Dungeness Breakwater and Dredging

Application Number: **03450** Commencement Date: **18/05/2026** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Dungeness Breakwater and Dredging

1.1.2 Project industry type *

Transport - Water

1.1.3 Project industry sub-type

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1.1.4 Estimated start date *

01/07/2027

1.1.4 Estimated end date *

01/07/2030

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The proposed action involves the construction of a rock breakwater near the mouth of the Dungeness-Enterprise Channel, on waters adjacent to Lot 540 on SP291542 at Dungeness. The overarching purpose of this action is to improve marine access from Dungeness to the Hinchinbrook Channel and the Great Barrier Reef Marine Park.

The northern foreshore of Dungeness, of which is located a boat ramp and ferry terminal, has undergone significant current erosion, which have cause considerable change to the spit, channel and foreshore. A strong tidal asymmetry (strong flood, weak ebb) has driven sediment transport. Eroded material has deposited within the navigation channel, preventing all tide conditions. It is noted that Dungeness access is fundamental as:

- Enterprise Channel provides the only access to the reef for Hinchinbrook Shire;
- Tourism within the Shire is heavily reliant on this access point; and
- The action ensures public safety, economic sustainability and lifestyle.

It is important to note that no alternative all-tide marine access facility exists for Hinchinbrook Shire.

The works will include:

- Construction of a rock wall with a footprint of approximately 1 ha, being approximately 370 m long and 32 m wide;
- Works to tie in the rock wall with the existing profile of the adjoining Dungeness spit;
- Navigation lighting works which are to be completed by others during construction;
- Capital dredging at the mouth of Enterprise Channel;
- Maintenance dredging in a footprint forms the Dungeness boat ramp through to the mouth of Enterprise Channel; and
- A proposed beach replenishment area along the Dungeness foreshore that has been subject to historic erosion.

The rock breakwater is necessary to:

- Minimise dredge frequency and therefore the associated environmental impacts of dredging;
- Improve the long-term financial viability of maintaining this level of marine access; and
- Protect the anchorage at Dungeness which is becoming increasingly exposed to wind and wave action.

The proposed disposal of dredge material on the nearby foreshore, given:

- There is a need to do so to maintain coastal processes;
- This the most cost effective option for dredge disposal;
- The environmental impacts associated with doing so are acceptable; and
- The material is compatible with use for this purpose.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

Statutory and Policy Framework

The proposed action is located within the Hinchinbrook Shire local government area. The *Planning Act 2016* (the Act) provides the overarching statutory framework for Queensland's planning system, coordinating local, regional and State planning interests. The Act establishes and is supported by subordinate planning legislation and instruments, which dictate the assessment parameters for the proposed development.

The primary Commonwealth, State and Local planning instruments relevant to the proposed coastal infrastructure and dredging works are:

- Local planning instrument:
  - *Hinchinbrook Shire Planning Scheme 2017*.
- State planning instrument:
  - *Planning Regulation 2017.*
- Commonwealth Regulatory Environment:
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Great Barrier Reef Marine Park Act 1975*

Local

Under the Act, development is categorised as accepted, assessable or prohibited. Assessable development requires a formal development approval under Schedule 10 of the Planning Regulation or by a local government through a planning scheme. The Hinchinbrook Shire Planning Scheme 2017 is the primary statutory instrument managing land use and development within the local government area.

While the seaward components of the breakwater and dredging operations are predominantly subject to State and Commonwealth jurisdictions, the landward activities intersect directly with the local planning framework. This includes the establishment of access track, temporary construction zones and the distribution of 13,500 m³ of dredged spoil for beach replenishment along Dungeness Beach.

State

As the proposed action is located adjacent to Lot 540 on SP291542, the site is subject to assessment against the Planning Regulation 2017. Specifically, the project is identified as being within the State Assessment and Referral Agency (SARA) overlays, triggering assessment against the State Development Assessment Provisions (SDAP). The relevant overlays include:

- Coastal Management District
- Coastal area – erosion prone area
- Coastal area – medium storm tide inundation area
- Coastal area – high storm tide inundation area
- Major (tidal)
- Regulated vegetation management map (Category A and B extract)

Commonwealth

Environmental Protection and Biodiversity Conservation Act 1999

The EPBC Act provides the legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, which defined as Matters of National Environmental Significance (MNES). An approval under the EPBC Act is required for any action likely to have a significant impact on MNES. Based on the comprehensive ecological reporting prepared to support

this proposal, the action is not considered likely to result in a significant impact on MNES. Consequently, the proponent is submitting this referral to seek formal written confirmation from the Commonwealth Minister that the project is not a 'Controlled Action'.

Great Barrier Reef Marine Park Act 1975 (GBRMP Act)

The GBRMP Act is the primary legislation for managing the Great Barrier Reef Marine Park and establishes the Great Barrier Reef Marine Park Authority (GBRMPA) as the Commonwealth authority responsible for its management. The seaward footprint of the breakwater and the outer extent of the dredging corridor occur within the GBRMP, specifically within a Habitat Protection Zone. The Act regulates activities within the Marine Park to ensure long-term ecological sustainability, meaning a Marine Park Permit from GBRMPA is required to authorise the proposed structural works and dredging.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

Ongoing community engagement with the community on the priority projects for the Shire. Indigenous stakeholder engagement to occur as part of cultural heritage investigations prior to work commencement.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	31162988132
Organisation name	MILFORD PLANNING PTY LTD
Organisation address	283 Flinders Street, Townsville City, 4810, Queensland

Referring party details

Name	George Milford
Job title	Director
Phone	0747240095
Email	info@milfordplanning.com.au
Address	

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	46291971168
Organisation name	HINCHINBROOK SHIRE COUNCIL
Organisation address	25 Lannercost Street, Ingham QLD 4850

Person proposing to take the action details

Name	Mary-Anne Uren
Job title	Chief Executive Officer
Phone	07 4776 4649
Email	council@hinchinbrook.qld.gov.au
Address	25 Lannercost Street, Ingham QLD 4850

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Hinchinbrook Shire Council has not been involved in any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Hinchinbrook Shire Planning Scheme 2017

The Hinchinbrook Shire Planning Scheme 2017 sets out the strategic framework and detailed assessment provisions for development in the Hinchinbrook Shire, identifying the future growth of urban environments while balancing economic, environmental and community wellbeing outcomes. In particular, the Planning Scheme sets out the following strategic environmental outcomes:

1. Development in protected areas is subservient to the landscape and the environmental and recreational carrying capacity.
2. Protect coastal processes and coastal resources.
3. Provide opportunities for coastal-dependent development.
4. Maintain or enhance scenic amenity of important coastal landscapes, view and vistas.
5. Consolidate coastal settlements through infill and redevelopment.
6. Conserve the natural state of the coast outside existing urban areas.
7. Maintain or enhance safe and adequate public access to coastal waters and foreshores.
8. Ensure the natural, built environment and humans are protected from acid sulfate soil impacts.
9. Development in water resource catchments maintains or improves water quality.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	46291971168
Organisation name	HINCHINBROOK SHIRE COUNCIL
Organisation address	25 Lannercost Street, Ingham QLD 4850

Proposed designated proponent details

Name	Mary-Anne Uren
Job title	Chief Executive Officer
Phone	07 4776 4649
Email	council@hinchinbrook.qld.gov.au
Address	25 Lannercost Street, Ingham QLD 4850

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	31162988132
Organisation name	MILFORD PLANNING PTY LTD
Organisation address	283 Flinders Street, Townsville City, 4810, Queensland
Representative's name	George Milford
Representative's job title	Director
Phone	0747240095
Email	info@milfordplanning.com.au
Address	

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	46291971168
Organisation name	HINCHINBROOK SHIRE COUNCIL
Organisation address	25 Lannercost Street, Ingham QLD 4850
Representative's name	Mary-Anne Uren
Representative's job title	Chief Executive Officer
Phone	07 4776 4649
Email	council@hinchinbrook.qld.gov.au
Address	25 Lannercost Street, Ingham QLD 4850

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

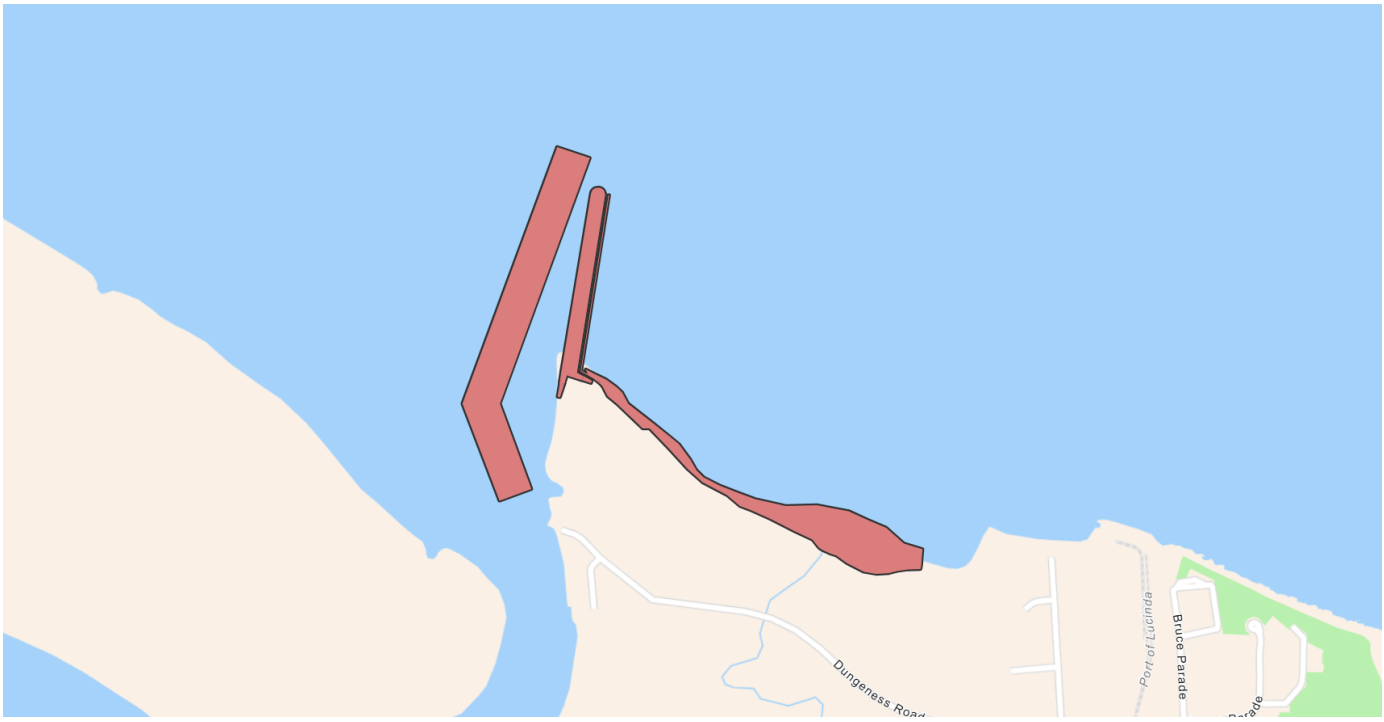
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint



Project Area: 14.65 Ha **Disturbance Footprint:** 14.65 Ha

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Waters adjacent to land at Dungeness Road, Lucinda and Lot 540 on SP291542

2.2.2 Where is the primary jurisdiction of the proposed action? *

Queensland

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The proposed action is located within tidal water designated as State Land. For Lot 540 on SP291542 which is adjacent to the subject site is classified as Reserve Land and falls within the jurisdiction of the local government area (Hinchinbrook Shire Council).

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The project site is located in waters adjacent to land at Dungeness Road, Lucinda and on Lot 540 on SP291542. Under the *Hinchinbrook Shire Council Corporate Plan 2025-2030*, the subject site is considered as non-urban land, being adjacent to urban land and is approximately 22 km from Hinchinbrook city centre, Ingham.

Zoning

The subject site is designated within the Environmental Management and Conservation Zone that adjoining with the Mixed Use Zone (specifically supporting resort and restaurant uses) and the Recreation and Open Space Zone (encompassing parkland and commercial boating operations). As the subject site is located in water and adjacent to Environmental Management and Conservation Zone, it means the site does not directly adjoin any urban land.

Surrounding Area

The site comprises tidal land adjacent to land formally described as Lot 540 on SP291542, which located at the intersection of Hinchinbrook Channel and Enterprise Channel. This coastal environment is characterised by highly dynamic geomorphological processes. Historically, this has manifested as significant, unmitigated erosion of the Dungeness Spit over the past century, exacerbated by the absence of permanent coastal protection infrastructure. Concurrently, natural processes have driven substantial sediment deposition at the mouth of the Enterprise Channel, which has severely compromised navigable, all-tide vessel access.

Access

The site holds critical strategic and economic importance for the region, serving as the primary marine gateway to the Hinchinbrook Channel, extensive mangrove-lined estuaries, Hinchinbrook Island, and the broader Great Barrier Reef. Crucially, this location provides the sole viable ferry access point, which is foundational to the economic sustainability and tourism capacity of the Hinchinbrook Shire. At present, the local government area possesses no alternative all-tide marine access facilities, underscoring the vital public need to maintain, optimise, and secure navigable access for the Shire.

3.1.2 Describe any existing or proposed uses for the project area.

Existing use

The subject site does contain boat ramp infrastructure. Its existing functional use is primarily characterised as a marine access to the Hinchinbrook Channel. However, it is currently severely compromised due to a significant and ongoing sediment accretion within the area has resulted in limitations.

Proposed use

The Enterprise Channel, which serves as the critical marine linkage between the Dungeness Boat Ramp and the deeper navigable waters of the Hinchinbrook Channel, is subject to extensive sediment build-up. This build-up inhibits safe vessel transit during low and mid-tide cycles, specifically for vessels with deeper drafts.

The project involves targeted dredging and the construction of a rock breakwater extending from the Dungeness Spit. These essential works are required to protect the precinct's area as a strategic marine gateway and restore reliable, all-tide access between the Dungeness Boat Ramp and the Hinchinbrook Channel.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

The Hinchinbrook Channel forms one of the most extensive estuarine systems in eastern Queensland, characterised by a numerous coastal tributary (refer **Attachment 1**). The area supports a complex mosaic of high-value coastal habitats, including mangrove forests, seagrass meadows, intertidal sandy channels, oyster reefs, and coastal wetlands. These environments provide critical habitat for a diverse assemblage of marine fauna, including marine turtles, dolphins, dugong, elasmobranchs (sharks and rays), and various protected shorebird species.

Furthermore, the Hinchinbrook region functions as an essential nursery ground for banana and offshore tiger prawn fisheries. It serves as a vital resource for several commercially significant species, including mud crab, barramundi, threadfin, and mackerel, underpinning the region's broader ecological and economic productivity.

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

The project is located at the confluence of Dungeness Enterprise and Hinchinbrook Channels, within a dynamic marine environment where the Hinchinbrook Channel reaches depths exceeding 20 m. The specific operational area for the proposed action is defined by the following depth and gradient specifications:

Dredge Channel: The target dredge depth is 1 m Lowest Astronomical Tide (LAT). This depth is calculated to provide safe navigational clearance for boating vessels.

Rock Wall: Based on the Proposal Plans from Water Technology 2021, the maximum depth of rock wall is approximately 4.84 m AHD to seabed level (refer **Attachment 2**).

Shoaling and Maintenance Triggers: Current bathymetric monitoring indicates that part of the channel is shoaling at a rate of up to 300 mm/year. Maintenance dredging is projected to be triggered when the shoal reaches a depth of 0.5 m LAT, with an estimated material volume of 20,000-30,000 m^3 accumulating every 1.5 to 2 years (refer **Attachment 3**).

Infrastructure Footprint: the proposed breakwater extends 370 m in length with a base width varying between 26 to 33 m to accommodate the natural seabed gradient. The structure features a low-crest design specifically to minimise the physical footprint and reduce encroachment on adjacent marine plant communities (refer **Attachment 2**).

Operational Work: the project involves a total capital dredging area of 27,000 m2 at the mouth of the Enterprise Channel and maintenance dredging in a footprint form the Dungeness boat ramp through to the mouth of Enterprise Channel with a total area of 67,500 m2. It is noted that 13,500 m^3 of dredged spoil will be utilised for beach replenishment along the Dungeness Beach Profile (refer **Attachment 2**).

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

A detailed ecology report was prepared by SLR Consulting in 2026 (refer **Attachment 1**). The objective of the assessment is to provide a distinct information of the existing environment and values of the area that may be impacted by the proposed development. It also aimed to identify all potential impact pathway which may impact any of the identified marine ecological values during any stage of the proposed works. The assessment consisted of:

- a desktop assessment of background information and legislative policy and documents;
- a field assessment to verify the presence and the extent of mapped marine ecological habitats; and
- preparation of an ecological reporting detailing methods, impacts, results and recommendations.

Flora

The field survey verified the presence of the following vegetation communities within the Study Area as:

- Seagrass consists of four species including *Halodule* sp., *Nanozostera muelleri, Halophila ovalis* and *Halophila decipiens*;
- Mangroves with over 31 different species in the area, with a mixture of wet and dry tropical mangrove species. The dominated Mangroves in the region are *Bruguiera gymnorhiza, Rhizophora* and *Ceriops* species; and
- Saltmarsh dominated by *Tecticornia* sp. and *Suaeda australis.*

Seagrass species found in the Hinchinbrook region predominantly come from colonising and opportunistic groups such as *Halophila*, which are having a low resistance to disturbance and by recovering rapidly from disturbances. For *Halophila ovalis* and *Halophila decipiens*, these are typical colonising species that commonly die back when conditions are unsuitable and colonise quickly when conditions allow. *Nanozostera muelleri* is fast growing and can rapidly recover from disturbance when necessary. According to the field survey, the fluctuations in the seagrass cover in this area are due to the location of these beds on the mouth of the Dungeness Enterprise Channel, where the significant fluctuations in turbidity due to rainfall and significant of sediment movement.

The foreshores of the Dungeness Enterprise Channel are dominated by mangroves. In recent years, Mangroves habitat on the Dungeness spit has been lost due to erosion and still under threat with long term erosion rate of the Dungeness spit approximately 6.6 m every year. It is noted that there are small patches of saltmarsh that is predominantly set back from the Dungeness Enterprise Channel with Mangroves between the saltmarsh and the channel. According to the field survey, in the shoreline along the Dungeness foreshore predominately consists of bare sand leading up to a band of dead mangroves and mangroves debris.

<u>Threatened Ecological Communities</u>

The modelling indicates the overall of proposed works to be stabilise the shoreline from further erosion and will promote the growth of marine plants, likely due to the overall increase in marine plants. However, it is also expected that mangroves loss of the Dungeness foreshore may be reduced, with the potential of retention for up to 0.12 ha of mangroves per year. It is noted that the saltmarsh regional ecosystem (7.1.2a) is listed as “of concern” under the *Vegetation Management Act 1999*, meaning that 10-30% of the pre-clearing extent across the bioregion remains or more than 30% of its pre-clearing extent remains and the remnant extent is less than 10,000 ha.

<u>Significant Impact Assessment</u>

A significant impact assessment was completed for the project with consideration of the identified Matters of National Environmental Significance (MNES) associated with the site (refer **Attachment 1**).

While three TECs are identified within a 5 km radius, Queensland Regional Ecosystem (RE) mapping confirms no direct or indirect impacts are anticipated. The project footprint does not contain Broad-leaf tea-tree woodlands, Littoral Rainforest, or Lowland Tropical Rainforest. The immediate area is instead characterised by RE 7.1.1 (Mangroves) and RE 7.2.3a (Corymbia and Melaleuca Forest), which are not listed as the subject TECs.

Fauna

The project footprint acts primarily as a transient corridor than a critical habitat. The key marine fauna communities include:

Marine Mammals and Reptiles: The area overlaps with Biologically Important Area (BIAs) for reproduction for the Humpback Whale, Australian Humpback Dolphin and Indo-Pacific Bottlenose Dolphin. The Dugong and Australian snubfin dolphin occasional traverse the channel mouth, though it primarily forage on more extensive offshore seagrass flats rather than within the project site. Marine turtles also known to navigate the broader channel waters.

Avian Species: The Study Area falls within a BIA for the Black-naped Tern. While shorebirds may forage on local intertidal flats, the habitat is considered to be low for feeding value compared to established high-density roasting sites located to the south at Lucinda Point.

Fish and Invertebrates: The estuarine waters support a typical regional assemblage of large-bodied predatory fish, alongside soft-sediment benthic invertebrates' communities.

Significant Impact Assessment

A significant impact assessment was completed for the project with consideration of the identified Matters of National Environmental Significance (MNES) associated with the site (refer **Attachment 1**).

The project intersects with Biologically Important Areas (BIAs) for reproduction for the Humpback Whale, Australian Humpback Dolphin, and Indo-Pacific Bottlenose Dolphin. The threatened and migratory avian species being present in the area as well. The only BIA of regionally significant marine avian species in the area is black-naped tern, which is currently not listed in MNES under the EPBC Act.

The intertidal flats within the study area provide low-value feeding habitat compared to established roosting sites at Lucinda Point. While a BIA exists for the Black-naped Tern (currently not an MNES), mitigation measures will manage noise and light to ensure no adverse effects on local foraging or nesting.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The proposed area consists of a dynamic transition zone between terrestrial and estuarine systems, primarily featuring remnant native vegetation and highly mobile coastal sediments. According to Queensland Regional Ecosystem mapping (refer **Attachment 1**), the foreshore is dominated by RE 7.1.1 (Mangroves) with a minor fringe of RE 7.2.3a (Corymbia and Melaleuca dealbata forest). Subtidal zones support opportunistic, fast-growing native seagrasses such as Halodule and Halophila, which are adapted to rapid recovery following natural or anthropogenic sediment disturbance.

The growth and stability of this vegetation are currently compromised by severe natural coastal processes, with the shoreline retreating at a baseline rate of 6.6 m per year. The underlying soil profile is predominantly medium grain sand. However, geotechnical investigations have identified intermittent layers of Acid Sulfate Soils (ASS) within the dredge footprint. While much of the sandy sediment possesses a natural Acid Neutralising Capacity, these specific ASS layers require targeted management to prevent the release of acidity during construction and dredging stages.

3.3 Heritage

3.3.1 Describe any Commonwealth Heritage Places Overseas or other places recognised as having heritage values that apply to the project area.

The proposed development is not listed in Commonwealth heritage places overseas.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The project area is designated within the Girrigun Indigenous Protection Area (IPA). The IPA represents a diverse landscape in and around the Wet Tropics region and is represented by eight traditional owner groups. The Girrigun Aboriginal Corporation, which represents the interests of traditional owners, are involved with preserving cultural heritage and providing sustainable outcomes for members. The proposed action, which involves the maintenance and protection of access to the Hinchinbrook Channel and is not anticipated to impact any Indigenous values. This stems from the negligible short and long term impact to flora and fauna, coupled with the major positive impact in ensuring maintain access to the channel.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

Surface Water and Hydrodynamics

While typically driven by complex tidal processes, the surface water hydrology of the Hinchinbrook and Enterprise Channels transitions to a fluvially dominated system during heavy rainfall events. Surface water current flows predominantly along a northwest-southeast axis, running parallel to the foreshore. Hydrodynamic investigations confirm that both flood and ebb tides generate high current velocities. However, peak current speeds are greater during the flood tide phase (refer **Attachment 3**). These strong flood currents, particularly those tracking near the northern Dungeness beaches, are the primary driver of significant, localised coastal erosion. A portion of this eroded sediment is subsequently transported around the Dungeness Spit, resulting in the formation of sediment pulses and localised accretion along the eastern bank of the Enterprise Channel.

Coastal Geomorphology and Historical Shoreline Analysis

Historical hydrological and morphological investigations including an analysis of aerial imagery by Water Technology (refer **Attachment 3**), demonstrate the long-term instability and dynamic shifting of the spit, channel and foreshore environments. Key observations include:

- Dungeness Spit Erosion: Severe historical erosion of the spit, which has critically diminished its capacity to provide natural wave protection to the Enterprise Channel entrance.
- Northern Beach Retreat: The erosion of the northern mangrove lined beach at Dungeness, characterised by a shoreline retreat of approximately 125 m between 1956 and 2017, averaging a loss of 2 m per year.
- Channel Accretion: The significant sediment accretion along the western bank of the Enterprise Channel with localised accretion on the western inner profile of the spit inside the channel corridor.

Stabilised Zone: The northern beaches of Lucinda demonstrate long-term stability, directly due to the establishment of existing coastal protection infrastructure.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	Yes	Yes
S15B	National Heritage	Yes	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	Yes	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	Yes	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	World heritage
Yes	Yes	Great Barrier Reef
Yes	Yes	Wet Tropics of Queensland

4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.1.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Most of the proposed dredging footprint and the rock breakwater infrastructure are situated within the Great Barrier Reef World Heritage Area (GBRWHA). It is noted that the designated sand replenishment area is located outside the GBRWHA boundary (refer **Attachment 1**).

Contribution to Outstanding Universal Value (OUV):

- Criteria (vii) – Natural Beauty and Aesthetic Importance: The project is located at the threshold of the Hinchinbrook Channel and Hinchinbrook Island. This region is internationally recognised for its natural phenomena, characterised by unique seascapes and mangrove forests.
- Criteria (x) – Conservation of Biological Diversity: the area provides essential habitat for a diverse range of marine. The key attributes identified within the proposed works zone include significant seagrass meadows, extensive mangrove ecosystems and a diverse range of fauna, including macroalgae, crustaceans, polychaetes, molluscs, fish, seabirds, mammal and reptiles.

While the project contributes with these values, the proposed development is not expected to result in adverse impacts extending beyond the project footprint. Potential risks to high priority marine fauna specifically dugongs, dolphins, marine turtles, and migratory shorebirds have been thoroughly assessed. Furthermore, it is recognised that the primary long-term pressures on the ecological integrity of this portion of the GBRWHA are driven by broader regional factors, namely climate change and fluctuating water quality.

4.1.1.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.1.6 Describe why you do not consider this to be a Significant Impact. *

While the construction of a rock breakwater provides a permanent structural element, the physical footprint is minor when measured against the vast scale of the Hinchinbrook Channel and the broader GBRWHA. The action does not result in the broad-scale loss or the overarching geomorphic of the region. The landforms within the study area are generally unstable due to rapid natural transformation. The proposed works are designed to stabilise a specific navigation channel rather than mitigating the geomorphic evolution of the wider coastal system.

The project does not disrupt the longshore and vertical connectivity that defines the ecological and geological character of the site. The ongoing development of coastal landforms in the surrounding Hinchinbrook area will continue largely unaffected by this localised safety infrastructure. The proposed works will not result in a permanent loss of the World Heritage values that characterise the Hinchinbrook Channel. Instead, the action manages a specific, high-intensity zone of sediment movement to maintain the safety and functionality of a regional marine gateway.

The proposed development and associated facilitated impacts are unlikely to degrade or alter the values with the landscape (natural water quality and coastal landforms) of GBRWHA, biological and ecological values including marine populations, diversity or composition of habitat communities and wilderness EVs such as structures or changes that impact on the natural aesthetic of GBRWHA.

4.1.1.7 Do you think your proposed action is a controlled action? *

No

4.1.1.9 Please elaborate why you do not think your proposed action is a controlled action. *

The proposed action is unlikely to result in a significant impact to World Heritage matters.

4.1.1.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Potential impacts on the GBRWHA will be mitigated and managed using the approaches listed in Section 6.0 (refer **Attachment 1, page 55**).

4.1.1.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Water Quality Monitoring

Water Quality will be monitored throughout the duration of the proposed works. In the event that turbidity levels exceed established thresholds based on background values, construction activities will cease immediately. Operations will only recommence once the cause of the exceedance has been identified and rectified to ensure the protection of the marine environment.

Localised High-Resolution Surveys

For a period of ten years following the commencement of construction, localised high-resolution surveys will be conducted every 6 months or following significant storm events. These surveys will be performed during spring low tides and will encompass Dungeness Beach, the adjacent spit and the western mangrove island to monitor geomorphological changes and erosion rates (refer **Attachment 4**).

Hydrographic surveys

A comprehensive hydrographic survey of the dredge area and its surrounds will be completed within one month of the completion of works. In accordance with the project's monitoring plan, additional hydrographic surveys of the Enterprise Channel and the adjacent Hinchinbrook Main Channel will be undertaken during the third, sixth and ten years following the commencement of construction to assess stability and shoaling (refer **Attachment 4**).

Marine Plant Communities

The marine plant monitoring program is designed to ensure the recovery of disturbed habitats. The program will comprise as a minimum survey following an initial survey upon the completion of works, a follow-up survey after 18 months to determine if supplementary planting is required, annual health surveys for a duration of 5 years, specifically monitoring protocols for temporarily disturbed mangroves and seagrass adjacent to the works are detailed in the Section 12.4.1 (refer **Attachment 1, page 99-100**).

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	National heritage
Yes		Great Barrier Reef
Yes		Wet Tropics of Queensland
Yes		Wet Tropics World Heritage Area (Indigenous Values)

4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.2.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

While three TECs are identified within a 5 km radius, Queensland Regional Ecosystem (RE) mapping confirms no direct or indirect impacts are anticipated (refer **Attachment 1**). The project footprint does not contain Broad-leaf tea-tree woodlands, Littoral Rainforest, or Lowland Tropical Rainforest. The immediate area is instead characterised by RE 7.1.1 (Mangroves) and RE 7.2.3a (Corymbia and Melaleuca Forest), which are not listed as the subject TECs.

Threatened and Migratory Aquatic Species

The project intersects with Biologically Important Areas (BIAs) for reproduction for the Humpback Whale, Australian Humpback Dolphin, and Indo-Pacific Bottlenose Dolphin. The threatened and migratory avian species being present in the area as well. The only BIA of regionally significant marine avian species in the area is black-naped tern, which is currently not listed in MNES under the EPBC Act.

Threatened and Migratory Avian Species

The intertidal flats within the study area provide low-value feeding habitat compared to established roosting sites at Lucinda Point. While a BIA exists for the Black-naped Tern (currently not an MNES), mitigation measures will manage noise and light to ensure no adverse effects on local foraging or nesting.

Great Barrier Reef:

The Great Barrier Reef, being a World Heritage Area, meets the National Heritage Criteria below.

- Criterion A (Events and Processes)
- Criterion B (Rarity)
- Criterion C (research)
- Criterion D (Principal characteristics of a class of places)
- Criterion E (Aesthetic characteristics)

An assessment of World Heritage Criteria are provided in section 5.3 of **Attachment 1**. The assessment of World Heritage Criteria overlaps with that of National Heritage Criteria. It is noted in particular, the works will not significantly impact any flora or fauna species, as outlined by **Attachment 1**. The proposed works are aimed to limit erosion processes, for the purpose of maintaining access to the channel, which is Hinchinbrook's only access. The development ensures that no national values are impacted, such as aesthetic characteristics.

Wet Tropics of Queensland

This National Heritage place contains the following values:

- Criterion A (Events and Processes)
- Criterion B (Rarity)
- Criterion C (research)
- Criterion D (Principal characteristics of a class of places)
- Criterion E (Aesthetic characteristics)
- Criterion F (Creative or technical achievement)
- Criterion I (Indigenous tradition)

It is noted that the proposed action has a disturbance footprint outside of the Wet Tropics World Heritage Area. Notwithstanding, the heritage area is proximate to the location and any potential impacts have been addressed within **Attachment 1**.

Wet Tropic of Queensland World Heritage Area (Indigenous Values)

The disturbance area of the proposed action is outside the Wet Tropics World Heritage Area. Moreover, the ephemeral nature of the river channel, combined with the nature of the proposed action, being operational work to maintain channel access, does not present as an adverse impact to Indigenous values.

4.1.2.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.2.6 Describe why you do not consider this to be a Significant Impact. *

The aquatic threatened and migratory species that are listed within 5 km of the Study Area that might potentially impacted by the works including:

- *Megaptera novaeangliae* (humpback whale) with the EPBC Act Status of Migratory species and likelihood occurrence in Study Area is Moderate. It has been observed that humpback whales migrating along the cost and the area offshore of Dungeness beach listed in Biologically Important Area (BIA) for breeding and calving.
- *Dugong dugon* (dugong) with the EPBC Act Status of Migratory species and likelihood occurrence in Study Area is Very High. It stated that Dugong have been recorded in the area. Dugong may feed on the seagrass flays offshore of the mouth of the Dungeness Enterprise Channel, however, it is not likely to provide a highly significant habitat for dugong.
- *Orcaella heinsohni* (Australian snubfin dolphin) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence in Study Area is Moderate. In the records of the species in the area are over 25 km from the site, and all are pre the year 2000. Australian snubfin dolphin may occasionally use the area in the vicinity of the proposed work, however, it is unlikely to provide highly significant habitat.
- *Sousa sahulensis as Sousa chinensis* (Australian humpback dolphin) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence in Study Area is High. The surveys conducted in the far northers section of the GBRMP showed that most sightings of Australian humpback dolphins appeared in waters less than 5 km from land, 20 km from the nearest river mouth and in waters less than 15 m deep (Parra et al. 2006).
- *Xeromys myoides* (Water mouse) with the EPBC Act Status of Vulnerable and likelihood of occurrence in Study Area is Moderate. There are credible records of the species from the Hinchinbrook Channel.
- *Caretta caretta* (Loggerhead turtle) with the EPBC Act Status of Endangered and Migratory species, and likelihood of occurrence in Study Area is High.
- *Chelonia mydas* (Green turtle) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence in the Study Area is High. The PMST indicates that breeding occurs in the area, habitat critical to the survival of this species is defined as major nesting areas with Mon Repos being the closest approximately 1,000 km to the south of the Study Area (DCCEEW 2024b).
- *Eretmochelys imbricata* (Hawksbill turtle) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence is High. It is known from the area. However, there are no known populations or key nesting habitats in the Wet Tropics region for hawksbill turtles.
- *Lepidochelys olivacea* (Olive ridley turtle) with the EPBC Act Status of Endangered and Migratory species, and likelihood of occurrence is Moderate. The PMST indicates that breeding likely occurs in the area.
- *Natator depressus* (Flatback turtle) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence is Moderate. The PMST indicates that breeding is known in the area. However, the habitat critical to the survival of this species is defined as major nesting areas with Avoid Island, with being the closest over 500 km to the south of the Study Area (DCCEEW 2024d).
- *Crocodylus porous* (Saltwater crocodile) with the EPBC Act Status of Migratory species, and likelihood of occurrence in Study Area is High. The species is known from the area (DF 2012).
- *Pristis Zijsron* (Green sawfish) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence is Moderate. The PMST indicates that this species may breed in the area. Green sawfish have been recorded offshore in deep water (DoE 2015). It is noted that there are no records for this species in the Study Area.
- *Anoxypristis cuspidata* (Narrow sawfish) with the EPBC Act Status of Migratory species and likelihood of occurrence is Moderate. Narrow sawfish occupying estuarine, inshore and coastal waters across northern Australian from the Pilbara coast in Western Australia to Rockhampton, Central Queensland.
- *Myrmecodia beccarii* (Ant plant) with the EPBC Act Status of Vulnerable and likelihood of occurrence is Moderate. The ant plant occurs in the coastal woodlands and mangrove communities between

Cooktown to Ingham (DCCEEW 2024d). it is noted that it has not been recorded in the Study Area, it may be present.

The threatened and migratory marine and wetland bird species that are listed within 5 km of the Study Area consists of:

- *Arenaria interpres* (Ruddy turnstone) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence is Moderate. There are three records of this species around the nearby town of Lucinda.
- *Calidris canutus* (Red knot) with the EPBC Act Status of Vulnerable and Migratory Species, and likelihood of occurrence is Moderate. There are multiple records of the species in vicinity of the proposed work.
- *Calidris ferruginea* (Curlew sandpiper) with the EPBC Act Status of Critically Endangered and Migratory species, and likelihood of occurrence is Moderate. There are scattered records occurring in the Gulf of Carpentaria, with widespread records along the coast south of Cairns.
- *Calidris tenuirostris* (Great knot) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence is High. The great knot have multiple records of the species in the vicinity of the proposed work.
- *Charadrius leschenaultii* (Greater sand plover) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence is Moderate. There are multiple records of the species in the vicinity of the proposed work and it occurs around the entire Australian coast in littoral and estuarine habitats.
- *Charadrius mongolus* (Lesser sand plover) with the EPBC Act Status of Endangered and Migratory species, and likelihood of occurrence is Moderate. There are multiple records of the species in the vicinity of the proposed work, and it has been recorded in all states in Australia.
- *Numenius madagascariensis* (Eastern curlew) with the EPBC Act Status of Critically Endangered and Migratory species, and likelihood of occurrence is Moderate. It has been recorded in all states and there are multiple records of the species in the vicinity of the proposed work.
- *Pluvialis squatarola* (Grey plover) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence is Moderate. There are multiple records of the species in the vicinity of the proposed work.
- *Sternula albifrons* (Little tern) with the EPBC Act Status of Vulnerable and Migratory species, and likelihood of occurrence is Moderate. the species inhabits coastal environments particularly with exposed ocean beaches and sandpits (DCCEEW 2026b). There are multiple records of the species in the vicinity of the proposed work.
- *Xenus cinereus* (Terek sandpiper) with the EPBC Act Status of Vulnerable and likelihood of occurrence is Moderate. The species have been recorded on mudbanks, sandbanks and spits, and near mangroves. The species has been recorded in the vicinity of the proposed works.

Migratory marine birds not listed as Threatened including:

- *Fregata ariel* (lesser frigatebird) – has been **recorded**

Migratory Wetland Birds not listed as Threatened including:

- *Limosa lapponica* (Bar-tailed godwit) – has been **recorded**
- *Limosa limosa* (Black-tailed godwit) – **no records**
- *Numenius minutus* (Little curlew) – has been **recorded**
- *Numenius phaeopus* (Whimbrel) – has been **recorded**
- *Pandion haliaetus* (Osprey)

Pluvialis fulva (Pacific golden plover) – has been **recorded**

4.1.2.7 Do you think your proposed action is a controlled action? *

No

4.1.2.9 Please elaborate why you do not think your proposed action is a controlled action. *

The proposed action is unlikely to result in a significant impact to National Heritage.

The project footprint is highly localised within a coastal zone, and current data indicates that the works will not change significant populations or critical habitats, ensuring the long-term viability of both threatened and non-threatened species remains unaffected.

4.1.2.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The potential impacts on the GBRMP will be mitigated and managed using the approaches listed in Section 6.0 (refer **Attachment 1, Page 55**).

4.1.2.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Water Quality Monitoring

Water Quality will be monitored throughout the duration of the proposed works. In the event that turbidity levels exceed established thresholds based on background values, construction activities will cease immediately. Operations will only recommence once the cause of the exceedance has been identified and rectified to ensure the protection of the marine environment.

Localised High-Resolution Surveys

For a period of ten years following the commencement of construction, localised high-resolution surveys will be conducted every 6 months or following significant storm events. These surveys will be performed during spring low tides and will encompass Dungeness Beach, the adjacent spit and the western mangrove island to monitor geomorphological changes and erosion rates (refer **Attachment 4**).

Hydrographic surveys

A comprehensive hydrographic survey of the dredge area and its surrounds will be completed within one month of the completion of works. In accordance with the project's monitoring plan, additional hydrographic surveys of the Enterprise Channel and the adjacent Hinchinbrook Main Channel will be undertaken during the third, sixth and ten years following the commencement of construction to assess stability and shoaling (refer **Attachment 4**).

Marine Plant Communities

The marine plant monitoring program is designed to ensure the recovery of disturbed habitats. The program will comprise as a minimum a survey following an initial survey upon the completion of works, a follow-up survey after 18 months to determine if supplementary planting is required, annual health surveys for a duration of 5 years, specific monitoring protocols for temporarily disturbed mangroves and seagrass adjacent to the works are detailed in the Section 12.4.1 (refer **Attachment 1, page 99-100**).

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Ramsar Wetland is located in the project area or local area.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
Yes		Balaenoptera musculus	Blue Whale
Yes		Botaurus poiciloptilus	Australasian Bittern
Yes		Calidris acuminata	Sharp-tailed Sandpiper
Yes		Calidris canutus	Red Knot, Knot
Yes		Calidris ferruginea	Curlew Sandpiper
Yes		Calidris tenuirostris	Great Knot
Yes		Carcharodon carcharias	White Shark, Great White Shark
Yes		Caretta caretta	Loggerhead Turtle
Yes		Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover
Yes		Chelonia mydas	Green Turtle
Yes		Dasyurus hallucatus	Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu]
Yes		Dermochelys coriacea	Leatherback Turtle, Leathery Turtle, Luth
Yes		Eretmochelys imbricata	Hawksbill Turtle
Yes		Erythrotriorchis radiatus	Red Goshawk
Yes		Falco hypoleucos	Grey Falcon
Yes		Fregetta grallaria grallaria	White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian)
Yes		Gallinago hardwickii	Latham's Snipe, Japanese Snipe
Yes		Hipposideros semoni	Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat
Yes		Hirundapus caudacutus	White-throated Needletail
Yes		Leichhardtia araujacea	

Direct impact	Indirect impact	Species	Common name
Yes		Lepidochelys olivacea	Olive Ridley Turtle, Pacific Ridley Turtle
Yes		Limosa lapponica baueri	Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit
Yes		Lindsaea pulchella var. blanda	
Yes		Litoria dayi	Australian Lace-lid, Lace-eyed Tree Frog, Day's Big-eyed Treefrog
Yes		Macroderma gigas	Ghost Bat
Yes		Mesembriomys gouldii rattoides	Black-footed Tree-rat (north Queensland), Shaggy Rabbit-rat
Yes		Myrmecodia beccarii	Ant Plant
Yes		Natator depressus	Flatback Turtle
Yes		Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew
Yes		Orcaella heinsohni	Australian Snubfin Dolphin
Yes		Petaurus gracilis	Mahogany Glider
Yes		Phaius pictus	
Yes		Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)
Yes		Pluvialis squatarola	Grey Plover
Yes		Poephila cincta cincta	Southern Black-throated Finch
Yes		Pristis pristis	Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish
Yes		Pristis zijsron	Green Sawfish, Dindagubba, Narrowsnout Sawfish
Yes		Pteropus conspicillatus	Spectacled Flying-fox
Yes		Pteropus poliocephalus	Grey-headed Flying-fox
Yes		Rhincodon typus	Whale Shark
Yes		Rhinolophus robertsi	Large-eared Horseshoe Bat, Greater Large-eared Horseshoe Bat, Lesser Large-eared Horseshoe Bat

Direct impact	Indirect impact	Species	Common name
Yes		Rhodamnia sessiliflora	Iron Malletwood
Yes		Rostratula australis	Australian Painted Snipe
Yes		Saccolaimus saccolaimus nudicluniatus	Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat
Yes		Sousa sahulensis	Australian Humpback Dolphin
Yes		Sphyrna lewini	Scalloped Hammerhead
Yes		Sternula albifrons	Little Tern
Yes		Tringa nebularia	Common Greenshank, Greenshank
Yes		Tyto novaehollandiae kimberli	Masked Owl (northern)
Yes		Xenus cinereus	Terek Sandpiper
Yes		Xeromys myoides	Water Mouse, False Water Rat, Yirrkoo

Ecological communities

Direct impact	Indirect impact	Ecological community
Yes		Littoral Rainforest and Coastal Vine Thickets of Eastern Australia
Yes		Lowland tropical rainforest of the Wet Tropics

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Threatened species and ecologically species have been identified and listed in **Attachment 1**, including the potential impact from light, noise, air and vibration in section 6 of the report.

Direct Physical Disturbance

The proposed works will result in both permanent and temporary direct impacts through the construction of the rock breakwater, dredging of the Enterprise Channel, and the placement of pipelines and access tracks. While the breakwater causes a permanent disturbance to small areas of bare sediment and mangroves, it will create 1.85 ha of new rocky reef habitat that will support macro-algae and oysters (refer **Attachment 1**). Dredging and pipeline placement are considered temporary disturbances to non-vegetated soft sediments and small sections of seagrass. However, these areas are expected to rapidly recolonise given the opportunistic nature of local seagrass species and the restoration of tidal inundation levels post construction.

Erosion and Sedimentation

Indirect impacts primarily relate to changes in coastal processes and temporary reductions in water quality during the construction phase. Hydrodynamic modelling indicates that the rock breakwater will provide a significant benefit by decreasing the baseline rate of shoreline erosion. Although dredging and wall construction will increase sediment and turbidity, these effects are predicted to be short-term and localised, with sediment plumes remaining within naturally processes. Local seagrass species, such as *Nanozostera muelleri*, have high physiological tolerance to short-term light reduction, ensuring that no long-term ecological decline is expected from increased turbidity.

Chemical and Geochemical Risks

The disturbance of sediments presents a minor risk of exposing Acid Sulfate Soils (ASS), which can release toxic aluminium or iron and decrease dissolved oxygen if not managed. While most of the sandy dredge material has sufficient natural capacity to neutralise acidity, intermittent layers in the channel may require management. Additionally, there is a low risk of hydrocarbon spills from construction vessels. However, these are considered "once-off" events where recovery is likely, particularly as the high-energy environment of the channel aids in the natural breakdown and removal of contaminants.

Operational Work Pressures

The project introduces several anthropogenic pressures, including Artificial Light at Night (ALAN), noise, vibration, and increased vessel activity. ALAN has the potential to disorient marine turtle hatchlings and alter fish shoaling behaviour, while noise and vibration may cause mobile fauna to temporarily avoid the area. Furthermore, improved boating access may slightly increase the risks of boat strike and marine litter. These risks are considered low to moderate and will be managed through strict adherence to a Construction Environmental Management Plan (CEMP) and established state and federal biosecurity guidelines to prevent the introduction of aquatic pest species.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

There are potential direct and indirect impacts of the proposed works, which resulted into temporary disturbance. However, there are no significant impacts that indicated in the proposed works.

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

The proposed action is unlikely to result in a significant impact to Threatened Species and Ecological Communities.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Approximately around 0.065 ha of marine plants permanently removed by the proposed works will be offset according to the *Queensland Environmental Offsets Act 2014*. Tidal lands profiles are temporary disturbed will restored to pre-works heights, and approximately of 0.048 ha mangroves temporarily disturbed by the proposed works will be rehabilitated (refer **Attachment 4**). Any sediment placed in the nourishment area will be sand and will be not contain any building waste or rock.

The direct impacts to mangroves will be avoided by ensuring dredge spoil is not placed in the high intertidal area. The direct impact to seagrass from boat anchoring will be avoided by ensuring during the proposed works, boats are not anchored over seagrass beds.

As the risks of sedimentation and erosion are considered to below, no mitigation is proposed. It is noted that marine plant communities will be monitored to confirm there are no long-term impacts (refer **Attachment 1, page 99-100**).

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Water Quality Monitoring

Water Quality will be monitored throughout the duration of the proposed works. In the event that turbidity levels exceed established thresholds based on background values, construction activities will cease immediately. Operations will only recommence once the cause of the exceedance has been identified and rectified to ensure the protection of the marine environment.

Localised High-Resolution Surveys

For a period of ten years following the commencement of construction, localised high-resolution surveys will be conducted every 6 months or following significant storm events. These surveys will be performed during spring low tides and will encompass Dungeness Beach, the adjacent spit and the western mangrove island to monitor geomorphological changes and erosion rates (refer **Attachment 4**).

Hydrographic surveys

A comprehensive hydrographic survey of the dredge area and its surrounds will be completed within one month of the completion of works. In accordance with the project's monitoring plan, additional hydrographic surveys of the Enterprise Channel and the adjacent Hinchinbrook Main Channel will be undertaken during the third, sixth and ten years following the commencement of construction to assess stability and shoaling (refer **Attachment 4**).

Marine Plant Communities

The marine plant monitoring program is designed to ensure the recovery of disturbed habitats. The program will comprise as a minimum a survey following an initial survey upon the completion of works, a follow-up survey after 18 months to determine if supplementary planting is required, annual health surveys for a duration of 5 years, specific monitoring protocols for temporarily disturbed mangroves and seagrass adjacent to the works are detailed in the Section 12.4.1 (refer **Attachment 1, page 99-100**).

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
Yes		Actitis hypoleucos	Common Sandpiper
Yes		Anous stolidus	Common Noddy
Yes		Anoxypristis cuspidata	Narrow Sawfish, Knifetooth Sawfish
Yes		Apus pacificus	Fork-tailed Swift
Yes		Balaenoptera edeni	Bryde's Whale
Yes		Balaenoptera musculus	Blue Whale
Yes		Balaenoptera omurai	Omura's Whale
Yes		Calidris acuminata	Sharp-tailed Sandpiper
Yes		Calidris canutus	Red Knot, Knot
Yes		Calidris ferruginea	Curlew Sandpiper
Yes		Calidris melanotos	Pectoral Sandpiper
Yes		Calidris ruficollis	Red-necked Stint
Yes		Calidris tenuirostris	Great Knot
Yes		Carcharhinus longimanus	Oceanic Whitetip Shark
Yes		Carcharias taurus	Grey Nurse Shark
Yes		Carcharodon carcharias	White Shark, Great White Shark
Yes		Caretta caretta	Loggerhead Turtle
Yes		Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover
Yes		Chelonia mydas	Green Turtle
Yes		Crocodylus porosus	Salt-water Crocodile, Estuarine Crocodile
Yes		Cuculus optatus	Oriental Cuckoo, Horsfield's Cuckoo

Direct impact	Indirect impact	Species	Common name
Yes		Dermochelys coriacea	Leatherback Turtle, Leathery Turtle, Luth
Yes		Dugong dugon	Dugong
Yes		Eretmochelys imbricata	Hawksbill Turtle
Yes		Fregata ariel	Lesser Frigatebird, Least Frigatebird
Yes		Fregata minor	Great Frigatebird, Greater Frigatebird
Yes		Gallinago hardwickii	Latham's Snipe, Japanese Snipe
Yes		Gallinago megala	Swinhoe's Snipe
Yes		Gallinago stenura	Pin-tailed Snipe
Yes		Hirundapus caudacutus	White-throated Needletail
Yes		Hirundo rustica	Barn Swallow
Yes		Lamna nasus	Porbeagle, Mackerel Shark
Yes		Lepidochelys olivacea	Olive Ridley Turtle, Pacific Ridley Turtle
Yes		Limosa lapponica	Bar-tailed Godwit
Yes		Megaptera novaeangliae	Humpback Whale
Yes		Mobula alfredi	Reef Manta Ray, Coastal Manta Ray
Yes		Mobula birostris	Giant Manta Ray
Yes		Motacilla flava	Yellow Wagtail
Yes		Natator depressus	Flatback Turtle
Yes		Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew
Yes		Numenius minutus	Little Curlew, Little Whimbrel
Yes		Numenius phaeopus	Whimbrel
Yes		Orcaella heinsohni	Australian Snubfin Dolphin
Yes		Orcinus orca	Killer Whale, Orca
Yes		Pandion haliaetus	Osprey
Yes		Phaethon lepturus	White-tailed Tropicbird

Direct impact	Indirect impact	Species	Common name
Yes		Phaethon rubricauda	Red-tailed Tropicbird
Yes		Pluvialis fulva	Pacific Golden Plover
Yes		Pluvialis squatarola	Grey Plover
Yes		Pristis pristis	Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish
Yes		Pristis zijsron	Green Sawfish, Dindagubba, Narrowsnout Sawfish
Yes		Rhincodon typus	Whale Shark
Yes		Sousa sahulensis	Australian Humpback Dolphin
Yes		Sternula albifrons	Little Tern
Yes		Tringa brevipes	Grey-tailed Tattler
Yes		Tringa nebularia	Common Greenshank, Greenshank
Yes		Xenus cinereus	Terek Sandpiper

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.5.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Assessment of Potential Impacts to Marine Threatened and Migratory Species

Section 7 and 8 of **Attachment 1** outline migratory aquatic and avian species which may be impacted, and provides a description on these impacts. In particular, the following endangered marine and avian migratory species may be impacted:

- Loggerhead turtle;
- Olive ridley turtle;
- Curlew sandpipe; and
- Eastern curlew.

It is noted that these works have been determined as unlikely to have a significant impact

There is no critically endangered marine within the proposed works area (refer **Attachment 1**). However, there are two endangered marine species that may potentially impacted by the proposed works:

Caretta caretta (Loggerhead Turtle)

It is noted that the action is **unlikely** to:

- Lead to a long-term decrease in the size of the population – no BIAs are in the vicinity of the Study Area for this species;
- Reduce the area of occupancy of the species – the species is highly mobile and minimal extent of impact on the seagrass community;
- Fragment an existing population into two or more populations – the records located along the eastern coastline;
- Adversely affect habitat critical to the survival of the species – no habitat critical of the species impacted;
- Disrupt the breeding cycle on the population – no records of loggerhead turtle breeding site;
- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline – no essential habitat of loggerhead turtles and only small amount of seagrass will be permanently impacted (not considered as potential impact);
- Result in invasive species that are harmful to a critically endangered species becoming established in the endangered or critically endangered species habitat – it is unlikely to increase proliferation of pest species in the Study Area as marine vessels are likely to be of local origin and maintained;
- Introduce disease that may cause the species to decline – no diseases are known to pose a significant threat to this species; and
- Interfere with the recovery of the species – no habitat critical of the species, no BIAs and impact on seagrass is considered minor.

Lepidochelys olivacea (Olive Ridley Turtle)

It is noted that the action is **unlikely** to:

- Lead to a long-term decrease in the size of the population – the species is migratory and no BIAs are in the vicinity of the Study Area for this species;
- Reduce the area of occupancy of the species – no impact on the area of occupancy for this species;
- Fragment an existing population into two or more populations – it will not indirectly or directly separate a population of this species;
- Adversely affect habitat critical to the survival of the species - no habitat critical to the survival of this species;
- Disrupt the breeding cycle on the population – the PMST breeding is likely in the area, however, nesting is unlikely in the vicinity of the proposed works;
- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline – no essential habitat for this species;

- Result in invasive species that are harmful to a critically endangered species becoming established in the endangered or critically endangered species habitat – the project is unlikely to facilitate the spread or increase proliferation of pest species as marine vessels are likely to be local origin, and it will be managed with standard procedure;
- Introduce disease that may cause the species to decline – no diseases are known to pose a significant threat to this species; and
- Interfere with the recovery of this species – the project is unlikely to interfere with the recovery of the olive ridley turtle, no BIAs and potential impacts to the habitat is considered minor.

Vulnerable Species include:

- *Sousa sahulensis* (Australian humpback dolphin) and *Orcaella heinsohni* (Australian snubfin dolphin)
- *Chelonia mydas* (Green turtle), *Eretmochelys imbricata* (Hawksbill turtle) and *Natator depressus* (Flatback turtle)
- *Pristis zijsron* (Green sawfish)
- *Xeromys myoides* (Water mouse)
- *Myrmecodia beccari* (Ant plant)

It is noted that it is unlikely the proposed works will have significant impact to these species (refer Table 19).

Migratory Species

- *Megaptera novaeangliae* (Humpback whale);
- *Orcaella heinsohni* (Australian snubfin dolphin);
- *Sousa sahulensis* (Australian humpback dolphin);
- *Dugong dugon* (Dugong);
- *Caretta caretta* (Loggerhead turtle);
- *Chelonia mydas* (Green turtle);
- *Eretmochelys imbricata* (Hawksbill turtle);
- *Lepidochelys olivacea* (Olive ridley turtle);
- *Natator depressus* (Flatback turtle);
- *Crocodylus porosus* (Estuarine crocodile);
- *Pristis zijsron* (Green sawfish); and
- *Anoxypristis cuspidate* (Narrow sawfish).

Assessment of Potential Impacts to Avian Threatened and Migratory Species

The critically endangered species is moderately likely to use the area potentially impacted by the proposed works.

Calidris ferruginea (Curlew Sandpiper) and *Numenius madagascariensis* (Eastern Curlew)

It is noted that the action is **unlikely** to:

- Lead to a long-term decrease in the size of the population – the impact is minor and unlikely to be impacted by the proposed works;
- Reduce the area of occupancy of the species – it will not impact on the area of occupancy for this species;
- Fragment an existing population into two or more populations – not directly or indirectly physically which separate populations of these species;
- Adversely affect habitat critical to the survival of the species – no habitat critical to the survival of these species;
- Disrupt the breeding cycle on the population – no essential breeding sites for these species;

- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline – the potential impact is very minor and there is extensive available habitat in the region;
- Result in invasive species that are harmful to a critically endangered species becoming established in the endangered or critically endangered species habitat – the proposed works is unlikely to increase proliferation of pest species and it will be managed with standard procedures;
- Introduce disease that may cause the species to decline – no diseases are known to pose a significant threat to this species; and
- Interfere with the recovery of the species – the Study Area does not include habitat critical to the survival of the species and any potential impact are considered very minor.

The endangered species may potentially be impacted by the proposed works.

Charadrius mongolus (Lesser Sand Plover)

It is noted that the action is **unlikely** to:

- Lead to a long-term decrease in the size of the population – the potential impact is very minor and unlikely to be impacted in any other way by the proposed works;
- Reduce the area of occupancy of the species – no impact on the area of the occupancy for this species;
- Fragment an existing population into two or more populations - no directly or indirectly physically which separate populations of this species;
- Adversely affect habitat critical to the survival of the species – no habitat critical to the survival of these species;
- Disrupt the breeding cycle on the population – no essential breeding sites for these species;
- Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline – the potential impact is very minor and there is extensive available habitat in the region;
- Result in invasive species that are harmful to a critically endangered species becoming established in the endangered or critically endangered species habitat – the proposed works is unlikely to increase proliferation of pest species and it will be managed with standard procedures;
- Introduce disease that may cause the species to decline – no diseases are known to pose a significant threat to this species; and
- Interfere with the recovery of the species – the Study Area does not include habitat critical to the survival of the species and any potential impact are considered very minor.

Vulnerable Species

- *Arenaria interpres* (Ruddy turnstone);
- *Calidris canutus* (Red knot);
- *Calidris tenuirostris* (Great knot);
- *Charadrius leschenaultii* (Greater sand plover);
- *Pluvialis squatarola* (Grey plover);
- *Sternula albifrons* (Litter tern); and
- *Xenus cinereus* (Terek sandpiper).

It is noted that it is unlikely the proposed works will have a significant impact for these species.

4.1.5.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.5.6 Describe why you do not consider this to be a Significant Impact. *

There are potential direct and indirect impacts of the proposed works, which resulted into temporary disturbance. However, there are no significant impacts indicated in the proposed works.

4.1.5.7 Do you think your proposed action is a controlled action? *

No

4.1.5.9 Please elaborate why you do not think your proposed action is a controlled action. *

The proposed action is unlikely to result in a significant impact to Migratory Species.

4.1.5.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The potential impacts on the GBRMP will be mitigated and managed using the approaches listed in Section 6.0 (refer **Attachment 1, Page 55**).

4.1.5.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Water Quality Monitoring

Water Quality will be monitored throughout the duration of the proposed works. In the event that turbidity levels exceed established thresholds based on background values, construction activities will cease immediately. Operations will only recommence once the cause of the exceedance has been identified and rectified to ensure the protection of the marine environment.

Localised High-Resolution Surveys

For a period of ten years following the commencement of construction, localised high-resolution surveys will be conducted every 6 months or following significant storm events. These surveys will be performed during spring low tides and will encompass Dungeness Beach, the adjacent spit and the western mangrove island to monitor geomorphological changes and erosion rates (refer **Attachment 4**).

Hydrographic surveys

A comprehensive hydrographic survey of the dredge area and its surrounds will be completed within one month of the completion of works. In accordance with the project's monitoring plan, additional hydrographic surveys of the Enterprise Channel and the adjacent Hinchinbrook Main Channel will be undertaken during the third, sixth and ten years following the commencement of construction to assess stability and shoaling (refer **Attachment 4**).

Marine Plant Communities

The marine plant monitoring program is designed to ensure the recovery of disturbed habitats. The program will comprise as a minimum a survey following an initial survey upon the completion of works, a follow-up survey after 18 months to determine if supplementary planting is required, annual health surveys for a duration of 5 years, specific monitoring protocols for temporarily disturbed mangroves and seagrass adjacent to the works are detailed in the Section 12.4.1 (refer **Attachment 1, page 99-100**).

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Nuclear actions are located within the project area or vicinity.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action is not located within a Commonwealth Marine Area.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

Yes

4.1.8.2 Briefly describe why your action has a direct and/or indirect impact on this protected matter. *

The seaward end of the proposed dredging and the breakwater is located within the Great Barrier Reef Marine Park (GBRMP), specifically categorised as a Habitat Protection Zone (refer **Attachment 1**). These zones are designated to ensure the conservation of the GBRMP by protecting and managing sensitive habitats against potentially damaging activities. While the broader biodiversity of the GBRMP includes the critical seagrass meadows, macroalgae, benthic microalgae and diverse invertebrate communities. The specific design footprint within the Marine Park consists solely of sandy substrate with no marine plants present.

The Potential Impacts to the GBRMP

- Direct impacts to marine habitat within the GBRMP are very minor, as the footprint located at the outer portion of the dredge channel and the breakwater.
- Modelling indicates sedimentation as a result of dredging is considered to be low and short lived.
- Impacts to the water quality is relatively low. Overall impacts on water quality are expected to remain relatively low and localised.
- Risk impacts from ASS are low.
- Contaminants spills from hazardous chemical may occur during refuel and maintain heavy vehicles.
- Risks from light, noise, air and vibration emissions are considered to be low.
- The risk from boat strike is low.

There will be no increase in the risk of spread of pest species or diseases.

4.1.8.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.8.6 Describe why you do not consider this to be a Significant Impact. *

It is noted that the action is unlikely to result in a significant impact on coastal vegetation habitats. The overarching threats to the Great Barrier Reef are primarily driven by climate change, specifically rising sea levels, ocean acidification and increasing water temperatures. While degraded water quality from excessive sedimentation can increase turbidity and reduce clarity potentially altering community composition and reducing the stability of seagrass meadows, the localised nature of the proposed works ensures that any associated impacts remain below the threshold of regional environmental significance.

The Mitigation to the GBRMP

- Turbidity will be monitored, and dredging will cease where it exceeds agreed thresholds based on background levels.
- The risks of Acid Sulfate Soils will be managed in accordance with the National and State Guidelines.
- The risk of any chemical contaminations will be managed through the DMP, DMPF and suitable contaminant storage areas. It will be managed through the Construction Management Plan.
- The risks from light will comply with the National Light Pollution Guidelines.
- Marine species will be monitored prior to and during any works.
- Risks from noise, air, and vibration emissions will be managed through the Construction Management Plan.
- Risk from boat will be managed through the Construction Management Plan.
- Risks from increased litter will be addressed by the Commonwealth Threat Abatement Plan for the impacts of marine debris of the vertebrate wildlife of Australia's coasts and oceans.

To diminish the risk of spread of pest species or diseases, it will manage with local vessels used and ballast water wash downs. This will comply with the *Biosecurity Act 2015*.

4.1.8.7 Do you think your proposed action is a controlled action? *

No

4.1.8.9 Please elaborate why you do not think your proposed action is a controlled action. *

The proposed action is unlikely to result in a significant impact to the Great Barrier Reef.

4.1.8.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The potential impacts on the GBRMP will be mitigated and managed using the approaches listed in Section 6.0 (refer Page 55) (**attachment 1**).

4.1.8.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Water Quality Monitoring

Water Quality will be monitored throughout the duration of the proposed works. In the event that turbidity levels exceed established thresholds based on background values, construction activities will cease immediately. Operations will only recommence once the cause of the exceedance has been identified and rectified to ensure the protection of the marine environment.

Localised High-Resolution Surveys

For a period of ten years following the commencement of construction, localised high-resolution surveys will be conducted every 6 months or following significant storm events. These surveys will be performed during spring low tides and will encompass Dungeness Beach, the adjacent spit and the western mangrove island to monitor geomorphological changes and erosion rates (refer **Attachment 4**).

Hydrographic surveys

A comprehensive hydrographic survey of the dredge area and its surrounds will be completed within one month of the completion of works. In accordance with the project's monitoring plan, additional hydrographic surveys of the Enterprise Channel and the adjacent Hinchinbrook Main Channel will be undertaken during the third, sixth and ten years following the commencement of construction to assess stability and shoaling (refer **Attachment 4**).

Marine Plant Communities

The marine plant monitoring program is designed to ensure the recovery of disturbed habitats. The program will comprise as a minimum a survey following an initial survey upon the completion of works, a follow-up survey after 18 months to determine if supplementary planting is required, annual health surveys for a duration of 5 years, specific monitoring protocols for temporarily disturbed mangroves and seagrass adjacent to the works are detailed in the Section 12.4.1 (refer **Attachment 1, page 99-100**).

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No coal mining development or coal seam gas development is located within or near the proposed action.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action is not located on Commonwealth Land.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action is not located within or near any Commonwealth Heritage Places Overseas.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

Yes

4.3.2 Do you have an alternative timeline you are proposing for your proposed action? *

No

4.3.3 Briefly describe why an alternate timeline for your proposed action was not possible. *

The proposed action will be undertaking in accordance with timing of conditions (refer **attachment 4**).

4.3.4 Do you have an alternative location you are proposing for your proposed action? *

No

4.3.5 Briefly describe why an alternative location for your proposed action was not possible. *

An alternative location for the proposed works was not considered possible due to:

Site Specific Functional Requirements

The primary objective of the project is to provide safe, all-tide access to the Hinchinbrook Channel to mitigate the severe 6.6 m per year erosion rate of the Dungeness Spit (refer **Attachment 1**). Alternative locations for the boat ramp or channel were unfeasible as the existing infrastructure is strategically located at the confluence of major deep-water channels. The current proposed location has minimal mangroves communities which most of them are mangroves debris from dead mangroves. Relocating the facility would require significantly more extensive capital dredging in previously undisturbed areas, resulting in a substantially larger environmental footprint and greater fragmentation of marine habitats.

Rock Wall

Without the stabilisation provided by the proposed rock wall, replenished sand would be rapidly redistributed by the high tidal currents and wave actions of the Hinchinbrook Channel. This would require a perpetual and costly dredging cycle, creating turbidity and ongoing disturbance to benthic communities, rather than the “one-off” capital intervention currently proposed.

Environmental Impact Minimisation

The current design of a low-crest breakwater with a 370 m length was selected specifically because it is the minimum structural intervention required to achieve navigational safety while protecting Regional Ecosystems (RE 7.1.1 and 7.2.3a). The wider breakwater designs would be rejected as it will result in a larger direct footprint on seagrass and mangrove communities. Consequently, the proposed location is considered the only viable solution to achieve the project’s safety goals while ensuring the long-term protection values of the region.

4.3.6 Do you have alternative activities you are proposing for your proposed action? *

No

4.3.7 Briefly describe why an alternative activity for your proposed action was not possible. *

An alternative activity for the proposed action was not possible due to the site-specific functional requirements of the existing infrastructure. Relocating the boating facility or establishing a new navigational channel was dismissed, as it would necessitate extensive capital dredging in previously undisturbed marine environments. This would result in a larger ecological footprint and greater fragmentation of benthic habitats within the Great Barrier Reef Marine Park (GBRMP).

The non-structural engineering alternatives such as isolated beach nourishment without the stabilising presence of a rock breakwater were evaluated and deemed unviable. The high energy tidal currents and wave action inherent to the channel confluence would rapidly redistribute nourished sediments. This would trigger a cycle of perpetual, costly maintenance dredging, creating turbidity and ongoing disturbance to adjacent sensitive receptors including local seagrass meadows and RE 7.1.1 (Mangroves). The proposed low-crest 370 m breakwater with targeted dredging represents the minimum structural intervention required to secure long term navigational safety while preserving the surrounding coastal ecosystem.

4.3.4 Alternatives: Impact and mitigation

4.3.4.1 Do these alternatives have a different impact, avoidance, or mitigation measure compared to what you have already provided? *

No

4.3.5 Alternatives: Considered alternatives

4.3.5.1 Do you have any other alternative actions, including not taking the action, that you have considered but are not proposing as part of this referral? *

No

5. Lodgement

5.1 Attachments

3.1.3 Natural features, important or unique values that applies to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	01/04/2026	No	High

3.1.4 Gradient relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT2-Water_Technology-Design_Plans.pdf Breakwater design plans.		No	High
#2.	Document	ATT3-Water_Technology-Detailed_Morphological_Modelling.pdf Morphological Modelling	09/10/2024	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

3.4.1 Hydrology characteristics that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT3-Water_Technology-Detailed_Morphological_Modelling.pdf Morphological Modelling	08/10/2024	No	High

4.1.1.2 (World Heritage) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

4.1.1.10 (World Heritage) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

4.1.1.11 (World Heritage) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High
#2.	Document	ATT4-SARA-Decision_Notice.pdf SARA Referral Agency Response	09/04/2025	No	High

4.1.2.2 (National Heritage) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

4.1.2.10 (National Heritage) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

4.1.2.11 (National Heritage) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High
#2.	Document	ATT4-SARA-Decision_Notice.pdf SARA Referral Agency Response	08/04/2025	No	High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental	31/03/2026	No	High

Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High
#2.	Document	ATT4-SARA-Decision_Notice.pdf SARA Referral Agency Response	08/04/2025	No	High

4.1.4.11 (Threatened Species and Ecological Communities) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High
#2.	Document	ATT4-SARA-Decision_Notice.pdf SARA Referral Agency Response	08/04/2025	No	High

4.1.5.2 (Migratory Species) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

4.1.5.10 (Migratory Species) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

4.1.5.11 (Migratory Species) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High
#2.	Document	ATT4-SARA-Decision_Notice.pdf SARA Referral Agency Response	08/04/2025	No	High

4.1.8.2 (Great Barrier Reef) Why your action has a direct and/or indirect impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

4.1.8.10 (Great Barrier Reef) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the	31/03/2026	No	High

Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.

4.1.8.11 (Great Barrier Reef) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High
#2.	Document	ATT4-SARA-Decision_Notice.pdf SARA Referral Agency Response	08/04/2025	No	High

4.3.3 Why an alternate timeline for your proposed action was not possible.

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT4-SARA-Decision_Notice.pdf SARA Referral Agency Response	08/04/2025	No	High

4.3.5 Why an alternative location for your proposed action was not possible

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	ATT1-SLR-Dungeness_EPBC_Referral_Report.pdf This report addresses potential impacts to Matters of National Environmental Significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) as a result of the proposed work, and will accompany the EPBC referral.	31/03/2026	No	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	31162988132
Organisation name	MILFORD PLANNING PTY LTD
Organisation address	283 Flinders Street, Townsville City, 4810, Queensland
Representative's name	George Milford
Representative's job title	Director
Phone	0747240095
Email	info@milfordplanning.com.au
Address	

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ By checking this box, I, **George Milford of MILFORD PLANNING PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	46291971168
Organisation name	HINCHINBROOK SHIRE COUNCIL
Organisation address	25 Lannercost Street, Ingham QLD 4850
Representative's name	Mary-Anne Uren

Representative's job title	Chief Executive Officer
Phone	07 4776 4649
Email	council@hinchinbrook.qld.gov.au
Address	25 Lannercost Street, Ingham QLD 4850

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ I, **Mary-Anne Uren of HINCHINBROOK SHIRE COUNCIL**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ I, **Mary-Anne Uren of HINCHINBROOK SHIRE COUNCIL**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.