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2 April 2025

Commercial-in-Confidence

Charlton Best,
Senior Planning Officer
PO Box 2358,
Cairns Qld 4870

Dear Charlton

Response to Information Request associated with Development Application 2501-44428 SRA

We on the behalf of the Department of Transport and Main Roads (the Applicant) in response to the information request issued on the 13 March 2025 requesting for further information on the Operational Works of the Revetment Wall Development Application (Reference number: 2501-44428 SRA).

Please find enclosed the response to the information request by Section 68 of the *Planning Act 2016*.

Please find attached to this letter the following:

- a copy of SARA's Information Request (Attachment A).
- a tabulated response the information requested (Attachment B)
- an Environmental Management Plan (Planning) (Attachment C).

We trust the information provided is sufficient for the purpose of the State's assessment of this development application.

Should the State require any further information or clarification, please contact the undersigned.

Yours faithfully

Frances Mahlouzarides
Senior Environmental Planner
frances.mahlouzarides@aecom.com

Mobile: +61 473 318 654

Attachment A – SARA's Information Request

Queensland Government

SARA reference: 2501-44428 SRA
Applicant reference: -
Council reference: OP 2025_5717/1

13 March 2025

Department of Transport and Main Roads
C/- AECOM
Level 5, 7-13 Tomlins Street
South Townsville QLD 4810
frances.mahlouzarides@aecom.com

Attention: Frances Mahlouzarides

Dear Sir /Madam

SARA information request – Captain Cook Highway, Mowbray

(Given under chapter 1, part 3, section 12 of the Development Assessment Rules)

This notice has been issued because the State Assessment and Referral Agency (SARA) has identified that information necessary to assess your application against the relevant provisions of the State Development Assessment Provisions (SDAP) has not been provided.

Matters of state environmental significance	
1.	**Issue:** The proposed application material has not adequately addressed and demonstrated compliance with Performance Outcome (PO)17 of State code 8: Coastal development and tidal works of the SDAP. The State code 8 SDAP assessment provided within the planning report states that *"…Any other relevant MSES values have been responded to in this report and are not impacted significantly".* However, it is unclear where the information referred to in the report is further outlined and as such the response to PO17 is not sufficient. The applicant should discuss in detail all mapped MSES within and adjacent to the site and demonstrate how the design of the proposed development either avoids or minimises and mitigates impacts on MSES. After demonstrating all reasonable avoidance, minimisation and mitigation measures have been undertaken, an assessment against the significant residual impact guideline should be undertaken to determine whether an offset is

Far North Queensland regional office
Ground Floor, Cnr Grafton and Hartley Street, Cairns
PO Box 2358, Cairns QLD 4870

	necessary. The following MSES have been noted at or adjacent to the proposed site: • MSES Marine Park (highly protected) • MSES Regulated vegetation (defined watercourse) • MSES declared high ecological value waters (wetland) • MSES High ecological significance wetlands • MSES Wildlife habitat (endangered or vulnerable) • MSES Wildlife habitat (special least concern animal) • MSES Regulated Vegetation (Category B – endangered or vulnerable) • MSES Regulated Vegetation (category R – GBR Riverine) • MSES Regulated Vegetation (essential habitat) **Action:** The applicant is required to provide a detailed response to PO17 of State code 8 of the SDAP to demonstrate that the proposed development has avoided impacts or, where the matters of state environmental significance cannot be reasonably avoided, impacts are reasonably minimised and mitigated. All mapped MSES (noted above) must be addressed against the avoid, minimise, offset hierarchy.
Demolition works	
2.	**Issue:** The 'Demolition and Clearing Plans Site 6 (52.3 KM) Sheet 1 of 4 prepared by Queensland Government, reference 958870, issue 3' states "existing rock fill to be removed". It is unclear whether this is an existing tidal work structure or part of the beach substrate. Please note: The definition of tidal works includes the construction or demolition of a structure and as such, the demolition of any existing seawall and associated infrastructure is considered to be tidal works and requires a development approval. **Action:** Please confirm whether the existing rock fill to be removed is a lawful tidal work structure or not.

The review undertaken by SARA has also identified the following issue with the proposed development material:

Water quality	
1.	**Issue:** The proposed application material has not adequately addressed and demonstrated compliance with PO13 of State code 8 of the SDAP. The assessment response provided within the planning report to address PO13 has not adequately outlined how the proposed development meets the development considerations 1 – 3 of PO13. As the proposed development may interact with the mapped MSES declared high

	ecological value waters [wetland] and high ecological significance wetlands, SARA requires further information in order to carry out a technical assessment. **Action:** The applicant is requested to provide a further detailed response to the development considerations under PO13 of State code 8 of the SDAP. It is recommended that any relevant management plans (e.g. Environmental Management Plan) are submitted to SARA to review.

How to respond

You have three months to respond to this request and the due date to SARA is **13 June 2025.**
You may respond by providing either: (a) all of the information requested; (b) part of the information requested; or (c) a notice that none of the information will be provided. Further guidance on responding to an information request is provided in section 13 of the Development Assessment Rules (DA Rules).

It is recommended that you provide all the information requested above. If you decide not to provide all the information requested, your application will be assessed and decided based on the information provided to date.

You are requested to upload your response and complete the relevant tasks in MyDAS2.

As SARA is a referral agency for this application, a copy of this information request will be provided to the assessment manager in accordance with section 12.4 of the DA Rules.

If you require further information or have any questions about the above, please contact Charlton Best, Senior Planning Officer, on 07 4037 3200 or via email CairnsSARA@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely

Tony Croke
Principal Planner

cc Douglas Shire Council, enquiries@douglas.qld.gov.au

Development details	
Description:	Development permit Operational work for prescribed tidal works – revetment wall
SARA role:	Referral agency
SARA trigger:	• Schedule 10, Part 6, Division 3, Subdivision 3, Table 1, Item 1 – Operational work involving marine plants • Schedule 10, Part 17, Division 3, Table 2, Item 1 – Operational work that is tidal works or work in a coastal management district
SARA reference:	2501-44428 SRA

Development details	
Assessment criteria:	State Development Assessment Provisions (version 3.2): • State code 8: Coastal development and tidal works • State code 11: Removal, destruction or damage of marine plants

Attachment B – Response to Information Requested

<table>
<tr><th>Information Requested</th><th>Response</th></tr>
<tr><td colspan="2">Matters of State Environmental Significance</td></tr>
<tr><td>Issue:
The proposed application material has not adequately addressed and demonstrated compliance with Performance Outcome (PO)17 of State code 8: Coastal development and tidal works of the SDAP. The State code 8 SDAP assessment provided within the planning report states that “…Any other relevant MSES values have been responded to in this report and are not impacted significantly”. However, it is unclear where the information referred to in the report is further outlined and as such the response to PO17 is not sufficient.
The applicant should discuss in detail all mapped MSES within and adjacent to the site and demonstrate how the design of the proposed development either avoids or minimises and mitigates impacts on MSES. After demonstrating all reasonable avoidance, minimisation and mitigation measures have been undertaken, an assessment against the significant residual impact guideline should be undertaken to determine whether an offset is necessary.
The following MSES have been noted at or adjacent to the proposed site:
• MSES Marine Park (highly protected)
• MSES Regulated vegetation (defined watercourse)
• MSES declared high ecological value waters (wetland)
• MSES High ecological significance wetlands
• MSES Wildlife habitat (endangered or vulnerable)
• MSES Wildlife habitat (special least concern animal)
• MSES Regulated Vegetation (Category B – endangered or vulnerable)
• MSES Regulated Vegetation (Category R – GBR Riverine)
• MSES Regulated Vegetation (essential habitat).
Action:
The applicant is required to provide a detailed response to PO17 of State code 8 of the SDAP to demonstrate that the proposed development has avoided impacts or, where the matters of state environmental significance cannot be reasonably avoided, impacts are reasonably minimised and mitigated. All mapped MSES (noted above) must be addressed against the avoid, minimise, offset hierarchy.</td><td>In response to PO17 of State Code 8 the following is provided:
• The proposed works are unable to avoid mapped MSES value as the purpose of the Project is to stabilise the exiting section of the Captain Cook Highway.
• The final option was informed by an options analysis and was informed by factors including cost, constructability timing, maintenance, environment and heritage impacts and public benefit. Section 4.1 and Section 4.2 of the Development Application Report provide further details of the options assessment and final option.
• An Environmental Management Plan (Planning) (EMP(P)) has been provided which detailed mitigation measures to be implemented during the construction phase.
• A significant residual impact assessment undertaken in accordance with the Significant Residual Impact Guideline is provided in the table below.
<table>
<tr><th>Ecological Value</th><th>Mapped Values</th><th>SRI Assessment Result</th></tr>
<tr><td>Regulated vegetation</td><td>The Project area contains mapped:
• MSES Regulated Vegetation (Category B – endangered or vulnerable)
• MSES Regulated vegetation (defined watercourse)
• MSES Regulated Vegetation (essential habitat).</td><td>The design development process has carefully considered the present vegetation and the ecological significance of area. The clearing marked out in the design for construction represents the maximum extent of the clearing boundaries. The works will avoid clearing specified trees within the clearing limits where possible, as outlined in the EMP(P).
MSES Regulated Vegetation clearing will occur within 5 m of the defining bank for an area that is approximately 10 m wide in a mid-dense RE.
No MSES Category B vegetation will be cleared.
Areas of vegetation to be cleared have also been previously modified with the planting of coconut palms, and so, do not represent a native RE.
A small, isolated extent of essential habitat will be cleared in the southern end of the design, which will not lead to habitat fragmentation occurring.
Rehabilitation through revegetation will be undertaken for exposed soils, as outlined in the EMP(P) and design plans.
It should be noted that the clearing is able to be undertaken for road construction and maintenance, and is exempt under the Planning Act 2016 with the provisions of the Transport Infrastructure Act 1994.</td></tr>
<tr><td>Connectivity areas</td><td>No.</td><td>N/A</td></tr>
<tr><td>Wetlands and watercourses (wetlands in a wetland protection area (WPA), wetlands of high ecological significance (HES); or wetlands or watercourses in high ecological value (HEV) waters)</td><td>The Project area contains mapped:
• MSES declared high ecological value waters (wetland)
• MSES High ecological significance wetlands.</td><td>The coastal area of the wetland to be artificially modified is limited to a minor edge of the revetment and temporary removal of stone and sand. This material is to be stockpiled; with the same area for the extent of works to be reestablished and rehabilitated with the stockpiled material once accessible. Thus, a significant residual impact is unlikely to occur.</td></tr>
<tr><td>Protected wildlife habitat</td><td>The Project area contains mapped:
• MSES Wildlife habitat (endangered or vulnerable)</td><td>An assessment of flora and fauna values by TMR did not identify any significant species that would be impacted by the project. Impacts to foraging areas for wader birds in the near shore coastal area are likely to be temporary, with re-establishment of beach profile after completion of the revetment works. No mudflats or significant sand staging or foraging areas for wader birds or marine animals are present in this locality. No significant impact is likely to occur to the habitat values of the small, isolated extent of endangered and vulnerable wildlife habitat (including essential habitat, and special least concern animal wildlife habitat.</td></tr>
</table>
</td></tr>
</table>

Information Requested	Response		
		• MSES Wildlife habitat (special least concern animal) • High risk area on the flora survey trigger map.	The EMP(P) outlines procedures when protected flora or fauna are encountered during works, though this is unlikely due to the small extent of clearing to be undertaken in a modified coastal environment. The project is located in areas above HAT that TMR can undertake works for construction and maintenance under the *Transport Infrastructure Act 1994*.
	Protected areas (national parks, regional parks and nature refuges)	No.	N/A
	Fish habitat areas and highly protected zones of State Marine Parks	The Project area contains mapped: • MSES Marine Park (highly protected).	Significant residual impact on the marine park is unlikely to occur due to the nature of the works. The coastal processes assessment identified that the works will stabilise the coastal environment at this locality, and will not result in detrimental processes to adjacent areas, including the Marine Park. The extent of works going into the marine park is limited to the minor extension of the revetment wall to prevent erosion, and temporary removal of pebbles and sand which will be stockpiled and reinstated at the completion of each stage of rock wall construction. The project will result in protection of the near coastal values by preventing erosive processes and resultant detrimental water quality and coastal vegetation impacts.
	Waterways providing for fish passage	The project area contains mapped: • Amber waterway.	Temporary waterway barrier works will be established in accordance with Water Way Barrier Works (WWBW) accepted development code requirements. The culvert design is consistent with the accepted development code requirements. The EMP(P) also outlines management measures for water quality within the watercourse, along with mitigation measures to prevent harm to fish within the waterway for the duration of works.
	Marine plants	The Project area contains mapped: • Highest Astronomical Tide.	The Project is considered, from self-assessment, to result in a significant residual impact to marine plants. A conservative estimate identified permanent clearing of 834 m^2 of marine plants will occur. These comprise predominantly of terrestrial species above HAT that are considered to be marine plants due to their proximity to the near coastal areas. It is acknowledged that marine plants provide a range of important environmental services including shoreline stability and protection from coastal conditions, however, the present extent of vegetation is not sufficient to provide adequate erosion control and stability; hence, the stabilisation works which are required to be undertaken. A revegetation and rehabilitation landscape plan with appropriate native coastal species will be implemented as identified in the design drawings. An offset for the clearing of marine plants is required for 0.0834 ha of marine plants at a cost $12,510.
	Legally secured offset areas	No.	N/A
Demolition Works			
Issue: The ‘Demolition and Clearing Plans Site 6 (52.3 KM) Sheet 1 of 4 prepared by Queensland Government, reference 958870, issue 3’ states “existing rock fill to be removed”. It is unclear whether this is an existing tidal work structure or part of the beach substrate. Please note: The definition of tidal works includes the construction or demolition of a structure and as such, the demolition of any existing seawall and associated infrastructure is considered to be tidal works and requires a development approval.	The ‘existing rock’ identified on the plans was associated with emergency works undertaken immediately following Cyclone to stabilise and make safe sections of the road under section 66 of the *Planning Act 2016*. TMR had previous lodged a development application associated with undertaken repair work along Pebbly Beach. Therefore, a formal approval has yet to be issued retrospectively associated with the emergency work. As the Project has progress, an increased footprint and detailed design has been prepared. To ensure the final structure is built to the current design, the ‘existing rock’ placed as a temporary measure is to be removed, as identified on the plans.		

Information Requested	Response
Action: Please confirm whether the existing rock fill to be removed is a lawful tidal work structure or not.	
Water Quality	
Issue: The proposed application material has not adequately addressed and demonstrated compliance with PO13 of State code 8 of the SDAP. The assessment response provided within the planning report to address PO13 has not adequately outlined how the proposed development meets the development considerations 1 – 3 of PO13. As the proposed development may interact with the mapped MSES declared high ecological value waters [wetland] and high ecological significance wetlands, SARA requires further information in order to carry out a technical assessment. **Action:** The applicant is requested to provide a further detailed response to the development considerations under PO13 of State code 8 of the SDAP. It is recommended that any relevant management plans (e.g. Environmental Management Plan) are submitted to SARA to review.	As stated in the development application, the development will maintain environmental values of waters in the area and has been designed to avoid releases of contaminants to local waters, thereby achieving Queensland water quality objectives. Upon completion of the works, the proposed works is not expected to adversely impact water quality within the area. In addition to the above and in response to PO13 of State Code 8 the following is provided: • The slumping of earth resulting from coastal erosion process at the location has unconsolidated previously compacted road embankment soils. These sediments are continually being liberated by ongoing tidal and wave action forces. The release of these sediments into the marine environment will be prevented by the construction of the proposed revetment that will provide a benefit to improving localised water quality consistent with the Water Quality Objectives for the Great Barrier Reef (GBR). • The Environmental Protection Policy (EPP) schedule identifies the Daintree, Mossman, Barron, Mulgrave Russell, Johnstone, Tully, Murray, Hinchinbrook, Herbert Basins (map identifier WQ1082). The EPP water type is open coastal waters, and the Environmental Value Zone is Mossman coastal waters, with a 'high ecological value' management intent. The values for the location are: - Aquatic ecosystems, Human consumption, Primary and secondary recreation, Visual amenity, Industrial use and Cultural values. • High ecological value waters of type 'open coastal' in the Daintree and Mossman rivers basins water quality objectives are presented below:

Level of protection	Water type	Water quality objectives													
		Physico-chemical		Nutrients								Algal growth	Water clarity		
		DO	pH	Ammonia N	Oxidised N	Particulate N	Organic N	Total N	FRP	Particulate P	Total P	Chl-a	Turbidity	Secchi	TSS
		% Saturation		µg/L									NTU	m	mg/L
	Open coastal[2] (HEV3121)	95-100-105[2]	8.1-8.3-8.4[2]	1-3-7[2]	0-0-1[2]	≤20[2]	nd	76-105-140[2]	0-2-3[2]	≤2.8[2]	8-14-22[2]	<0.45[2]	0.6-0.9-1.8[2]	≥10[2]	≤2[2]

Total dissolved N: 57-80-110 µg/L
Total dissolved P: 4-8-18 µg/L
Silicate: 90-165-260 µg/L
Temperature: <1°C increase above long term (20 year) average maximum

• High ecological value waters of type 'open coastal' in the Barron River basin water quality objectives are presented below:

Level of protection	Water type	Water quality objectives													
		Physico-chemical		Nutrients								Algal growth	Water clarity		
		DO	pH	Ammonia N	Oxidised N	Particulate N	Organic N	Total N	FRP	Particulate P	Total P	Chl-a	Turbidity	Secchi	TSS
		% Saturation		µg/L									NTU	m	mg/L
High ecological value waters/ slightly disturbed waters	Open coastal[2] (HEV3121/ SD3121)	95-100-105[2]	8.1-8.3-8.4[2]	1-3-7[2]	0-0-1[2]	≤20[2] (annual mean)	nd	75-105-140[2]	0-2-3[2]	≤2.8[2] (annual mean)	8-14-20[2]	<0.45[2] (annual mean)	0.6-0.9-1.8[2]	≥10[2] (annual mean)	≤2[2] (annual mean)

Total dissolved N: 55-80-110 µg/L
Total dissolved P: 4-8-18 µg/L
Silicate: 90-165-260 µg/L
Temperature: <1°C increase above long term (20 year) average maximum

• Addendums exist in both these objectives documents identifying Amendments as of October 2020, which specify new standards for open coastal waters of the Wet Tropics. These are presented below:

Information Requested	Response

Water area/type (Source: s1–s6) (refer plan WQ1082)	Management intent /Level of protection	WET TROPICS - COASTAL AND MARINE WATERS (refer plan WQ1082) Aquatic Ecosystem water quality objectives [1–7]														
		Note: WQGs for indicators are shown as a range of 20th, 50th and 80th percentiles to be maintained or achieved (e.g. 3–4–5), lower and upper limits (e.g. pH: 7.2–8.2), or as a single value (e.g. <15). For single value WQOs, medians (or means where specified) of test data are compared against the WQO (refer to 'Note 7: comparison of test data with WQOs' for more details). HEV – high ecological value; SD – slightly disturbed; MD – moderately disturbed. Refer to accompanying plans for details; ID – insufficient data Sources: S1: Local datasets/reporting; S2: QWQG guidelines and /or data; S3: GBRMPA (2010) WQG; S4: GBRMPA analysis of Marine Monitoring Program and/or AIMS Long Term Monitoring Program datasets; S5: ANZG (2018); S6: CSIRO aluminium studies (Golding et al., 2015)													
		Amm N[1] (µg/L)	Oxid N[1] (µg/L)	Partic N[5] (µg/L)	Total Diss N (µg/L)	Total N (µg/L)	FRP (µg/L)	Partic P[5] (µg/L)	Total Diss P (µg/L)	Total P (µg/L)	Chl-a[5] (µg/L)	Silicate (µg/L)	DO[3] (% sat)	Turb (NTU)	Secchi (m)	SS[2, 5] (mg/L)	pH
WET TROPICS OPEN COASTAL WATERS – ALL BASINS EXCEPT HERBERT RIVER BASIN (refer separate row below)																	
WET TROPICS HEV and SD open coastal waters HEV3121, SD3121 (EXCLUDES Herbert Palm Island Group) (s2, s3, s4)	**HEV**	≤2 (s4)	0.07–0.35– 1.15 (s4)	≤20 (ann. mean) Dry: ≤16 (May-Oct) Wet:≤25 (Nov-Apr) (s3, s4)	50–80–100 (s4)	65-100-125 (s4)	0–2–3 (s4)	≤2.8 (ann. mean) Dry: ≤2.3 (May-Oct) Wet: ≤3.3 (Nov-Apr) (s3, s4)	3–6–10 (s4)	5–11–20 (s4)	≤0.45 (ann. mean) Dry: ≤0.32 (May-Oct) Wet: ≤0.63 (Nov-Apr) (s3, s4)	90–165–260 (s4)	95–105 (s2)	0.6–0.9–1.8 (s3, s4)	≥10 (ann. mean) (s3)	≤2 (ann. mean) Dry: ≤1.6 (May-Oct) Wet: ≤2.4 (Nov-Apr) (s3, s4)	8.1–8.4 (s2)

- The project is unlikely to impact water quality for any of the objectives excepting turbidity and suspended solids entering the near shore environment.
- There is currently high risk of impact to the near coastal water quality as a result of erosion of the consolidated sediments on the road embankment. Construction of the project will remove the impacts of the current situation and reduce potential impacts from turbidity in the coastal area.
- Some potential impacts from sediment will exist temporarily during construction of the project however these will be managed through implementation of an Environmental Management Plan (EMPC) including erosion and sediment control measures to the IECA best-practice standard.
- TMR have prepared an EMP(P) to support the proposed development and inform the preparation of the contractors Environmental Management Plan (Construction) (EMP(C)). A copy of the EMP(P) is provided in Attachment C.

Attachment C – Environmental Management Plan (Planning)

Environmental Management Plan (Planning) – Site 6 (Ch. 52.3)

CN-22733 – Package 1 20A Captain Cook Highway

Queensland Government

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Document control

PROJECT DETAILS			
TMR District	Far North District		
Project / Facility Name	Captain Cook Highway Risk Assessment – Site 6 (Ch.52.3)		
Investment ID	CN-22733		
Project Location	Captain Cook Highway, Cairns, Queensland. Latitude -16.58203, Longitude 145.51261		
Local Government Area	Douglas Shire	**QTRIP WBS**	Not applicable
Road No / Facility No	Captain Cook Hwy (24E)	**DMS Reference**	Not applicable

REPORT PREPARATION

I have prepared this report based on the best information available at the time. I have considered, to the fullest extent possible, all actual and potential environmental impacts of the Project.

Name	Kitt Allen	**Signature**	
Position	Environmental Consultant (AECOM)	**Date**	13/09/2024
REPORT REVIEW			
Name	Frances Mahlouzarides	**Signature**	
Position	Senior Environmental Planner (AECOM)	**Date**	13/09/2024
REPORT LEAD VERIFIER			
Name	Julie Carpenter	**Signature**	
Position	Principal Environmental Scientist (AECOM)	**Date**	13/09/2024

VERSION HISTORY

Version No.	Date	Changed by	Nature of Amendment
1	13/09/2024		Report issued with 80% design deliverables
2	15/11/2024	F.Mahlouzarides	Report issued with 100% design deliverables
3	26/03/2025	F.Mahlouzarides	Updated with TMR comments

PROJECT MANAGER ACCEPTANCE

I agree that this report has been prepared based on the Project scope at the time and accept responsibility for ensuring any future changes to the scope are appropriately assessed. I understand the potential impacts and legislative consequences of not actioning the recommendations outlined in the report.

Name	Daniel Tierney	**Signature**	
Position	Project Manager (AECOM)	**Date**	13/09/2024

Table of Contents

List of Tables

LIST OF ACRONYMS & ABBREVIATIONS	
ADR	Accepted Development Requirements
CPESC	Certified Professional in Erosion and Sediment Control
DPI	Department of Primary Industries
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DWATSIPM	Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism
DETSI	Department of the Environment, Tourism, Science and Innovation
DNRMMRRD	Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development
DRFA	Disaster Recovery Funding Arrangements
EMP(C)	Environmental Management Plan (Construction)
EMP(P)	Environmental Management Plan (Planning)
ILUA	Indigenous Land Use Agreement
MNES	Matter of National Environmental Significance
PEA	Preliminary Environmental Assessment
PMST	Protected Matters Search Tool
REF	Review of Environmental Factors
SCoC	Supplementary Conditions of Contract
SMP	Species Management Program
TIA	Transport Infrastructure Act 1994
TMR	Department of Transport and Main Roads

1. Introduction

1.1 Purpose

In accordance with the Department of Transport and Main Roads (TMR)'s Environmental Processes Manual, the purpose of the Environmental Management Plan (Planning) (EMP(P)) is to provide recommendations for mitigation measures for the development and implementation phases of an infrastructure project. These recommendations aim to sufficiently avoid/ mitigate /manage the impacts of the Project. As agreed in consultation with TMR, a Review of Environmental Factors (REF) report will not be prepared for the Project.

The EMP(P) provides a summary of impacts and associated risk ratings together with the subsequent recommendations. Residual risk ratings are assigned to the impacts based on the full implementation of the recommendations provided.

The recommendations formulated in the EMP(P) shall be considered by the Project Manager and incorporated into the Project design and documentation. Where a decision is made to not incorporate a recommendation, the Project Manager accepts that the identified environmental impact will potentially occur.

2. Project Background

Tropical Cyclone (TC) Jasper crossed the Queensland coast as a category 2 system in the vicinity of Wujal Wujal at around 8 pm AEST on the evening of 13 December 2023. TC Jasper was associated with an extraordinary flooding event causing large-scale isolation, widespread power outages across north Queensland, and significant impacts to agriculture, animal welfare, small business and tourism.

Captain Cook Highway between Cairns and Port Douglas was damaged during TC Jasper and associated rainfall and flooding between 13th and 28th December 2024. AECOM Australia Pty Ltd (AECOM) was engaged by TMR to provide design and consultancy services for DRFA 24E Package 1 – 20A Captain Cook Highway. This package includes six separate locations (Sites 1 to 6) on the Captain Cook Highway that were damaged during the Disaster Recovery Funding Arrangements (DRFA) rainfall event with multiple geotechnical slips identified. Figure 1 shows the general Project location and proximity to other sites in the DRFA package.

The Preliminary Environmental Assessment (PEA) used TMR's Rapid Environmental Checklist spreadsheet (ENV02– Rapid Desktop Checklist) the environmental constraints have been calculated to have a potential Medium impact on the Project delivery. Future pre-construction costs for environmental assessment and management of this Project were also estimated at $104,500 in the PEA. This estimate excludes items listed as to be determined (TBD) (refer to PEA, 2024), permit application fees or additional works associated with a Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) referral information request.

Site 6 (the Project) includes six slips located at Latitude -16.582 and Longitude 145.513, occurring within the road corridor (refer to Figure 1). The Project extends toward the Wet Tropics World Heritage Area (WTWHA) in close proximity to the Great Barrier Reef Marine Park (GBRMP). A constraints map is provided in Figure 2 and Figure 3.

Figure 1 - TMR FND DRFA 24E - Package 1 (20A) - Captain Cook Highway - Project Overview

Legend

- Project Sites
- Project Footprint

AECOM

N

0 325 650 m

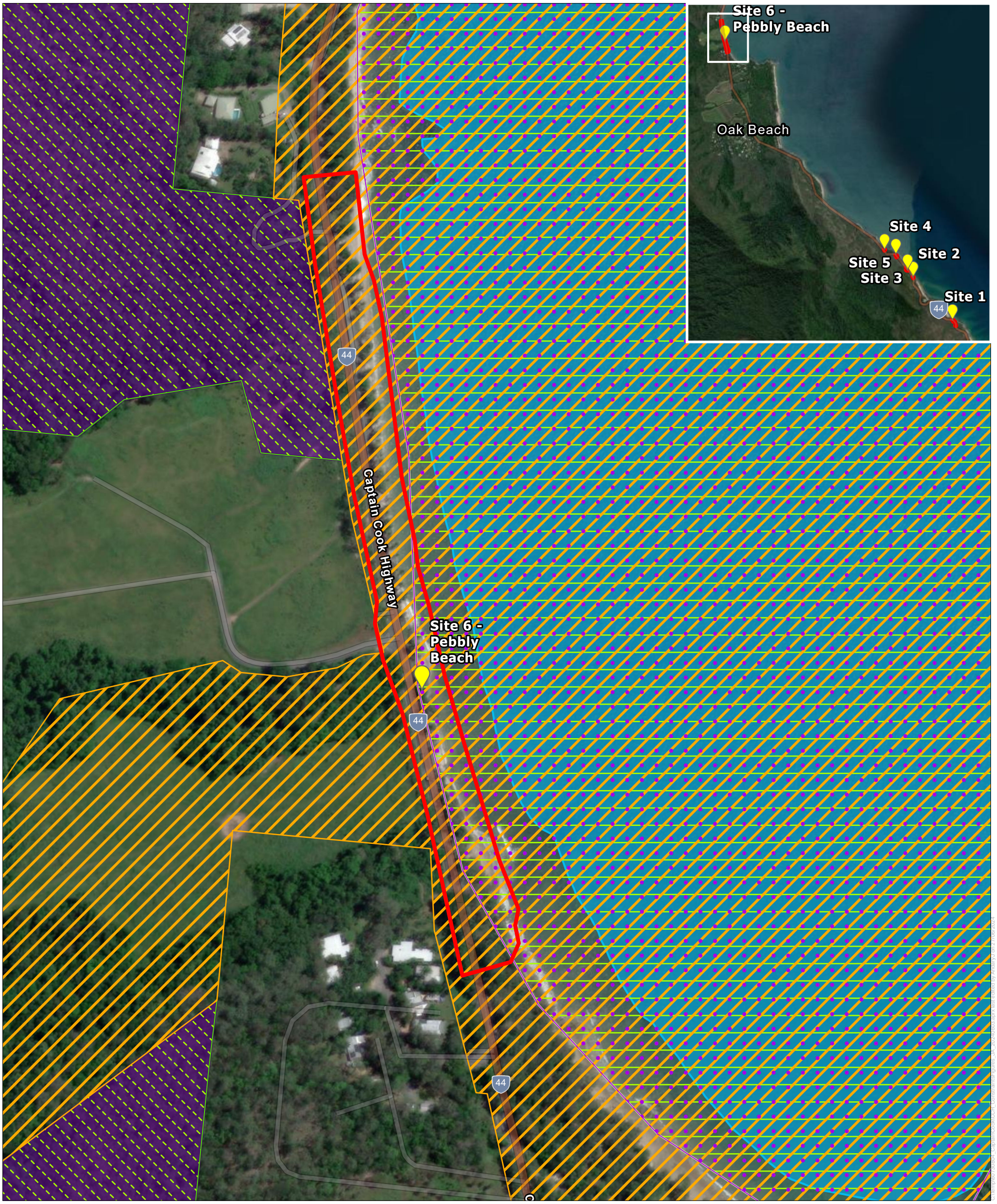

Figure 2 - Captain Cook Highway - Environmental Constraints Mapping - Site 6

Legend

- Project Sites
- Project Footprint
- Coastal Management District
- MSES Marine Park (Highly Protected)

Great Barrier Reef Coast Marine Park Zones

- Conservation Park Zone

Protected Areas

- National Park

World Heritage Areas of Queensland

- Great Barrier Reef
- Wet Tropics of Queensland

AECOM

N

0 40 80 m

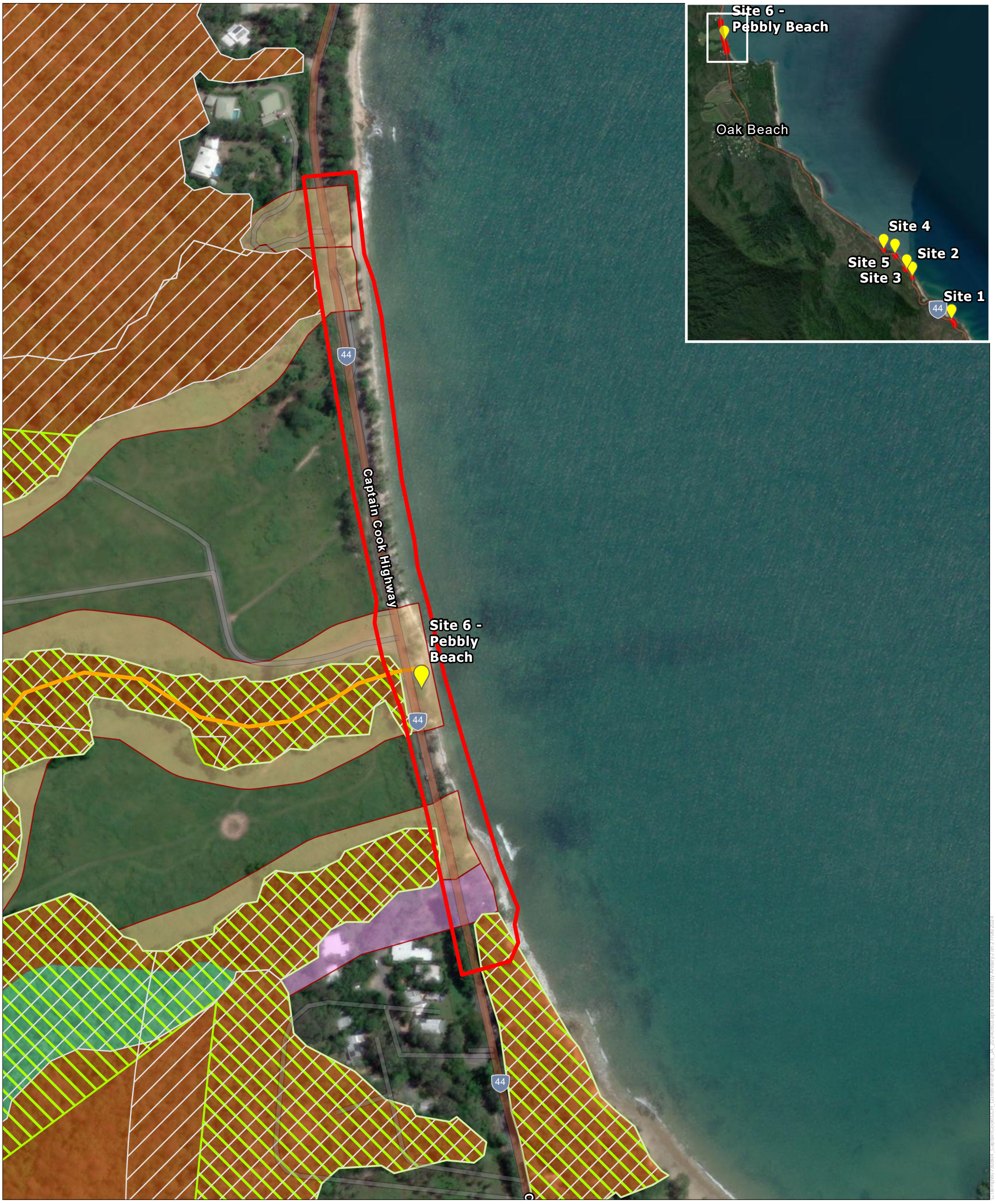

Figure 3 - Captain Cook Highway - Environmental Constraints Mapping - Site 6

Legend

- Project Sites
- Project Footprint
- Essential Habitat
- Protected Plants

Waterways for Waterway Barrier Works

- Moderate

Vegetation Management Regional Ecosystems

- Category A or B area containing of concern
- Category A or B area that is of least concern
- Category C or R area containing endangered
- Category C or R area containing of concern

AECOM

N

0 40 80 m

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3. Environmental Assessment Process

As agreed in consultation with TMR, a Review of Environmental Factors (REF) report will not be prepared for the Project. However, Table 1 outlines the recommended level of assessment for each of the environmental values (factors) to be undertaken following the selection of the preferred option (refer to the PEA, 2024). Table 1 also includes the recommended level of assessment for cultural heritage.

The EMP(P) provides in tabular form a summary of the impacts, their associated risk ratings, and subsequent recommendations. Residual risk ratings are assigned to the impacts based on the full implementation of recommendations provided.

Table 1 Recommended Level of Assessment for the Detailed Design Phase

Factor	Desktop	Standard Field	High-risk Field
Cultural Heritage	☐	☐	☒
Water	☒	☐	☐
Soil and Land	☒	☐	☐
Ecosystems and Habitat	☐	☐	☒
Flora	☐	☐	☒
Fauna	☐	☐	☒
Biosecurity Matters	☐	☒	☐
Air	☒	☐	☐
Amenity	☒	☐	☐
Resource use and Waste	☒	☐	☐
Special Areas and Land Tenures	☐	☐	☒

3.1 Risk Assessment Methodology

Risk assessment and ratings are to be conducted in accordance with the TMR Risk Assessment and Ratings Matrix published on TMR's Risk Management Tools and Techniques intranet site.

The identification and assessment of likely impacts of the Project have been discussed for each environmental factor in the PEA. Recommendations to mitigate and manage these impacts are made within Section 5. The significance of the residual impact of the Project, taking into consideration the full implementation of these recommendations, is also determined.

4. Legislative review

The PEA identified the approvals, standard or notification requirements that are present due to existing site conditions. The legislative review is continued in the EMP(P) in Table 2 where the proposed strategy to ensure legislative compliance is described. This table also includes the likely timeframes, costs, and offset requirements. Specific action, that makes up the strategies, is described in the action tables in Section 5.

Table 2 Relevant Legislative Requirements for the Project

Approval, exemption, standard or notify requirement	Administering Authority	Recommended mitigation measures/strategies	TIMEFRAMES & COSTS[1]	Offsets
Water				
Undertaking tidal works in, on or above land under tidal water	Department of State Development, Infrastructure and Planning (DSDIP)	**Development Approval (DA)** for Operational Works that are Tidal Works/ Prescribed. Tidal Works or works within a CMD. TMR currently has an application in for tidal works for this site as the Project was not deemed to comply with Excluded Works or the Code. Further assessment of design options for this site to be reviewed considering the submitted application and information requests.	Code Assessable (DA Rules) Lead time 12 months	TBD
Undertaking works completely or partly within a coastal management district (CMD)	Department of the Environment, Tourism, Science and Innovation (DETSI)			TBD
Constructing or raising of a Waterway Barrier Works (temporary or permanent)	DSDIP Department of Primary Industries (DPI)	**Works are determined to be 'works which are not waterway barrier works';** **Works that can comply with the relevant Accepted Development Requirements (ADR) for Waterway Barrier Works;** **Development approval for operational works that are waterway barrier works (Temporary or Permanent)** The Study Area traverses a moderate 'amber' waterway. Development approval and/ or compliance with Accepted Development may be applicable for aspects of the work, however further investigation in relation to the design which interfaces with this waterway, self-assessment against the ADR and consultation with DPI is recommended to confirm if the waterway barrier works will trigger development approval.	Code Assessable (DA Rules) Lead time 12 months	TBD
Soil and Land				
Historic culvert located within the Project area have a high likelihood of containing asbestos	DETSI	The Contractor shall comply with the requirements of Clause 11 of MRTS04 General Earthworks in relation to Deposition of Surplus Material and MRTS96 Management and Removal of Asbestos.	TBD	TBD

[1] **Note** – Timeframes and costs associated with preparing applications, application fees, financial offsets and purchase of land-based offsets.

Approval, exemption, standard or notify requirement	Administering Authority	Recommended mitigation measures/strategies	TIMEFRAMES & COSTS[1]	Offsets
Ecosystem and Habitat				
All project works associated with planning, construction and operation	DETSI	**Compliance with the general environmental duties (GED)** Compliance with the GED may be demonstrated through the development and implementation of an EMP(C) for all construction activities which have the potential to cause environmental harm. GED must be demonstrated through all phases of the project lifecycle. Acid sulphate management plan to be prepared for construction works based on ASS soil sampling findings and subsequent report.	Not applicable – GED must be demonstrated through Project documentation and compliance during construction.	N/A
Entry and use of Marine Park including infrastructure works and geotechnical investigations	DETSI DETSI Department of Climate Change, Energy, the Environment and Water (DCCEEW)	**Marine Parks Act 2004 (Marine Parks Act)** **Marine Parks (Great Barrier Reef Coast) Zoning Plan 2014 (Zoning Plan)** **Great Barrier Reef Marine Park Zoning Plan 2003** Marine Park Permit and/ or Works area declaration for proposed major works Entry and use for some activities after notification includes (s5.1): • Use or entry without permission or notification allows for: – investigate and respond to an emergency alert – to save human life or avoid the risk of injury to a person • to undertake urgent maintenance or works on essential public services (including power, water, sewerage and communication systems), that are authorised under a law of the Commonwealth, Queensland or a local government authority.	Non-statutory timeframe, however, includes a 30-day native title notification period, plus permit preparation time, approximately one month. Lead time – 2-3 months	N/A

Approval, exemption, standard or notify requirement	Administering Authority	Recommended mitigation measures/strategies	TIMEFRAMES & COSTS[1]	Offsets
Undertaking any action which has, will have or is likely to have an impact on a Matter of National Environmental Significance (MNES)	DCCEEW	**EPBC self-assessment** Undertake self-assessment of impacts to MNES to determine if the Project is likely to have a significant impact and will need to refer the Project. **EPBC referral** Following receipt of a valid referral, the Minister will make a decision on whether the proposal triggers matters protected under the EPBC Act within 20 business days. **EPBC approval** If the Project receives a 'controlled action' decision from DCCEEW, the approval may take 12 to 18 months depending on the type of additional surveys required to be undertaken, to carry out assessment, prepare reports and submit for approval	Lead time – 1-2 months Lead time – 3-4 months Lead time – Up to 2 years	TBD
Flora				
Clearing (CREVNT) flora within of a mapped protected plant area (high-risk) area	DETSI	**Protected Plant Clearing Permit (within high-risk areas)** **or** **Exempt Clearing notification** A Protected Plant Clearing Permit is not expected to be required for the Project based on the current Study Area where the Project involves maintenance activities only. • confirm that the Project will not include 'betterment works' • conduct site survey of areas proposed to impact by works to identify risk of impacting threatened species and any mitigation measures that can be implemented to minimise impacts. • If betterment works are proposed, this requires a survey within a 100 m buffer around the clearing areas.	40 business days Lead time 3-4 months	N/A
Undertaking a Prescribed Activity for which there will be a significant residual impact on one or more Prescribed Environmental Matters (i.e. MSES and MLES)	DETSI	Prescribed activities for the Project may include: • operational works for clearing marine plants MSES which may be impacted could include: • protected wildlife habitat • marine plants • areas of connectivity • regulated vegetation Undertake ecology assessments to confirm MSES and assessments to identify impacts to MSES by prescribed activities to confirm whether State offsets may apply to the Project.	Code Assessable Lead time 12 months, if offsets are required, time may extend	The Project has potential to trigger offsets under the Offsets Act where prescribed activities significantly impact on MSES.
Fauna				

Approval, exemption, standard or notify requirement	Administering Authority	Recommended mitigation measures/strategies	TIMEFRAMES & COSTS[1]	Offsets
Vegetation clearance and earthworks that impact least concern animal breeding places (example, nests, hollows, burrows)	DETSI	**Species Management Program (SMP)** TMR's low-risk SMP shall be implemented across the Project area by Contractor prior to and during all clearing works. To ensure all breeding places within the Project are known prior to clearing and grubbing, a pre-clearing animal breeding place assessment shall be undertaken by the Contractor in accordance with Clause 8.10.3 of MRTS51.	30 business days Lead time 2-3 months	N/A
Biosecurity Matters				
Undertaking ground disturbance works and movement of biosecurity matter carriers	DPI	**General Biosecurity Obligation (GBO)** The construction Contractor is responsible for ensuring their GBO commitment is detailed in the EMP(C) and adhered to for the duration of the Project works.	No timeframes apply	N/A
	DPI	**Biosecurity Instrument Permit (BIP)** Permits may be required to be obtained prior to commencement of construction. Permits are the responsibility of the Contractor. The Contractor's EMP(C) must provide details of the management measures implemented to control the risk of biosecurity matter to, from and within the site.	20 Business days	N/A
Air				
The PEA did not identify any approval requirements relevant to this factor	N/A			
Noise and Vibration				
The PEA did not identify any approval requirements relevant to this factor	N/A			
Resource Use and Waste				
Disposal of leviable waste and payment the waste levy	DETSI	**Payment of waste levies for disposal of leviable/ regulated wastes** The Project will be required to quantify wastes during Detailed Design to ensure Project funding is sufficient to cover the Project's waste levy liabilities.	Not applicable – to be paid as part of waste disposal process	N/A

Approval, exemption, standard or notify requirement	Administering Authority	Recommended mitigation measures/strategies	TIMEFRAMES & COSTS[1]	Offsets
The take or use of water for construction purposes	Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development (DNRMMRRD)	**Compliance** with the Exemption requirements for constructing authorities for the take of water without a water entitlement OSW/2020/5467 Version 4.01. The construction Contractor will identify where water for construction will be sourced from within their EMP(C). Exemption notification, record keeping and additional requirements (Section 4 of exemption) are to be adhered to if utilised. **Water licence** to take or interfere with surface water (watercourse, lake or spring), overland flow water or underground water. The construction Contractor to confirm where water for construction is to be taken from within their EMP(C) and if exemption (OSW/2020/5467 Version 4.01) cannot be complied with.	Pre-work notification must be provided – 10 business days 20 to 90 Business Days plus additional investigation and submission preparation	N/A
Special Areas and Tenures				
Proposing development on land which may be subject to Native Title	Attorney General's Department	There are three potential approval pathways: • notification of potential suppression of Native Title under Section 24KA of the Transport Infrastructure Act 1994 (TIA) • negotiation of an Indigenous Land Use Agreement (ILUA) with the Native Title Holders • compulsory acquisition of the land.	Standard notification period is 30 business days Lead time – Two and a half months	N/A
Undertaking ground disturbing works, working in high-risk landscapes/locations and the removal of remnant vegetation	Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism (DWATSIPM)	Duty of Care to take all reasonable and practicable measures to avoid harm to Aboriginal cultural heritage. Cultural heritage field assessment and reporting. Reaching an agreement on the management of any identified impacts on cultural heritage for the Project.	Consultation with the Djabugay Nation Native Title Claim group and agreement negotiation. Lead time (if required) – 6 to 12 months	N/A

5. Management Actions

This section provides recommended actions for the remainder of the Project to ensure environmental impacts associated with the location, design and operation of the road are minimised. Outcomes will be reviewed in the Environmental Design Reports.

TMR specifies all construction phase requirements in relevant specifications and annexures. The specifications are standard documents that describe management measures which are applicable to all projects. The related annexures are for applying project specific requirements. Where the PEA has identified a factor that needs management during the construction phase, it is described in the relevant section. The recommended actions describe what is in the specification or what needs to go into the annexure. For all actions it is the responsibility of the Designer or Project Manager to ensure that the actions are put into the Contract documents and it is the responsibility of the Contractor to implement them.

The risk for each factor is revised to get a mitigated risk which is summarised in Section 6.

5.1 General Contract Conditions

Table 3 Requirements for the Construction Contract

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
TIC General Conditions of Contract Annexure C7831 Clause 29A	There are specific risks to be managed during construction (e.g. erosion and sediment occurring, clearing vegetation, etc.).	An environmental representative will undertake inspections and audits weekly and when requested by TMR.	Environmental Officer
TIC General Conditions of Contract Annexure C7831 Clause 29C		The environmental representative must have minimum of 5 years construction experience as an environmental representative. Degree from a tertiary institution in environmental management, resource management, environmental engineering or equivalent qualifications is mandatory.	Designer/ Environmental Officer

5.2 Cultural Heritage

Table 4 Planning and Design Actions for Cultural Heritage

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 3.1	Cultural Heritage values may be present on the site and could require specific management during construction.	<u>Add the following text to the clause:</u> A cultural heritage assessment report (1) has been completed and issued by the Aboriginal Party's technical advisor, Everick Heritage for AECOM Priority 1 Geotech Sites 1-6. The recommendations of the cultural heritage assessment report should be incorporated into a Cultural Heritage Field Agreement (CHFA), and the CHFA should be endorsed by the Aboriginal party. The EMP(P) and MRTS51.1 should be updated with the CHFA's management recommendations once endorsed.	Designer

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 3.2	TMR has completed a Cultural Heritage Risk Assessment (CHRA) that identified the likelihood of harm in accordance with the *Aboriginal Cultural Heritage Act 2003.* AECOM has completed a cultural heritage field assessment with the Aboriginal Party and their technical advisor, Everick Heritage. The cultural heritage assessment report has been provided by Everick Heritage.	The Contractor needs to be made aware of the assessment. Add the following text to the clause: A CHRA was undertaken on 28 May 2024 and is valid for a period of twelve months. The CHRA found the Project to be high risk under the *Aboriginal Cultural Heritage Act 2003* Duty of Care Guidelines. The risk assessment should be updated with the results of the field assessment in accordance with the cultural heritage assessment report issued by Everick Heritage. It was recommended by Everick Heritage that monitoring be undertaken by Aboriginal Party representatives of all ground disturbing works.	Designer
MRTS51.1 Clause 3.3	No Aboriginal Cultural Heritage was identified within and or adjacent to the site during the field assessment. These findings were confirmed in the cultural heritage assessment report produced by Everick Heritage on behalf of the Aboriginal Party.	Add the following text to the clause: The cultural heritage assessment report (1) for Sites 1-6 has been obtained from Everick Heritage, and this EMP(P) and the MRTS51.1 have been updated. No Aboriginal Cultural Heritage identified within or adjacent to the site. In the event of an unexpected discovery/ find, standard requirements of Clause 8.4.2.3 of MRTS51 apply. The Principal's Cultural Heritage Officer contact details are as follows: Olivia Cashmere Ph: 0436 620 854 Email: olivia.c.cashmere@tmr.qld.gov.au	Designer
MRTS51.1 Clause 3.4	TMR has completed a CHRA that identified the likelihood of harm in accordance with the *Aboriginal Cultural Heritage Act 2003* as Category 5 (high risk).	The risk assessment should be revised to include the findings of the cultural heritage field assessment, and the cultural heritage assessment report provided by Everick Heritage.	Designer
MRTS51.1 Clause 3.5	An agreement has not been made with the Aboriginal party.	Identify in the contract that an agreement has NOT been made. Tick the [No] box in the clause.	Designer
MRTS51.1 Clause 3.6	If an agreement is made, the Contractor needs to be made aware of the agreement requirements.	An arrangement is still being finalised with the Principal and the Aboriginal Party.	Designer
MRTS51.1 Clause 3.7	Potential Historical Cultural Heritage was identified within to the site during the field assessment. These findings were confirmed in the historical heritage field assessment report produced by AECOM.	The historical heritage field assessment report has been provided by AECOM and this EMP(P) and the MRTS51.1 have been updated with the identified Historical Cultural Heritage. Two culverts with rough-cut stone and mortar headwalls were identified approximately 1 m beneath the road surface. These were given a provisional assessment of local significance. These culverts may be original structures from the early 1930s, but may have also been installed in 1959 when the road was widened. Standard requirements of Clause 8.4.2.3 of MRTS51 apply in the event of an unexpected discovery/find.	Designer

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 3.8	No approvals have been obtained for impacts to Historical Cultural Heritage located within or adjacent to the site.	The historical heritage field assessment report has been provided by AECOM, and this EMP(P) and the MRTS51.1 have been updated with the Historical Cultural Heritage identified within the site, including any approval requirements. No approvals are required as the culverts are not heritage listed nor meet the threshold for reporting under s89 QHA. It is recommended the culverts be avoided. If avoidance is not possible a photographic archival recording should be completed prior to impact.	Designer

Table 5 Risk Assessment for Cultural Heritage

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
High	Minor	Unlikely	Low

5.3 Water

Table 6 Actions for Water

<table>
<tr><th>Ref Num / Spec-Clause</th><th>Potential Impact/Opportunity</th><th>Recommended Actions</th><th>Responsibility</th></tr>
<tr><td>MRTS51.1 Clause 1.1</td><td>Approvals yet to be obtained by Principal</td><td>Based on the currently design, the Project will require a development permit for prescribed tidal works under the Planning Act 2016. TMR will provide the development approval once obtained.</td><td>Designer/ Environmental Officer</td></tr>
<tr><td>MRTS51.1 Clause 2.1</td><td>During construction the downstream water quality will be adversely affected.</td><td>The water quality risk for the contract is HIGH. The actions required to manage the level of risk are described in MRTS51.
To note:
Contractor to confirm soil exposure quantity and re-assess the water quality risk once known.
<table>
<tr><th>Water Quality</th><th>Characteristics of Risk Level</th></tr>
<tr><td>☐ Low</td><td>• Contracts with minor earthworks, and
• ground surface disturbance not greater than 1ha, and
• do not undertake an activity that is defined in high risk, or
• are located 250 m or greater upslope from:
– a waterway (with defined bed and banks and water present) or
– a dam or
– waterbody.
(That is, the site boundary is within the catchment of a waterway, dam, waterbody but is separated by more than 250 m. NOTE: Site could be closer but not be within the catchment of a waterway, dam or waterbody.)</td></tr>
<tr><td>☐ Medium</td><td>Contracts that are neither low nor high risk.</td></tr>
</table></td><td>Designer/ Contractor</td></tr>
</table>

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions		Responsibility
		☒ High	• Works within the tidal limit, or • Works within a watercourse with water present, or • Works within a wetland or wetland protection area, or • Works that disturb ASS, or • Works that discharge from a tertiary water quality treatment device such as high efficiency sediment basin, or • Works that disturb a known contaminated site, or • Works immediately upstream of a stock and domestic water supply, or • Works will affect the habitat of fauna or flora sensitive to changes in water quality within the water shed of the project (e.g special frogs and fish), or Works that have a permit that includes conditions directly related to water quality.	
MRTS51.1 Clause 2.2	There are other parameters that may be present in discharge from the site which need to be monitored.	The Contractor shall develop and undertake a water quality monitoring plan that is reasonable and practicable in accordance with the requirements stipulated in Clause 8.2.3 of MRTS51 Environmental Management Specification.		Contractor
MRTS51.1 Clause 2.3		Add the following to the **water quality monitoring** requirements: Level of water quality monitoring TBD by Contractor. If less than 2,500 m², works will have to visually monitor water quality and ensure no contaminated or dirty water leaves site.		Contractor
MRTS51.1 Clause 2.3	There are no mapped watercourses that may be impacted.	The Project area does not contain mapped watercourses under the *Water Act 2000.*		Designer
MRTS51.1 Clause 2.3	There are sensitive receiving environments downstream of the Project that could be impacted by the Project.	Runoff from Project area will need to be monitored for runoff events. Main contaminants anticipated will be suspended solids. Monitoring will be undertaken to inspect suspended solids and plumes. Visual monitoring and sampling will be undertaken for suspended solids using a handheld Turbidity Units recording device. Monitoring is to be undertaken in accordance with the Erosion and Sediment Control Plan prepared for the Project. • If visual inspections identify plumes of sediment or alternative sources of contaminates, then additional testing is required as part of the investigation to ensure all reasonable and practicable measures is undertaken to meet GED.		Environmental Officer

Table 7 Risk Assessment for Water

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
Extreme	Moderate	Possible	Medium

5.4 Soil and Land

Table 8 Actions for Soil and Land

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
#1	A major project with high risk of erosion and sediment impacts during construction	Apply the alternative erosion and sediment control specification MRTS52B provisional sum method. Undertake a cost estimate for erosion and sediment control during construction phase. This may require expert advice in erosion and sediment control. Include emphasis on erosion and sediment control performance and experience on high-risk projects as a non-price criterion in procurement. Include provision items within the works schedule for erosion and sediment control. Resource the contract administration team with an expert in erosion and sediment control to ensure suitable oversight of Contractor's erosion and sediment control performance.	Designer / Project Manager
#2	Presence of dispersive and slaking soils will impact resilience of asset during operational phase.	Design considerations for dispersive and slaking soils – refer to soil management manual. Include amelioration work items in works schedule. Ensure quantities have been estimated based on earthworks.	Designer
#3	Potential of the erosion of sediment into waterbodies.	An Erosion and Sediment Control Plan to be prepared by a suitably qualified person Certified Professional in Erosion and Sediment Control (CPESC).	Contractor

<table>
<tr><th>Ref Num / Spec-Clause</th><th>Potential Impact/Opportunity</th><th>Recommended Actions</th><th>Responsibility</th></tr>
<tr><td>MRTS51 Clause 8.9</td><td>Potential to disturb existing asbestos culverts within the Project area.</td><td>Historic culvert located within the Project area have been identified as potentially containing asbestos.
The Contractor shall comply with the requirements of Clause 11 of MRTS04 General Earthworks in relation to Deposition of Surplus Material and MRTS96 Management and Removal of Asbestos.
Known locations of Contaminated Sites are stated to be stated in Clause 7.1 of Annexure MRTS51.1.
Where an Administrating Authority-accepted Site Management Plan exists, this is identified in Clause 7.2 of Annexure MRTS51.1.
Where stipulated in Clause 7.3 of Annexure MRTS51.1, the Contractor shall develop and implement a Contaminated Site investigation by a suitably qualified person, management and Compliance Testing Plan in accordance with Environmental Protection Act 1994, Chapter 7, Part 8 Contaminated Land.
If an additional Contaminated Site is identified during Work under the Contract, the Contractor shall:
a) notify the Administrator in accordance with Clause 7 of this Technical Specification
b) notify the Administrating Authority in accordance with the requirements of the Environmental Protection Act 1994 (for unexploded ordnances (UXO) notify Department of Defence)
c) prevent spread of contamination
d) manage the Contaminated Site in accordance with statutory requirements
e) where instructed by the Administrator, the Contractor will develop a Site Management Plan in accordance with statutory requirements, submit to the Administrator for suitability, submit to the Administrating Authority for acceptance, and carry out remediation of Contaminated Site in accordance with the Site Management Plan, and
f) provide the Administrating Authority-accepted Site Management Plan to Administrator for records.
The Principal may at their discretion elect to undertake the investigation and management of additional Contaminated Site by its own agents. The Contractor shall facilitate the investigation.</td><td>Designer/ Contractor</td></tr>
<tr><td>MRTS51 Clause 1.1</td><td>Relevant Standards, Approvals or Exemption requirements that apply to this Project</td><td>No relevant Standards, Approvals or Exemption requirements required for this Project</td><td>Designer</td></tr>
<tr><td>MRTS51 Clause 1.1</td><td>Notification requirements</td><td>The Contractor must notify the Principal if they intend to carry out asphalt manufacture, a notifiable activity as defined under the Environmental Protection Act 1994 on Principal owned land to allow the Principal to notify the regulator as the land owner.</td><td>Contractor</td></tr>
<tr><td>MRTS52.1 Clause 2.1</td><td>During construction the Project area will be eroded and there will be offsite sedimentation</td><td>The following is the erosion risk for the contract is HIGH. The actions required to manage this level of risk are described in MRTS52.
<table><tr><th>Erosion Risk</th><th>Characteristics of risk level</th></tr><tr><td>☐ Low</td><td>☐< 2500 m² disturbed surface area open at any one time OR
☐< 10 t/ha/year soil loss predicted (using RUSLE), AND
☐controls installed and maintained in accordance with prescriptive standard (e.g. standard drawings).</td></tr></table></td><td>Designer</td></tr>
</table>

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions		Responsibility
		☐ Medium	☐all projects not meeting the characteristics above or below.	
		☒ High	Projects with two or more of the following characteristics: ☐project duration > 6 months ☐project working within or discharging to sensitive environment such as marine parks, wetlands or waterway ☐soils with high to very high erodibility rating (i.e. dispersive soils) ☐projects which have > 1 hectare of land exposed during months with monthly rainfall erosivity (R factor) is greater than 285 ☐topography factor (LS) is greater than 2 or modal slopes on project are steeper than 15% (6.6 degrees).	
MRTS52.1 Clause 4.1	There is a high erosion risk for the site	Ensure that there is verification of the erosion and sediment controls on the Project. <u>Add the following text to the clause:</u> <u>Verifier</u> The verifier required under Cl. 6.3 MRTS52 shall be a person who is not affiliated with the Contractor other than their engagement/ role as the verifier with respect to the Contract. The independent verifier shall have CPESC qualifications and have a minimum of five (5) years' experience auditing road and/ or civil infrastructure projects.		Designer/ Contractor
Part 7 Project Specific Documents	Presence of dispersive and slaking soils will impact resilience of asset during operational phase	Design considerations for dispersive soils – refer to TMR soil management manual. A landscaping plan and potentially soil testing should be considered during design. The MRTS16 including an informed annexure will be required for the construction of this Project. To mitigate the risk of dispersive soils, soil testing will likely identify topsoil and subsoils treatment with a nominal rate of 2kg/m2 of Gypsum. Following treatment, topsoil is to be respread and hydromulched or turfed. Include amelioration work items in works schedule. Ensure quantities have been estimated based on earthworks.		Designer
MRTS51.1 Clause 7.1	There are contaminated sites that may be impacted by the Project and require management during construction.	Ensure that the Contractor is aware of the sites and that they incorporate specific measures in the EMP(C). The following is the list of contaminated sites: • existing asbestos culverts within the Project area.		Designer
MRTS51.1 Clause 7.2		The following specific requirements are necessary for the management of the contaminated sites: • A Site Management Plan to be approved for existing asbestos culverts within the Project area. <u>Unexploded Ordnance (UXO)</u> Should an UXO be found, work is to cease immediately, and the following measures implemented: • DO NOT TOUCH or DISTURB IT • Notify the Administrator immediately who must then notify the Police • Isolate and mark the location with high visibility tape or similar Ensure co-workers and/ or other people on the work site are aware of the find and instructed not to enter the marked off area		Designer

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS04.1 Clause 4.1	Acid Sulphate Soils (ASS) will be disturbed by construction	Identify in the contract that ASS has been identified The Project area is likely to contain ASS given the tidal nature of the site. The desktop investigation showed that the Project is within Cq(p4) Extremely Low Probability of Occurrence of acid sulfate soil classification.	Designer
MRTS04.1 Clause 4.2		Ensure that the Contractor is aware of the locations of ASS on the site: Site 6	Designer
MRTS04 Clause 10.3		The Contractor must prepare an ASS Management Plan.	Contractor
MRTS04.1 Clause 4.5		The Contractor must do the following when assessing and treating ASS: Stockpile, treat and neutralise ASS prior to disposing in a lawful manner.	Contractor
MRTS04.1 Clause 4.3	Acid Sulphate Soils may be present in the construction area	Identify in the contract that ASS has been identified The Project area is likely to contain ASS given the tidal nature of the site. The desktop investigation showed that the Project is within Cq(p4) Extremely Low Probability of Occurrence of acid sulfate soil classification.	Designer
MRTS04.1 Clause 4.4		Ensure that the Contractor is aware of the potential locations where ASS may be present on the site: Site 6.	Contractor
MRTS04.1 Clause 4.5		The Contractor must do the following when assessing and treating ASS: Stockpile, treat and neutralise ASS prior to disposing in a lawful manner.	Contractor
MRTS04 Clause 10.7	Acidic runoff from stockpiles off ASS or excavations of ASS may impact downstream environments	The minimum testing requirements for contaminated water is chloride, sulfate, aluminium, calcium and iron content, pH and Electrical Conductivity	Contractor
MRTS04.1 Clause 4.6		Contaminated water must meet the criteria outlined in an ASS Management Plan prior to discharge.	Contractor

Table 9 Risk Assessment for Soil and Land

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
High	Moderate	Unlikely	Medium

5.5 Ecosystems and Habitats

Table 10 Actions for Ecosystems and Habitats

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51 Clause 1.1	Relevant Standards, Approvals or Exemption requirements that apply to this Project	An amber waterway under the *Fisheries Act 1994* intersects the Project area. Further assessment is required to confirm impacts and assess compliance with the *"Accepted development requirements for operational work that is constructing or raising waterway barrier works (Date effective 1st October 2018)"* (Acceptable Development Requirements). If temporary waterway barrier works are to be constructed, raised or modified as part of this Contract, the Contractor shall ensure compliance with DPI's Acceptable Development Requirements. Where compliance with the Accepted Development Requirements is not practicable, the Contractor is obligated to obtain an applicable Development Approval and comply with Approval conditions. If the Contractor requires access over or works within a waterway mapped under the Queensland Waterways for Waterway Barrier Works not within the Site, the Contractor is required to undertake an assessment of applicable fish passage requirements. The Contractor shall obtain the necessary Approvals.	Designer
MRTS51.1 Clause 8.1	Fish passage streams will be impacted by construction work.	An amber waterway under the *Fisheries Act 1994* intersects the Project area. Further assessment is required to confirm impacts and assess compliance with the *"Accepted development requirements for operational work that is constructing or raising waterway barrier works (Date effective 1st October 2018)"* (Acceptable Development Requirements). If temporary waterway barrier works are to be constructed, raised or modified as part of this Contract, the Contractor shall ensure compliance with DPI F's Acceptable Development Requirements. Where compliance with the Accepted Development Requirements is not practicable, the Contractor is obligated to obtain an applicable Development Approval and comply with Approval conditions. If the Contractor requires access over or works within a waterway mapped under the Queensland Waterways for Waterway Barrier Works not within the Site, the Contractor is required to undertake an assessment of applicable fish passage requirements. The Contractor shall obtain the necessary Approvals.	Designer/ Contractor

Table 11 Risk Assessment for Ecosystems and Habitat

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
High	Moderate	Unlikely	Medium

5.6 Flora

Table 12 Actions for Flora

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 1.1	Relevant Standards, Approvals or Exemption requirements that apply to this Project	This Project requires removal of marine plants and must comply with Development Permit for the removal, destruction or damage of marine plants under the *Planning Act 2016* and *Fisheries Act 1994*. TMR have lodged a development application with DSDILGP for Operational Works for clearing marine plants. The Contractor must undertake the work in accordance with the conditions of the Development Permit. Where the Contractor cannot be complied with conditions, the Contractor will be required to obtain an amendment to the Development Permit at the Contractor's expense. A Protected Plant Clearing Permit is not expected to be required for the Project based on the current Project area where the Project involves maintenance activities only. The following actions are recommended: • confirm that the Project is consistent with maintenance works and will not include 'betterment works'. If betterment works are proposed, these are unlikely to be considered maintenance works and would require a Protected Plant Flora Survey to be conducted in any area where vegetation that is considered to be "in the wild" is impacted. This requires a survey within a 100m buffer around the clearing areas.	Designer
MRTS51 Clause 1.1	Approvals to yet be obtained by Principal	The following approvals will be obtained by the Principal: • Development Permit for the removal, destruction or damage of marine plants • If betterment works are proposed, these are unlikely to be considered maintenance works and would require a Protected Plant Flora Survey to be conducted in any area where vegetation that is considered to be "in the wild" is impacted. This requires a survey within a 100 m buffer around the clearing areas.	Designer/ Environmental Officer
MRTS51 Clause 1.1	Approvals yet to be obtained by Contractor	The following approval must be prepared and obtained by the Contractor at the Contractor's expense: • If during the construction phase, the clearing of marine plants occurs outside of the approved clearing footprint. • If betterment works occur during the construction phase as a deviation to the detailed design, these are unlikely to be considered maintenance works and would require a Protected Plant Flora Survey to be conducted in any area where vegetation that is considered to be "in the wild" is impacted. This requires a survey within a 100 m buffer around the clearing areas.	Contractor
MRTS51 Clause 1.1	Notification requirements	Dependent upon the relevant approvals needed, ie: Agreements prior to authority being issued must be notified within 10 business days. The offset delivery approach starts with the authority holder filling in the notice of election form, available at www.qld.gov.au (search 'environmental offsets'). The administering agency should provide a response to the notice of election within 40 business days of receipt of the notice.	Designer/ Environmental Officer

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 9.1	Significant vegetation (individual or communities) will be impacted by the Project and will require management during construction.	MRTS51 states that the Contractor shall be responsible for managing work under the Contract in order to avoid Environmental Harm on Significant Vegetation that is to be retained. The Contractor shall adhere to the Contractual Limits of Clearing as defined in Table 2 of this Technical Specification. The Contractor shall take reasonable and practicable Management Measures to avoid disturbance to vegetation on ground surface outside of the Limits of Clearing and to minimise disturbance areas within the Limits of Clearing where practicable. The Contractor shall install identification markers along the Limits of Clearing boundary prior to commencing vegetation clearing and ground disturbance. Identification markers shall be maintained for the duration of the Contract or at least until Works are complete in the adjacent area. Exclusion zones shall be installed around any vegetation identified for retention that occurs inside the overall limits of disturbance. Further ecology survey work to confirm if marine plants are present and likely to be impacted by the Project (permanent and temporary marine plant disturbance). Where marine plants are identified, assessment against the ADR will be required. Where the ADR cannot be met, a significant residual impact assessment will be required to be undertaken and development approval obtained. Offsets may be applicable where marine plants are impacted.	Contractor
MRTS51.1 Clause 14	Clearing may be required beyond the assessed limits	MRTS51 states that where the Contractor identifies the requirement for additional areas of vegetation or ground to be disturbed outside the specified Limits of Clearing, the Contractor shall submit a request to the Administrator. If the Administrator deems the additional areas suitable for clearing, the Contractor shall amend the Limits of Clearing and erosion and sediment controls managing the Site before proceeding. The Contractor will be responsible for determining whether Approval(s) are required, obtaining the Approval(s) and complying with conditions. Delays incurred as a result of obtaining Approvals shall be the Contractor's responsibility. (Section 8.11.2) Include the following text in the clause: Additional requirements for request to clear outside Limits of Clearing In addition to the requirements in MRTS1 Section 8.11.2, the Contractor must provide a minimum of 15 business-days notice to the Administrator for any request to clear outside of the specified Limits of Clearing.	Contractor

Table 13 Risk Assessment for Flora

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
High	Moderate	Possible	Medium

5.7 Fauna

Table 14 Actions for Fauna

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
#1	There is a potential for breeding places present in the Project area.	Ensure a spotter catcher is engaged to undertake a breeding place inspection of trees and shrubs is undertaken prior to clearing works.	Contractor
MRTS51 Clause 1.1	Relevant Standards, Approvals or Exemption requirements that apply to this Project	TMR's low-risk Species Management Program (SMP) is recommended to be implemented across the Project area by the construction Contractor during all clearing works. To ensure all breeding places within the Project are known prior to clearing and grubbing, a pre-clearing animal breeding assessment will be required to be undertaken by the construction Contractor. • Species Management Program (Low Risk) under the Nature Conservation (Animals) Regulation 2020 (NC Animals Reg). • If required, Species Management Program (High Risk) under the NC Animals Reg.	Contractor
MRTS51 Clause 1.1	Notification requirements	The Contractor must report the presence of any threatened fauna to the appropriate contacts within 24 hours of detection. The authorised entity should discuss a proposed action with DETSI. The approved entity will within 48 hours of an action undertaken under this clause notify DETSI in writing at wildlife@des.qld.gov.au. On approval, DETSI will give written notice to the approved entity that condition(s) of this document are alleged to have been contravened and will invite the approved entity to show cause in writing within 20 business days of the date of the notice why the approval should not be revoked.	Contractor

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 8.4	Fauna habitat or breeding place may be impacted by the Project and a Suitably Qualified and Experienced Person (Fauna) will be required for clearing.	MRTS51 includes a definition for a suitably qualified and experienced person (fauna). It also states the following: Section 8.10.2 Where the Works under the Contract will result in a requirement to tamper with a breeding place covered by the scope of the Principal's State-wide SMP-low risk, the Contractor shall be responsible for tampering with any least concern breeding places in accordance with Table 1 of the SMP-low risk including the engagement of Suitably Qualified and Experienced Person (fauna) as required. Section 8.10.3 - When operating under the State-wide SMP-low risk, the Contractor shall engage a Suitably Qualified and Experienced Person (Fauna) to undertake pre-clearing inspections of vegetation and potential breeding places and monitor for native fauna and breeding places when undertaking works that are known or likely to impact animal breeding places or native fauna. Low-risk SMP can be found online on DETSI's website: NCS/2016/2516 Species management program for tampering with animal breeding places (low risk of impacts) (desi.qld.gov.au). Add the following text to the clause: Suitably Qualified and Experienced Person (Fauna) • Must be engaged to implement the requirements of the SMP - Low Risk (MRTS51 Section 8.10.2) and do a pre-clearing inspection (MRTS51 Section 8.10.3) • Pre-clearing survey must be within 48 hours prior to clearing and grubbing. • Must be present for clearing of all woody vegetation, ground debris, and the top 100mm of any soil stripping that were identified as requiring supervision from the pre-clearing survey. • There must be one Suitably Qualified and Experienced Person (Fauna) per planting operation to clear vegetation. • May investigate rocks, logs and other ground debris ahead of machinery movements. • May request that trees with high fauna potential be brought down in sections to manage risks to hollow dwelling fauna. • May be present for topsoil stripping in areas deemed to have fauna potential. • Shall submit a post clearing report to the Administrator. • The Pre-clearing report must describe the fauna and habitat places found including, but not limited to, habitat trees, nests, arboreal hollows, termite nests and the ground surface. • A post-clearing report shall document all strategies employed during clearing to manage impacts to animals and habitat places including all records of animal sightings. The report shall be prepared by the Suitably Qualified and Experienced Person (Fauna) and provided to the Administrator no later than 14 days after the completion of clearing. The post-clearing report is in addition to submission of the Animal Breeding Place Register in accordance with Clause 8.10.2 of MRTS51.	Designer/ Environmental Officer

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 8.2	Fauna habitat or breeding place will be impacted by the Project and will require management during construction.	MRTS51 states that the Contractor shall be responsible for managing potential Environmental Harm to native fauna, their breeding places and their habitat within the Site and adjacent to the Site. These are the known fauna habitat and breeding places: • A breeding place inspection of trees and shrubs within the Project site has not been undertaken and will be required prior to clearing works. <u>Sick or injured animals</u> The Contractor is obliged to ensure that any fauna injured during construction shall be promptly treated by a veterinarian or registered wildlife carer. Any fauna that are injured or killed during construction undertaken by the Contractor under the Contract shall be promptly reported to the Administrator as an environmental incident. <u>Breeding places for threatened species identified in pre-clearing survey</u> In the event breeding places of critically endangered, endangered, vulnerable, near-threatened species or colonial breeders are discovered on site and the species is not covered by a SMP, the Contractor shall: (a) cease works in the immediate vicinity; and (b) establish a protection zone around the breeding place; and (c) contact the Administrator's Environmental Officer for management advice.	Contractor
MRTS51.1 Clause 8.2	Vegetation to be cleared has hollows which are potential breeding places	<u>Add the following text to the clause:</u> <u>Retain hollow logs</u> All practical efforts shall be made to salvage whole any hollow limbs and logs, during vegetation clearing. These shall be dispersed throughout the road reserve as ground level fauna habitat – outside the safety clear zone and 3 m from any fence. <u>Nest Boxes</u> The Contractor shall count the number of individual hollows, potentially usable for fauna, which are to be removed by vegetation clearing. Nest boxes (or carved hollows) shall be installed within state-controlled road reserve within 2 km of the Project, at a rate of 1 nest box per hollow removed to a maximum of 50 nest boxes. Boxes shall be a mixture of types to suit local fauna species. Boxes shall be physically numbered in sequence (tags or paint) identifiable during monitoring. Latitude/ longitude for each box shall be recorded. A report shall be provided including a map of nest box locations labelled with their sequential number. <u>Nest Boxes</u> The Contractor shall conduct a count of fauna hollows removed by vegetation clearing works. Hollows lost shall be replaced with carved hollows/ nest boxes (maximum of 75) in the following proportions: 50% of replacement hollows shall be “carved hollows” carved by chainsaw into retained trees on site, by tree climbers experienced in this practice. 50% pre-built nest boxes made from durable materials, with 30-year life expectancy. (For example, natural hardwood hollow sections with end plates, or high-quality nest boxes. Cheap plywood boxes are not suitable). Carved hollows/ nest boxes shall include various designs catering for microbats, possums/ gliders, and different species of native birds that occur in the local landscape. Carved hollows/ nest boxes shall be installed within road reserve trees that have been retained within the Project extent. They shall be installed with a height, position and aspect suitable to the target species.	Contractor

Table 15 Risk Assessment for Fauna

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
High	Moderate	Possible	Medium

5.8 Biosecurity Matters

Table 16 Actions for Biosecurity Matters

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51 Clause 1.1	Relevant Standards, Approvals or Exemption requirements that apply to this Project	The construction Contractor is responsible for ensuring their GBO commitment is detailed in the EMP(C) and adhered to for the duration of the Project works. A BIP for movement of high-risk biosecurity matter which cannot comply with movement restrictions may also be required, to be confirmed through field survey of biosecurity matters presence.	Contractor
MRTS51 Clause 1.1	Approvals yet to be obtained by Contractor	The Project will need to demonstrate how it will meet its GBO through development of an EMP(C) to manage biosecurity risk through the construction phase of the Project. The Project is known to be in Banana, Asian Honey Bee, Cattle tick, Electric ant, Grape Phylloxera, and Sugar cane zones from desktop investigation. It is recommended that site inspection is to be taken place before commencement of works.	Contractor/ Environmental Officer
MRTS51 Clause 1.1	Notification requirements	The Contractor must report the presence of any biosecurity matter listed above under the *Biosecurity Act 2014* to DPI within 24 hours of detection. Reports of fire ants can be made either by calling or completing the yard check report form which is available on DPI website.	Contractor
MRTS51.1 Clause 10.1	Biosecurity Matters need to be managed during the construction phase of the Project	Retain one or more options below: • No weed treatment has been undertaken by the Principal prior to the Contract. The Contractor is required to mechanically remove all individuals of the above listed weed species that occur within the works footprint. All parts of all removed weeds must be separated from other vegetation waste and debris and disposed to landfill via a covered load. • The Contractor is required the chemically treat all individuals of the above listed weed species that occur between works footprint and the road reserve boundaries (or 20 m beyond the works footprint, whichever is less) on both sides of the road, up to 200 m^2 allowance.	Designer
MRTS51.1 Clause 10.1	There are significant infestations of biosecurity matters which could be spread due the location of the work.	Add the following text to the clause: The Contractor shall construct a formalised temporary weed washdown bay for the Project. The temporary weed washdown bay shall be constructed in an appropriate location for use by the Contractor to ensure that the spread of restricted matters and environmental weeds across site and the external environment is minimised. Before a vehicle can be passed out for on-site use, it should be washed down and inspected, or have a weed hygiene certificate. Additionally, all weeds to be treated prior to working in the area. Potential weeds should also be included in the Construction EMP and induction to aid in site identification. Works associated with the above are deemed to be included in Item Number 20246 – Biosecurity Matter Control.	Contractor

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 10.2	The Project is within a biosecurity zone	• Asian Honey Bee Biosecurity Zone (Known Infested Area) • Banana Biosecurity Zone (Northern Zone) • Grape Phylloxera Biosecurity Zone (Risk Zone) • Sugar Cane Biosecurity Zone (Zone 1) • Electric Ant Biosecurity Zone • Cattle Tick Biosecurity Zone (Cattle Tick Area)	Designer
MRTS51.1 Clause 10.1	The Project is within the Electric Ant Biosecurity Zone.	The rifle range stockpile site (coordinates: -16.6839, 145.5756) is located within the an Electric Ant Restricted Zone. Contractor to confirm if additional stockpiles sites are within an Electric Ant Restricted Zone prior to use. Contractor to check Biosecurity Queensland interactive mapping. Link: https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/biosecurity/plants/insects/electric-ants. • Where a stockpile site is confirmed to be within an Electric Ant Restricted Zone (i.e. the rifle range stockpile site), a BIP will need to be obtained by the contractor. An application can be made via the DPI website: https://www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/biosecurity-instrument-permit.	Contractor
MRTS51.1 Clause 10.2	The Project is NOT within a Fire Ant zone	No recommended actions needed	Designer

Table 17 Risk Assessment for Biosecurity Matters

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
High	Minor	Unlikely	Low

5.9 Air

Table 18 Actions for Air

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 6.1	Burning of material during construction will impact on sensitive receptors	No (burning is not permitted on site).	Designer
MRTS51.1 Clause 6.3	Sensitive receptors will be impacted by construction activities	Air quality monitoring is only required to be undertaken in response to, or as part of an investigation into a valid complaint as per TMR's Road Traffic Air Quality Management Manual. Air quality monitoring will be in accordance with: • Environmental Protection Agency Air Quality Sampling Manual • AS 2922 Ambient Air Guide for Siting Sampling Equipment • AS 3580.10.1-2003 Method of Sampling Analysis of Ambient Air. The data shall assist with the assessment of impact (through a comparison with air quality criteria given in the Road Traffic Air Quality Management Manual) and in the development and implementation of appropriate work procedures or mitigation measures to minimise further dust impacts (if required).	Designer

<table>
<tr><th>Ref Num / Spec-Clause</th><th>Potential Impact/Opportunity</th><th>Recommended Actions</th><th>Responsibility</th></tr>
<tr><td>MRTS51.1 Clause 6.4</td><td></td><td>The following air quality sensitive receptors have been identified by the Principal:
<table>
<tr><th>Lot & Plan / Location</th><th>Type of Receptor</th></tr>
<tr><td>146 SR636</td><td>Residence</td></tr>
<tr><td>149 SR636</td><td>Residence</td></tr>
<tr><td>2 RP739081</td><td>Residence</td></tr>
<tr><td>1 RP739081</td><td>Residence</td></tr>
<tr><td>129 SR454</td><td>Residence</td></tr>
<tr><td>130 SR454</td><td>Residence</td></tr>
<tr><td>131 SR454</td><td>Residence</td></tr>
<tr><td>137 SR454</td><td>Residence</td></tr>
<tr><td>138 SR454</td><td>Residence</td></tr>
<tr><td>139 SR454</td><td>Residence</td></tr>
<tr><td>140 SR454</td><td>Residence</td></tr>
<tr><td>4 RP742791</td><td>Residence</td></tr>
<tr><td>1 RP742791</td><td>Residence</td></tr>
<tr><td>2 RP742791</td><td>Residence</td></tr>
<tr><td>3 RP742791</td><td>Residence</td></tr>
<tr><td>174 NPW930</td><td>Wet Tropics of Queensland World Heritage Area</td></tr>
</table></td><td>Designer
Environmental Officer/ Contractor</td></tr>
</table>

The initial risk for Air was Low so no action is required to manage this factor. The Residual Risk is the same as the Initial Risk.

Table 19 Risk Assessment for Air

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
Low	Minor	Unlikely	Low

5.10 Noise and Vibration

Table 20 Actions for Noise and Vibration

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions		Responsibility
MRTS51.1 clause 4.1	Sensitive receptors will be impacted by construction noise	**Construction Noise Risk**	**Characteristics of Risk Categories**	
		☐ Low Risk	• The project duration is less than 3 months, and • The project construction activity is conducted during the daytime only (7 am to 6 pm) excluding Sundays and public holidays, and • The project does not include piling, dynamic compaction or demolition, and • Sensitive receivers are located greater than: – 50 m from the project area, or – 30 m from the project area where the project progresses along an alignment with less than 1 week in the vicinity of individual sensitive receivers.	Designer
		☒ Medium/ high	Further assessment required - Refer Guidance Note: Implementation of Transport Noise Management Code of Practice Volume 1 and 2	Designer
MRTS51.1 clause 4.2	A Noise Assessment Report is required and needs to be done by the Contractor.	Yes (Contractor must prepare a Noise Assessment Report)		Designer

<table>
<tr><th>Ref Num / Spec-Clause</th><th>Potential Impact/Opportunity</th><th>Recommended Actions</th><th>Responsibility</th></tr>
<tr><td>MRTS51.1 clause 4.2</td><td>Noise sensitive receptors have been identified near the Project and the impact of construction noise needs to be managed.</td><td>The following noise sensitive receptors have been identified through desktop assessment within 500m from Site:<table><tr><th>Lot / Plan</th><th>Type of Receptor</th></tr><tr><td>146 SR636</td><td>Residence</td></tr><tr><td>149 SR636</td><td>Residence</td></tr><tr><td>2 RP739081</td><td>Residence</td></tr><tr><td>1 RP739081</td><td>Residence</td></tr><tr><td>129 SR454</td><td>Residence</td></tr><tr><td>130 SR454</td><td>Residence</td></tr><tr><td>131 SR454</td><td>Residence</td></tr><tr><td>137 SR454</td><td>Residence</td></tr><tr><td>138 SR454</td><td>Residence</td></tr><tr><td>139 SR454</td><td>Residence</td></tr><tr><td>140 SR454</td><td>Residence</td></tr><tr><td>4 RP742791</td><td>Residence</td></tr><tr><td>1 RP742791</td><td>Residence</td></tr><tr><td>2 RP742791</td><td>Residence</td></tr><tr><td>3 RP742791</td><td>Residence</td></tr></table></td><td>Designer</td></tr>
<tr><td>MRTS51.1 clause 4.2</td><td>Noise sensitive receptors have been identified near the Project and the impact of construction noise needs to be managed.</td><td>MRTS51 states that the Contractor shall review the EMP(C), update and implement additional Management Measures in response to a justifiable complaint caused by the Work under the Contract.

<u>Add the following to the clause:</u>

A noise complaint assessment should be conducted for a justifiable complaint only when preliminary investigations and communication cannot quickly resolve the issue. The complaint assessment requirements are outlined in section 4.3.2 of TMR's Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration. When conducting noise measurements, you shall follow the described methods and standards outlined in section 5 of TMR's Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration.</td><td>Contractor</td></tr>
<tr><td>MRTS51.1
Clause 5.1</td><td>Sensitive receptors will be impacted by construction vibration</td><td><table><tr><th>Construction Vibration Risk</th><th>Characteristics of Risk</th></tr><tr><td>☐ Low risk</td><td>• The project duration is less than 3 months, and
• The project construction activity is conducted during the daytime only (7 am to 6 pm) excluding Sundays and public holidays, and
• The project does not include blasting, piling or dynamic compaction or demolition, and
• Sensitive receivers and services are located greater than 50 m from vibratory rollers/hydraulic hammers.</td></tr></table></td><td>Designer</td></tr>
</table>

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions		Responsibility
		☒ Medium/high	Further assessment required - Refer Guidance Note: Implementation of Transport Noise Management Code of Practice Volume 1 and 2	Designer
MRTS51.1 clause 5.2	A Vibration Assessment Report is required, and it will be prepared	Yes (Contractor is required to do a Vibration Assessment Report)		Contractor
MRTS51.1 clause 5.4	Vibration sensitive receptors have been identified near the Project and the impact of vibration needs to be managed.	MRTS51 states that the Contractor shall review the EMP(C), update and implement additional Management Measures in response to a justifiable complaint caused by the work under the Contract. <u>Add the following to the clause:</u> A vibration complaint assessment should be conducted for a justifiable complaint only when preliminary investigations and communication cannot quickly resolve the issue. The complaint assessment requirements are outlined in section 4.3.2 of TMR's Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration. When conducting vibration measurements, you shall follow the described methods and standards outlined in section 5 of TMR's Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration.		Environmental Officer/ Contractor

Table 21 Risk Assessment for Noise and Vibration

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
Low	Insignificant	Unlikely	Low

5.11 Amenity

Table 22 Actions for Amenity

<table>
<tr><th>Ref Num / Spec-Clause</th><th>Potential Impact/Opportunity</th><th>Recommended Actions</th><th>Responsibility</th></tr>
<tr><td>#1</td><td>Removal of trees within the Project may impact amenity value.</td><td>Revegetation of site with hydro mulching where practical. The table below indicates the composition and application of hydro mulch at the site. Where the proposed hydro mulch is amended as a result of consultation with Wet Tropics Management Authority, approval from the Principal will be required.
<table>
<tr><th>Ingredient</th><th>Species Description</th><th>Application Rate</th></tr>
<tr><td>Acacia simsii</td><td>Sims' Wattle</td><td>0.5 kg/ha</td></tr>
<tr><td>Acacia celsa</td><td>Brown Salwood</td><td>1 kg/ ha</td></tr>
<tr><td>Acacia crassicarpa</td><td>Hickory Wattle</td><td>1 kg/ ha</td></tr>
<tr><td>Acacia flavescens</td><td>Red Wattle</td><td>0.5 kg/ ha</td></tr>
<tr><td>Acacia mangium</td><td>Black Watte</td><td>1 kg/ ha</td></tr>
<tr><td>Macaranga sp.</td><td>Macaranga</td><td>0.5 kg/ ha</td></tr>
<tr><td>Crotalaria spp.</td><td>Yellow Rattlepod</td><td>0.5 kg/ ha</td></tr>
<tr><td>Cynodon Dactylon</td><td>Green Couch-Hulled</td><td>10 kg/ ha</td></tr>
<tr><td>Cynodon Dactylon</td><td>Green Couch-Unhulled</td><td>10 kg/ ha</td></tr>
<tr><td>Echinochloa esculentum</td><td>Japanese millet</td><td>20kg/ha</td></tr>
<tr><td>Imperata Cylindrica</td><td>Blady Grass</td><td>5 kg/ ha</td></tr>
<tr><td>Bothriochloa bladhii subsp. Bladhii</td><td>Forest Bluegrass</td><td>5 kg/ ha</td></tr>
<tr><td>Bothriochloa insculpta</td><td>Sweetpitted Grass</td><td>5kg/ha</td></tr>
<tr><td>Fertiliser</td><td>Crop King 77S</td><td>300kg/ha</td></tr>
<tr><td>Lime</td><td></td><td>2000kg/ha</td></tr>
<tr><td>BFM with tackier, wetting agents</td><td></td><td>6500kg/ha</td></tr>
</table></td><td>Designer/ Contractor</td></tr>
<tr><td>#2</td><td>Removal of pebbles from Pebbly Beach resulting in an impact to amenity value.</td><td>During construction, pebble removed are to be stockpiled and placed back over the site once the works are completed.</td><td>Designer</td></tr>
</table>

Table 23 Risk Assessment for Amenity

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
Medium	Moderate	Possible	Medium

5.12 Resource Use and Waste

Table 24 Actions for Resource Use and Waste

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
#1	There will be surplus material (includes unsuitable material) from the Project	Identify potential spoil locations that are within existing disturbed areas such as old laydowns and stockpiles. Refer to Engineering Policy EP175 Deposition of Surplus Material – Assessment Methodology June 2023 for guidance.	Contractor
#2	Waste Reuse and Recycling Opportunities	Consideration of potential opportunities for use of reclaimed asphalt pavement and recycling of pavement. Contractor to identify potential opportunities within C7810.S12.TIC Tender Schedule S12 Waste to Resource Plan.	Contractor
#3	Disposal of leviable waste and payment the waste levy	Payment of waste levies for disposal of leviable / regulated wastes Contractor to identify waste quantities in C7810.S12.TIC Tender Schedule S12 Waste to Resource Plan. Section 11C, of the Waste and Recycling Regulation 2011 states: For section 37(2) of the Act, the total amount of waste levy imposed on all leviable waste that is delivered to a leviable waste disposal site during a levy period is the sum of the individual amounts of waste levy imposed on each type of leviable waste.	Designer / Project Manager
MRTS51.1 Clause 11.1	Vegetation needs to be cleared from the site and suitably disposed of, deposited or reused.	MRTS51 states vegetation waste from clearing and grubbing, that is free from Biosecurity Matter, may be used in conjunction with soil erosion and sediment measures such as brush matting or mulch or for appropriate fauna logs in accordance with Clause 7.2.5 of MRTS04. The following are the management requirements for vegetation waste from clearing and grubbing activities: • Chipped or mulched material can be used for ESCP controls. • Where trees are felled care should be taken not to damage adjacent vegetation. • Logs should not be windrowed where they present a significant risk of burning during annual National Park maintenance burning activities. • Vegetation not marketable and will not be provided for furniture (preference for fauna habitat) • Consider relocation of hollows to adjacent areas if identified (if possible). • Vegetation waste shall not be stockpiled anywhere in the road reserve. • Smaller individual trees may be placed into adjacent road reserve bushland where space permits, as ground level habitat, only to a maximum density of one tree per 50m of road length. Placement of felled vegetation into adjacent bushland must be done in a manner that does not damage existing trees and shrubs. Excess vegetation waste shall be removed from site and disposed lawfully.	Contractor
MRTS04.1 Clause 5	There will be surplus material from the Project	Principal did not identify deposition areas for surplus material to be assessed for impacts to environment, cultural heritage, native title and hydrology/ hydraulics.	Designer

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51.1 Clause 14	Concrete waste and washout could contaminate waterways in the Project area	Add the follow text to the clause: Concrete Waste & Washout A designated area for any excess concrete and/ or cement truck washout shall be established and enforced at least 30 m from any waterway. E.g., an area bunded and lined with plastic where it can evaporate or cure prior to disposal.	Designer

Table 25 Risk Assessment for Resource Use and Waste

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
Medium	Minor	Unlikely	Low

5.13 Special areas and Land Tenures

Table 26 Actions for Special Areas and Land Tenures

Ref Num / Spec-Clause	Potential Impact/Opportunity	Recommended Actions	Responsibility
MRTS51 Clause 1.1	Relevant Standards, Approvals or Exemption requirements that apply to this Project	The Project adjoins the Wet Tropics World Heritage Area (WTWHA) and Great Barrier Reef Marine Park World Heritage Area (GBRMP). The Contractor to ensure the works are contained within the clearly demarcated Project site to ensure works do not impact the WTWHA and GBRMP. If the works are undertaken within the WTWHA or GBRMP, a permit for activities within the WTWHA or GBRMP will be required for the Project.	Contractor

Table 27 Risk Assessment for Special Areas and Tenures

Initial Risk	Revised Consequence	Revised Likelihood	Residual Risk
Extreme	Major	Possible	High

5.14 Standard Work Items to Include

The work items that are indicated in Table 28 have been recommended for inclusion in the schedule of work for the Project.

Table 28 Recommended Standard Work Items

Standard Item No.	Description	Include
MRTS 04 General Earthworks		
32022P	Supply and storage of agricultural lime (Provisional Quantity, as directed)	☒
32026P	Quantitative laboratory testing of actual or potential Acid Sulphate Soils (Provisional Quantity, as directed)	☒
32030P	Treatment of water contaminated by acid sulphate soil, (Provisional Quantity if ordered)	☒
MRTS 16 Landscape and Revegetation Works		
50601	Preparation of a Soil Management Plan – Construction – Form A	☐
50602P	Topsoil sampling and testing – Form C (Provisional Quantity)	☐
50606P	Manufactured site topsoil sampling and testing – Form D (ProvisionalQuantity)	☐
50610P	Subsoil sampling and testing – Form E (Provisional Quantity)	☐
50614P	Drainage basin soil sampling and testing – Form F (ProvisionalQuantity)	☐
50651P	Manufactured site topsoil (Provisional Quantity, if ordered)	☐
50655P	Manufactured site mulch (Provisional Quantity, if ordered)	☐
50659	Harvesting of site seed material [*description*]	☐
50660	Harvesting of site plant material [*description*]	☐
50701P	Amelioration agent – agricultural lime, dolomite and / or gypsum(Provisional Quantity, if ordered) [agricultural lime, agricultural dolomite, agricultural gypsum]	☒
50705P	Amelioration agent – organic soil conditioner (Provisional Quantity, if ordered)	☒
50709P	Imported topsoil (Provisional Quantity, if ordered)	☐
50713P	Imported mulch (Provisional Quantity, if ordered) [*description*]	☐
50751P	Application of knock-down herbicide (Provisional Quantity)	☐
50755P	Manual removal of weeds (Provisional Quantity, if ordered)[*description*]	☐
50759P	Application of target herbicide (Provisional Quantity, if ordered)[*description*]	☐
50801	Installation of ameliorants to subsoil	☐
50802	Ripping, cultivation, roughening	☐
50803	Installation of topsoil [*depth*]	☐
50851	Seed Mix – Grassland Mix [*mix name*]	☐
50852	Seed Mix – Woodland / Forest Mix [*mix name*]	☐
50853	Installation of drill seeding [*mix name*]	☐
50854	Installation of broadcast seeding [*mix name*]	☐
50855	Installation of hydromulch – standard [*mix name*]	☐
50856	Installation of hydromulch - bonded fibre matrix [*mix name*]	☐
50858	Installation of hydro-compost [*mix name*]	☐
50859	Installation of straw mulching [*mix name*]	☐

Standard Item No.	Description	Include
50860	Installation of organics blanket [*mix name*]	☐
50861	Installation of seeded organic mesh and emulsion [*mix name*]	☐
50901	Installation of turf [*description*]	☐
50951	Installation of planting [*description*]	☐
51001	Installation of concrete planting bed edging	☐
51002	Installation of irrigation system	☐
51051	Establishment Period	☐
51052P	Establishment Period Watering (Provisional Quantity)	☐
51056	Monitoring Period [*duration*]	☐
51057P	Monitoring Period Watering (Provisional Quantity)	☐
MRTS 51 Environmental Management		
20201	**Weekly Environmental Inspections***	☒
20202	**Develop Environmental Management Plan (Construction)***	☒
20203	**Implement Environmental Management Plan (Construction)***	☒
20204	**Monthly Environmental Reporting***	☒
20205	**Environmental Records Management***	☒
20206	Approvals	☒
20208P	Water Quality Monitoring (Provisional Item, if ordered)	☒
20211	Cultural Heritage Management	☒
20212	Noise Assessment Report	☒
20213	Develop Noise Management Plan	☐
20217	Implement Noise Management Plan	☐
20221	Vibration Assessment Report	☒
20222P	Condition Surveys (Provisional Quantity)	☐
20226	Develop Vibration Management Plan	☐
20230	Implement Vibration Management Plan	☐
20234P	Air Quality Monitoring (Provisional Quantity, if ordered)	☐
20238P	Management of Contaminated Sites (Provisional Quantity, if ordered)	☐
20242P	Fauna Management (Provisional Item, if ordered)	☒
20246	Biosecurity Matter Control	☒
20250P	Investigation of Contaminated Sites (Provisional item, if ordered)	☒
20254P	Complaint-related Noise Assessment and Management (Provisional Quantity, if ordered)	☒
20258P	Complaint-related Vibration Assessment and Management (Provisional Quantity, if ordered)	☒
MRTS 52 Erosion and Sediment Control		
20501	Erosion and Sediment Control Plan/s	☒
20502	Erosion and Sediment Control Devices (Non-Itemised)	☒
20503	Independent Verification and Auditing	☒

Standard Item No.	Description	Include
20551P	Catch drains [material] (Provisional Quantity)	☐
20555P	Flow diversion bank / berm [material] (Provisional Quantity)	☐
20559P	Batter chutes [material] (Provisional Quantity)	☐
20563P	Check dams [material] (Provisional Quantity)	☐
20601P	Geobinders (Provisional Quantity)	☐
20605P	Erosion Control Blanket (Provisional Quantity)	☐
20609P	Temporary Cover Crop (Provisional Quantity)	☐
20613P	Mulch (Provisional Quantity)	☐
20651P	Sediment Basin <100 m^3 (Provisional Quantity)	☐
20655P	Sediment Basin 100 – 200 m^3 (Provisional Quantity)	☐
20659P	Sediment Basin 200 – 500 m^3 (Provisional Quantity)	☐
20663P	Sediment Basin 500 – 1000 m^3 (Provisional Quantity)	☐
20667P	Sediment Basin 1000 – 2000 m^3 (Provisional Quantity)	☐
20671P	Sediment Basin 2000 – 5000 m^3 (Provisional Quantity)	☐
20675P	Sediment Basin >5000 m^3 (Provisional Quantity)	☐
20679P	Kerb Inlet Protection (Provisional Quantity)	☐
20683P	Drop Inlet Protection (Provisional Quantity)	☐
20687P	Silt/ Sediment Fence (Provisional Quantity)	☒
20691P	Site Exit Point – Shaker Ramp [description] (Provisional Quantity)	☒
20695P	Site Exit Point – Wheel Wash (Provisional Quantity)	☒
20751P	In-Stream Silt Curtain (Provisional Quantity)	☐

* These are the minimum environmental management standard work items that should be included in ALL contracts.

6. Summary of Risk Assessment

The Initial Factor Risk assessments are recorded in the PEA and listed in Table 29. Table 29 also includes the risk assessment for cultural heritage. The risks were then reassessed assuming that all recommended actions will be done to determine the residual risk. The Residual Factor Risk is also listed in Table 29. Information on both the initial and the residual risk assessments are documented within Section 5 where the recommended management actions for each factor is described.

Table 29 Summary of Revised Risk Assessment

Factor	Initial Factor Risk	Residual Factor Risk
Cultural Heritage	High	Low
Water	Extreme	Medium
Soil and Land	High	Medium
Ecosystems and Habitat	High	Medium
Flora	High	Medium
Fauna	High	Medium
Biosecurity Matters	High	Low
Air	Low	Low
Noise and Vibration	Low	Low
Amenity	Medium	Medium
Resource Use and Waste	Medium	Low
Special Areas & Land Tenures	Extreme	High

APPENDIX A – FUTURE ACTIONS & COST

The following Actions have been identified as being required during future phases of the Project.

Future Actions	ESTIMATE	
	TIMING	**COST**
Factor Specific assessment [External] • *Ecological Survey* • *EPBC Significant Impact Assessment* • *MSES Significant Residual Impact Assessment (per species) e.g marine plants* - *High Risk Species Management Program.*		$2,000 $10,000 (5 species) $2,500 (per MSES species or value) $10,000-$15,000
Prepare and submit applications for Licences / Permits / Agreements including notifications for relevant Accepted Development Codes • *Permit for activities within the Wet Tropics of Queensland World Heritage Area (for all 5 sites)* • *Marine Park Permit* • *Species Management Program (High Risk)* • *Operational works development approval for removal of marine plants* *EPBC Referral (MNES and online form) (if required)*		$10,000 $2,500-$5,000 $10,000 $15,000 $15,000 excl fees or additional work associated with an information request)
Concept Erosion and Sediment Control Plan		$5,000-10,000
Offset Delivery (Financial Settlement or Land Based)		To be determined (TBD) if required
Review Contract Documents, including Specifications and schedule of work.	Design	TBD following the receipt of all approvals
Review Contractor Management Plans	Implementation	TBD
Provide environmental support to Contract Administrator	Implementation	TBD
Environmental Auditing	Implementation	TBD
Surrender and finalise relevant licences / Permits / Agreements including sending post-works notifications for relevant Self Assessable Codes [*TBD*]	Implementation	TBD
Post Implementation Review / Handover Report (Environment)	Implementation	TBD
Monitoring and Maintenance of Offsets	Operation	TBD
Total		$104,500

** Excludes item listed as To be Determined (TBD), permit application fees or additional works associated with an EPBC referral information request*