: none"> • Earthworks - Soil erosion and sediment • Soil compaction as a result of construction equipment moving in the area • Construction and operational equipment causing displacement of soils and/or rocks • Trail users causing displacement of soils and/or rocks by not following designated routes. • Chemicals and fuel used on-site during construction/operational phase impacting on the natural environment. 	<p>Wet Tropics World Heritage Area As per amphibian and aquatic species in Biodiversity – Fauna Waterways protected under the <i>Fisheries Act 1994</i> and <i>Water Act 2000</i> and coastal management districts protected under the <i>Coastal Protection and Management Act 1995</i>.</p>
Public amenity and heath	<ul style="list-style-type: none"> • Vegetation clearance • Construction/operational vehicle movements. • Construction plant operation • Soil erosion and earthworks • Storage and management of waste from construction crew • Storage and management of waste from campsite. • Construction activities may be visible to varying degrees by 	<p>Wet Tropics World and National Heritage Area</p> <p>Waterways protected under the <i>Fisheries Act 1994</i> and <i>Water Act 2000</i></p> <p>Coastal management districts protected under the <i>Coastal Protection and Management Act 1995</i>.</p>

Key environmental factor	Activities that could affect the factor	Applicable MNES and MSES
	<p>people living, working, and travelling through the surrounding areas</p> <ul style="list-style-type: none"> • Noise and vibration generated by trail users using the trail and impacting on sensitive receptors including wildlife • Noise and vibration generated by construction plant, vehicles and equipment impacting on sensitive receptors including wildlife • Noise generated by members of the public using vehicles illegally within the project area • Potential air and dust impacts to sensitive receptors because of construction activities, attributable to exhaust emissions and fugitive dust • During construction, construction activities have the potential to increase bushfire hazard. The use of construction machinery within the project area have the potential to ignite fires and include, but not limited to mini excavators; chainsaws, compactors, general construction tools and equipment such as drills, saws, sanders, etc. • During operation trail users illegally starting fires • Bushfires occurring within the project area impacting threatened flora and fauna species • Steep terrain, remote location, the presence of dangerous animals and plants and potential of extreme weather events are associated with Wangetti South Section and could adversely impact on construction personnel and/or trail users in the following ways: <ul style="list-style-type: none"> ○ Bites from snakes, spiders, and insects ○ Allergic reactions to plant species along the trail ○ Heat/cold exposure, falls and sprains, etc. 	<p>MNES and MSES species as outlined in the Biodiversity – Fauna row above.</p> <p>Heritage Area National Heritage Site</p> <p>Protected Areas - estates protected under the <i>Nature Conservation Act 1992</i> (NC Act).</p>

Key environmental factor	Activities that could affect the factor	Applicable MNES and MSES
	<ul style="list-style-type: none"> ○ Another hazard is the operation of a helicopter to transport construction material to the project area ○ Potential hostile intersection with fauna species ○ Extreme weather events requiring evacuation ● Disruption to traffic along Captain Cook Highway from construction vehicles ● Interference with wildlife by construction vehicles/operational vehicles ● Impacts to sensitive environmental areas because of vehicles not using designated service tracks and/or members of the public using vehicles illegally within the project area ● Congestion of vehicles at existing parking areas. 	
Biosecurity	<ul style="list-style-type: none"> ● Introduction or spread of weeds/pests/pathogens from construction/ operation activities or materials within Wangetti South Section ● Introduction or spread of weeds/pests/pathogens from trail user within Wangetti South Section. 	<p>MNES and MSES species as outlined in the Biodiversity – Fauna and Flora rows above.</p> <p>Wet Tropics World and National Heritage Area.</p> <p>Protected Areas - estates protected under the NC Act.</p>
Waste management	<ul style="list-style-type: none"> ● Clearing of vegetation and cut and fill activities will be required to allow for the construction of the trail, camp sites and access tracks resulting in vegetation waste and excess spoil ● Construction camps will produce general waste ● Inappropriate waste management by construction personnel ● Inappropriate waste management by operational staff ● Generation of waste from trail users. 	<p>MNES and MSES species as outlined in the Biodiversity – Fauna and Flora rows above.</p> <p>Wet Tropics World and National Heritage Area.</p> <p>Protected Areas - estates protected under the NC Act.</p> <p>Waterways protected under the <i>Fisheries Act 1994</i> and <i>Water Act 2000</i></p>
Cultural heritage	<ul style="list-style-type: none"> ● Potential to find unrecorded cultural heritage and to disturb identified cultural heritage 	<p>Wet Tropics World and National Heritage Area</p> <p>Protected Areas - estates protected under the NC Act.</p>

Key environmental factor	Activities that could affect the factor	Applicable MNES and MSES
	<ul style="list-style-type: none"> Additional access to sensitive and restricts sites that may impact on Traditional Owner cultural values. 	

3. Legislative Requirements

Wangetti South Section is to comply with all legislative requirements with respect to Commonwealth, State (Queensland) and Local legislation and a summary of the statutory approvals associated with the project is outlined in Table 3-1 below.

Table 3-1 Statutory approvals associated with Wangetti South

Legislation and Approval Type	Relevance to the project area
<p><i>Environment Protection and Biodiversity Conservation Act 1999</i> DAWE Referral</p>	<p>Wangetti South is considered to involve undertaking an action which has, will have, or is likely to have, an impact on a MNES. Therefore, project has been referred and is a controlled action that requires approval (reference EPBC 2020/8722).</p>
<p>Wet Tropics Management Plan 1998 <i>Wet Tropics Permit</i> Wet Tropics Management Authority (WTMA)</p>	<p>Wangetti South Section is located within the Wet Tropics World Heritage Area. The project has been approved (Wet Tropics Permit No: WTMA20001a) and a permit issued under Part 4, Division 1, Section 45 of the Wet Tropics Management Plan 1998 (<i>Wet Tropics World Heritage Protection Management Act 1993</i>) to allow for the proposed works to occur within the Wet Tropics Management Zone.</p>
<p><i>Nature Conservation Act 1992</i> Authority required to construct trail and public camping areas under s34 of the NC Act.</p>	<p>Subject to s34 of the NC Act, a lease, agreement, license, permit or other authority over, or in relation to land in a protected area may be granted if the activity is consistent with the management principles for the areal and, if a management plan has been approved for the area, the management plan. The grant of an authority will be considered by the Chief Executive of the Department of Environment and Science (DES) for the construction of Wangetti Trail and public camping areas in the protected area estate.</p>
<p><i>Nature Conservation Act 1992</i> Protected plant clearing permit</p>	<p>Where the alignment intersects a flora survey trigger area, a protected plant clearing permit or exemption notice will be required.</p>
<p>Species management program (SMP) under the <i>Nature Conservation Act 1992</i></p>	<p>Given the number of protected fauna species located within the project area, a SMP may be required to allow for tampering in breeding areas. Breeding habitat is to be avoided for endangered, vulnerable species.</p>
<p><i>Native Title Act 1993</i> ILUA or notification procedures</p>	<p>TDPD has been conducting meaningful engagement with Traditional Owners who have a native title claim or assert a native title interest in relation to trail area as outlined in Section 1.7 to address native title requirements for the project. ILUAs will be negotiated between native title parties and the State accordingly.</p>

Legislation and Approval Type	Relevance to the project area
<p>Under the <i>Aboriginal Cultural Heritage Act 2003 (ACH Act)</i> a Cultural Heritage Management Agreement (CHMA) or similar may need to be established with the relevant Aboriginal parties</p>	<p>TDPD has been conducting meaningful engagement with Traditional Owners who have interests in relation to trail area to address cultural heritage requirements under the ACH Act for the project.</p> <p>Archaeological reporting, including a Cultural Heritage Management Plan between the proponent and the Traditional Owners outlining how the project will be managed to avoid or minimise harm to Aboriginal cultural heritage (to the extent that harm cannot reasonably be avoided) will be negotiated before works commence</p> <p>The Department of Aboriginal and Torres Strait Islander Partnerships' (DATSIP) Duty of Care Guidelines are required to be followed to assist in conducting due diligence.</p>
<p>Under the <i>Planning Act 2016</i> and Planning Regulation 2017 a Material Change of Use development permit assessable under the Douglas Shire Council planning scheme and a Material Change of Use development permit assessable under the Cairns Regional Council Planning Scheme</p>	<p>A material change of use development permit application will be required for Wangetti South to establish the use within the project area.</p> <p>Pre-lodgement meetings have been undertaken with the former Department of State Development, Manufacturing, Infrastructure and Planning (referred to now as Department of State Development, Infrastructure, Local Government and Planning (DSDILGP), Douglas Shire Council, Cairns Regional Council, DES, former Department of Natural Resources Energy and Mines (referred now as DR), Department of Agriculture and Fisheries (DAF) and Department of Transport and Main Roads (DTMR).</p>
<p>Under the Planning Regulation 2017 and <i>Vegetation Management Act 1999 (VM Act)</i> an Operational works development approval for clearing of native vegetation</p>	<p>Wangetti South does not trigger operational work involving clearing native vegetation under Schedule 10, Part 3, Division 4, Table 1, Item 1 under the <i>Planning Regulation 2017</i>, as the proposed works is considered to meet the definition of government supported transport infrastructure and is therefore exempt from the clearing of remnant Category B, Category C and Category R vegetation.</p>
<p>Under the Planning Regulation 2017 and <i>Fisheries Act 1994</i> Development Permit for operational works for constructing/raising waterway barrier works Compliance with Accepted development requirements for operational work that is constructing or raising waterway barrier works and</p>	<p>Boulder rock crossing will trigger a development permit for operational works waterway barrier works where the work does not comply with DAF's accepted development requirements.</p> <p>Bed level crossings associated with the project are considered to meet the accepted development requirements for operational work that is constructing or raising waterway barrier works' and riverine protection permit exemption requirements WSS/2013/726.</p>

Legislation and Approval Type	Relevance to the project area
<p><i>Water Act 2000</i> Riverine Protection Permit Exemption Requirements.</p>	
<p>Under the Planning Regulation and <i>Coastal Protection and Management Act 1995</i>. Development permit for operational works for interfering with quarry material on state coastal land above the high-water mark within a Coastal Management District</p>	<p>Parts of the project area are proposed within mapped coastal management district and therefore the proposed works would trigger a development permit for operational works for interfering with quarry material on state coastal land above the high-water mark within the coastal management district under Schedule 10 of the <i>Planning Regulation 2017</i>.</p>
<p>Under the <i>Land Act 1994</i> land owners consent for works on State Land</p>	<p>Land owner's consent is required from DR for work on state land to support material change of use development application.</p>
<p>Riverine protection permit (RPP) under the <i>Water Act 2000</i></p>	<p>There are a number of DR mapped watercourses along the proposed alignment. Bed level crossings are considered to meet the RPP exemption requirements WSS/2013/726.</p> <p>TDPD is an entity under schedule 2 of the RPP Exemption Requirements and therefore can follow the RPP exemption requirements WSS/2013/726 for any works proposed in a watercourse.</p> <p>Proposed works will be required to work within the vegetation clearing limit and excavation and placement of fill limit requirements.</p> <p>Where works result in the clearing of less than 0.5 ha of least concern regional ecosystem in a category B, C, R or X or carried out under an accepted development vegetation clearing code (other than if the vegetation is in a category A area), then the exemption requirements apply.</p> <p>Where works result in the excavation of 500 cubic metres or less, then the exemption requirements apply.</p> <p>Where works result in the placement of less than 150 cubic metres of fill, then the exemption requirements apply.</p>
<p>Road corridor permit under the <i>Transport Infrastructure Act 1994</i> (TI Act)</p>	<p>Part of the project area is located within State controlled road reserve namely Captain Cook Highway which is managed by DTMR. Works within a state-controlled road reserve triggers a road corridor permit from DTMR.</p>
<p>Under the <i>Land Act 1994</i> Permanent closure or short-term occupation within road reserves</p>	<p>Permanent road closures or short-term occupation and construction within road reserves (excluding state-controlled roads) will be required during the construction phase of the project.</p>

Legislation and Approval Type	Relevance to the project area
General Biosecurity Obligation (GBO) under the <i>Biosecurity Act 2014</i>	During the construction and operation phase of the project, activities are to be undertaken in accordance with the GBOs whereby all reasonable and practical measures are to be undertaken to prevent or minimise biosecurity risks. The Act identifies seven categories of restricted matters. Where activities are proposed contrary to the restriction for each category under the Act, a Restricted Matter Permit is required.
General Environmental Duty under the <i>Environmental Protection Act 1994</i> (EP Act)	Under the provisions of the EP Act, all persons, whether undertaking an activity authorised under the EP Act, are required to comply with the General Environmental Duty. The duty requires that ‘A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm.’ This is applicable to all phases of the project.
Environmental offset requirements under the <i>Environmental Offsets Act 2014</i> <i>Commonwealth offsets policy</i> (DSEWPC, 2012)	DES has advised that state environmental offsets will be triggered for the project which will be administered under s34 and s35 of the NC Act. EPBC Act offsets are proposed in relation to impacts on the southern cassowary.

3.1 Wet Tropics Management Plan 1998

The project has been approved (Wet Tropics Permit No: WTMA20001a) and a permit issued under Part 4, Division 1, Section 45 of the Wet Tropics Management Plan 1998 (3 July 2017) (*Wet Tropics World Heritage Protection Management Act 1993*) to allow for the proposed works to occur within the Wet Tropics Management Zone. While the project was assessed in accordance with the 1998 plan, the project is considered to comply with the intent of the Wet Tropics Management Plan 2020.

An assessment has been undertaken against the provisions of the Wet Tropics Management Plan 1998 and is presented in Table 3-2.

Table 3-2 Assessment against the provisions of the Wet Tropics Management Plan 1998 (3 July 2017 version)

Wet Tropics Management Plan 1998 (3 July 2017 version)	Response
<p>Zone B – Zone B is comprised of land that is mostly of high integrity but not necessarily remote from disturbance.</p> <p>It is intended that, in Zone B, land be undergoing recovery or rehabilitation towards its natural state or becoming remote from disturbance by activities associated with modern</p>	<p>The majority of the project is located within Zone B under the Wet Tropics Management Plan 1998.</p> <p>The proposed trail is considered to meet the intent of Zone B by providing opportunities to connect with nature and to be surrounded by nature along the trail. The trail will allow for winding around natural obstacles and integrating within the natural environment. Vegetation disruption, including canopy cover, is minimised.</p>

Wet Tropics Management Plan 1998 (3 July 2017 version)	Response
<p>technological society; and a visitor may expect opportunities for solitude in a natural area requiring a degree of self-reliance; and management presence be limited mainly to activities required for the recovery or rehabilitation of the area.</p>	<p>The Wangetti South Section has been designed to minimise built structures like bridges, boardwalks and viewing platforms. These built structures pose a number of challenges:</p> <ul style="list-style-type: none"> • They are normally constructed from imported materials and can be intrusive in the natural environment • They can burn during bushfires or prescribed burns
<p>The management purpose of Zone B is, to the greatest possible extent—</p> <p>a. To protect and enhance the integrity of land in the zone</p> <p>b. If the land is disturbed—</p> <p>(i) To restore land in the zone to its natural state, as opportunities arise</p> <p>(ii) To include the land in zone A once it is sufficiently recovered or rehabilitated.</p>	<ul style="list-style-type: none"> • They can be difficult to construct in remote areas, due to the challenges of importing the materials • They increase the maintenance burden. <p>Where built structures are required, the design and finish will prioritise the use of local timbers and other materials that will age gracefully with time. Above all, the materials must be durable enough to withstand the harsh tropical climate and natural environment. Any built structures must be designed and engineered to be fit-for-purpose, to have minimal impact to the surrounding environment, to have minimal maintenance requirements and will need to take a minimalistic approach to materials given the remote nature of the trail, resulting in a minimal impact on the scenic beauty of the Wet tropics.</p>
<p>Zone C – Zone C is comprised of land on which, or adjacent to which, there is disturbance associated with community services infrastructure.</p> <p>It is intended that, in Zone C—</p> <p>c. Land be mostly natural, but with some disturbance associated with community services infrastructure (community services infrastructure means infrastructure for community services such as, for example, transport services, electricity supply, water supply and telecommunications services), other community facilities and visitor facilities</p> <p>d. A visitor may expect various low-key opportunities for nature appreciation and social interaction in a natural setting, but with some</p>	<p>Where the trail is located within Zone C land, it is considered to meet the intent of Zone C areas, being, land be mostly natural, but with some disturbance associated with community services infrastructure.</p> <p>The Wangetti South Section has been designed to minimise built structures like bridges, boardwalks and viewing platforms. These built structures pose a number of challenges:</p> <ul style="list-style-type: none"> • They are normally constructed from imported materials and can be intrusive in the natural environment • They can burn during bushfires or prescribed burns • They can be difficult to construct in remote areas, due to the challenges of importing the materials • They increase the maintenance burden. <p>Where built structures are required, the design and finish will prioritise the use of local timbers and other materials that will age gracefully with time. Above all, the materials must be durable enough to withstand the harsh tropical climate and natural environment. Any built structures must be designed and engineered to be fit-for-purpose, to have minimal impact to the surrounding environment, to have minimal maintenance requirements and will need to take a</p>

Wet Tropics Management Plan 1998 (3 July 2017 version)	Response
<p>disturbance by activities associated with modern technological society</p> <p>e. Management presence may be obvious.</p>	<p>minimalistic approach to materials given the remote nature of the trail, resulting in a minimal impact on the scenic beauty of the Wet tropics.</p>
<p>The management purpose of Zone C is—</p> <p>f. To accommodate community services infrastructure, other community facilities and visitor facilities; but (b) to the greatest possible extent—</p> <p>(i) To ensure any adverse impact of activities carried out in the zone on the area’s integrity is minimal and acceptable under this plan</p> <p>(ii) To otherwise protect and enhance the integrity of land in the zone.</p>	

3.2 Wet Tropics Strategic Plan 2020 – 2030

The Wet Tropics Strategic Plan 2020 - 2030 provides a 10-year policy framework to guide decision-making under the *Wet Tropics World Heritage Protection and Management Act 1993*. The primary purpose of the Wet Tropics Strategic Plan 2020 - 2030 is to enable the identification, protection, and conservation of the Wet Tropics for future generations. It states the desired outcomes that will be delivered and outlines the actions that will achieve this. An assessment has been undertaken against the provisions of the Wet Tropics Strategic Plan 2020–2030 with respect to Wangetti South Section and is outlined in Table 3-3.

Table 3-3 Assessment against the provisions of the Wet Tropics Strategic Plan 2020 – 2030

Wet Tropics Strategic Plan 2020 – 2030	Response
<p>1. Climate change and other threats</p> <p>Respond to the impacts of climate change and priority cross-tenure threats to the area</p>	<p>With respect to the production of greenhouse gases as a result of machinery use, selection of machinery is to be fit-for-purpose and low emission, wherever possible.</p> <p>Construction mitigation measures will be required to be incorporated into the contractor’s CEMP. The contractor is also required to comply with the general environmental duty under the EP Act and Environmental Protection (Air) Policy 2008, as well as appropriate provisions under the contract documentation.</p>
<p>2. Support Rainforest Aboriginal Peoples</p>	<p>During the development of the trail, cultural heritage representatives were engaged to provide advice regarding the</p>

Wet Tropics Strategic Plan 2020 – 2030	Response
<p>Promote and incorporate the rights, interests and aspirations of Rainforest Aboriginal Peoples in the management of the area.</p>	<p>significant Aboriginal areas, significant Aboriginal objects and or evidence, of archaeological or historic significance along the trail.</p> <p>As part of the Project, TDPD has been engaging with Traditional Owners regarding the proposed works and to avoid impacts on cultural heritage values.</p>
<p>3. Involve the community</p> <p>Optimise community participation and connection with the area through innovative interpretation, with a focus on education, volunteering and social inclusion.</p>	<p>The Wangetti South Section experience will be uniquely Australian, emphasising the culture, history and way of life of the Traditional Owners, the Yirrganydji people. It will encourage a sense of exploration and a spirit of adventure. It will foster an appreciation of the natural environment and the diversity of flora and fauna within it.</p> <p>The Project will provide economic, cultural and educational benefits to the community, as summarised below.</p> <p><i>Economic</i></p>
<p>4. World-class tourism and recreation</p> <p>Enhance the World Heritage presentation and support opportunities for natural and cultural tourism and recreation</p>	<p>Wangetti South Section has the potential to diversify the tourism product offering in North Queensland, involve Traditional Owners and increase jobs by utilising Queensland’s natural assets. The construction phase of the Project will provide an opportunity for the creation of local jobs and employment through the sourcing of material and equipment or through manual labour, while the operational phase of the Project will increase visitors to the area, supporting the local economies of Cairns, Wangetti and Port Douglas.</p> <p>The Wangetti South Section will provide access to a World Heritage listed assets –the WTWHA, which will create value for money experiences for tourists and provide opportunities for tourism operators to extend their offerings and capture markets that are seeking access to unique nature-based experiences (PWC, 2018).</p> <p><i>Cultural and spiritual</i></p> <p>The Wangetti South Section supports a healthy wellbeing and lifestyle by encouraging the physical, mental, and spiritual activity of participants. Contact with nature can enhance spiritual health, which underpins all other aspects of health (PWC, 2018).</p> <p><i>Educational</i></p> <p>The Wangetti South Section will create several educational opportunities, including the community, schools and universities to increase their knowledge and understanding around wildlife and conservation in WTWHA, with the opportunity to develop education programs to help teach and upskill students (PWC, 2018).</p>
<p>5. Minimise impacts</p> <p>Manage activities that may have been an impact on the area appropriately</p>	<p>Wangetti South Section has received a WTMA permit and therefore will be undertaken in accordance with Strategy 5 of the Wet Tropics Strategic Plan 2020 - 2030.</p>

Wet Tropics Strategic Plan 2020 – 2030	Response
through permit and zoning system.	

4. Roles and Responsibilities

To achieve the overall objective of sound environmental management throughout construction and operation of Wangetti South Section, with the least possible impact on the environment, a clear implementation and management structure is required.

The following section provides an overview of the minimum implementation structure for the project relating to environmental responsibilities. Specific roles and responsibilities shall be included in duty statements.

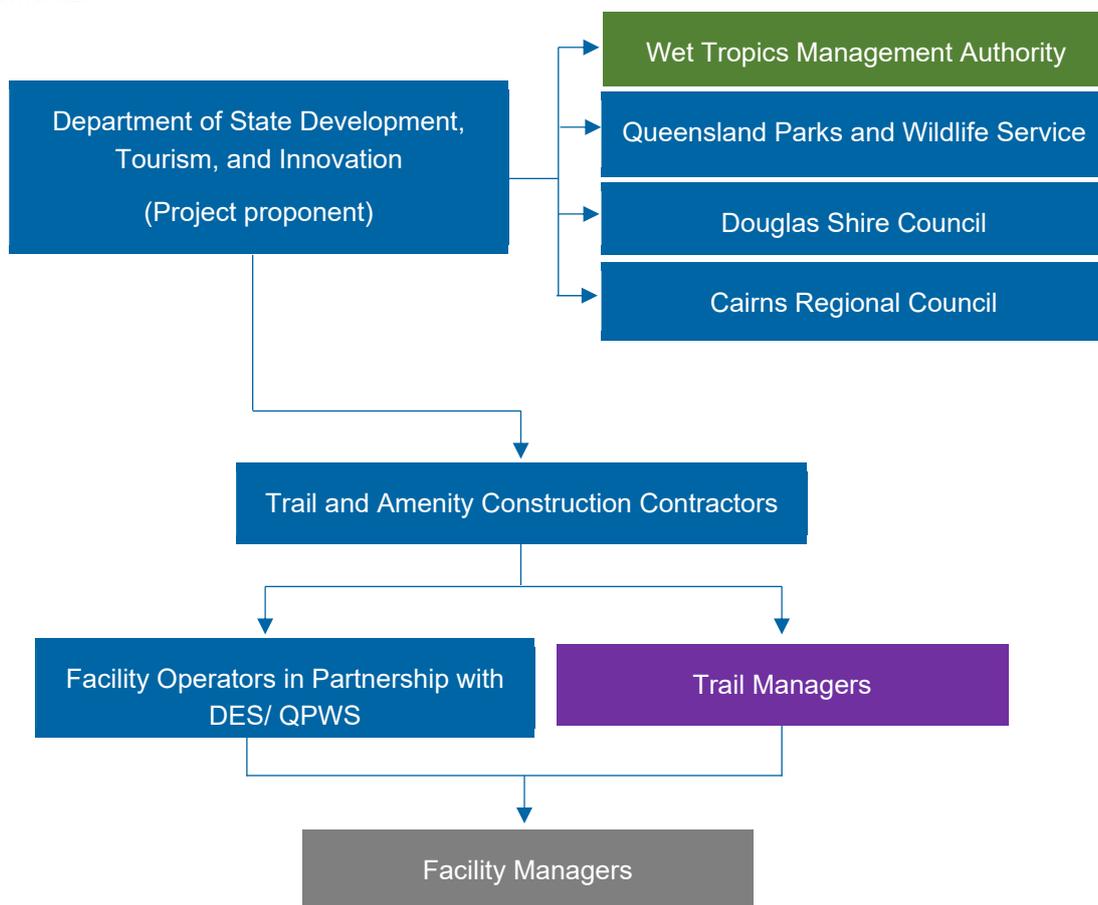


Figure 4-1 Project organisation chart

4.1.1 Site responsibilities

4.1.1.1 All personnel

All personnel associated with the planning, design, construction and operation of the trail are responsible for ensuring that they comply with this EMP, the General Environmental Duty (GED) and Duty to Notify in accordance with the EP Act (as detailed below).

General Environmental Duty

Section 319 of the EP Act states that every person has a GED. This GED requires that a person must not carry out an activity that causes or is likely to cause environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm. In deciding measures to be undertaken to fulfil the GED the following must be considered:

- The nature of the harm or potential harm
- The sensitivity of the receiving environment

- The current state of technical knowledge for the activity
- The likelihood of successful application of the different measures that might be taken
- The financial implications of the different measures as they would relate to the type of activity.

Compliance with the GED is a defence to offences related to causing unlawful environmental harm. If defendants can show that the harm happened while a lawful activity apart from the EP Act was being carried out and they fulfilled their GED, then they cannot be found guilty of causing unlawful environmental harm.

Duty to Notify

Section 320 of the EP Act requires that on becoming aware of serious or material environmental harm being caused by an activity that they are involved in, a person has a duty to report that harm, unless the harm is authorised by the Administering Authority (i.e. is undertaken in accordance with an approval or condition of a permit/licence). This is the duty to notify environmental harm. Failure to fulfil this duty is an offence and can lead to prosecution.

4.1.1.2 Department of State Development, Tourism and Innovation

Responsibilities of DSDTI as project proponent are as follows:

- Ensuring sufficient resources are available to implement EMP
- Ensure that all relevant licenses/permits/approvals are in place prior to any works being undertaken (if required)
- Ensure that key personnel are familiar with the EMP and are aware of their environmental responsibilities
- Ensure that all personnel operate in accordance with the EMP, statutory approvals and legislative requirements
- Ensure that the EMP is updated with conditions of approvals, permits and licences
- Communicating with all role players in the interests of a co-ordinated effort to protect the environment
- Ensure all preconstruction activities such as preclearance surveys are complete prior to construction (clearing commencing)
- Monitor and review (where required) environmental performance during construction of the project.

4.1.1.3 Construction contractor and trail builder

Contractor responsibilities are as follows:

- Implementation of the CEMP
- Implement the Weed, Pest and Disease Management Plan during construction (as per procedures outlined in Appendix E)
- Implementation of the Erosion and Sediment Control Plan during construction (ESCP)
- Implementation of the rehabilitation plan
- Implementation of the Pre-clearance Survey Methodology
- Implementation of the Cassowary Management Plan.

4.1.1.4 Trail Manager

Trail Manager responsibilities are as follows:

- Trail maintenance
- Repairs to damaged infrastructure (bridges, watercourse crossings, etc.) following adverse weather events
- Litter control along the trail
- Weed and pest management along the trail in the operation phase
- Erosion and sediment control during the operation phase.

4.1.1.5 Facility Operator in Partnership with DES/ QPWS/Local councils

Facility operators' responsibilities are as follows:

- Management of camp site facilities
- Management of trail head facilities
- Management of service tracks
- Ensure necessary guidance and advice is provided to all personnel with regard to environmental management requirements
- Ensure staff are appropriately qualified and trained regarding the requirements and responsibilities of the EMP.

5. Project Phases

5.1 Planning and Design Phase

Upon appointment of a contractor onsite they will be responsible for the Planning and Design Phase. This phase includes pre-clearance surveys, trail routing but does not include site clearance.

In keeping with the low impact, ecofriendly, ecotourism nature of the development activity the following principles have been considered during the planning and design phase of the project:

- Minimal vegetation clearance is to be encouraged across the entire development footprint
- Pre-clearance surveys are to be undertaken prior to any vegetation clearing
- The construction contractor's appropriately qualified person (ecologist/botanists) to undertake the preclearance survey and fauna spotter catcher activities
- Trail routing must take place along the alignment of least disturbance
- Trail watercourse crossing points should be sited where there is minimal disturbance to stream banks and riparian vegetation and preferably over exposed bedrock
- Manual construction methods are to be encouraged over mechanised methods
- Only existing access roads are to be utilised, with no new access roads constructed
- Where feasible, amenities are to be designed with energy efficiency measures such as solar lighting, natural cooling, rainwater harvesting, etc.
- The use of flood lighting will be avoided
- An emphasis should be given to the use of locally available building materials, recycled material
- Colour tones matching the surrounding natural environment should be utilised on new infrastructure (eco-accommodation) to limit visual impacts
- Informative signage will be established to provide education around the heritage values of the WHA and encourage minimal impact behaviours from visitors.

5.2 Construction Phase

The Construction Phase includes all activities from site establishment by a contractor, site clearance, to practical completion of all built facilities and activities and typically ends when the final payment certificate has been processed.

The general construction methodology to be adopted by the contractor during the construction phase is discussed in Wangetti Trail Construction Methodology Manual April 2020 in Appendix G.

A detailed CEMP has been developed for Wangetti South Section and is provided in Appendix E. The contractor will be required to update and amend the CEMP based on adopted construction approaches and the outcomes of approvals and permits associated with Wangetti South Section.

5.2.1 Access arrangements

Access to the shared use trail can be achieved through a number of different options, depending on the location.

During the construction phase the project area can be accessed via the existing service tracks that connect to the Captain Cook Highway, as nominated in the Wangetti Trail Construction Methodology Manual April 2020 and shown in Appendix G. The service tracks will be closed to the public at all times during construction. Access will be blocked by regulatory signage will be provided. It is the contractor's responsibility to ensure the day-to-day maintenance of these barriers.

During the operational phase the project area operational staff can access via the service tracks that connect to the Captain Cook Highway, as shown in Appendix D. The service tracks will be closed to the public at all times. Access will be blocked by gates and signage will be provided.

Trail users including hikers and cyclists can access the shared use trail via the trail head at Ellis Beach.

5.3 Operation Phase

The operational phase commences once the project area has been handed over by the contractor to the proponent. It should be noted that should there be further construction activities taking place, post the construction phase, then the specifications of the construction phase will still apply.

During the operational phase, the shared use trail, service tracks and public camping node will be managed in accordance with the Queensland Parks and Wildlife Service (QPWS) Asset and Infrastructure Management Business Rules (AIM business rules), QPWS operational policies, procedural guides, guidelines, information sheets, technical manuals and checklists. These documents set out standards that Wangetti South Section will need to comply with and provide a structured approach to ensure appropriate environmental management measures and controls are implemented as part of the project.

The anticipated activities associated with the operational phase include:

- Shared use trail and Dark Jungle used by cyclists and hikers
- Trail head will be open to all, no bookings required
- Maintenance of the shared use trail including the trail head and associated infrastructure by maintenance staff
- Maintenance of Dark Jungle by maintenance staff
- Maintenance of service tracks by maintenance staff.

6. Training

6.1 Training, awareness and competence

All personnel involved in the construction and operational phases shall be required to attend a compulsory induction before commencing any work on site. This education requirement will be the responsibility of the contractor. The environmental component of the induction shall include (but not be limited to) the following items:

- Guidance on the significance and sensitivity of environmental features along the Wangetti Trail
- Individual's and organisation's environmental obligations under relevant environmental legislation
- The potential environmental impacts of construction (where relevant)
- Controls and procedures to prevent impacts
- All staff shall be made aware of their GED and Duty to Notify responsibilities as per the EP Act and the implications of failing to fulfil these duties
- All staff shall be made aware of their environmental responsibilities under the CEMP and EMP in relation to implementing mitigation measures, reporting environmental incidents and complaints and implementing corrective actions
- All staff shall be made aware of their environmental responsibilities under the CEMP and EMP in relation to contaminated land, including identification of potentially contaminated land and procedures for working with potentially contaminated land
- All staff shall be given instructions on environmental emergency response procedures (i.e. firefighting, snake bite, spill kit locations and usage).

The environmental induction training should be developed prior to construction commencing and operational activities occurring.

6.1.1 Training register

A register of all environmental training delivered during the course of the construction and operation phases of the Project, (including inductions and toolbox talks), will be maintained for the duration specified by any environmental approvals. The register will be maintained to record training attendance and currency of training for each staff, contractor and visitor.

7. Monitoring and environmental inspections

7.1 Construction phase

The contractor will be required to develop an environment monitoring plan and schedule to be approved by the proponent for the construction phase of Wangetti South Section and to include the monitoring requirements as outlined in the EMP, CEMP, TMP, CESSCP, WPDMP and CMP.

7.2 Operational phase

The contractor will be required to develop an environment monitoring plan and schedule to be approved by TDPD for the operational phase of Wangetti South Section. Monitoring plan and schedule to consider the following environmental matters:

- Biodiversity (fauna)
- Biodiversity (flora)
- Biosecurity
- Soil and land management:
 - erosion and sediment control; and
 - chemical and fuel management)
- Public amenity and health:
 - bushfire
 - noise and vibration
 - air quality
 - hazards, health, safety and
 - roads and traffic
- Cultural heritage
- Water management
- Waste management.

It is the responsibility of TDPD to continually monitor the performance of the Contractor in accordance with the specifications contained in this Environmental Management Plan (EMP).

8. Documentation, document control and records

The contractor and the TDPD will ensure that an adequate document control system is in place to ensure that only current documentation is in use.

Records collected as part of environmental management activities will be retained by the Contractor and the TDPD for the legally required period of time. Environmental records include but may not be limited to:

- Site inspection checklists
- Environmental audit reports
- Training records
- Monitoring data
- Complaints and associated records of communication
- Meeting minutes.

During construction phase the Contractor will make these records available to the TDPD or any relevant authorities and their representatives on request. During the operational phase, the Proponent will make these records available to any relevant authorities and their representatives on request and where justified and in accordance with legislation.

9. Audit

9.1 Construction Phase

During construction activities, the Contractor will be responsible for complying with the relevant provisions as set out in this EMP and sub-plans.

All inspection and compliance reports of environmental performance will be stored in an electronic database that is used to enable corrective actions identified during the inspection/auditing process to be recorded, tracked and closed out. The information will be made available to the relevant regulatory authorities as required.

9.2 Operational Phase

During the operational phase, monitoring and maintenance of the trail and camping site will be managed in accordance with each land management agencies policies and procedures.

10. Review

During the construction phase and operational phase TDPD will regularly review and (if necessary) update the EMP and associated sub-plans. The review will take into account the following:

- Changes in legislative requirements (including conditions of approvals)
- Environmental performance, findings of environmental audits and inspections
- Outcomes of agency consultation
- Outcomes of consultation with communities and resolution of complaints
- Changes in external and internal policies, standards and guidelines.

The review will ensure the continuing suitability, adequacy, and effectiveness of the EMP. The review will include assessing opportunities for improvement.

11. Emergency, incidents and complaints

Emergency and incident responses will vary depending on the nature of the incident.

TDPD will be verbally notified of an incident on the day it occurs and as soon as practicable of the responsible person becoming aware of the incident, and in writing within 24 hours.

All notifications to authorities including but not limited to WTMA, DES, QPWS, State emergency services (police/fire/ambulance) and DTMR will be undertaken by TDPD.

The Contractor will be required to provide an Emergency Response Plan and for this plan to be thoroughly communicated to all staff members in the Construction Induction. The Emergency Response Plan should identify evacuation routes, mustering points, communication protocols and provide key contact details for local authorities and services. It should be compatible with the internal emergency response protocols of the various land managers.

When reporting environmental incidents to TDPD, the following information is to be provided:

- The name and contact details of the reporting person
- The date and time the environmental incident occurred
- The activity that was being undertaken when the incident occurred
- How the incident occurred
- Any containment measures put in place to reduce or contain environmental harm
- An assessment of the amount of environmental harm that occurred
- If any other stakeholders are aware of the incident.

Environmental incidents and corrective actions have been identified in the following subplans:

Sections 6.2 and 6.3 of the CЕССР (refer to Appendix A).

Section 5.2 of the СМР (refer to Appendix B).

Section 5.3.5 of WPDMP (refer to Appendix C).

Section 4 of the TMP (refer to Appendix D).

Section 4 of the СЕМР (refer to Appendix E).

However, pro-active environmental risk management measures should be undertaken wherever possible, if events such as extreme rainfall or flooding are forecast. Some examples of environmental risk responses are provided in Table 11-1 below.

Table 11-1 Example environmental incidents and mitigation and reporting requirements

Incident	Mitigation Measures	Report
Failure of erosion and sediment control devices following rainfall event or flooding	Re-instatement of ESC devices	Report to TDPD
Identification of cultural heritage aspects during excavation	Cease operations and follow cultural heritage reporting procedure	Report to TDPD
Injury to fauna during site works	Following notification procedure.	Report to TDPD

Incident	Mitigation Measures	Report
Damage to vegetation	Cease operations in the vicinity of impacted vegetation. Attempt to stabilise area and engage project botanist.	Report to TDPD

The contractor during the construction phase to develop an emergencies, incidents and complaints protocols and reporting documentation to be agreed by TDPD.

The contractor during the operational phase to develop an emergencies, incidents and complaints protocols and reporting documentation to be agreed by TDPD.

12. Environmental Management Subplans

The following documents outlines the avoidance, mitigation and management measures that must be abided by during and after the project.

12.1 Concept Erosion and Sediment Control Plan

Refer to Appendix A.

12.2 Cassowary Management Plan

Refer to Appendix B.

12.3 Preliminary Weed, Pest and Disease Management Plan

Refer to Appendix C.

12.4 Preliminary Traffic Management Plan

Refer to Appendix D.

12.5 Preliminary Construction Environmental Management Plan

Refer to Appendix E.

12.6 Matters of National Environmental Significance flora pre-clearance survey methodology

Refer to Appendix F.

13. References

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Appendices

Appendix A – Concept Erosion and Sediment Control Plan

Appendix B – Cassowary Management Plan

Appendix C – Preliminary Weed, Pest, and Disease Management Plan

Appendix D – Preliminary Traffic Management Plan

Appendix E – Preliminary Construction Environmental Management Plan

Appendix F – Matters of national environmental significance flora pre-clearance survey methodology

Appendix G – Wangetti Trail Construction Methodology Manual April 2020

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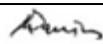
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