Terms of reference for an environmental impact statement

Port of Brisbane Channel Enhancement project

September 2025

DELIVERING FOR QUEENSLAND

Queensland Government

The Department of State Development, Infrastructure and Planning, connects industries, businesses, communities and government (at all levels) to leverage regions' strengths to generate sustainable and enduring economic growth that supports well-planned, inclusive and resilient communities.

Acknowledgement of Country

The department acknowledges the First Nations peoples in Queensland: Aboriginal and Torres Strait Islander peoples and their connections to the lands, winds and waters we now all share. We pay our respect to Elders, past, present and emerging. We also acknowledge the continuous living culture of First Nations Queenslanders – their diverse languages, customs and traditions, knowledges and systems. We acknowledge the deep relationship, connection and responsibility to land, sea, sky and Country as an integral element of First Nations identity and culture.

The Country is sacred. Everything on the land has meaning and all people are one with it. We acknowledge First Nations peoples' sacred connection as central to culture and being. We acknowledge the stories, traditions and living cultures of First Nations peoples and commit to shaping our state's future together. The department recognises the contribution of First Nations peoples and communities to the State of Queensland and how this continues to enrich our society more broadly.

Translating and interpreting service

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Copies of this publication are available on our website at **www.statedevelopment.qld.gov.au/cg** and further copies are available upon request.

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Part A About these terms of reference

Introduction

This document outlines the terms of reference (TOR) for the environmental impact statement (EIS) for the Port of Brisbane Channel Enhancement project (the project) under the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

The project

Project purpose is to dredge up to 96.5 million cubic meters of material to straighten, widen, deepen, and realign for efficiency, the existing Port of Brisbane shipping channel. The project will improve maritime safety for larger vessels and future-proof the port to manage changes in vessel size and global supply chain trends supporting the local and Queensland economy. Enhancements to the shipping channel will enable vessels to transit through Moreton Bay under a wider range of conditions more safely and efficiently, including allowing for two-way passing. Optimising the shipping channel by reducing bends and realigning has the potential to lower carbon emissions.

The EIS should give priority to the critical matters associated with the project, including:

- impacts to the ecological values of the Moreton Bay Marine Park & Ramsar Wetland (sections 29 and 30)
- impacts to water quality, matters of state and national significance including marine fauna and flora (sections 16, 29 & 30)
- impacts to coastal geomorphology including coastal erosion within Moreton Bay and surrounding Islands (sections 11 and 12).

A critical matter is an aspect of the proposal that has one or more of the following characteristics:

- a high or medium probability of causing serious or material environmental harm or a high probability of causing an environmental nuisance
- it is considered important by the Coordinator-General, and/or there is a public perception that an activity has the potential to cause serious or material environmental harm or an environmental nuisance, or the activity has been the subject of extensive media coverage
- it is relevant to a controlling provision under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- it raises obligations under any other legislation applicable for the project.

Statutory basis

The Coordinator-General declared the project to be a 'coordinated project for which an EIS is required' pursuant to section 26(1)(a) of the SDPWO Act. This declaration initiates the statutory environmental impact assessment procedure of Part 4 of the SDPWO Act, which requires the proponent to prepare an EIS for the project.

This TOR sets out the matters the proponent is to address in an EIS for the project.

Accredited assessment process under Australian legislation

On 19 September 2024, a delegate of the Australian Government Minister for the Environment and Water determined the project to be a 'controlled action' under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (EPBC reference 2024/09919). Therefore, the project requires approval under the EPBC Act.

The controlling provision/s for the project are sections 16 and 17B, 18 and 18A, 20 and 20A, 23 and 24A. Refer to Appendix 3 for further information on the controlling provisions.

On 19 September 2024, a delegate of the Australian Government Minister for the Environment and Water decided under section 87 of the EPBC Act that the project will be assessed by accredited assessment under the SDPWO Act.

The EIS must include, as a stand-alone chapter or report, an assessment of impacts to matters of national environmental significance (MNES) that fully addresses matters relevant to the controlling provision under the EPBC Act. Section 30 of the TOR, developed in consultation with the Australian Government, sets out the information which must be included in the EIS relating to MNES.

Indigenous recognition and native title

This TOR acknowledges and respects the rights, culture, and interests of Queensland's Aboriginal peoples and Torres Strait Islander peoples.

Accepting statutory processes and regulated decision-making requirements, as far as practicable, the proponent is to demonstrate engagement and consideration of the views of Aboriginal peoples and Torres Strait Islander peoples irrespective of native title status.

More information

For information about the project, or the coordinated project declaration and EIS process under the SDPWO Act can be found at **www.statedevelopment.qld.gov.au/coordinatorgeneral.**

Part B Developing the EIS and requirements for an EIS

1. Structure and general approach

General approach

1.1 The draft EIS is to address all matters as specified in the TOR for the project.

1.2 Each technical chapter of the draft EIS should identify and describe the relevant environmental values that must be protected.

1.3 Proponents should use cross-referencing within the draft EIS to avoid repetition of information. It is suggested that proponents follow the heading structure as set out in Part C of this TOR.

1.4 For the purposes of the EIS process, 'environment' is defined in Schedule 2 of the SDPWO Act and includes social and economic matters.

1.5 The detail required in the EIS to address each relevant to the project matter is to be proportional to the potential significance of the impacts on environmental values. When determining the significance of an impact, consider:

(a) the sensitivity of the environmental value

(b) the extent, intensity, duration, cumulative effect, irreversibility of the impact

(c) the likelihood of risk of impact being realised and causing environmental harm, and

(d) the effectiveness of any proposed mitigation measures.

1.6 The EIS must address other matters not covered in the TOR in the following circumstances:

(a) studies reveal a matter that is material to the impact assessment that had not been foreseen when the TOR was finalised

(b) the Coordinator-General directs the proponent in writing to address a matter as an information request under section 34B of the SDPWO Act

(c) new or amended legislation or policies that come into effect after the TOR has been finalised

(d) the proponent makes amendments to the proposed project that would result in a change in the nature, timing or location of any impacts.

1.7 The EIS should address matters relevant to the environmental objectives and performance outcomes specified in schedule 8 of the Environmental Protection Regulation 2019 (EP Regulation) to allow appropriate conditions to be developed.

Requirements of an EIS

1.8 The EIS must:

(a) be prepared in accordance with, and meet the minimum requirements of, Schedule 1 of the State Development and Public Works Organisation Regulation 2020 (SDPWO Regulation)

(b) be prepared in accordance with relevant policies, standards and guidelines identified in this TOR, and any others identified during development of the EIS

in consultation between the Coordinator-General, the proponent and advisory agencies

(c) be prepared by suitably qualified and experienced professionals, relevant to the field of expertise required for each subject matter

(d) characterise the existing environment and clearly define environmental values that may be impacted by the project. This should be supported by site-specific and relevant baseline information sufficient to identify seasonal (where relevant for the value being assessed) and long-term variations at a scale relevant to the project

(e) identify the project's relevant impacts and analyse their significance. When determining the significance of an impact, consider the sensitivity of the relevant environmental value, the extent, intensity, duration, cumulative effect and irreversibility of the impact, the likelihood of the risk of impact being realised and causing environmental harm, and the effectiveness of proposed mitigation measures. Where impacts are not quantifiable, proponents should describe the impacts qualitatively, in as much detail as reasonably practicable

(f) be supported by appropriate scientific and/or specialist studies that include details of their methodology, reliability, and any relevant assumptions or scientific judgements

(g) provide detailed mitigation measures and strategies for the protection or enhancement of relevant environmental values. Mitigation measures should be specific to identified impacts, have a clear action or process, be linked to measurable outcomes and align with the preferred hierarchy to:

  (i) to avoid

  (ii) to minimise or otherwise mitigate

  (iii) remedy and

  (iv) if necessary, offset

(h) present a clear narrative that connects the existing environment and environmental values, project activities, their impacts, how mitigation measures will manage those impacts, and the acceptability of any residual impacts. Conclusions should be supported by objective analysis and relevant evidence

(i) provide plans and drawings of sufficient detail to support the approvals being sought and to enable the Coordinator-General and relevant agencies to evaluate and condition the project

(j) use consistent and clearly defined nomenclature and terminology.

Format and copy requirements

1.9 The proponent must submit a draft EIS for consideration by the Coordinator-General. To ensure the draft EIS is evaluated in a timely manner, documents need to be easy to navigate and meet the below criteria:

- an electronic copy in Portable Document Format (PDF)
- an electronic table of contents (PDF or HTML) with hyperlinks to each chapter
- each chapter should include a table of contents, which is hyperlinked to subsections within the chapter (to 3 heading levels)

- hyperlink any external websites referred to in the draft EIS.

1.10 Subject to proprietary and confidentiality requirements, the proponent shall provide supporting data, modelling and input/output information used in the EIS in an appropriate electronic format (e.g. shapefiles or Microsoft Excel files).

1.11 Once the Coordinator-General and the Australian Government are satisfied the draft EIS addresses the TOR and is suitable for public release, the proponent must meet the requirements of Appendix 1. A PDF version of the draft EIS will be published on the Coordinator-General's website at the commencement of the public notification period, and all advertising material will direct the public to that website. The proponent must not make the draft EIS publicly available until the Coordinator-General provides written advice that the draft EIS may be released.

Part C Content requirements of the EIS

2. Executive summary

2.1 The executive summary is to describe and convey the most important aspects of the project, its potential impacts and how they will be managed, in a concise and readable form. It is to use plain English, avoid jargon, be written as a stand-alone document and broadly follow the structure of the draft EIS.

3. Introduction

3.1 The introduction is to clearly explain the function of the draft EIS, why it has been prepared and what it sets out to achieve. The introduction is also to set the context for the detailed assessment of the project and describe the structure of the document.

About the project

3.2 Provide a brief description of the project including:

(a) project location, including locality and local government area

(b) anticipated maximum life of the project

(c) key components of the project

(d) rationale for the project, including a clear outline of the project's objectives and background to the project's development

(e) how the project relates to other major or significant projects in or adjacent to the area where this project is proposed, of which the proponent should be reasonably aware that have been, or are being undertaken or that have been approved but not yet constructed or implemented

(f) the consequences of not proceeding with the project.

Project proponent

3.3 Provide the following proponent information:

(a) the proponent's full name, postal address, Australian Business Number or Australian Company Number as applicable, and details of any joint venture partners

(b) the proponent's (including directors) experience in relevant technologies and developing and implementing comparable major projects

(c) the proponent's (including directors) environmental record in Australia, including a list of any breach of, or proceedings against the proponent under an Australian or state law for the protection of the environment or the conservation and sustainable use of natural resources (an environmental law), during the previous ten years

(d) the proponent's environmental, health, safety and community policies

(e) experience, qualifications and certification of all suitably qualified consultants and sub consultants engaged by the proponent to complete the EIS

(f) all potential or actual conflicts of interest for the proponent and all consultants and subconsultants engaged by the proponent.

Environmental impact assessment process

3.4 State the controlling provisions for the project under the EPBC Act.

3.5 Describe the environmental management framework to be applied to the project, including the approach to the environmental management plans.

4. Project description

Proposed development

4.1 Clearly define the project footprint, project area and total disturbance area in hectares (including buffer zones) and/or in the context of lineal kilometres (related to the shipping channel).

4.2 Provide a description of the project's proposed phases, including likely timing and sequencing of proposed phases or stages and physical layout of the project during each project phase. Describe the nature and timing of proposed phases or stages, including triggers and hold points.

4.3 Describe the anticipated project costs, including across each of its proposed stages and phases.

4.4 Describe the proposed delivery model(s) for the project, and commercial arrangements including, where relevant, options for delivery of the project.

4.5 Describe any project components that are subject to change, refinement through detailed design or alternative options that remain under consideration.

4.6 Describe any project components or activities that are proposed to be assessed separately or subsequently to the EIS process, including details of the assessment and approvals process.

Site description

4.7 Describe and illustrate with suitably scaled maps the existing environment and features within the project footprint and surrounding project area, including:

(a) underlying tenure and ownership information for all land and tidal waters impacted by the project footprint and adjacent properties, including detail of any special attributes of land and waters

(b) watercourses, waterways and coastal wetlands as defined by the *Coastal Protection and Management Act 1995* and *Fisheries Act 1994* and lakes, springs, aquifers, floodplain areas (including wetlands), unmapped features, and watercourse and drainage features as defined by the *Water Act 2000*

(c) intertidal and subtidal ecosystems as defined by the Queensland Intertidal and Subtidal Ecosystem Classification Scheme including, but not limited to, unvegetated intertidal flats, seagrass meadows, shellfish communities, coral and algal reefs and coral communities

(d) bathymetry for the footprint area and any area impacted by dredging operations

(e) existing uses (including but not limited to commercial fishing, recreational fishing, extractive industry, aquaculture).

4.8 Describe and map, in both plan and cross-section view, the geology, bathymetry, waterbodies, watercourses and landforms of the project area and any relevant areas within the project surrounds.

Project footprint

4.9 Within the context of the existing environment, define and map the location and boundaries of the project footprint, including all infrastructure elements, extent of disturbance (including clearing of marine plants) and development components necessary for the project. Show all key aspects including dredge footprints, dredge material placement areas, excavations, stockpiles, areas of fill or reclamation, subsidence areas, services infrastructure, plant locations, stockpile areas and loading and unloading facilities. Include discussion of any environmental design features of these facilities (for example, bunding of plant and storage facilities).

Project phases

4.10 Describe for each proposed project phase and stage:

(a) estimated timing and indicative sequencing of activities, and any implications where project staging is proposed

(b) disturbance areas for each project component

(c) workforce numbers expressed as annual average full-time equivalent positions and proposed shifts, as applicable

(d) anticipated workforce recruitment and rostering arrangements, including proposed travel to and from work, such as fly-in, fly-out and drive-in, drive-out

(e) where and how personnel are to be accommodated (if relevant)

(f) the type, quantity, origin, routes, delivery modes, storage and laydown requirements/locations for construction material and for dredge material generated by the project

(g) the precise location (within and outside the project footprint) of works to be undertaken, structures to be built or components of the project that may have relevant impacts

(h) how the works are to be undertaken and design parameters for aspects of the structures, or components, of the project that may have relevant impacts

(i) requirements for new infrastructure, or the upgrading, retention, relocation and/or decommissioning of existing infrastructure on and offsite to service the project.

4.11 For the pre-dredging phase, include a description of:

(a) results of pre-disturbance surveys and how this information is/will be used in the final design of the project

(b) proposed development, upgrades, modifications, realignments, relocation, deviation or restricted access to roads and other infrastructure including water, power and telecommunications (where relevant).

4.12 For the proposed dredging phases of the project over its maximum anticipated duration, include a description of:

(a) proposed hours of dredging and placement (including night-time works)

(b) proposed timing including the need for any temporal pauses of dredging or placement throughout the calendar year to address logistical, navigational safety and/or environmental requirements

(c) any temporary construction or stockpile areas, and how and when temporary construction or stockpile areas will be managed and/or rehabilitated

(d) any supporting developments that are required, such as quarries, borrow pits, water storage, site offices, laydown areas or roads

(e) the location of any releases to the environment such as tailwater or de-watering releases from dredged material in storage areas.

5. Project rationale and alternatives

5.1 Describe the objectives and rationale for the project, including strategic, economic, environmental, and social implications, technical feasibility and commercial drivers. Describe the markets or sectors that the project is proposed to service.

5.2 Demonstrate the need and scale of the project including in a regional, state and national context. Consider this in context of other major relevant infrastructure projects proposed and/or under development in the region.

5.3 Describe the expected benefits and opportunities associated with the project and the relevant recipients of these benefits and opportunities (supported by relative evidence).

5.4 Describe the process and criteria used in selecting the channel location and design, dredged material placement area(s) and defining the project footprint.

5.5 Describe the feasible alternatives to the project, including conceptual, technological, scale, locality, channel alignment and material placement alternatives that may improve environmental outcomes. Detail the criteria used to determine the alternatives. Provide sufficient detail to support selection of the preferred option(s). Include an assessment of the costs and benefits of the options being assessed.

5.6 Describe the options assessed for transport of materials and workers to site, and why the preferred option was selected with reference to managing health and safety considerations.

5.7 Where project options or alternatives are still under consideration, provide a description and assessment of each option and a timeframe of when the option will be confirmed. Briefly describe how the potential impacts of these options have been assessed, for example, consideration of worst case or greatest disturbance scenarios.

5.8 Demonstrate why the preferred option(s) has been selected by summarising the comparative environmental, social and economic impacts of each project option, with particular regard to the principles of ecologically sustainable development.

5.9 Describe the consequences of not proceeding with the project or any component of the project.

6. Legislative requirements and project approvals

6.1 Identify the statutory approvals (local, state and Commonwealth) that are likely to be required for the project. The list of statutory approvals should be in the format provided at Appendix 2 and describe the approval, relevant statutory provision, trigger, administering authority, when the approval is required (relative to the completion of the EIS process) and any exemptions that apply. Clearly define

approvals for which conditions are being sought through the EIS process[1] and approvals for which conditions will be sought separate to the EIS.

6.2 Provide an overview of the land use planning instruments relevant to the project, such as applicable local government planning schemes, development schemes for a State development area, land use plan for strategic port land, State regional plans or other land use planning document that regulates development and land use of the site.

6.3 Provide information required under section 125(1) of the *Environmental Protection Act 1994* (EP Act) in support of the project's application for an environmental authority for any proposed environmentally relevant activities (ERAs). List each ERA separately and identify the appropriate ERA number, activity name and relevant threshold (see Schedule 2, EP Regulation for a list of ERAs). Environmental values, information and approval requirements are specified in the EP Act, the EP Regulation, environmental protection policies (EPP) and relevant guidelines.

6.4 Assess the extent to which the project and its intended outcomes are consistent with relevant legislation, policies, plans, statutory guidelines and government priorities for the region. If there is a conflict (e.g. the proposed works are inconsistent with zone objectives for Moreton Bay Marine Park), explain how the project can be approved (noting that under the current Marine Park legislation this project may require a legislative amendment (e.g. a revocation or establishing a new works area), which is a separate process, subject to its own requirements.

7. Stakeholder consultation and engagement

7.1 In preparing the EIS, consult with directly affected people, communities and key stakeholders including but not limited to landholders, Aboriginal peoples and Torres Strait Islander peoples, local, State and Australian Government agencies, local and regional commerce and community groups, conservation groups and social and public service providers. Utilise the community and stakeholder engagement methodologies outlined in the *Social Impact Assessment Guideline*[2] (SIA Guideline) and *Social Impact Assessment Supplementary material for assessing and managing the social impacts of projects under the Coordinator-General's Social Impact Assessment Guideline* (SIA Supplementary Material).[3]

7.2 Describe in a stakeholder consultation and engagement report, the consultation and engagement activities undertaken during the preparation of the EIS. Demonstrate that engagement methods and processes are effective, transparent, accessible, timely, well-recorded, provide appropriate content and context, and encourage and facilitate participation.

7.3 Identify issues raised during stakeholder engagement and explain how feedback from stakeholders has been considered and/or resolved during the EIS process and been incorporated into project design and outcomes.

[1] Approvals for which conditions are being sought should consider consideration provisions of Part 4 of the SDPWO Act.
[2] Queensland Government, *Social impact assessment guideline*, July 2025.
[3] Queensland Government, Supplementary material for assessing and managing the social impacts of projects under the *Coordinator-General's Social Impact Assessment Guideline* , July 2025. Consideration should also be given to the Australian Government, Department of Climate Change, Energy the Environment and Water, *The Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environmental Protection and Biodiversity Conservation Act 1999 (interim guidance),* 2023 (or subsequent revision).

8. Tenure including Native Title

Existing environment

8.1 For the project footprint and land adjacent to the project footprint:

(a) identify the tenure of the land and waters

(b) identify the registered owner of the land and waters

(c) identify any registered interests in the land and waters

(d) identify any tenure arrangements or commercial arrangements that the proponent has in place to access the land and waters in association with the project.

8.2 Identify any native title rights and interests that apply to the project footprint, including:

(a) a native title assessment that determines presence, or otherwise, of Native Title over all land or waters

(b) land or waters where Native Title has been determined to exist by the Federal Court

(c) land or waters that are covered by a Native Title determination application

(d) land or waters that are covered by a registered Indigenous Land Use Agreement

(e) land or waters where Native Title has been determined not to exist.

Impact assessment

8.3 Identify any tenure proposed to be applied for as part of the project, including anticipated timeframes, approvals or owner's consent requirements.

8.4 For impacts on overlapping tenures, describe outcomes of consultation with the land holders and occupiers with respect to accessing land and waters, impact assessment and mitigation measures.

8.5 Identify whether the project involves any proposed impact on Native Title and describe the options available under the *Native Title Act 1993 (Cth)* to consult with relevant native title bodies and manage any impacts identified.

Mitigation measures

8.6 Identify any existing or proposed arrangements to manage impacts on Native Title.

8.7 Detail proposed mitigation measures for potential impacts on the tenure of the land.

9. Land use planning

Existing environment

9.1 For the project footprint (including any reclamation areas) and land adjacent to the project footprint:

(a) identify current and historical land uses and infrastructure, supported by lot on plan descriptions

(b) identify areas of regional interest under the *Regional Planning Interests Act 2014*

(c) identify any land that is listed on the environmental management register or the contaminated land register, or that has been subject to a notifiable activity under the EP Act.

9.2 Identify any land use planning instruments that apply to the project footprint, including:

(a) relevant provisions of the State Planning Policy

(b) the applicable regional plan under the *Planning Act 2016* that applies to the land, including the relevant provisions of the regional plan

(c) the applicable local government planning scheme, including the relevant provisions of the local government planning scheme

(d) Port of Brisbane Land Use Plan as drafted under the provisions of the *Transport Infrastructure Act 1994*

(e) relevant State codes under the State Development Assessment Provisions (SDAP).[4]

Impact assessment

9.3 Assess the project against the land use planning instruments and relevant SDAP State codes that apply to the project, taking into consideration the proposed measures that would be used to avoid or minimise impacts.

9.4 If the project is exempt from compliance with a land use planning instrument or does not require assessment against a SDAP State Code but constitutes technical assessment under the Planning Regulation 2017 triggers, identify the exemption and extent, along with any limitations on the exemption.

9.5 Where non-compliance with a land use planning instrument is identified, provide commentary setting out whether the non-compliance is appropriate and reasons for the non-compliance.

Mitigation measures

9.6 Detail proposed mitigation measures for potential impacts or non-compliance with land use planning instruments

10. Dredging and dredge material placement area

Existing environment

10.1 Provide information and detailed mapping of the existing shipping channel and existing dredge material placement locations, including evidence of all current development permits, environmental authorities and marine park permits that demonstrate the approved areas for maintenance dredging and shipping within the existing channel.

10.2 Detail the physical, chemical and biological characteristics of the water column and seabed include hydrographic, bathymetric and benthic habitat survey mapping in your analysis.

10.3 An allocation of quarry material permit will be required for quarry material that is removed from land under tidal waters owned by the State and where the material is

[4] Further information regarding SDAP requirements can be accessed from **www.planning.qld.gov.au/planning-framework/state-assessment-and-referral-agency/state-development-assessment-provisions-sdap.**

disposed of above the high-water mark. Please provide the following information in relation to sand extraction:

(a) timeframes for starting extraction of clean sand

(b) rate of extraction

(c) amount of clean sand within the extraction area

(d) impact on the availability of clean sand to existing sand sourcing operations (for example, Spitfire Channel triangle area).

10.4 Provide the following information in relation to proposed placement of dredge spoil to reclaim land below the limit of Highest Astronomical Tide (HAT):

(a) the boundary of land to be filled or reclaimed by metes and bounds, tied to real property boundary/Commonwealth/State land boundaries

(b) the location of the limit of mean high water spring tide, HAT and lowest astronomical tide

(c) existing levels of the land and proposed final levels relative to the Australian Height Datum and/or Chart Datum

(d) method of containment of the dredge spoil and protection from erosion with certification of design by a registered professional engineer of Queensland.

Impact assessment

10.5 Detail and provide mapping of the location, depth and volume of dredging and dredge material placement required for the project. Mapping should include proximity to habitats with sensitive receptors such as coral, seagrass meadows, fishing grounds, spawning grounds and protected fauna feeding areas.

10.6 Provide details of the proposed dredging methodology including class of dredge vessel and likely dredging equipment to be used during the different stages or phases of the dredging campaign.

10.7 Provide details on the expected duration and timing of the dredging campaigns up to the anticipated maximum life of the project and how existing shipping operations will be managed.

10.8 Provide details of the grading and sediment composition of likely dredged materials, including potential contaminants as required for testing completed in accordance with the National Assessment Guidelines for Dredging (NAGD) (Commonwealth of Australia 2009). Sampling and testing of marine sediments in accordance with the NAGD to support the EIS shall employ a risk-based approach based on the likely sources of potential contamination and the geotechnical properties of the dredge material, sufficient to characterise the potential impacts from dredging and placement and to inform future testing in areas of identified higher risk.

10.9 Provide descriptions of prudent and feasible alternative dredge material placement areas and how the project has determined the preferred dredge material placement strategy(s). Provide justification for the selected disposal area over other alternative dredge material placement areas.

10.10 Where relevant, detail future beneficial reuse of dredge material including for example through use as construction/fill material, manufacture of building or glass products, land reclamation, beach nourishment or environmental enhancement (bank stabilisation, restoration of habitat and establishment of wetlands and nesting islands).

10.11 Detail potential future beneficial reuse of dredge material including land reclamation, beach nourishment, replenishment of current and historical sand extraction areas with sand for future reuse or environmental enhancement (bank stabilisation, restoration of habitat and establishment of wetlands and nesting islands).

10.12 Describe proposed placement/disposal options for both capital and maintenance dredge spoil that is not suitable for re-use including:

(a) disposal site locations, sediment characteristics, dimensions and capacity (including initial and final bathymetry for unconfined sea disposal sites

(b) disposal methodology, material characteristics, contaminants or acid sulfate soils if found

(c) operational management of dredging and dredge spoil handling, particularly in relation to sediment plume generation according to vessel type being used.

Mitigation measures

10.13 Provide a Dredge Management Plan that includes the following:

(a) type or class of equipment likely to be used, volume of bed material to be removed, duration and timing of the dredging campaigns over the proposed phases and including areas of proposed dredging and placement for each proposed phase

(b) maps to scale showing all relevant places (boundaries of dredging operation; estimated or modelled zone of influence of sediment plumes; location of designated disposal sites, sensitive receptors and all monitoring locations)

(c) a detailed description of sediment plume associated monitoring program including the monitoring sites and methodology over the proposed phases and areas of the project

(d) describe how dredge spoil is to be managed (e.g. transportation, dewatering, placement area and disposal) over the proposed phases and areas of the project

(e) on land dredge material management including location of tailwater release, contaminant profile of tailwater releases, storage pits for dewatering, disposal of water from dewatering, monitoring sites for releases

(f) describe management measures and actions that will be undertaken to mitigate impacts should they be detected including where relevant improvements that may be made as new technologies and best practices evolve

(g) a detailed description of the assessment methodology to provide data in relation to trigger values and defined alert levels (this includes management of the dredge plume) including:

(i) clearly set out data handling and evaluation procedures that demonstrate how exceedance of alert levels will be determined

(ii) management actions to be initiated if alert levels are exceeded and

(iii) measures to ensure no permanent impacts to sensitive receptors outside the approved dredge footprint

(iv) alert levels represent tiers in a hierarchy of increasing environmental risk and are defined by trigger values. Three alert levels (low, moderate, and high) are typically used in a management action framework to indicate

adverse conditions and guide management responses that aim to prevent and minimise environmental harm

(v) trigger values that are physicochemical, parameter-specific measurement values used to indicate a condition where an environmental value or sensitive receptor may be at low, moderate or high risk, or some other risk related indicator.

10.14 Provide a Sampling and Analysis Plan that identifies contaminants and sediment characteristics of dredged material and details the proposed sampling, data analysis and quality assurance procedures in accordance with the NAGD, the National Environment Protection (assessment of site contamination) measure (N2013) and/or the latest edition of the Queensland Acid Sulfate Soil Technical Manual, as appropriate. Please note that submission of the Sediment Analysis Plan to the determining authority (Department of the Environment, Tourism, Science and Innovation) prior to the sampling being undertaken is a requirement established under the NAGD.

10.15 Assess the short term and long term resuspension of material associated with dredging and dredge placement, including the risk of mobilisation of contaminants given the sediment characteristics and proposed dredging and placement/disposal locations.

10.16 Detail proposed mitigation measures to avoid and minimise adverse impacts from the dredging and material placement activity on water quality and environmental values of the Moreton Bay Marine Park.

10.17 Outline the management measures to reduce risk of adverse impacts occurring due to dredging and the placement of dredged material including any reclamation. Detail how stockpiling locations will be rehabilitated if/when they are no longer in use.

11. Coastal environment

11.1 The following guidance is relevant for the assessment of the coastal environment:

(a) Queensland Government, Coastal – EIS information guideline, Environmental Significance Report (ESR)/2020/5299

(b) Queensland Government, Coastal Management Plan, 2014

(c) Queensland Government, Marine Plants (website), available at: **www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/development/marine-plants.**

Existing environment

11.2 Describe and map the existing coastal environment that is potentially impacted by the project. The description must address the following matters:

(a) basis of the spatial and temporal limits of the scope contemplated in the assessment

(b) current and recently historical estuarine, littoral and marine morphology with a description of the processes shaping the coastal zone (e.g. tides, waves, rivers, floods, coastal currents, sediment transport, major storms, rocky headlands, islands)

(c) existing coastal environmental values that could be impacted by the project

(d) existing residential, commercial or recreational uses of the coastal zone that could be impacted by the operation of the project

(e) potential impacts of existing shipping operations on the marine environment

(f) proposed placement or disposal options for dredged or excavated material within the coastal environment

(g) information including historical studies and/or findings regarding the Bribie Island breakthrough and coastal erosion occurring in the north-western project area of Moreton Bay.

11.3 Describe the tidal hydrodynamics of the project area and the adjoining tidal waterways in terms of water levels and current velocities and directions at different tidal states, and any relevant temporal changes (with supporting assumptions).

11.4 Describe the wave climate in the vicinity of the project area and the adjacent beaches including inter-annual variability and details of historical and predicted extreme wave conditions generated by tropical cyclones or other severe storm events.

11.5 Describe the sediment transport dynamics, including sediment budgets, in the project area and adjacent coastline detailing all sinks and sources into and out of Moreton Bay that influence sediment transport rates and pathways.

11.6 All numerical modelling to be undertaken must describe the hydrodynamic and sedimentation aspects of the project area and adjacent coastline will be calibrated and validated against measured data within the project area.

Impact assessment

11.7 Assess the potential impacts of the project's activities on the coastal environment outlined in section 11.2 above. Undertake predictive modelling of the short (10 years), medium (50 years) and long-term (100 years) to determine if the proposed project would result in significant impacts or effects on any of the following matters:

(a) hydrodynamic processes including tidal or wave action

(b) land reclamation or excavation of the shore

(c) water quality

(d) sediment transport processes including geomorphological changes to adjacent coasts

(e) sediment suspension, sorting and settlement including plumes from dredging, excavation, construction and/or transhipping activities

(f) erosion potential

(g) stream and river flows into the estuarine or marine environment.

11.8 Assess and document the potential impacts (or absence of impacts) of the project on the significant coastal erosion occurring at the Bribie Island breakthrough and Pumicestone Passage.

11.9 Provide analysis to identify any correlation or causal linkages between the enhancement of the shipping channel and coastal erosion at residential locations around Moreton Bay, such as but not limited to, Moreton Island (Cowan Cowan), Bribie Island, Stradbroke Island, Russel Island, Lamb Island, Coochiemudlo Island and Macleay Island.

11.10 Describe the selection of the preferred placement of disposal site in relation to coastal management outcomes, having regard to the nature of the spoil, cost of alternatives and potential impacts on coastal resources and environmental values.

Mitigation measures

11.11 Propose measures to avoid or minimise the potential adverse impacts of the project's activities on the coastal environment.

11.12 Develop and describe suitable indicators for measuring coastal resources and values and set objectives to protect them in accordance with state interest statement and policies for the Coastal Environment. Refer to Integrating state interests in a planning scheme (Department of State Development, Infrastructure, Local Government and Planning 2021) and the department's Coastal—EIS information guideline (Department of the Environment, Tourism, Science and Innovation 2024b)

11.13 Detail a monitoring program that would audit the success of mitigation measures and whether objectives have been met and describe corrective actions to be used if monitoring shows that objectives are not being met.

12. Land – geology, geomorphology and soils

12.1 The following guidance is relevant for the assessment of land, including geology, geomorphology and soils:

(a) Queensland Government, *Land – EIS information guideline*, ESR/2020/5303

(b) Queensland Government, Rehabilitation – EIS information guideline, ESR/2020/5308

(c) Queensland Government, Contaminated land – EIS information guideline, ESR/2020/5300

(d) Queensland Government, Quarry material – EIS information guideline, ESR/2020/5306

(e) Queensland Government, Application requirements for activities with impacts to land, ESR/2015/1839

(f) Queensland Government, Queensland Land Resource Assessment Guidelines – Volume 1: Soil and land resource assessment, 2021

(g) Queensland Government, Queensland Soil and Land Resource Survey Information Guideline, VEG/2018/4460

(h) Soil Science Australia, Guideline for soil survey along linear features, 2015

(i) International Erosion Control Association, Best Practice Erosion and Sediment Control, 2008.

Existing environment

12.2 Describe and map with cross-sections the geology of the project footprint and surrounding project area, with reference to the physical and chemical properties of surface and sub-surface materials within the proposed areas of disturbance.

12.3 Where excavated rock or spoil is to be used or placed within the project footprint, analyse the potential for acid generation, or generation of other potential pollutants of air, land or waters, supported by site-specific geochemical data.

Impact assessment

12.4 Identify and assess the potential for disturbance of sediment due to dredging activities during each project phase and identify material requiring particular management. Analyse and describe the significance of these impacts on environmental values.

12.5 Describe the risks to land associated with transport, stockpiling or disposal of material containing acid sulfate soils. For land-based disposal, the characterisation of sediments and suitability for disposal is to be undertaken in accordance with the methodology provided in the latest edition of the National Environment Protection (assessment of site contamination) measure. Where applicable, undertake sufficient testing of material to characterise the risks from acid sulfate soils guided by the latest edition of the Queensland Acid Sulfate Soil Technical Manual.

Mitigation measures

12.6 Describe how the achievement of environmental objectives and associated performance outcomes would be monitored, audited and reported, and how corrective/preventative actions and continual improvement would be managed.

12.7 Where actual or potential acid sulfate soils will be disturbed by the project, prepare suitable acid sulfate soil management plans to guide future works in accordance with accepted industry guidelines[5] to avoid or minimise adverse effects to environmental values.

13. First Nations cultural heritage

Existing environment

13.1 Identify the Aboriginal peoples and the Torres Strait Islander peoples who are the Traditional Custodians of the land and waters in and adjacent to the project footprint.

13.2 Identify the existing and potential Aboriginal peoples' and Torres Strait Islander peoples' cultural heritage values of the area potentially affected by the project. This is to be undertaken in consultation with relevant Aboriginal peoples' and Torres Strait Islander peoples' consistent with consultation and engagement requirements identified in section 7 of this document.

13.3 Any desktop assessment is to be verified and supported by an appropriate field survey, consultation or other investigation of the project footprint. The survey, consultation or other investigation must be sufficient to support the preparation of a cultural heritage management plan (CHMP) in accordance with the *Aboriginal Cultural Heritage Act 2003* and/or *Torres Strait Islander Cultural Heritage Act 2003*.

Impact assessment

13.4 Detail potential impacts on Aboriginal peoples' and Torres Strait Islander peoples' cultural heritage in accordance with the *Aboriginal and Torres Strait Islander cultural heritage – EIS information guideline*.[6] Identify and consider those aspects of the environment that also have a tangible and intangible cultural dimension.

[5] Queensland Government, *Queensland Acid Sulfate Soil Technical Manual - Soil Management Guidelines* Version 5.1 (or subsequent revision); Queensland Government, *State Planning Policy – state interest guidance material, Emissions and hazardous activities*, 2018 (or subsequent revision).
[6] Queensland Government, *Aboriginal and Torres Strait Islander cultural heritages – EIS information guideline*, ESR/2020/5296.

Mitigation measures

13.5 Develop or otherwise recognise the requirements and progress toward developing a CHMP[7] for the project in accordance with the requirements of Part 7 of the *Aboriginal Cultural Heritage Act 2003* and identify any associated agreements that have been reached with relevant Parties. The area covered by the CHMP must include, at a minimum, the project footprint that is the subject of the EIS.

14. Non-indigenous cultural heritage

Existing environment

14.1 Describe the known and potential historic heritage values that are protected under the *Queensland Heritage Act 1992* and may be impacted by the project.

14.2 Undertake a study of, and describe, the known and potential historic heritage values that may be affected by the project in accordance with the non-Indigenous cultural heritage – EIS information guideline.[8] Identify values at local and state thresholds and assess the significance of identified values using recognised criteria.

Impact assessment

14.3 Detail potential impacts on non-Indigenous cultural heritage values.

Mitigation measures

14.4 Detail proposed mitigation measures to avoid and minimise harm to non-Indigenous cultural heritage values in accordance with the non-Indigenous cultural heritage – EIS information guideline.

14.5 Include a strategy to address unexpected archaeological discoveries, remains and/or historic cultural places.

15. Biosecurity

15.1 The following guidance is relevant for the biosecurity assessment:

(a) Queensland Government, *Biosecurity-EIS information guideline*, ESR/2020/5297.

Existing environment

15.2 Provide information and maps showing terrestrial, aquatic and marine pest animal and aquatic and marine plant/weed distribution in relation to the project footprint and ecologically significant areas identified as containing, or likely to contain, listed flora, fauna, and ecological communities of MSES or MNES. This information is to include prohibited and restricted matters listed in the *Biosecurity Act 2014* and *Biosecurity Regulation 2016*, Weeds of National Significance, pests and weeds declared under local laws, and designated pests under the *Public Health Act 2005*.

Impact assessment

15.3 Describe for each proposed project phase, the risk of the potential introduction or spread of terrestrial, aquatic and marine pest animals, aquatic and marine plant or

[7] Unless section 86 of the *Aboriginal Cultural Heritage Act 2003* or the *Torres Strait Islander Cultural Heritage Act 2003* applies.
[8] Queensland Government, *Non-Indigenous cultural heritage – EIS information guideline*, ESR/2020/5302.

weed species, and disease within the project footprint, access routes, and into adjoining properties (where relevant).[9]

Mitigation measures

15.4 Propose measures in consultation with relevant authorities and in accordance with best practice to prevent, remove, control and limit the spread of pests, weeds, or diseases within and surrounding the project footprint and adjacent areas that could result from the project. Detail alignment with any relevant Biosecurity Plans and pest management priorities or initiatives undertaken by Biosecurity Queensland. Include a discussion on minimising any susceptibility to biosecurity risks with the introduction and/or expansion of temporary and permanent infrastructure.

15.5 All proposed measures are to be in accordance with any relevant biosecurity surveillance or prevention measures authorised under the *Biosecurity Act 2014* and any requirements under the *Vegetation Management Act 1999* or *Planning Act 2016*.

16. Water quality

16.1 The following guidance documents are relevant for the assessment of water quality:

(a) Queensland Government, Water – EIS information guideline, ESR/2020/5312

(b) Queensland Government, Groundwater dependent ecosystems – EIS information guideline, ESR/2020/5301

(c) Queensland Government, Application requirements for activities with impacts to water, ESR/2015/1837

(d) Queensland Government, Waste – EIS information guideline, ESR/2020/5311

(e) Queensland Government, Regulated structures – EIS information guideline, ESR/2020/5312

(f) Queensland Government, Wastewater release to Queensland waters, ESR/2015/1654

(g) Queensland Government, Stormwater and environmentally relevant activities, ESR/2015/1653

(h) Queensland Government, Water monitoring and sampling manual Water monitoring and sampling manual, Department of the Environment, Tourism, Science and Innovation, Queensland

(i) Environmental Protection (Water and Wetland Biodiversity) Policy 2019.

Existing environment

16.2 Identify and describe the relevant environmental values and Water Quality Objectives (WQOs) of marine and surface water in the project footprint and potential impact area.

16.3 Provide spatial mapping and a detailed description of the locations any sensitive receptors such as wetlands, coral, seagrass, proposed wastewater releases and potential contaminant sources in relation to the proposed project. Assess and describe the current condition of the aquatic environments and determine the level of disturbance to the existing aquatic ecosystems, as outlined in the section 6 of the

[9] Queensland Government, *Biosecurity – EIS information guideline*, ESR/2020/5297.

Environmental Protection (Water and Wetland Biodiversity) Policy 2019. The EIS must specify and justify the selection of indicators used in the baseline studies and impact assessment. To support detailed assessment processes, raw data in an Excel electronic format may need to be provided upon request.

16.4 Provide a detailed description and justification of the site-specific monitoring program, including the design, sampling frequency, selected indicators (both included and excluded), and the quality control and quality assurance measures in place. Baseline monitoring programs must encompass all relevant potential contaminants of concern associated with the proposed project activities. Laboratory reporting limits should be sufficiently low to enable direct comparisons with all applicable WQOs and Water Quality Guidelines (WQG's), ensuring the protection of all Environmental Values, including aquatic ecosystem protection trigger values.

16.5 Describe current and historical marine and surface water quality in terms of physical, chemical and biological characteristics in the project footprint, surrounding area and potential impact area. Characterise the nature and extent of any existing marine and surface water contamination sources, including licenced releases from other developments, that may interact with project activities.

16.6 Analyse water quality variability to identify and describe trends, including those associated with seasonal or climatic factors, variability of freshwater flows and responses to natural and anthropogenic events/changes. Use suitable reference locations and statistically robust site-specific data to adequately establish baseline condition and define natural variation, including seasonal variation. The EIS should include, as a minimum, raw data, quality assured data (including removal of statistical outliers), statistical summaries, and detailed comparisons of baseline data against relevant WQO and WQGs. All water quality data should be presented alongside corresponding flow conditions at the time of sampling.

16.7 Within the project footprint, surrounding area and potential impact area, describe:

(a) the relationship of water quality to location, rainfall and flow, supported by local catchment data

(b) existing water quality issues (such as stratification, eutrophication and deoxygenation) and/or exceedance of existing WQOs and WQGs

(c) the confirmed or likely causes of existing water quality issues, including how they are managed (if known).

16.8 Marine water analysis and additional field sampling undertaken as part of the project should be linked to potential impacts from the project and must as a minimum be analysed for electrical conductivity, pH, dissolved oxygen, turbidity, total suspended solids, nutrients, dissolved and total metals and metalloids, total recoverable hydrocarbons, dissolved inorganic nitrogen, fine sediment, per-and poly-fluoroalkyl substances (PFAS) plus any other potential contaminants relevant to the project. Marine water samples should allow for relevant WQOs and WQGs to be reliably assessed.

16.9 Discuss how the environmental values relating to water quality have informed the project design methodology (i.e. constraints, impact mitigation).

Impact assessment

16.10 Describe and map all potential and/or proposed controlled and uncontrolled discharges of water and contaminants[10] by the project, including the predicted quantity, quality, location, source (point or diffuse) timing and duration. All potential contaminants of concern arising from onsite activities should be identified, thoroughly evaluated, supported by adequate technical rationale. Discharges may include controlled water releases to surface waters, uncontrolled discharges when the design capacity of storages is exceeded, management of spills of products during loading or transportation, stormwater discharge, and contaminated run-off or seepage from operational areas of the site.

16.11 Identify and assess the impacts of project activities (including discharges), disturbance and infrastructure on surface water quality and relevant environmental values. Analyse and describe the significance of direct, indirect, point source, diffuse and cumulative impacts on physical, chemical and biological characteristics in the receiving environment in the context of the assimilative capacity, supported environmental values and relevant WQOs and WQGs.

Mitigation measures

16.12 Describe the mitigation measures that will be applied to the project to:

(a) achieve the water quality criteria that has been developed for the project

(b) avoid, minimise and/or mitigate adverse water quality impacts to sensitive receptors

(c) protect the environmental values of the water environment.

16.13 Describe the management framework for controlled discharges or material placement at sea, including:

(a) avoidance, minimisation, mitigation and treatment requirements prior to discharge

(b) receiving environmental values including sensitive receptors

(c) discharge water quality limits and conditions designed to ensure the WQOs and WQGs are met and environmental values within the receiving environment are protected.

16.14 Describe how unplanned or indirect impacts to water quality will be managed, including measures to:

(a) avoid, identify, remediate and manage water that is contaminated or may become contaminated

(b) protect environmental values including sensitive receptors.

16.15 Describe how water quality objectives would be monitored, audited, reported, and how corrective/preventative actions and continual improvement would be managed. Provide scientifically justified measurable criteria, standards and/or indicators that will be used to assess the condition of environmental values and the receiving water environment. Present the details for an adequate receiving environment monitoring program in accordance with guidance documents.

[10] Defined under sections 440ZD and 440ZF of the EP Act and Schedule 10 of the EP Regulation.

16.16 Develop scientifically justified proposed conditions for any proposed release to waters that meet the requirements of relevant guidelines and are designed to ensure the protection of all relevant Environmental Values, prevent environmental harm and allow for responsive and effective management and reporting actions, where needed.

17. Visual amenity

17.1 The following guidance is relevant for the assessment of visual amenity:

(a) Australian Institute of Landscape Architects, *Guidance Note for Landscape and Visual Assessment*, 2018

(b) Landscape Institute, Photography and photomontage in landscape and visual impact assessment, 2018

(c) Landscape Institute and Institute of Environmental Management and Assessment, *Guidelines for Landscape and Visual Impact Assessment*, 2013.

Existing environment

17.2 Characterise the existing visual landscape by describing, mapping and illustrating landscape aspects that influence visual amenity, including:

(a) topography and natural landscape and seascape features

(b) land use and character

(c) built features and infrastructure.

17.3 Identify visually sensitive locations, including public viewpoints, recreation areas, culturally relevant features (in consultation with Traditional Custodians) etc.

17.4 Evaluate the sensitivity of the existing visual landscape and its ability to absorb change.

Impact assessment

17.5 Identify key project features during all stages of project development which will be visually obtrusive, including project lighting,[11] and undertake a viewshed analysis to identify locations from which project features will be visible.

Mitigation measures

17.6 Describe proposed mitigation measures to avoid or minimise predicted impacts on landscape character and visual amenity, including:

(a) how the project has been designed to integrate with the existing landscape

(b) strategies to protect visual amenity at visually sensitive locations

(c) how the obtrusive effects of diffuse and direct lighting have been minimised.

18. Social

18.1 Prepare a social impact assessment (SIA) for the project consistent with the relevant requirements in the SIA Guideline[12] and SIA Supplementary Material[13].

[11] In accordance with Australian Standard 4282 (AS4282) Control of Obtrusive Effects of Outdoor Lighting.
[12] Queensland Government, *Social impact assessment guideline*, July 2025.
[13] Queensland Government, *Supplementary material for assessing and managing the social impacts of projects under the Coordinator-General's Social Impact Assessment Guideline* July 2025.

18.2 The SIA is to be developed in consultation with the Office of the Coordinator-General. The SIA is to describe the potential social impacts (both positive and negative) of the project (including an assessment of impacts to commercial/recreational fishing and general recreational users of the Marine Park) and must identify relevant and effective impact mitigation and benefit enhancement measures.

19. Economics

Existing environment

19.1 Describe the existing economic environment consistent with the *Economic Impact Assessment Guideline*[14]. The analysis is to describe the local and regional economies likely to be impacted by the project and identify the relevant stakeholders, and include:

(a) the regional economy's key industries and their contribution to regional output

(b) relevant economic indicators

(c) existing and approved projects in the region.

19.2 Describe the existing and future demand for the project's products in both domestic and international markets over the life of operations, including alternative demand scenarios and detail any assumptions underpinning the demand scenarios.

19.3 Describe the options and preferred project delivery model (including funding sources) and expected timeframes, outlining assumptions on economic externalities that have the potential to impact on the delivery model and/or expected timeframes.

19.4 Provide an analysis of the project's contribution to climate change-related economic and financial risks and benefits to Queensland based on best practice assessment frameworks, such as the Task Force on Climate-related Financial Disclosures framework. This analysis must be based on a scenario consistent with achieving the goals of the Paris Agreement (of which Australia is a signatory) to limit global warming to as close to 1.5 degrees Celsius as possible. Additional scenarios can be included for comparison; however, the central assessment should be aligned with 1.5° degrees Celsius.

19.5 Consider the 'social cost of carbon' (or other form of carbon cost) in cost benefit analysis for the project. Provide an analysis of the economic costs of developing and implementing greenhouse gas (GHG) measures to meet the Queensland's Government's GHG emission reduction and clean energy targets as legislated in the *Clean Economy Jobs Act 2024* and *Energy (Renewable Transformation and Jobs) Act 2024*.

Impact assessment and mitigation measures

19.6 Identify the net economic impacts of the project on the local and regional area and the State, ensuring the analysis is consistent with the *Economic Impact Assessment Guideline*.

19.7 The economic impact assessment is to address matters including, but not limited to:

[14] Queensland Government, *Economic impact assessment guideline*, 2017

(a) labour demand, including the ability for labour (including specialists) to be drawn from the existing local, regional and state workforce, and the potential effects this may have on local and regional businesses

(b) raw input demand, including the ability of existing local, regional and state suppliers to provide relevant raw and manufactured inputs

(c) the anticipated value of offsets required for all components of the project.

19.8 Provide a demand analysis as justification for the scale and scope of the project, relative to the demand scenarios examined in TOR item 19.2, with sensitivity analysis for potential changes in product prices.

19.9 Undertake a regional impact assessment in accordance with the *Economic Impact Assessment Guideline* that quantifies the employment by industry (including an estimate of supply chain employment) and value-added contribution of the project to the local, regional and state economies. The regional impact assessment is to estimate the changes in key indicators including:

(a) gross regional product

(b) gross state product

(c) employment by industry

(d) gross value added by industry.

19.10 Subject to any confidentiality requirements, discuss any economic aspirations identified through engagement with Aboriginal peoples and Torres Strait Islander peoples that are enabled via the project, especially for areas where native title exists.

20. Hazards, health and safety

20.1 The following guidance is relevant for the assessment of hazards, health and safety:

(a) Queensland Government, Queensland Emergency Risk Management Framework Risk Assessment Process Handbook, 2018

(b) Queensland Government, Health considerations – Environmental Impact Statement – Guidelines for Proponents, 2016

(c) Queensland Government, Regulated structures – EIS information guideline, ESR/2020/5307

(d) Queensland Government, Structures which are dams or levees constructed as part of environmentally relevant activities, ESR/2016/1934

(e) Queensland Government, Guideline for failure impact assessment of water dams, 2018.

Existing environment

20.2 Describe the likelihood and severity of hazards and health and safety risks in and around the project footprint including, but not limited to storm, flooding, bushfire, drought, earthquakes, landslide and heatwave. Evaluate hazard-related vulnerabilities, constraints and considerations in the area relevant for the impact assessment.

Impact assessment

20.3 Prepare a risk assessment and describe the potential risks to people, property, and environmental values that may be impacted by the project, for all components and stages of the project. The assessment is to include:

(a) identification of potential hazards and estimated probabilities of occurrence, including:

(i) consideration of project activities and disturbance

(ii) consideration of natural events (e.g. storm, cyclone, flooding, bushfire, earthquakes[15], heatwave[16], landslide) that may affect the site with at least a one per cent annual exceedance probability or 100 year average reoccurrence interval level

(iii) consideration of all hazardous substances (including hazardous waste) to be used, transported, stored, processed or produced

(iv) consideration of hazards posed by wildlife interactions (including mosquitos)

(v) consideration of hazards away from the project footprint where hazard characteristics may be changed by the project

(vi) consideration of the cumulative impact of several natural hazards occurring at the one time

(vii) mapping of potential hazard areas within the project footprint

(b) hazard analysis and risk assessment in accordance with relevant guidelines and standards.[17]

20.4 Detail any consultation undertaken with the relevant state, district and local emergency response authorities and organisations (including local disaster management groups, where relevant) to support this risk assessment and proposed mitigation measures.

Mitigation measures

20.5 Describe how the project has been designed to avoid or mitigate project-related risks to people, property, and environmental values.

20.6 Detail safeguards and mitigation measures that will reduce the likelihood and severity of hazards, consequences and project-related risks to people, property, and environmental values. Identify the residual risk following application of mitigation measures. Present an assessment of the overall acceptability of residual project risks with consideration of uncertainties and risk profiles.

20.7 Where emergency response or hazard management plans are proposed to address scenarios and hazards identified in the risk assessment, provide a plan outline, including key measures and procedures, including consultation with relevant groups.

20.8 Describe how risk management would be monitored, audited, reported, and how corrective/preventative actions and continual improvement would be managed.

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[15] The State Earthquake Risk Assessment includes probabilities of major seismic events for all local government areas and is to be used to inform risk consideration and management – Queensland Government, *State Earthquake Risk Assessment*, 2019.
[16] In accordance with Queensland Government, *State Heatwave Risk Assessment*, 2019.
[17] Standards Australia, Risk management – Guidelines, 2nd edition, 2018, ISO, 31000:2018; Standards Australia, *Managing environment-related risk*, 2012, ISO, HB 203:2012; Standards Australia; Queensland Government, *Queensland Emergency Risk Management Framework Risk Assessment Process Handbook*, 2018.

21. Air quality

21.1 The following guidance is relevant for the assessment of air quality:

(a) Queensland Government, *Air – EIS information guideline*, ESR/2020/5294

(b) Queensland Government, Guideline – Application requirements for activities with impacts to air, ESR/2015/1840.

Existing environment

21.2 Identify and map the location of any sensitive receptors and environmental values of the project footprint and surrounding areas that may be impacted by air emissions from the project.[18]

21.3 Describe and illustrate the existing significant sources of contaminants at the project footprint and surrounding area and the airshed.

21.4 Provide baseline data on local and regional meteorology up to the airshed scale. Parameters should include air temperature, wind speed and directions, atmospheric stability, mixing depth and other parameters necessary for input to the model.

21.5 Discuss the existing local and regional air shed environment and quality in the context of environmental values, including:

(a) background/ambient levels and sources of particulates, gaseous and odorous compounds, any major constituent and contaminants. Include all available data from any site-specific air monitoring, the National Pollutant Inventory reporting, and/or ambient air quality monitoring undertaken by the Queensland Government

(b) pollutants

(c) baseline monitoring data

(d) locations of sensitive receptors (including ecologically significant species and habitats).

Impact assessment

21.6 Identify and quantify the air emissions from the stages of project (point, diffuse and fugitive emission sources).

21.7 Describe likely changes (if any) to air emissions as a result of changes to shipping associated with the implementation of the project.

21.8 Provide an emissions inventory and description of the characteristics of contaminants or materials that would be released when carrying out the activity.

21.9 Tabulate the air quality objectives applicable to the air emissions from the project.

21.10 Detail the potential impacts of air emissions from the project on environmental values and sensitive receptors, including identifying any exceedances of the air quality criteria.

21.11 Detail the compatibility of air quality impacts from the project on existing and approved land uses in the project footprint and surrounding area.

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[18] Standards Australia, *Risk management – Guidelines*, 2nd edition, 2018, ISO, 31000:2018; Standards Australia, *Managing environment-related risk*, 2012, ISO, HB 203:2012; Standards Australia; *Queensland Government, Queensland Emergency Risk Management Framework Risk Assessment Process Handbook*, 2018.

Mitigation measures

21.12 Describe the mitigation measures that will be applied to the project to:

(a) achieve the air quality criteria that has been developed for the project

(b) avoid, minimise and/or mitigate adverse air quality impacts to sensitive receptors

(c) protect the environmental values of the air environment.

21.13 Describe the monitoring and auditing processes to achieve the air quality criteria that has been developed for the project.

21.14 Describe the process for corrective actions to address any exceedance of the air quality criteria.

22. Noise and vibration

22.1 The following guidance is relevant for the assessment of noise and vibration:

(a) Queensland Government, Noise and vibration – EIS information guideline, ESR/2020/5305

(b) Queensland Government, Guideline – Application requirements for activities with noise impacts, ESR/2015/1838.

Existing environment

22.2 Identify and map the location of any sensitive places and noise sensitive environmental values (that are listed in Schedule 1 of the Environmental Protection (Noise) Policy 2019) of the project footprint and surrounding areas that may be impacted by noise emissions from the project.

22.3 Describe the existing background noise within the project footprint (as far as practical), including noise and vibration sources. Any field-based data is to be collected in accordance with quality-assured, best practice methodologies and as per the *Noise Measurement Manual*[19].

Impact assessment

22.4 Identify and quantify (where required) the noise and vibration sources emitted from the project (point and general emission sources). Describe whether the sources will be continuous, intermittent, fluctuating, vibrating or impulsive.

22.5 Tabulate the noise and vibration objectives applicable to the noise and vibration emissions from the project.

22.6 Describe the potential impacts of noise and vibration emissions from the project on environmental values, marine fauna and sensitive places, including identifying any exceedances of the acoustic quality criteria, above the existing background noise and acoustic environment.

22.7 Detail the compatibility of noise and vibration impacts from the project on existing and approved land uses in the project footprint and surrounding area.

Mitigation measures

22.8 Describe the mitigation measures that will be applied to the project to:

[19] Queensland Government, *Noise Measurement Manual*, ERS/2016/2195.

(a) achieve the noise and vibration criteria that has been developed for the project

(b) avoid, minimise and/or mitigate additional adverse noise and vibration impacts to sensitive receptors

(c) protect the environmental values of the acoustic environment

(d) control background creep in noise as outlined in the *Environmental Protection (Noise) Policy 2019*.

22.9 Describe the monitoring and auditing processes to achieve the noise and vibration criteria developed for the project.

22.10 Propose environmental management strategies that will avoid long-term impacts of underwater noise on aquatic and marine fauna and describe how objectives would be monitored and audited. Describe the process for corrective actions to address any exceedance of the noise and vibration criteria.

23. Traffic and transport

23.1 The following guidance is relevant for the assessment of traffic and transport:

(a) Queensland Government, Transport – EIS information guideline, ESR/2020/5310

(b) Queensland Government, Technical publications, available at **www.tmr.qld.gov.au/business-industry/technical-standards-publications**

(c) Maritime Safety Queensland's Maritime Safety Queensland guidelines for major development proposals (Maritime Safety Queensland 2022)

(d) Queensland Government State Development Assessment Provisions Supporting Guideline State code 7: Maritime safety.

Existing environment

23.2 Describe the existing and future (as planned by state or local government) transport network and corridors that could be affected by the project including detailed maps to appropriate scales showing relevant:

(a) laydown areas

(b) locations where project components cross or are located in proximity to or located within existing and planned:

(i) state or local government road corridors and road infrastructure

(ii) railway corridors and rail infrastructure

(iii) airports and airstrips

(iv) sea ports

(v) other relevant approved or known projects.

Impact assessment

23.3 Describe the total transport activities associated with each proposed project phase. The information should include, but not be limited to:

(a) background traffic growth and existing traffic data that is expected via the state-controlled road network and via local government roads

(b) expected annual volumes, weights and origins/destinations of materials, products, hazardous goods, and wastes

(c) details concerning road transportation for any major transport task associated with the project (e.g. importation of rock for reclamation) including likely quarry sources for construction materials, traffic routes, heavy vehicle classification, load size (highlighting over-mass and over-sized loads) (swept paths to be provided), estimated number of trips, service frequency, likely timing and duration, and maps of routes highlighting any vulnerable bridges or other structures along the proposed routes

(d) potential impacts to time sensitive agricultural freight (e.g. exports, horticulture, livestock)

(e) traffic generated by workforce personnel and service providers during each proposed phase of the project

(f) a multi-criteria analysis and/or a cost benefit analysis of the economic, social, and environmental impacts for logistics management alternatives being considered, including shared use of common user infrastructure

(g) detail appropriate choices for modes of transport to ensure efficiency and minimise impacts on the community.

23.4 Identify the main access to the project (latitude and longitude coordinates). Include an assessment of the suitability for the proposed use and any required upgrades in accordance with relevant local and/or state policies, standards, and manuals.

23.5 Prepare a transport impact assessment in accordance with *Transport – EIS information guideline*[20]. Present the transport assessment in separate sections for each project-affected mode (road, rail, air services and port) as appropriate for each proposed phase of the project, including the proposed transportation and delivery of pre-assembled modules or components to site. The assessment must be completed by a Registered Professional Engineer of Queensland and include:

(a) how the existing and future safety, condition, and performance of transport infrastructure (local and state) will be impacted by each proposed phase of the project

(b) details of the adopted assessment methodology for impacts on roads within the road impact assessment report in accordance with *Guide to Traffic Impact Assessment* (GTIA)[21] for state-controlled roads and the local government impact assessment methodologies for local government roads

(c) for state-controlled roads, to ensure that all impact types, such as road safety, access and frontage, intersection delay, road link capacity, pavement, and transport infrastructure (including bridges, culverts, and grids), and wayfinding and road signs as detailed in the GTIA are considered and mitigated. Particular emphasis is to also be placed on the following sections of the GTIA:

(i) section 8.4.2 - Heavy vehicle routes

(ii) section 9 - Road safety

(iii) section 13 - Pavement.

[20] Queensland Government, *Transport - EIS information guideline*, ESR/2020/5310.
[21] Queensland Government, *Guide to Traffic Impact Assessment*, 2018, available at www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guide-to-Traffic-Impact-Assessment

23.6 Provide a detailed assessment for the project's impacts on local government roads in accordance with the relevant local government's impact assessment methodology.

23.7 Where material is proposed to be disposed of to a suitably licensed facility, provide written evidence the facility is legally permitted, capable and willing to accept that material.

Mitigation measures

23.8 Demonstrate that any necessary transport impact mitigation works will not compromise existing and future transport infrastructure corridors planning and works, with reference to the latest version of the Department of Transport and Main Roads (DTMR's) Queensland Transport and Roads Investment Program[22] and the Development Assessment Mapping System.

23.9 Demonstrate how project impacts for each transportation mode will be mitigated to maintain the safety, efficiency and operational integrity of all affected transport modes for the project workforce and other transport system. Mitigation measures are to be prepared in consultation with relevant transport authorities (e.g. local governments, DTMR, Civil Aviation Safety Authority, relevant port authorities, Maritime Safety Queensland, Queensland Rail and Queensland Police Service) and must consider the transport authorities' works programs and forward planning, and be in accordance with the relevant methodologies, guidelines, and design manuals.

24. Waste

24.1 The following guidance is relevant for the assessment of waste:

(a) Queensland Government, Waste – EIS information guideline, ESR/2020/5311

(b) Queensland Government, Application requirements for activities with waste impacts, ESR/2015/1836.

Existing environment

24.2 Describe any current waste management infrastructure/facilities relevant to the project, including location, capacity, and accepted waste streams for dredged material that is contaminated or not suitable for beneficial reuse. Evaluate waste-related constraints and considerations relevant for the impact assessment.

24.3 Describe and map any actual or potential contaminated material within the project footprint, including details of relevant site investigations and details of dredge material management or disposal obligations/requirements.

Impact assessment

24.4 Provide a waste inventory for all expected project waste streams generated by project activities. Describe the waste source, quantity/volume, waste type (solid, liquid, regulated (category 1, category 2) etc.), and discuss whether sediment material would be beneficially reused, disposed or managed under an end of waste approval.

24.5 Describe how waste would be stored, handled, transported, treated, disposed or managed in another way at each stage of the project to minimise risks to environmental values.

[22] Refer to www.tmr.qld.gov.au/QTRIPonline

24.6 Describe waste treatment, reuse, recycling and recovery processes to be carried out within the project footprint, including end uses.

24.7 Identify the likely destination for waste streams (including dredge spoil), to be disposed of or recycled off-site, and determine capacity of waste disposal facilities to accept project waste.

24.8 Where excavated dredge spoil is to be disposed of offsite, assess the potential risks associated with this waste stream and describe the management of progressive placement and any disposal strategy to avoid or minimise potential impacts on environmental values.

Mitigation measures

24.9 Describe proposed measures to avoid or minimise environmental impacts as a result of waste storage, handling, transport, disposal, or other management at each stage of the project. Demonstrate that proposed measures are consistent with best practice environmental management, including the waste management hierarchy.

24.10 Describe how the achievement of environmental objectives and associated performance outcomes would be monitored, audited and reported, and how corrective/preventative actions and continual improvement would be managed.

25. Climate change

25.1 The following guidance is relevant for the assessment of climate:

(a) Queensland Government, Climate – EIS information guideline, ESR/2024/5298.

Existing environment

25.2 Describe the local and regional climate relevant to the project, with regards to its seasons and its susceptibility to extreme events such as drought, cyclone, storm tide, and flood.

25.3 Describe the rainfall patterns (including magnitude and seasonal variability of rainfall), overland flow paths, air temperature, evaporation, humidity, wind (direction and speed) and any other special factors (e.g. temperature inversions) that may affect management of the project.

Impact assessment

25.4 Describe the climate patterns that are relevant to the project. Climate information is to be presented in a statistical form including long-term averages and extreme values reflecting extreme weather events (e.g. droughts, floods and bushfires), as necessary. It should also be illustrated by bar charts, wind rose diagrams or other relevant graphic means as necessary.

25.5 Assess the project's vulnerabilities to projected climate change (e.g. changing patterns of temperature, rainfall, hydrology and extreme weather events including storm surge and storm tide inundation). In the assessment of climate hazards and risks, reference relevant climate projection data (e.g. Queensland Future Climate high-resolution climate projection data) and employ appropriate risk assessment methodology.[23]

[23] Queensland Government, *Queensland Future Climate Dashboard*, **https://longpaddock.qld.gov.au/qld-future-climate/dashboard**

Impact assessment

25.6 Describe the adaptation strategies and/or activities designed to minimise climate change impacts to the project, subsequent land uses on that site (e.g. rehabilitation projects) and surrounding land uses. Adaptation activities must be designed to avoid perverse outcomes, such as increased emissions of GHGs or maladaptive outcomes for surrounding land uses.

26. Greenhouse gas

26.1 The following guidance is relevant for the assessment of GHG emissions:

(a) Queensland Government, *Guideline – Greenhouse gas emissions*, ESR/2024/6819 (GHG Guideline).

Existing environment

26.2 Describe nearby activities or sources which may emit GHG emissions (point source or diffuse) including naturally occurring (potential or actual) sources.

Impact assessment

26.3 Provide an emissions inventory identifying the GHGs to be emitted by source from all components of the project.

26.4 Provide information regarding GHG emissions and energy production and consumption consistent with requirements of *National Greenhouse and Energy Reporting Act 2007* (Cth) and its subordinate legislation, including methodology, emissions factors, and calculations used to estimate the project's GHG emissions.

26.5 Undertake an assessment of GHG emissions, including:

(a) an estimate of the projected annual Scope 1 and Scope 2 carbon dioxide equivalent emissions[24] during proposed construction phases of the project. Include both unabated emissions and emissions after all avoidance and abatement measures have been accounted

(b) for medium to high emitting projects,[25] provide an estimate of and total Scope 3 emissions during proposed phases of the project

(c) estimate changes or benefits to Scope 3 emissions during the operational phase of the project from the channel enhancements.

26.6 Identify risks and likely magnitude of impacts to environmental values from Scope 1, 2 and 3 emissions.[26]

26.7 Demonstrate how the project will meet the environmental objectives and performance outcomes relevant to air in Schedule 8 of the EP Regulation.

Mitigation measures

26.8 For low emitting projects:[27]

[24] In accordance with the GHG Guideline (chapter 5) Scope 1 emissions mean 'GHG emissions released to the atmosphere as a direct result of an activity. This includes direct emissions and fugitive emissions.' For the purposes of a coordinated project, vegetation clearing is taken to be a Scope 1 emission. The GHG Guideline (chapter 5) defines Scope 2 emissions as 'GHG emissions released to the atmosphere from the indirect consumption of an energy commodity that was produced elsewhere.
[25] Section 3.2, GHG Guideline.
[26] Section 3.4, GHG Guideline.
[27] Sections 3.2 and 3.3, GHG Guideline.

(a) detail proposed GHG management practices to demonstrate that all reasonable and practical measures have been applied to manage GHG emissions through best practice design, process, technology, and management following the GHG abatement hierarchy: avoid, reduce, substitute and offset[28]

(b) identify long-term overall Scope 1 and Scope 2 GHG emission reduction targets

(c) provide a program for periodic public reporting on progress towards the GHG emission reduction targets

(d) explain feasible alternatives that were considered to avoid or reduce the project's a Scope 1 and 2 emissions as well as the alternative of not proceeding with the project

(e) outline actions that will be taken to reduce Scope 3 emissions (e.g. entering into arrangements with third party suppliers or users)

(f) identify the potential location of Scope 3 emissions (domestic or international) where practicable

(g) provide a description of any voluntary initiatives such research into reducing the lifecycle and embodies energy carbon intensity of the proposed project's processes or products

(h) provide a description of any opportunities for further offsetting of GHG emissions, noting offsets must be consistent with Australian requirements using Australian Carbon Credit Units

(i) detail any proposed ongoing training and capacity building around decarbonisation options and technology.

26.9 Describe the assumptions and data inputs applied to develop the emissions estimates and the project emissions reduction targets. The calculation of baseline should follow the methodology outlined in the *National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015*. If international best practice benchmarks[29] are not available, detail how the project baseline has been estimated and identify how the international best practice benchmark will be integrated should values become available.

27. Cumulative impacts

27.1 Provide a cumulative impact assessment of the project that identifies potential cumulative environmental, social, economic and cultural impacts for each proposed phase of the project, including consideration of the likelihood, intensity, duration, magnitude and extent of impacts.

27.2 The cumulative impact assessment is to consider the combined effect of potential impacts of different components of the project on the same value (i.e. intra-project cumulative impacts) and the impacts of other major or significant projects in or adjacent to the project area acting in combination on the same value (i.e. inter-project cumulative impacts).

[28] Figure 1, GHG Guideline.
[29] Refer to www.dcceew.gov.au/climate-change/publications/benchmark-guidelines-setting-international-best-practice.

27.3 Describe measures that would be used to avoid, minimise, or mitigate any identified cumulative impacts.

28. Environmental management plans

28.1 The EIS must include detailed environmental management plans (EMPs) for all phases of the project (for those phases that are relevant to the scope of the project). These EMPs should be developed from, and be consistent with, the information in the EIS and set SMART (specific, measurable, achievable, relevant, and time-bound) commitments that achieve best practice environmental management to protect the identified environmental values.[30] The EMPs are to be presented as stand-alone documents (separate chapters or appendices to the EIS).

28.2 The EMPs must:

(a) set out the environmental objectives and performance outcomes the proponent has committed to achieving for the project (i.e. expected levels of environmental harm, performance standards and associated measurable indicators, including progressive and final rehabilitation, impact prevention and control strategies)[31]

(b) include all measures to avoid, minimise and rehabilitate impacts identified throughout the EIS

(c) provide for ongoing stakeholder engagement as the project proceeds

(d) include a monitoring and review program to identify the effectiveness of the management measures in achieving the environmental objectives and performance outcomes

(e) include a process for implementation of preventative and corrective actions and continual improvement of the EMP

(f) provide for a program for regular reporting and auditing on compliance and implementation of the EMP.

29. Flora and fauna

29.1 Guidance material relevant for the flora and fauna assessment includes:

(a) Queensland Government, Aquatic ecology – EIS information guidelines, ESR2020/5295

(b) Queensland Government, Terrestrial ecology – EIS information guideline, ESR/2020/5309

(c) Queensland Government, Matters of national environmental significance – EIS information guideline, ESR/2020/5304

(d) Queensland Government, Coastal – *EIS information guideline*, ESR/2020/5299

(e) Queensland Government, *Water – EIS information guideline*, ESR/2020/5312

[30] SMART commitments are: Specific – it is clear what must be done; Measurable – it must be possible to know when it has been achieved; Achievable – it is capable of being achieved; Reasonable/relevant – there is a clear connection between the commitment and the desired outcome. The requirement is reasonable; Time Specific – it is clear when the milestone will be completed.

[31] Consider: Queensland Government, *Rehabilitation – EIS information guideline*, ESR/2020/5308.

(f) Queensland Government, Biosecurity – *EIS information guideline*, ESR/2020/5297

(g) Queensland Government, Business Queensland, Fish salvage (website), available at: **www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/development/waterways/salvage**

(h) Queensland Government, *Policy for Vegetation Management*, VEG/2014/1084.

Existing environment

29.2 Describe the legislative context for flora and fauna in the project footprint and surrounding area, including the protection and conservation status of each identified ecological value under the EP Act, *Nature Conservation Act 1992*, *Marine Parks Act 2004*, *Coastal Protection and Management Act 1995*, *Fisheries Act 1994*, *Vegetation Management Act 1999*, local government planning scheme and any other relevant statutory instrument.

29.3 Identify and describe MNES outlined in section 30 of this TOR, matters of state environmental significance (MSES), matters of local environmental significance (MLES), fauna and flora of cultural significance to Aboriginal peoples, state and regionally significant biodiversity likely to be impacted by the project[32] The description should include ecological communities, flora and fauna environmental values in the project area, and surrounding areas, identified in desktop analysis and field surveys, and shown on maps in relation to their habitat and connectivity in the landscape (including upstream and downstream of the project). This includes, but is not limited to the following:

(a) migratory shorebirds and marine fauna, including cetaceans, dugongs, turtles, sharks

(b) threatened ecological communities and threatened species records

(c) protected wildlife habitat

(d) waterways or waterbodies providing for fish passage

(e) watercourses, wetlands and drainage features

(f) protected areas and conservation areas

(g) regulated vegetation (including marine plants, prescribed regional ecosystems, essential habitat, categories B, C and R vegetation)

(h) connectivity areas

(i) significant intertidal and subtidal habitat and/or connectivity areas including, but not limited to: unvegetated intertidal flats, seagrass meadows, shellfish communities, coral and algal reefs, and coral communities.

29.4 Map (at a suitable scale) and illustrate the context of the project footprint in relation to surrounding MNES/MSES/MLES (or any matter identified at TOR item 29.3)

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[32] The Queensland Government, *State Planning Policy*, 2017 definition of MSES should be considered in the context of describing flora and fauna values in the project footprint. Consider: Queensland Government, *Aquatic ecology-EIS information guidelines*, ESR2020/5295; Queensland Government, *Terrestrial Ecology- EIS information guideline*, ESR/2020/5309; Queensland Government, *Business Queensland, Fish salvage* (website), available at **www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/development/waterways/salvage**; Queensland Government*, Policy for Vegetation Management*, VEG/2014/1084; Queensland Government, regional ecosystemdescriptions, available at **www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions**; Queensland Government, *Coastal – EIS information guideline*, (ESR/2020/5297).

including the location of project activities, disturbance footprint, infrastructure and buffers.

29.5 Identify MSES that are also MNES and provide specific cross-referencing throughout the draft EIS to demonstrate where the matter has been assessed in the MNES chapter in section 30.

29.6 Provide details of the scope, methodology, timing, effort and results of the field surveys undertaken in the EIS.[33] Field surveys should appropriately cover seasonal fluctuations in conditions (i.e. wet and dry seasons) where appropriate to the value being assessed. Ecological survey reports (including field proformas and data sheets) should be provided in an appropriate digital format.

29.7 Describe, using relevant literature, habitat mapping, and the results of surveys, the natural and existing upstream and downstream movement and habitat requirements of protected or important marine, aquatic and terrestrial flora and fauna species and groups in the project area and surrounding area. Identify sensitivity to change of marine, aquatic and terrestrial flora and fauna groups, regional ecosystem, and significant species.

29.8 Describe the existing quality and suitability of habitat for protected or important flora and fauna species or groups that are known to occur, likely to occur, or have the potential to occur in the project footprint. Provide the area of existing habitat in hectares for each species in the project footprint based on field verification. For habitat area calculations, identify the use (where relevant) of high value regrowth vegetation and non-remnant areas.

29.9 Discuss how the conservation values relating to flora and fauna and their habitat informed the project design (i.e. constraints, impact avoidance, minimisation and mitigation).

29.10 Address any obligations imposed by State or Commonwealth legislation or international treaty obligations, such as the China–Australia Migratory Bird Agreement, Japan–Australia Migratory Bird Agreement, or Republic of Korea–Australia Migratory Bird Agreement and the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

Impact assessment

29.11 Describe all relevant permanent and temporary impacts (direct, indirect, cumulative and facilitated) on biodiversity and natural environmental values identified at TOR item 29.3 (including the type of habitat impacted, such as breeding, roosting, migration or recruitment pathways, nesting and foraging habitat) from the project across all stages. The assessment should consider known and potential impacts of the project, and must include:

(a) coastal zone and marine ecosystems

(b) biological diversity of the Moreton Bay Marine Park including marine megafauna

[33] Guidance materials relevant to survey methods include Queensland Government, *Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland*, Version 7.0, 2023 (or subsequent revision); Queensland Government, *Flora Survey Guidelines – Protected Plants*, NCS/2016/2534; Queensland Government, *Terrestrial Vertebrate Fauna Survey Guidelines For Queensland*, Version 4.0, 2022 (or subsequent revision). For targeted survey guidelines see: Queensland Government, Terrestrial vertebrate fauna survey guidelines (webpage) at **www.qld.gov.au/environment/plants-animals/biodiversity/vertebrate-survey#download**

(c) the integrity of ecological processes, including habitats of listed threatened, near threatened or special least-concern species

(d) likely impacts of dredging and other vessel movements on estuarine and marine plants and fauna within or adjacent to the project footprint

(e) connectivity of habitats and ecosystems.

29.12 When identifying impacts, ensure figures are appropriately scaled and provided for each activity/component and for each phase of the project.

29.13 Describe any actions of the project that require an authority under the *Nature Conservation Act 1992*, and/or would be accepted or assessable development for the purposes of the EP Act, *Marine Parks Act 2004*, *Coastal Protection and Management Act 1995*, *Fisheries Act 1994*, *Vegetation Management Act 1999*, local government planning scheme and any other relevant statutory instrument. Features to consider include regional ecosystem, environmentally sensitive areas, wetlands, nature refuges, protected areas and strategic environmental areas.

Mitigation measures

29.14 Demonstrate how the proposal avoids marine plant including seagrass disturbance, or where avoidance is not reasonably possible, minimises disturbance to conserve marine plants, and maintain ecological processes.

29.15 Describe how the project will be designed, constructed and operated to avoid direct or indirect impacts on the biological diversity of the Moreton Bay Marine Park including the management intent of relevant zones listed in the Moreton Bay Marine Park Zoning Plan

29.16 Where impacts to MSES cannot reasonably be avoided, describe measures to minimise and then mitigate the direct or indirect impacts on ecological values.

29.17 Assess how the nominated quantifiable indicators and standards may be achieved for nature conservation management. Address measures to protect or preserve any listed threatened, near threatened or special least concern species. Describe the practicality, effectiveness and risks for each avoidance and mitigation measure. Include the timeframes in which results would be achieved, frequency of monitoring, and how corrective actions will be managed for all proposed phases of the project.

29.18 Justify how applying proposed avoidance and management measures would result in acceptable outcomes for aquatic and marine ecology. Describe how achieving the measures successfully will be monitored, measured and audited. Include provisions to regularly evaluate all the mitigation measures so that improvements may be made as new technologies and best practices evolve over the anticipated maximum life of the project.

29.19 Propose measures that would avoid the need for waterway barriers or propose measures to mitigate the impacts of their construction and operation.

29.20 Assess the need for buffer zones and the retention, rehabilitation or planting of movement corridors. The assessment must consider the role of buffer zones in maintaining and enhancing riparian vegetation and wetlands to enhance water quality, promote habitat connectivity and provide habitat.

Environmental offsets

29.21 After demonstrating that all reasonable steps have been taken to avoid and then mitigate impacts, identify whether the project will result in a significant residual

impact (SRI) to MSES/ requiring an environmental offset with reference to the Queensland Environmental Offsets policy, Significant Residual Impact Guideline, and Queensland environmental offset framework.[34] Characterise the scale of SRI in hectares.

29.22 Propose offsets consistent with the relevant State and Commonwealth legislation or policies for any SRI:

(a) if an SRI will occur on a prescribed environmental matter as outlined in the Environmental Offsets Regulation 2014, offset(s) must be consistent with the requirements of the *Environmental Offsets Act 2014* and the latest version of the Queensland Environmental Offsets Policy[35]

(b) if the Australian Government's offset policy requires an offset for a significant impact on a MNES, offset(s) must be consistent with the requirements of the EPBC Act Environmental Offsets Policy (2012) (Offsets Policy).[36]

29.23 Propose environmental offsets, that at a minimum:

(a) identify and illustrate the extent of any SRI overlap between impacts on MSES/MLES and MNES

(b) for staged offsets, consider the full extent of potential impacts on prescribed environmental matters for the entire project as part of the SRI assessment

(c) provide results of a habitat quality assessment on both the impact area and the proposed offset area(s) to compensate for impacts[37]

(d) identify whether an SRI to MSES will be addressed through a financial or proponent driven offset, including an offset delivery plan for any proponent driven offsets, and financial offset calculation for financial offsets

(e) evaluate how the proposed offset will achieve a conservation outcome for the impacted matter

(f) for land-based offsets (if relevant), assess the vulnerability and resilience of any proposed offset site(s) under climate change scenarios (e.g. reduced water availability, increased bushfire risk, sea level rise).

29.24 Describe how the achievement of the offset will be monitored and audited, and how corrective actions will be managed.

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[34] State Government, *Environmental Offsets – Legislation- Environmental offset framework* (webpage) at **www.qld.gov.au/environment/management/environmental/offsets/legislation**. See also: Queensland Government, General guide for the Queensland Environmental Offsets Framework, EPP/2021/5541; Queensland Government, *Queensland Environmental Offsets Policy*, EPP/2015/1658; Queensland Government, Department of Environment and Heritage Protection, *Queensland Environmental Offsets Policy: Significant Residual Impact Guideline*, 2014 (or subsequent revision); Queensland Government, *Significant Residual Impact Guideline: For matters of state environmental significance and prescribed activities assessable under the Sustainable Planning Act 2009 – Queensland Environmental Offsets Policy*, 2014 (or subsequent revision). Note: Environmental Offsets Regulation 2014 (Qld) defines prescribed environmental matters including MSES and MLES.

[35] Queensland Government, *Queensland Environmental Offsets Policy*, EPP/2015/1658.

[36] Australian Government, Department of Sustainability*, Environment, Water, Population and Communities, EPBC Act offsets policy*, 2012.

[37] Before undertaking habitat quality assessments, consult with the Office of the Coordinator-General regarding the relevant methodology.

30. Matters of national environmental significance

On 19 September 2024, a delegate of the Australian Government Minister for the Environment and Water determined the project to be a 'controlled action' under the EPBC Act (EPBC reference 2024/09919).

The controlling provisions for the project are:

- Ramsar wetlands of international importance (sections 16 and 17B)
- listed threatened species and communities (sections 18 and 18A)
- listed migratory controlling provisions (sections 20 and 20A)
- Commonwealth marine areas (sections 23 and 24A).

The MNES chapter must address the matters outlined in Schedule 4 of the EPBC Regulations and the matters outlined below.

Ensure habitat definitions for listed threatened species are in accordance with definitions available in the EPBC Act guidelines or other relevant, most recent, statutory documents (e.g. referral guidelines, approved listing advice(s), approved conservation advice(s), recovery plan(s), threat abatement plan(s) or comparable policy guidelines, and information contained in relevant Australian databases such as the Species Profile and Threats (SPRAT) database). Ensure that the habitat definitions also take into account all relevant Queensland regional ecosystem and other available information. The most up-to-date documentation and/or scientific expert advice must be used.

Note: Where 'action' is used below, it is to mean the project (all components) in the MNES chapter.

General content

30.1 The MNES chapter of the EIS should be a stand-alone document or chapter that primarily focuses on the project's controlling provisions. The MNES chapter is to contain sufficient information to be read alone with reference to technical data or supplementary reports (where appropriate). Any detailed technical information that supports the MNES chapter is to be included as appendices to the EIS.

30.2 The MNES chapter is to take into consideration the EPBC Act Significant Impact Guidelines[38], other relevant statutory documentation (such as relevant recovery plans and conservation advice accessible via the SPRAT database) and Australian Government policy guidelines.[39] Documents to consider include but are not limited to those outlined in Appendix 5.

30.3 The MNES chapter should contain sufficient information to allow the Australian Government Minister for the Environment and Water (or delegate) to make an informed decision on whether or not to approve, under Part 9 of the EPBC Act, the taking of the action for the purposes of each controlling provision.

[38] Australian Government, Department of the Environment, Water, Heritage and Arts, *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance*, 2013.
[39] See: Australian Government, Department of Climate Change, Energy, the Environment and Water, *EPBC Act publications and resources* (webpage) available at www.dcceew.gov.au/environment/epbc/publications#policy

30.4 The MNES chapter should enable interested stakeholders to understand the environmental consequences of the proposed action on MNES and how these impacts will be avoided, mitigated and where required offset.

30.5 All work and conclusions presented in the chapter must:

(a) be presented clearly, unambiguously, succinctly and objectively

(b) be evidence based, with the evidence provided

(c) be supported by peer reviewed literature, with references provided, or expert opinion included

(d) be in accordance with the EPBC Act guidelines and other most recent statutory documents (e.g. referral guidelines, approved listing advice(s), approved conservation advice(s), recovery plan(s), threat abatement plan(s) or comparable policy guidelines, and information contained in relevant Australian databases such as the SPRAT and Australian Wetlands databases)

(e) use scientifically robust methodologies appropriate to the purpose, including a justification of why the methodology/s was selected; details of the methodology described in a manner that allows an independent suitably qualified practitioners to apply the method; and state any limitations of the chosen approach

(f) be supported by maps, plans, diagrams, baseline surveys or other descriptive detail

(g) where relevant, have maps that clearly identify development footprints, buffer zones, conservation areas where impacts will be avoided, and areas of adjacent habitat that would be subject to indirect impacts, including areas that are to be retained within and adjacent to the site

(h) use active language and state clear commitments (e.g., 'must' and 'will') where appropriate, particularly in describing avoidance, mitigation and management actions and outcomes

(i) demonstrate the use of up to date policy guidelines, scientific methods, information, data and species-relevant survey methods

(j) appropriately reference all sources using the Harvard standard. The reference list must include the address of any internet pages used as data sources.

30.6 The level of analysis and detail in the MNES chapter should reflect the level of significance of the expected impacts on the environment. Any and all unknown variables or assumptions made in the assessment must be clearly stated and discussed. The extent to which the limitations, if any, of available information may influence the conclusions of the environmental assessment should be discussed.

30.7 The proponent is to ensure that the MNES chapter assesses compliance of the action with principles of ecologically sustainable development and the objects of the EPBC Act.[40]

30.8 Where the TOR in the MNES chapter refer to a department or other Australian Government guideline, unless otherwise specified this should be taken to mean the most recent revision or subsequent version of the document. Guidelines that should

[40] See EPBC Act chapter 1, part 1.

be considered when writing the EIS include, but are not limited to, those listed in Appendix 5.

Format and style

30.9 The MNES chapter should comprise 3 elements:

(a) the executive summary

(b) the main text of the document

(c) appendices containing detailed technical information and other information, including management plans, that can be made publicly available.

30.10 The MNES chapter should be written so that any conclusions reached can be independently assessed. To this end, all sources must be appropriately referenced using the Harvard standard. The reference list should include the address and date of access of any Internet webpages used as data sources.

30.11 The main text of the MNES chapter should include a list of abbreviations, a glossary of terms and appendices containing:

(a) a list of persons and agencies consulted during the EIS

(b) contact details for the proponent

(c) the names of the persons involved in preparing the EIS and work done by each of these persons.

30.12 The MNES chapter should be produced in A4 size paper capable of being photocopied, with maps and diagrams in A4 or A3 size and in colour (where possible) in line with the *Guide to providing maps and boundary data for EPBC Act projects*[41].

30.13 The MNES chapter must be in an appropriate format and style to allow publication on the Internet.

Specific content

30.14 The body of the MNES chapter should address each of the relevant protected matters with the following detail:

(a) project description including:

(i) general information

(ii) description of the action

(iii) feasible alternatives

(b) description of the environment and MNES including:

(i) general description of the environment

(ii) description of protected matters, including desktop analysis, survey efforts and outcomes, and habitat assessments

(c) impacts, including:

(i) relevant impacts

[41] Australian Government, Department of Agriculture, Water and the Environment, *Guide to providing maps and boundary data for EPBC Act projects*, 2021 (or subsequent revision).

(ii) avoidance, mitigation, and management measures

(iii) rehabilitation requirements

(iv) significant impact assessment

(d) consideration of statutory requirements

(e) details of proposed offsets.

Project description

General information

30.15 Provide the background and context of the action including:

(a) the title of the action

(b) the full name and postal address of the designated proponent

(c) a clear outline of the objective of the action

(d) the location of the action, including the regional context

(e) the background to the development of the action

(f) how the action relates to other major or significant actions in or adjacent to the area where this project is proposed (of which the proponent should reasonably be aware) that have been, or are being taken or that have been approved in the region affected by the action

(g) the current status of the action

(h) the consequence of not proceeding with the action.

Description of the action

30.16 Describe in detail all components (phases) of the action. This is to include the precise location (including coordinates) of all works to be undertaken, structures to be built or elements of the action that may have impacts on MNES.

30.17 Detail the anticipated timing of all components (phases) of the action.

30.18 Detail how the dredging works are to be undertaken (including stages of development and their likely timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts. The various elements of the action must be described in the text and illustrated with maps, diagrams, plans (at a suitable scale) and other information as required to provide sufficient context and basis for the identification and assessment of impacts. This section must also include but not be limited to:

(a) a table showing the amounts to be dredged for each separate dredge area, as well as differentiating between clean, contaminated and potentially contaminated materials

(b) treatment of contaminated material, including method of treatment, disposal of sediment waste and contaminated material, standards and minimum thresholds required for removal/disposal

(c) details of channel realignment or replacement of shipping services, structures, access, etc., required as a result of the action

(d) anticipated maximum life of the action, including operations, maintenance dredging and rehabilitation

(e) number of jobs for the life of the action, including number of jobs for Indigenous employees

(f) other such actions, including but not limited to, earthworks, use of explosives, changes to hydrological flow and groundwater, accommodation facilities, concrete batch plants material storage, construction facilities, waste management generally and management of spills/contaminants/pollutants.

30.19 Provide the total size of the project footprint and the total size of the proposed action footprint (in hectares). If the project footprint is the same as the proposed action footprint, the MNES chapter is to include a statement to this effect. Detail any area subject to indirect or facilitated impacts (outside of the project footprint).

30.20 The MNES chapter must include a map(s) which clearly identify all components of the action and boundaries of the proposed project footprint including all infrastructure elements and development necessary for the project. All maps must follow the *Guide to providing maps and boundary data for EPBC Act projects*.[42]

30.21 Describe any changes to the project description or action footprint that may have occurred since the original referral.

Feasible alternatives

30.22 Any prudent and feasible alternatives to the action to the extent reasonably practicable, including:

(a) if relevant, the alternative of taking no action

(b) options for the establishment or upgrade of an alternative deepwater port

(c) alternative uses or placement areas for dredged material, including land reclamation, beneficial re-use, and terrestrial dredge material placement alternatives

(d) a comparative description of the impacts of each alternative on MNES

(e) sufficient detail with evidence to make clear why an alternative is preferred to another or why alternatives to the above projects are not possible

(f) short, medium and long-term advantages and disadvantages of the feasible alternatives.

Description of the environment and MNES

General description of the environment

30.23 The EIS must describe the environment of the project area and surrounding areas that may be affected by the action. Environments to be described must include (but are not limited to) those adjacent, upstream and/or downstream of the action and any water intake and discharge points. At a minimum, this section is to include:

(a) clear delineation of the extent/s of impacted areas of the receiving environment/s studied, and justification for this extent

(b) current and historical uses of the project area, including potential dredged material placement areas

[42] Australian Government, Department of Agriculture, Water and the Environment, *Guide to providing maps and boundary data for EPBC Act projects*, 2021 (or subsequent revision).

(c) historical anthropogenic uses of the project area and existing condition of the overall area within and adjacent to, downstream and upstream of the project area

(d) hydrology (surface and ground), including flood extents, relevant hydrogeology, and local water quality

(e) description of any listed threatened species or migratory species that occur in the project footprint and adjacent areas

(f) a description of the ecological character of the extent of the Moreton Bay Ramsar site relevant to the action and its impacts

(g) a description of the Commonwealth marine environment relevant to the action

(h) a description of terrestrial and aquatic ecosystems, including key vegetation communities and relevant watercourses (to the extent practical to the project)

(i) a description of estuarine and coastal environments, including inshore coastal areas, vegetation, underwater ecological features, key benthic habitats, and intertidal areas

(j) soil and geological characteristics, physical, chemical and biological characterisation of any sediment that will be disturbed as a result of the action. Include analytical results of any site investigations conducted to date and contaminant testing, the thresholds used and their source

(k) assessment of vegetation (not limited to MNES), including raw data sheets and species lists

(l) total size (in hectares) of regional ecosystems present on site, as well as a map(s) showing regional ecosystem patches and native vegetation regrowth

(m) distribution and abundance of pest species and weeds, including marine pests

(n) topography and elevation and/or bathymetry and depth across the project footprint (include a stratigraphic map with contour intervals)

(o) identification of conservation and special use areas and any outstanding natural features

(p) cultural heritage values, people and communities and other socially relevant considerations, including underwater cultural heritage

(q) ancillary transport roads, corridors, and channels and the surrounding areas that may be affected by the action.

Description of protected matters

Based on information provided in the referral documentation and other available information, it is considered that the proposed action may significantly impact MNES including listed threatened species and communities, listed migratory species, the ecological character of a Ramsar wetland, and the Commonwealth marine environment. For the purposes of this TOR, 'MNES' will be used to refer to controlling provisions more broadly, and 'Protected Matters' will be used to refer to individual matters protected under these controlling provisions, as defined in s34 of the EPBC Act.

The MNES chapter must provide the quantification of the extent of the MNES present both within and surrounding the proposed action site, details of the resources used to identify and assess the below MNES, and whether consultation was undertaken and/or advice sought from local community groups or experts.

Assessments must be informed by up-to-date desktop and field surveys, and informed by relevant department documents including but not limited to approved Conservation Advice, Recovery Plans, draft referral guidelines and Listing Advice, Marine Bioregional Plans, Ramsar Information Sheets and Ecological Character Descriptions, the SPRAT Database, published research, and other relevant sources, including but not limited to those outlined in Appendix 5.

It is the proponent's responsibility to ensure that any listed threatened and migratory species and ecological communities at the time of the controlled action decision, which will or are likely to be impacted by the project, are assessed for the Minister or the delegate's consideration. Any listing events (e.g. the listing or up-listing of a species) that occur after the controlled action decision do not affect the assessment and approval process.

30.24 For each triggered MNES, include a brief description, the status of the matter in the region and the applicable key threatening processes. The MNES chapter must include a detailed assessment of the presence of individuals and suitable habitat for the relevant Protected Matters which are known to occur, may occur, or are likely to occur below, within and adjacent to the project footprint.

30.25 The proponent must ensure that a recent Protected Matters Search Tool report has been generated and considered before finalising the draft EIS. This Protected Matters Search Tool report must be provided as an attachment to the EIS.

30.26 The MNES chapter must also include a detailed presence and habitat assessment for any other MNES, that will, or is likely to, be directly or indirectly impacted by the proposed action.

30.27 The MNES chapter must provide information about the habitat for and presence of any MNES identified as potentially being significantly impacted by the proposed action, including (but not limited to) the MNES identified in Appendix 3.

30.28 The process used to determine the relevant Protected Matters must be clearly defined and justified within the MNES chapter of the EIS.

30.29 Describe the desktop assessment methodology used to inform the likelihood of occurrence, assessment of protected matters and field surveys in and within the vicinity of the project footprint.

30.30 The desktop assessment method should:

(a) identify and describe known historical records of the relevant species, ecological communities and other information related to protected matters within the proposed action area and adjacent area

(b) identify and describe known and historical records in the broader region (e.g. highly mobile, transient, or cryptic species)

(c) all known records must be supported by an appropriate source (i.e. Australian Government and state databases, published research, publicly available survey reports, etc.)

(d) include the year of the record and a brief description of the habitat in which the record was identified

(e) where multiple records are extracted from a database (such as Atlas of living Australia or WildNet), the date this information was extracted or downloaded should also be provided.

30.31 Provide detailed mapping of suitable habitat for all relevant protected matters which may be impacted by the action, which:

(a) is specific to the habitat requirements for each listed threatened species and ecological community (i.e. does not only illustrate relevant Queensland REs)

(b) includes upstream, downstream, within and adjacent to the proposed action area

(c) includes the total patch size of habitat, which may include sections of the patch that fall outside of the project area (in hectares)

(d) identifies any specific habitat requirements (e.g. breeding, foraging, dispersal, known important habitat, suitable habitats, roosting)

(e) considers the regional context and describes the connectivity of habitat in the broader landscape

(f) includes known records of individuals derived from desktop analysis and field surveys

(g) is provided separately as high-resolution attachments.

30.32 Provide details of the scope, methodology, timing and effort of field surveys. Surveys are to be undertaken by suitably qualified ecologists, with input on methodology or results from qualified experts with demonstrated experience with the relevant protected matter where required. Provide details of:

(a) how surveys were undertaken in accordance with relevant Australian Government and state guidelines or best practice survey guidelines at the time of the surveys

(b) an assessment of the adequacy of any surveys undertaken (including survey effort and timing), the extent to which the surveys were appropriate for the species and in accordance with Australian Government's relevant survey and policy guidelines[43], or best practice methods where these are unavailable

(c) if relevant, the justification for divergence from relevant Australian Government and state guidelines or best practice survey guidelines at the time of the surveys

(d) state the total number of records (individuals and evidence of presence) of listed threatened species, migratory species and ecological communities in and within the vicinity of the proposed action site, and show in applicable area maps

(e) provide maps identifying verified sightings of MNES during studies or surveys, in accordance with Department of Climate Change, Energy, the Environment and Water (DCCEEW) mapping guidance.

30.33 Surveys are to be of a suitable standard, including the scope, timing and spatial and temporal replication, to be able to detect cryptic or difficult to detect terrestrial and aquatic species. Surveys are to also target areas upstream, downstream and adjacent to the project area, particularly for species which regularly disperse through the landscape or aquatic environments (particularly seasonally) and/or have large home ranges.

30.34 Wherever practicable, surveys should be undertaken over an ecologically relevant scale and period to adequately determine the likely presence or absence of the

[43] See Australian Government, Department of Climate Change, Energy, the Environment and Water, On-ground surveys and data for referred actions under the EPBC Act - DCCEEW; For listed migratory species, consider also: Australian Government, *EPBC Act Policy Statement 3.21 – Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species*, 2015 (or subsequent reiteration).

target species or environmental value. A precautionary approach should be taken where this is not possible.

30.35 Attach all relevant ecological surveys referenced in the referral and MNES chapter as supporting documents to the EIS.

Specific requirements for listed threatened species and communities, and migratory species

30.36 Describe each relevant listed threatened species, ecological community and migratory species, including those identified in Appendix 3 (including EPBC Act listing status at time of controlled action decision, distribution, ecology and habitat preferences of the species or communities, threatening processes, etc.). These descriptions are to align with the information in the SPRAT database and relevant Australian Government documents, including but not limited to those listed in Appendix 5. Consider:

(a) habitat descriptions should have regard to the *National Directory of Important Migratory Shorebird Habitat*[44] for relevant threatened and migratory shorebird species

(b) Biologically Important Areas (BIAs)[45] for relevant listed threatened and/or migratory marine species should be included in habitat descriptions

(c) any up-to-date information regarding key foraging areas, migratory corridors, courtship areas and habitat required for hatchling dispersal for marine turtles, including areas not currently identified as BIAs.[46]

30.37 Habitat assessments for listed species and communities and listed migratory species must provide estimates for habitat quality for each protected matter. Habitat quality should be assessed using the same approach/scoring mechanism as is used for any offset site (if relevant). The method applied must be suitable and targeted for each protected matter.

30.38 Identify potential climate change refugia within the proposed action area and adjacent area for listed threatened species and listed migratory species, which may be impacted by the proposed action. See *Characteristics of climate change refugia for Australian biodiversity* for information on climate change refugia as well as other more recent and species-specific research where relevant.

Specific requirements for the Moreton Bay Ramsar Site

The primary purpose of management of a declared Ramsar wetland must be, in accordance with the Ramsar Convention, to describe and maintain the ecological character of the wetland by promoting conservation of the wetland and wise and sustainable use of the wetland for the benefit of humanity in a way that is compatible with maintenance of the natural properties of the ecosystem.

The Moreton Bay Ramsar Site was nominated in 1993, and meets all nine criteria for the designation of a wetland of international importance:

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[44] Birdlife Australia, 2020, *Australian National Directory of Important Migratory Shorebird Habitat*, available at **https://eaaflyway.net/australian-national-directory-of-important-migratory-shorebird-habitat/**

[45] See Australian Government, Department of Climate Change, Energy, the Environment and Water, *Biologically Important Areas for protected marine species (BIAs)* (webpage), available at **www.dcceew.gov.au/environment/marine/bias**

[46] See Australian Government, Department of Environment and Energy, the NSW Government and the Queensland Government, *Recovery Plan for Marine Turtles in Australia*, 2017, available at **www.dcceew.gov.au/environment/marine/marine-species/marine-turtles/recovery-plan-marine-turtles-australia-2017**

Criterion 1: representative, rare or unique natural or near-natural wetland types

Criterion 2: supports vulnerable, endangered, or critically endangered threatened species and ecological communities

Criterion 3: supports populations of plant and animal species important for maintaining biological diversity

Criterion 4: supports plant and animal species during critical life cycle stage or in adverse conditions

Criterion 5: regularly supports more than 20,000 waterbirds

Criterion 6: regularly supports more than 1% of the individuals in one or more species of waterbird

Criterion 7: supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity

Criterion 8: provides an important source of food for fishes, spawning grounds, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend

Criterion 9: regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian species.

30.39 Identify and provide a comprehensive description of the ecological character and state the characteristics that make the Moreton Bay Ramsar site a wetland of international importance under the Ramsar Convention. Describe the values of the wetland that are likely to be impacted by the action; include and refer to the criteria for identifying wetlands of international importance[47].

30.40 The MNES chapter is to describe any current pressures on the Moreton Bay Ramsar site and the ecological characteristics of the Moreton Bay Ramsar site and surrounds in the context of (but not limited to):

(a) erosion, sediments and salinity (i.e. turbidity)

(b) indirect and facilitated impacts of increased intensification and expansion of agriculture and development

(c) changes in hydrological regime (i.e. connected groundwater and wetland systems, flow changes, hydrological connectivity, increased flooding)

(d) change to the physicochemical status of the wetland (i.e. nutrients, other chemicals)

(e) habitat modification/loss and/or disruption of the lifecycle of listed species

(f) introduction or establishment of pest species.

30.41 The description of the environmental values within and surrounding the Moreton Bay Ramsar site is to be supported by baseline data derived from field surveys, scientific evidence derived from research papers and expert advice, public consultation, other approval processes, and information collected from desktop research (e.g.

[47] See Department of Climate Change, Energy, the Environment and Water, *The Criteria for Identifying Wetlands of International Importance* (webpage), available at **www.dcceew.gov.au/water/wetlands/publications/criteria-identifying-wetlands-international-importance**. See also information available on Moreton Bay in the *Directory of Important Wetlands* (web database), available at **www.environment.gov.au/cgi-bin/wetlands/ramsardetails.pl?refcode=41**

Australian and State Government databases/websites (including Commonwealth Scientific and Industrial Research Organisation (CSRIO)), universities, outcomes of previous field surveys, modelling, scientific investigations, etc.). The description of environmental values may have reference to the Draft Ecological Character Description – Moreton Bay Ramsar Site (BMT, 2008).

Specific requirements for the Commonwealth marine environment

Where the project will have relevant impacts on the Commonwealth marine environment resulting from actions taken outside the Commonwealth marine area, the assessment must consider impacts to the whole of the environment within the Commonwealth marine area, including social, economic and cultural aspects of the environment.

The 'Commonwealth marine area' is defined in section 24 of the EPBC Act as any part of the waters inside the seaward boundary of Australia's Exclusive Economic Zone and any waters over the continental shelf of Australia, including the seabed under, and any airspace over those waters, that is not within the limits of a State or the Northern Territory.

The 'environment' is defined in section 528 of the EPBC Act, the MNES chapter should have regard to the definition under the act and as described in the related Policy Statement[48].

30.42 Provide a description of the Commonwealth marine environment relevant to the proposed action, including the water, seabed and airspace. The description of the Commonwealth marine environment must include information on:

(a) ecosystems and their constituent parts, including people and communities

(b) natural and physical resources

(c) the qualities and characteristics of locations, places and areas, including Biologically Important Areas (BIAs)[49], Key Ecological Features (KEFs), and Australian marine parks[50], addressing:

(i) distance from the proposed action

(ii) conservation values

(iii) status, condition and the threats to identified values that are relevant to the proposed action and

(iv) relevant management arrangements (e.g. management plans) and strategies and any separate approval requirements for activities within or which may affect Australian marine parks

(d) heritage values of places, including locations and descriptions of underwater cultural heritage sites and artefacts must be determined using an appropriate survey method such as desktop assessment. If detailed assessment is required, it should be undertaken by a suitably qualified expert with a background in Australian underwater cultural heritage expertise, in consultation with, relevant First Nations groups and key First Nations Traditional Owners

[48] See Australian Government, Department of Sustainability, Environment, Water, Population and Communities, Policy Statement *Definition of 'Environment' under section 528 of the EPBC Act, 2013, available at* ***https://www.dcceew.gov.au/environment/epbc/publications/epbc-act-policy-statement-definition-action-section-523-section-524-and-section-524a-epbc***

[49] See Australian Government, Department of Climate Change, Energy, the Environment and Water, *Biologically Important Areas for protected marine species (BIAs)* (webpage), available at **https://www.dcceew.gov.au/environment/marine/bias**

[50] See *Australian Marine Parks* available at **https://australianmarineparks.gov.au/**

(e) the social, economic and cultural aspects, of a thing mentioned in paragraph a), b), c) or

(f) including as they relate to the relevant First Nations peoples and other First Nations stakeholders.

30.43 Marine species, whales, and other cetaceans listed at the time of the controlled action decision which are relevant to the Commonwealth marine area in which themselves (or their prey) are known, likely to be or may be affected by the project are listed in Appendix 3.

Impacts to MNES

The MNES chapter must include a description of all the relevant impacts of the action. Relevant impacts are impacts that the action will have or is likely to have on a matter protected by a controlling provision.

Relevant impacts are the impacts that the action will have, or is likely to have, on MNES. 'Likely' is taken to mean a 'real, or not remote, chance or possibility'. This includes both direct and indirect of the action[51].

30.44 The MNES chapter should address all relevant impacts to controlling provisions, and provide the following information:

(a) a detailed assessment of the nature and extent of the likely short-term and long-term relevant impacts, including:

(i) a statement, with supporting evidence, of whether any relevant impacts are likely to be unknown, unpredictable or irreversible

(ii) the geographic extent of impacts and the length of the impact period

(iii) an assessment of the likelihood and total quantum (in hectares) of the impact of the proposed action on the ecological functions, populations, habitat (including critical and supporting), species behaviours (foraging, migration and breeding) and known threats of any MNES, including natural values and ecological character of these MNES, within and surrounding the proposed action area

(b) an assessment of the likelihood of the impacts of the proposed action to impede the recovery of any MNES, including the natural values and ecological character of these MNES, within and surrounding the project area

(c) an analysis of the significance of the relevant impacts

(d) any technical data and other information used or needed to make a detailed assessment of the relevant impacts, including but not limited to baseline studies, site characterisation, relevant modelling, and surveys undertaken, including:

(i) a discussion of what is included in studies and characterisation assessments and any relevant thresholds use

(e) consideration must be given to specific habitat features relevant to the species within and surrounding the development footprint.

[51] See Australian Government, Department of Sustainability, Environment, Water, Population and Communities, *EPBC Act Policy Statement - 'Indirect consequences' of an action: Section 527E of the EPBC Act*, 2013, available at www.dcceew.gov.au/environment/epbc/publications/epbc-act-policy-statement-indirect-consequences-action-section-527e-epbc-act

30.45 All relevant impacts of the action must be assessed in accordance with the latest relevant Australian Government policies and guidelines, and information provided in the SPRAT database, including but not limited to:

(a) habitat clearance

(b) habitat inundation

(c) habitat fragmentation and degradation

(d) injury or death (such as from vehicle strike or vessel collision)

(e) new, changed, or increased dust, light, vibration and noise, including underwater noise

(f) introduction/spread of, and/or increase in, pests, weeds and disease (including marine pests)

(g) impacts from changes in shipping activity, such as changes in risk (likelihood or consequence) of spills, discharge, leaching of antifouling paints, other chemical releases, and introduction of marine pest species changes to hydrological regimes (including flow changes and flooding)

(h) impacts to groundwater levels in root zones of relevant vegetation

(i) impacts arising from actual or potential contaminated material, including acid sulphate soils

(j) impacts to water quality, including from waste/chemical pollution and/or land contamination

(k) impacts on the extent or ecological function of benthic habitats

(l) impacts on or changes to water quality, including total suspended sediment and turbidity changes associated with capital and maintenance dredging activities, and the duration of these impacts

(m) sedimentation, accretion and erosion resulting from the action, including changes to current patterns which may affect MNES

(n) barriers to species dispersal and edge effects.

30.46 The MNES chapter is to address the potential impact of the action on ecosystem resilience where relevant for MNES. This should include consideration of the likely/predicted changes to climate regimes.

30.47 Where relevant and practicable, the MNES chapter should consider the anticipated/predicted future climatic conditions at the site in the assessment of impacts on MNES, and how changes in climate and the frequency and severity of weather events may interact with, exacerbate or reduce the impacts of the proposed action on MNES over time. This should include, but not be limited to the:

(a) loss, fragmentation, and/or drying of potential climate refugia and/or refuges for threatened species or communities / listed migratory species as a result of the proposed action – consider the potential impacts of removing or otherwise impacting these habitats

(b) increased risk of fire as a result of the proposed action under drier conditions and periods of extreme heat

(c) inclusion of different climate scenarios in water modelling

(d) a risk assessment for all identified risks to relevant protected matters should be conducted and documented

(e) any climate risk assessment should be qualitative in nature around potential or possible additive impacts of the action using the medium or high emission Representative Concentration Pathways/Shared Socio-economic Pathways (RCP/SSP) scenario

30.48 In assessing the impacts, including when defining acceptable levels of impact, consideration must be given to relevant Australian Government documents and guidelines, including but not limited to the *Significant Impact Guidelines 1.1*[52] and those outlined in Appendix 5.

Specific impact guidance

To assist in the assessment of impacts to MNES, further guidance on specific impacts, impact pathways, or considerations for particular protected matters has been provided below. These requirements should be considered in addition to those outlined in the '*General Impacts'* section of this chapter.

Habitat clearing and fragmentation

30.49 The MNES chapter must include an assessment of relevant impacts to habitat from all phases of the proposed action, including from land clearing, land reclamation, dredging and dredged material placement. Indirect impacts including those which may arise from changes to hydrological regimes or tidal processes should also be considered. The chapter should characterise the following:

(a) the type of habitat being impacted including species use and ecological characteristics, including whether the habitat:

(i) is habitat critical to the survival of a species or ecological community

(ii) supports an important population

(iii) is an important habitat for migratory species

(iv) is a biologically important area of a regionally significant marine species

(b) the footprint of habitat impacted within the proposed action area

(c) the percentage of each of habitat type expected to be cleared within and surrounding the proposed action area and

(d) impacts to the ecological function and characteristics of adjacent habitat, including consideration of whether the surrounding area may be retained, removed, or functionally lost.

Dredging and dredge material placement

30.50 Assessment of dredging and its impacts to MNES should be consistent with the National Assessment Guidelines for Dredging (2009)[53] and the National Environment Protection (Assessment of Site Contamination) Measure (1999)[54]. A conceptual site model should be included to describe impact pathways and linkages. Characterisation of impacts should include:

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[52] Australian Government, Department of the Environment, Water, Heritage and Arts, *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance*, 2013

[53] Australian Government, Department of the Environment, Water, Heritage and the Arts, *National Assessment Guidelines for Dredging,* 2009, available at **https://www.dcceew.gov.au/environment/marine/publications/national-assessment-guidelines-dredging-2009**

[54] See *National Environment Protection (Assessment of Site Contamination) Measure 1999* (Cwlth). See also: Commonwealth of Australia, *National Environment Protection (Assessment of Site Contamination) Measure*, available at **https://www.nepc.gov.au/nepms/assessment-site-contamination**

(a) a draft Sampling Analysis Plans and/or Sampling Analysis and Quality Plans to the relevant Australian Government Department for review of their suitability under the relevant guidelines, including the NAGD and NEPM

(b) details of the capital and maintenance dredging to be undertaken during proposed or indicative stages of the proposed action including the magnitude, volume, parameters, spatial and temporal extent

(c) an environmental baseline assessment related to substrate, bathymetry and hydrodynamics to inform and ensure appropriate dredge spoil modelling

(d) baseline assessment of sediments at and near the loading and disposal sites as well as nearby sensitive elements of the marine environment and a consideration of other uses of the area

(e) location of sites within and surrounding the proposed action area sensitive to dredging impacts must be identified on a map at a suitable scale

(f) details of land reclamation and excavation associated with the activities of the proposed action

(g) details of any marine placement of dredge material, including:

  (i) prediction of turbidity plume characteristics and suspended solids concentrations during and after disposal, relative to existing sediment levels and hydrodynamics. The processed condition of any sediments, that is, after dredging, should be tested and accounted for in any modelling and

  (ii) disposal alternatives and waste minimisation, alternatives and prevention

(h) details of land reclamation using dredged material, including:

  (i) baseline characterisation of proposed reclamation sites, including assessment of potential contaminants

  (ii) characteristics of dredged material to be used for land reclamation, including material types, source area, and potential or actual contamination risks

  (iii) ongoing monitoring or sampling plans to be implemented throughout land reclamation works

  (iv) assessment of dredge placement site and dredge material for suitability for use as fill for land reclamation should consider the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013)*[55]

(i) details of the removal of existing marine infrastructure and construction of marine infrastructure

(j) details of the sediment quality at the loading and disposal sites including:

  (i) assessment of dredge spoil contamination

[55] See *National Environment Protection (Assessment of Site Contamination) Measure 1999* (Cwlth). See also: Commonwealth of Australia, *National Environment Protection (Assessment of Site Contamination) Measure*, available at **www.nepc.gov.au/nepms/assessment-site-contamination**

(k) assessment of acid sulfate soils, consistent with the *National Acid Sulfate Soils Guidance*[56] including:

(i) assessment of the presence of acid sulfate soils

(ii) details of water contamination including disturbance and spread and

(iii) consideration of cumulative levels of acid sulfate soils due to other projects within and surrounding the proposed action area.

30.51 Assessment of PFAS, consistent with the PFAS National Environmental Management Plan (2025)[57], including:

(a) assessment of the presence of PFAS

(b) details of water contamination including disturbance and spread and

(c) consideration of cumulative levels of PFAS due to other projects within and surrounding the proposed action area.

30.52 Contamination pathways and the assessment of the bioavailability of contaminants should be considered, and potential pathways to impact MNES discussed.

Light Pollution

30.53 Include an assessment of potential impacts arising from new, changed, or increased light pollution which is consistent with the *National Light Pollution Guidelines for Wildlife* (2023)[58], the *Industry Guidelines for avoiding, assessing, and mitigating impacts on EPBC Act Listed migratory shorebird species* (2015)[59] and other relevant documents, including but not limited to those in Appendix 5. Impacts should be characterised for all stages of the proposed action, including night operations, maintenance, those from new or increased vessel/vehicle traffic.

Noise and Vibration

30.54 The MNES chapter should include an assessment of the potential impacts (including to prey species), arising from new, changed or increased underwater noise and vibrations by the proposed action. This should include consideration of:

(a) details of the noise and vibrations fields to be generated during all stages of the proposed action including:

(i) the intensity, duration, frequency, and extent of underwater noise generated from all relevant activities associated with the proposed action

(ii) consideration of cumulative impacts from all noise generating activities and

(iii) characterisation of whether the impact is impulsive or continuous

(b) the location of sites sensitive to noise disturbance must be identified on a map at a suitable scale.

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[56] Water Quality Australia, *Guidelines for the dredging of acid sulfate soil sediments and associated dredge spoil managemen*t, 2018, available at **www.waterquality.gov.au/issues/acid-sulfate-soils/dredge-spoil-management**

[57] Head of EPAs Australia and New Zealand, *PFAS National Environmental Management Plan Version 3.0,* 2025, available at **www.dcceew.gov.au/environment/protection/publications/pfas-nemp-3**

[58] Australian Government, Department of Climate Change, Energy, the Environment and Water, *National Light Pollution Guidelines for Wildlife,* 2023, available at **www.dcceew.gov.au/environment/biodiversity/publications/national-light-pollution-guidelines-wildlife**

[59] Australian Government, Department of Environment, *EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species*, 2015, available at **www.dcceew.gov.au/environment/epbc/publications/shorebirds-guidelines**

Vessel strike and other collision risks

30.55 The MNES chapter should include assessment of collision risks, including vessel strike in accordance with the *National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna* (2017)[60], the Industry Guidelines for avoiding, assessing, and mitigating impacts on EPBC Act Listed migratory shorebird species (2015)[61] and other relevant documents, including but not limited to those in Appendix 5.

Disturbance of underwater cultural heritage

30.56 The MNES chapter must include an assessment of the potential impacts to any underwater cultural heritage areas within the Commonwealth marine area, as a result of the proposed action. The assessment must be consistent with the *Underwater Cultural Heritage Act* (2018). The following will need to be characterised:

(a) description of the potential impact to remains of shipwrecks, submerged aircraft and their associated articles which have been in Commonwealth waters for 75 years or more, and other sites/protected zones declared under the *Underwater Cultural Heritage Act* (2018) which contains articles of heritage significance.

Impacts to the Moreton Bay Ramsar Site

30.57 Impacts on the extent or ecological function of benthic habitats within the wetland:

(a) impacts to waterbird species, their habitat within, and their use of the wetland

(b) impacts to fish species, their habitat within, and their use of the wetland

(c) impacts to other relevant wetland-dependent species, their habitat, or use of the wetland.

30.58 Impacts should be assessed against relevant reports and documents, including but not limited to:

(a) Ramsar information sheet(s)

(b) Ecological Character Descriptions

(c) other relevant reports or documents related to the Moreton Bay Ramsar Site.

Impacts to Commonwealth marine environment

30.59 The whole of the Commonwealth marine environment must be considered in the assessment of the impacts of the proposed action on the Commonwealth marine area, including social, economic and cultural aspects of the environment.

30.60 The MNES chapter must describe and assess all direct, indirect, facilitated and cumulative impacts to the Commonwealth marine environment and values, including:

(a) impacts of the action, as assessed against relevant plans, reports and documents including, but not limited to:

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[60] Australian Government, Department of Environment and Energy, *National Strategy for Reducing Vessel Strike on Cetaceans and other Marine Megafauna,* 2017, available at **www.dcceew.gov.au/environment/marine/marine-species/cetaceans/national-strategy-reducing-vessel-strike-cetaceans-marine-megafauna**

[61] Australian Government, Department of Environment, *EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species*, 2015, available at **www.dcceew.gov.au/environment/epbc/publications/shorebirds-guidelines**

(i) the Marine bioregional plan for the Temperate East Marine Region[62]

(ii) the Temperate East Network Management Plan[63]

(iii) any relevant Threat Abatement Plan or Conservation Management Plan, including but not limited to those outlined in Appendix 5.

(b) impacts to habitats, species, and ecological communities in the Commonwealth marine environment

(c) impacts to heritage, including underwater heritage.

Avoidance, mitigation and management

Avoidance, minimisation, and mitigation measures are the primary methods of eliminating and reducing significant impacts on MNES. Where possible and practicable, it is best to avoid impacts. If impacts cannot be avoided, then they should be minimised or mitigated as much as possible. Residual impacts should then be managed. Avoidance, minimisation, and mitigation measures must be investigated thoroughly as a part of the assessment and be supported by evidence to demonstrate likely success.

The SPRAT database, conservation advice, recovery plans, and associated statutory and policy documents, may provide a starting point for relevant mitigation measures for protected matters. Relevant documents include but are not limited to those outlines in Appendix 5.

The Australian Government encourages the proponent to establish, test, and monitor novel methods for avoiding, minimising, and mitigating impacts of the proposed project on MNES. The Australian Government also encourages the development of scientifically rigorous monitoring programs to measure impacts and assess the effectiveness of mitigation.

General requirements

30.61 The MNES chapter must provide information on proposed avoidance, minimisation, mitigation, and management measures to deal with the impacts of the action. General requirements include:

(a) use of committal language (i.e. 'will') rather than non-committal language (i.e. 'may', 'where possible', 'if required', etc.) must be used

(b) any commitments by the proponent must be clearly distinguished from recommendations or statements of best practice made by the document author or other technical expert

(c) the proposed measures and outcomes to be achieved must be provided and substantiated with the best available evidence and practices

(d) all proposed measures must also be drafted to meet the SMART principle:

(i) S – Specific (what and how)

(ii) M – Measurable (baseline information, number/value, auditable)

(iii) A – Achievable (timeframe, money, personnel)

[62] Australian Government, Department of Sustainability, Environment, Water, Population and Communities, *Marine bioregional plan for the Temperate East Marine Region*, 2012, available at **www.dcceew.gov.au/environment/marine/marine-bioregional-plans/temperate-east**

[63] Australian Government, Director of National Parks, *Temperate East Marine Parks Network Management Plan*, 2018, available at **https://australianmarineparks.gov.au/parks/temperate-east-marine-parks-network/temperate-east-network-management-plan/**

(iv) R – Relevant (conservation advices, recovery plans, threat abatement plans)

(v) T – Time-bound (specific timeframe to complete)

(e) avoidance, mitigation and management measures must be able to be implemented and enforced by the proponent.

30.62 Avoidance of impacts to protected matters must be applied as the first step in the mitigation hierarchy, and will need to be identified and discussed in the MNES chapter.

30.63 Any management plans required for the mitigation and management of impacts on MNES should be provided either as separate documents attached to the EIS or included as subsections in the MNES chapter. The relevant Australian Government department is likely to recommend to the Australian Government Minister (or delegate) that any conditions of approval require that final versions of any relevant plans be approved and in place prior to the commencement of the proposed action.

30.64 Provide a consolidated list of mitigation measures, including environmental design features, proposed to be undertaken to prevent, minimise, or compensate for all relevant impacts of the action, including:

(a) a description of the environmental outcomes the measures are expected to achieve, including details of any baseline data or proposed monitoring to demonstrate progress towards achieving these outcomes

(b) a description of proposed safeguards and mitigation measures to deal with relevant impacts of the action, including mitigation measures proposed to be taken by the proponent

(c) assessment of the expected or predicted effectiveness of the mitigation measures, with consideration of climate change predictions where relevant

(d) details of ongoing management, including scientifically robust monitoring programs to support an adaptive management approach and determine the effectiveness of the proposed measures or assess against proposed outcomes

(e) any statutory or policy basis for the mitigation measures

(f) the cost of the mitigation measures

(g) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.

30.65 Describe how habitat fragmentation and patch isolation will be avoided, with consideration of whether avoidance areas will enable species mobility across the project area and still be connected to habitat in the broader landscape.

30.66 Describe all relevant measures proposed to avoid, mitigate and manage potential impacts on the Moreton Bay Ramsar site including relevant plans.

30.67 Describe all relevant measures for the relevant impacts of the action on the Commonwealth marine environment.

Specific requirements for management plans

30.68 The MNES chapter must include a detailed outline of any management plans that set out the framework for management, mitigation and monitoring of relevant

impacts of the proposed action, including any provisions for independent environmental auditing.

30.69 The management plans need to address the proposed action phases separately and any staging of each phase. Each management plan must state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue.

30.70 The management plans must also describe contingencies for events such as accidental vessel or machinery spills, heavy or prolonged rainfall, storms, or saltwater intrusion into ground water. The name of the agency responsible for endorsing or approving each mitigation measure or monitoring program must also be provided.

30.71 All management plans must be developed in accordance with the *Environmental Management Plan Guidelines*[64] and take account of all requirements relevant to the proposed action and its impacts. Additional requirements for specific management plans are provided below. It is the proponent's responsibility to determine which management plans will or may be required for managing the impacts of the proposed action, and these may include but is not limited to those discussed in the TOR.

30.72 The EMPs are to be presented as stand-alone documents (appendices to the EIS). Management plans may be designed to cover requirements outside of the EPBC Act. Where this is the case, plans must explicitly address relevant protected matters, and discussion of them in the MNES chapter should directly reference the relevant section within the plan.

Environmental management plan

30.73 Provide a detailed outline of an EMP that sets out the framework for management, mitigation, and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing.[65] The EMP must:

(a) address the project phases separately

(b) state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue

(c) describe contingencies for events such as heavy or prolonged rainfall, unexpected finds protocol for encountering unexpected contamination, the importation of inappropriate fill material, chemical spills, off-target impacts of chemical usage

(d) in the construction phase of the EMP, include management measures such as dust suppression and enforcement of reduced construction zone vehicle speeds

(e) incorporate terrestrial, aquatic and marine weed and pest management actions, including monitoring

(f) consider the Environmental Management Plan Guidelines[66].

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[64] Australian Government, Department of Climate Change, Energy, The Environment and Water, *Environmental Management Plan Guidelines,* 2024, available at **www.dcceew.gov.au/environment/epbc/publications/environmental-management-plan-guidelines**

[65] Australian Government, Department of Climate Change, Energy, the Environment and Water, *Environmental Management Plan Guidelines*, 2024

[66] Australian Government, Department of Climate Change, Energy, the Environment and Water, *Environmental Management Plan Guidelines*, 2024

Rehabilitation management plan

30.74 Where rehabilitation is proposed and relevant to MNES, the information in below must be included in a rehabilitation management plan or a subsection of the MNES chapter.

30.75 Detail any rehabilitation activities proposed to be undertaken and how they meet best practice standards, including for the restoration of habitat for protected matters, and avoidance of sedimentation/erosion.

30.76 Provide a summary of the vegetation communities including dominant species that are being rehabilitated.

30.77 Provide the details of any rehabilitation activities proposed to be undertaken as required by Commonwealth, State or Territory, and local government legislation.

30.78 Provide information on the timing, frequency and duration of proposed rehabilitation activities to be implemented, including anticipated time to completion (refer to SMART principle above). All commitments must be drafted using committal language (e.g. 'will' and 'must') when describing the proposed activities.

30.79 Detail the rehabilitation acceptance criteria relevant to MNES and the procedures, including contingency measures that will be undertaken to achieve them.

30.80 Provide details of ongoing management and monitoring programs, including timing, to validate the effectiveness of proposed rehabilitation activities, including any contingency measures and when they would be triggered.

30.81 Provide details of tangible, on-ground corrective actions that will be implemented, including timing, in the event that monitoring programs indicate that the completion criteria have not been, or will not be, achieved.

30.82 Provide information on the management of the rehabilitation sites including, but not limited to, weed and pest management.

30.83 Provide maps showing the areas that will be rehabilitated within the project area and the size in hectares of these areas.

Dredging and dredge material placement and disposal management plan

30.84 A plan should be provided detailing management of dredging, dredged material placement and/or disposal and its impacts on protected matters.

30.85 This should be developed considering the requirements of the NAGD[67] and the National Environment Protection (Assessment of Site Contamination) Measure 1999[68].

30.86 This should include an outline of planned sampling throughout the life of the action to monitor changes to water quality and sediment quality, indicators that are included and their thresholds, and any triggers for management or mitigation actions based on these.

30.87 This should include the ability to consider long-term changes in baseline quality, such as through a staged approach.

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[67] Commonwealth of Australia, *National Assessment Guidelines for Dredging*, 2009, available at www.dcceew.gov.au/environment/marine/publications/national-assessment-guidelines-dredging-2009

[68] See *National Environment Protection (Assessment of Site Contamination) Measure 1999* (Cwlth). See also: Commonwealth of Australia, *National Environment Protection (Assessment of Site Contamination) Measure*, available at www.nepc.gov.au/nepms/assessment-site-contamination

30.88 A Sediment Sampling and Analysis Plan should be developed with consideration to relevant guidelines including but not limited to:

(a) the NAGD, including the Decision tree and explanatory note for assessment of tributyltin in dredge spoil[69] (2009)

(b) Australian-New Zealand water quality guidelines (ANZG 2018)[70]

(c) National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013)[71]

(d) National strategy for the management of coastal acid sulfate soils (2000)[72]

(e) Guidelines for the dredging of acid sulfate soil sediments and associated dredge spoil management (2018)[73]

(f) Moreton Bay including Stradbroke Islands, Moreton Island and other bay islands, Environmental Values and Water Quality Objective[74]

(g) National Environment Protection (Assessment of Site Contamination) Measure 1999[75]

(h) The PFAS National Environmental Management Plan 3.0 (2025)[76].

Significant impact assessment

30.89 After consideration of proposed avoidance, mitigation, and management measures, provide an assessment of the likelihood of residual significant impacts on relevant protected matters. The significant impact assessment must consider the Australian Government's *Significant impact Guidelines 1.1*[77].

30.90 Where there are residual significant impacts to protected matters, refer to the 'Offsets' section.

Listed threatened species and ecological communities and listed migratory species

30.91 After consideration of proposed avoidance, mitigation, and management measures, provide an assessment of the likelihood of residual significant impacts on each species or community.

30.92 Provide the total amount of residual significant impacts, if any, for each type of habitat (in hectares) in the disturbance footprint for each species or community.

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[69] Commonwealth of Australia, *Clarification of the National Assessment Guidelines for Dredging 2009 on tributyltin*, 2009, available at **www.dcceew.gov.au/environment/marine/publications/national-assessment-guidelines-dredging-2009**

[70] See Australian and New Zealand Governments and Australian state and territory governments, *Australian and New Zealand Water Quality Guidelines for Fresh and Marine Water Quality (webpage)* available at **www.waterquality.gov.au/anz-guidelines**

[71] See *National Environment Protection (Assessment of Site Contamination) Measure 1999* (Cwlth). See also: Commonwealth of Australia, *National Environment Protection (Assessment of Site Contamination) Measure*, available at **www.nepc.gov.au/nepms/assessment-site-contamination**

[72] Australian Government, National Working Party on Acid Sulfate Soils, *National Strategy for the Management of Coastal Acid Sulfate Soils*, 2000, available at **www.waterquality.gov.au/issues/acid-sulfate-soils/coastal**

[73] Water Quality Australia, *Guidelines for the dredging of acid sulfate soil sediments and associated dredge spoil management*, 2018, available at **www.waterquality.gov.au/issues/acid-sulfate-soils/dredge-spoil-management**

[74] Queensland Government, Department of Environment and Science, *Moreton Bay including Stradbroke Islands, Moreton Island and other bay islands Environmental Values and Water Quality Objectives,* 2019, available at **https://environment.desi.qld.gov.au/management/water/policy/seq-moretonbay**

[75] *National Environment Protection (Assessment of Site Contamination) Measure 1999* (Cth). See also: Commonwealth of Australia, *National Environment Protection (Assessment of Site Contamination) Measure*, available at **www.nepc.gov.au/nepms/assessment-site-contamination**

[76] Head of EPAs Australia and New Zealand, *PFAS National Environmental Management Plan Version 3.0,* 2025, available at **www.dcceew.gov.au/environment/protection/publications/pfas-nemp-3**

[77] Australian Government, Department of the Environment, Water, Heritage and the Arts, *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*, 2013

Moreton Bay Ramsar Site

30.93 After consideration of proposed avoidance, mitigation and management measures, provide an assessment of the likelihood of residual significant impacts on the ecological character of the Moreton Bay Ramsar site. The significant impact assessment must consider the *Significant impact Guidelines 1.1* [78], and include an assessment of whether the project will result in:

(a) areas of the wetland being destroyed or substantially modified

(b) a substantial and measurable change in the hydrological regime of the wetland

(c) the habitat or lifecycle of native species dependent on the wetland being seriously affected

(d) a substantial and measurable change in the water quality of the wetland

(e) an invasive species that is harmful to the ecological character of the wetland being established or encouraging the spread of an existing species.

30.94 The MNES section must provide a clear and definitive conclusion (i.e. 'likely' or 'unlikely'), including the extent and nature of residual significant impacts on the ecological characteristics of the Moreton Bay Ramsar site to align with the EPBC Act Environmental Offsets Policy (2012)[79]. Overall, the MNES section must demonstrate how, with detailed supporting justification, the integrity of the ecological character of the Moreton Bay Ramsar site will be maintained throughout all phases of the proposed action, including capital and maintenance dredging.

The Commonwealth marine environment

30.95 The whole of the Commonwealth marine environment must be considered in the assessment of the impacts of the proposed action on the Commonwealth marine area, including social, economic and cultural aspects of the environment.

30.96 The EIS must describe and assess all direct, indirect, facilitated and cumulative impacts to the Commonwealth marine environment and values, including:

(a) impacts of the action, as assessed against relevant plans, reports and documents including, but not limited to:

(i) the Marine bioregional plan for the Temperate East Marine Region[80]

(ii) the Temperate East Network Management Plan[81]

(iii) any relevant Threat Abatement Plan or Conservation Management Plan, including but not limited to those outlined in Appendix 5

(b) impacts to habitats, species, and ecological communities in the Commonwealth marine environment

(c) impacts to heritage, including underwater heritage

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[78] Australian Government, Department of the Environment, Water, Heritage and Arts, *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance*, 2013

[79] Australian Government, Department of Sustainability, Environment, Water, Population and Communities, *EPBC Act environmental offsets policy*, 2012

[80] Australian Government, Department of Sustainability, Environment, Water, Population and Communities, *Marine bioregional plan for the Temperate East Marine Region*, 2012, available at **https://www.dcceew.gov.au/environment/marine/marine-bioregional-plans/temperate-east**

[81] Australian Government, Director of National Parks, *Temperate East Marine Parks Network Management Plan*, 2018, available at **https://australianmarineparks.gov.au/parks/temperate-east-marine-parks-network/temperate-east-network-management-plan/**

(d) impacts to any other aspects of the Commonwealth marine environment, as outlined in 33.45-33.46.

Consideration of statutory requirements

30.97 The MNES chapter should include a discussion of whether the proposed action is consistent or inconsistent with Statutory requirements as detailed in the EPBC Act.

Statutory requirements for impacts to listed threatened species and ecological communities and listed migratory species

30.98 For listed threatened species and ecological communities, describe, with supporting evidence, how the proposed action will not be inconsistent with:

(a) Australia's obligations under the:

(i) Biodiversity Convention[82]

(ii) the Convention on Conservation of Nature in the South Pacific (Apia Convention)[83] and

(iii) the Convention on International Trade in Endangered Species of Wild Fauna and Flora[84]

(b) a recovery plan or threat abatement plan.

30.99 For listed Migratory species, describe, with supporting evidence, how the proposed action will not be inconsistent with Australia's Obligations under:

(a) the Bonn Convention[85]

(b) China–Australia Migratory Bird Agreement[86]

(c) Japan–Australia Migratory Bird Agreement[87]

(d) an international agreement approved under subsection 209(4) of the EPBC Act.

30.100 For listed threatened species or ecological communities and listed migratory species, describe, with supporting evidence, how the proposed action has taken into account any relevant approved conservation advice for the relevant species.

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[82] See Australian Government, Department of Climate Change, Energy, the Environment and Water, *UN Convention on Biological Diversity* (webpage), available at **https://www.dcceew.gov.au/environment/biodiversity/international/un-convention-biological-diversity**

[83] See APIA Convention: *Convention on Conservation of Nature in the South Pacific,* signed 1976, [1990] ATS 41 (entered into force 26 June 1990).

[84] See Australian Government, Department of Climate Change, Energy, the Environment and Water, *Convention on International Trade in Endangered Species of Wild Fauna And Flora* (webpage), available at **www.dcceew.gov.au/environment/wildlife-trade/cites**

[85] See Bonn Convention: United Nations Environment Program, *Convention on the Conservation of Migratory Species of Wild Animals* (webpage), available at **www.cms.int/**

[86] See CAMBA: *Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment* , Australia-People's Republic of China, signed 20 October 1986, [1988] ATS 22 (entered into force 1 September 1988). See also Australian Government, Department of Climate Change, Energy, the Environment and Water, *Migratory Birds* (webpage), available at **www.dcceew.gov.au/environment/biodiversity/migratory-species/migratory-birds#international**

[87] See JAMBA: *Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment*, Australia-Japan, signed 6 February 1974, [1981] ATS 6 (entered into force 30 April 1981). See also Australian Government, Department of Climate Change, Energy, the Environment and Water, *Migratory Birds* (webpage), available at **www.dcceew.gov.au/environment/biodiversity/migratory-species/migratory-birds#international**

Statutory requirements for the Moreton Bay Ramsar Site

30.101 All actions and mitigation measures relating to the Ramsar Wetlands must be consistent with:

(a) the Ramsar Convention[88], and

(b) the Australian Ramsar management principles, (as set out in Schedule 6 of the EPBC Regulations)

(c) where relevant, any Ramsar Site management plan prepared in accordance with section 333 of the EPBC Act.

30.102 Demonstrate how the project will not be inconsistent with the Australian Ramsar management principles, which include:

(a) to describe and maintain the ecological character of the wetland

(b) to formulate and implement planning that promotes conservation of the wetland and wise and sustainable use of the wetland

(c) wetland management that allows for public consultation on decisions and actions that may have significant impact on the wetland

(d) wetland management should make special provision for the involvement of people who have a particular interest in the wetland and may be affected by the management of the wetland

(e) wetland management should provide for continuing community and technical input.

Other impacts

The MNES chapter may provide a discussion and assessment of impacts other than those relevant to the proposed action (as defined in section 82 of the EPBC Act). These impacts and what may be considered are outlined below.

30.103 Impacts the proposed action may facilitate at the local, regional, state, or national scale. This may include consideration of:

(a) any other known development proposals which may be facilitated or impacted (either positively or negatively) by the proposed action

(b) whether the proposed action will result in an intensification of development or proposals in the region, or an increase in workforce, or in local and regional community changes, and

(c) any requirements for further proposals of major regional infrastructure to allow the proposed action to proceed.

30.104 Cumulative impacts, such as those that arise where potential existing pressures and threats exist or will occur in the near future, and these will or may be compounded by the proposed action. These may be considered in terms of the potential overall consequence or magnitude, reversibility and duration of impacts. The assessment of cumulative impacts may include:

[88] See Australian Government, Department of Climate Change, Energy, the Environment and Water, *The Ramsar Convention on Wetlands* (webpage), available at: **www.dcceew.gov.au/water/wetlands/ramsar**

(a) defined cumulative impact thresholds for each impacted matter and address how the project's management actions consider these thresholds to minimise the risk to the environment

(b) reference to and discussion of relevant environmental quality thresholds from management and framework guideline documents, including a justification that the level of expected impact is below or within these thresholds

(c) a review and analysis of residual impacts of the proposed action, and of other known proposals, where there may be a spatial or temporal overlap

(d) consideration of the potential for cumulative impacts to the values and ecological character of the Commonwealth marine area and Commonwealth land environment, resilience of any important populations of Listed marine species, migratory species, threatened species and on overall habitat quality and availability, and

(e) a discussion of the potential for existing pressures and threats to be exacerbated by the proposed action.

Offsets

The MNES chapter must include an assessment of the likelihood of residual significant impacts to all relevant protected matters after avoidance, mitigation and management measures relating to the proposed action have been applied. If it is considered that residual significant impacts are likely, then environmental offsets are required to be provided.

Environmental offsets are measures that compensate for the residual significant impacts of an action on the environment. Offsets provide environmental benefits to counterbalance the impacts that remain after consideration of avoidance and mitigation measures. Offsets do not reduce the impacts of an action and are not intended to make proposals with unacceptable impacts acceptable.

An environmental offsets package is a suite of actions that a proponent undertakes in order to compensate for the residual significant impact of a project. It can comprise a combination of *direct offsets* and *other compensatory measures*.

Direct offsets are those actions that provide a measurable conservation gain for an impacted protected matter. Conservation gain in the marine environment may include improving protection of important protected species habitat, such as sea grass, or by addressing pressures on the protected matter or its habitat, such as removing derelict fishing nets and other marine debris.

Other compensatory measures are those actions that do not directly offset the impacts on the protected matter but are anticipated to lead to benefits for the impacted protected matter, for example funding for research or educational programs. Requirements for other compensatory measures are outlined in Appendix A of the Offsets Policy.

An EPBC Act offset package must demonstrate that the relevant protected matters significantly impacted by the proposed action are not worse-off when compared to a situation where neither the impact nor the offset occurred.

30.105 It is important to consider environmental offsets early in the assessment process. Any proposed offsets must meet the key principles of the Offsets Policy[89].If it is considered that a residual significant impact is likely, the EIS must include a draft

[89] Australian Government, Department of Sustainability, Environment, Water, Population and Communities, *EPBC Act environmental offsets policy*, 2012

Offset Area Management Plan (OAMP) consistent with the Offsets Policy. If there is a residual significant impact, the relevant Australian Government department is likely to recommend to the Australian Government Minister (or delegate) that any conditions of approval require the offset package and any strategies or management plans within in be approved and implemented prior to the commencement of the proposed action.

30.106 If the EIS determines a residual significant impact is likely, the MNES chapter must include:

(a) a summary of the proposed environmental offset(s) and key commitments to achieve a conservation gain for each protected matter in accordance with the Offsets Policy

(b) a proposed Offsets Package, which must provide detail about any proposals to offset impacts including any direct offsets, indirect offsets, and other compensatory measures. The offset package must demonstrate how the proposed offset measures are suitable and meet the principles of the Offsets Policy

(c) any relevant OAMP, consistent with the principles of the Offsets Policy.

30.107 The proposed offset package should comprise at least 90% direct offsets for each Protected Matter. Where the package deviates from this requirement the proponent must seek agreement and support from the Australian Government Minister for the Environment and Water (or their delegate) prior to submission of the final draft EIS, and the EIS must include justification for this deviation which details that:

(a) the proposed package demonstrates that a greater benefit to the protected matter is likely to be achieved through increasing the proportion of other compensatory measures in the offsets package or

(b) scientific uncertainty is so high that it isn't possible to determine a direct offset that is likely to benefit the protected matter. For example, this can be the case in some poorly understood ecosystems in the Commonwealth marine environment.

30.108 At a minimum, the Offsets Package must include:

(a) details of the environmental offset/s, including quantification (in hectares if relevant) required for the identified SRIs on relevant protect matters

(b) details of how the environmental offset/s meet the principles of the Offsets Policy, including the Offsets Assessment Guide, in particular how the proposed offset/s will achieve an overall conservation outcome for the Protected Matter/s

(c) if proposed, details on any staging off environmental offset/s, including their indicative timing

(d) details of appropriate offset area/s (including a map) to compensate for the residual impacts on Protected Matters.

30.109 An EPBC Act protected matter must be present in the proposed offset site(s) if it is present in the project site to align with the Offsets Policy.

30.110 Where the proposed offset area(s) supports an environmental offset for multiple MNES, proposed management action(s) for one protected matter must not be detrimental (i.e. have an impact) to other protected matters.

30.111 Where an offset is proposed, with a completed Offsets Assessment Guide calculation, all inputs must be supported by robust scientific evidence and/or supporting evidence (e.g. historical grazing regimes, satellite imagery, statements from landholders).[90]

30.112 Where offset site/s have been nominated as part of the package, the EIS appendices should also include a draft OAMP

30.113 The draft OAMP must be prepared by a suitably qualified ecologist and in accordance with the Australian Government's *Environmental Management Plan Guidelines*[91].

Minimum requirements for a draft Offsets Area Management Plan

30.114 If offset site/s form all or part of the Offsets Strategy, include a draft OAMP as an appendix to the EIS, which demonstrates how the environmental offset(s) compensate for the residual significant impacts of the action on relevant MNES, and/or their habitat in accordance with the principles of the Offsets Policy. The minimum information requirements include (but may not be limited to), the below.

30.115 Describe the offset area(s), including location, size, condition, environmental values present and surrounding land uses.

30.116 Provide baseline data and other supporting evidence that documents the presence of the relevant MNES, and the quality of their habitat within the offset area(s).

30.117 Detail how the offset area(s) will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the relevant MNES.

30.118 Provide specific, committal and measurable environmental outcomes that detail the nature of the conservation gain to be achieved for the relevant MNES, including the creation, restoration, and revegetation of habitat in the proposed offset area(s).

30.119 Provide an assessment of the site habitat quality for the offset area(s). Before undertaking habitat quality assessments, consult with the Office of the Coordinator-General and the relevant Australian Government department regarding the proposed methodology for deriving Habitat Quality scores for the impact and offset sites: The important factor is that both impact and offset sites are assessed using the same approach/scoring mechanism, that the method is suitable and targeted for each species/community, and that the resulting offset proposed is in line with the core principles of the Offsets Policy.

30.120 Demonstrate (with supporting evidence) how the environmental offset(s) compensate for residual significant impacts of the proposed action on relevant MNES, and/or their habitat, in accordance with the principles of the Offsets Policy and all requirements of the Offsets Assessment Guide including:

(a) time over which loss is averted (max. 20 years)

(b) time until ecological benefit

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[90] Australian Government, Department of Sustainability, Environment, Water, Populations and Communities, *Offsets assessment guide*, 2012. Available at **www.dcceew.gov.au/environment/epbc/publications/epbc-act-environmental-offsets-policy**. See also: Australian Government, Department of Sustainability, Environment, Water, Populations and Communities, *How to use the Offsets assessment guide*, 2012; Australian Government, Department of Climate Change, Energy, the Environment and Water, *Offsets assessment guide* (webpage), available at **www.dcceew.gov.au/environment/epbc/approvals/offsets/guidance/offsets-assessment-guide**.

[91] Australian Government, Department of Climate Change, Energy the Environment and Water, *Environmental Management Plan Guidelines*, 2024

(c) risk of loss (%) without offset

(d) risk of loss (%) with offset

(e) confidence in result (%).

30.121 Provide specific offset completion criteria (derived from the site habitat quality) to demonstrate the improvement in the quality of habitat in the offset area(s) over a 20 year period.

30.122 Detail the management actions, and timeframes for implementation, to be carried out to meet the offset completion criteria.

30.123 Include interim milestones that set targets at 5 year intervals for progress towards achieving the offset completion criteria.

30.124 Detail the nature, timing, and frequency of monitoring to inform progress against achieving the 5 yearly interim milestones (the frequency of monitoring must be sufficient to track progress towards each set of milestones, and sufficient to determine whether the offset area(s) are likely to achieve those milestones in adequate time to implement all necessary corrective actions).

30.125 Propose timing for the submission of monitoring reports that provide evidence demonstrating whether the interim milestones have been achieved.

30.126 Provide timing for the implementation of tangible, on-ground corrective actions to be implemented if monitoring activities indicate the interim milestones have not been achieved.

30.127 Provide a risk analysis and a risk management and mitigation strategy for all risks to the successful implementation of the OAMP and timely achievement of the offset completion criteria, including a rating of all initial and post-mitigation residual risks in accordance with a risk assessment matrix.

30.128 Provide evidence of how the management actions and corrective actions take into account relevant approved conservation advice and are consistent with relevant recovery plans and threat abatement plans.

30.129 Provide supporting evidence to justify how proposed management action(s) are additional to the existing requirements of the landholder in managing their land (e.g. weed and pest management requirements under the *Biosecurity Act 2014* (Qld), existing grazing regimes, etc.) as required by the Offsets Policy.

30.130 Include robust scientific evidence (e.g. published research, pilot studies, previously successful projects/programs) to demonstrate the success of proposed measures to create, revegetate, regenerate and/or improve habitat (e.g. tree planting, nest boxes, artificial hollows) in the proposed offset area(s) for the specific MNES (e.g. listed threatened species, ecological community and listed migratory species).

30.131 Provide maps and shapefiles to clearly define the location and boundaries of the offset area(s), accompanied by the offset attributes (e.g. physical address of the offset area(s), coordinates of the boundary points in decimal degrees, the relevant MNES that the environmental offset(s) compensates for, and the size of the environmental offset(s) in hectares).

30.132 Provide details and execution timing of a mechanism to legally secure the proposed offset area(s), such that legal security remains in force over the offset area(s) for at least 20 years to provide enduring protection for the offset area(s) against development incompatible with conservation.

30.133 All proposed management actions, monitoring approach and corrective actions must be written using committed language (e.g. 'will' and 'must').

Other approvals and conditions

30.134 Provide details of any local or state government planning scheme, or plan or policy under any local or state government planning system that deals with the proposed action, including:

(a) what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan, or policy

(b) how the scheme provides for the prevention, minimisation, and management of any relevant impacts

(c) a description of any approval that will or has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the EPBC Act), including any conditions that apply to the action

(d) a statement identifying any additional approval that is required

(e) a description of the monitoring, enforcement, and review procedures that apply, or are proposed to apply, to the action.

Economic and social matters

30.135 Provide an analysis of the economic and social impacts of the action, both positive and negative. The analysis must include:

(a) detail projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies

(b) economic and employment opportunities expected to be generated by the project

(c) economic and social impacts at the local, regional and national level.

30.136 Details of the relevant costs and benefits of identified alternative options to the proposed action (including not proceeding with the action) should also be included with reference to impacts on and benefits to nearby communities and other social and economic considerations.

Consultation

30.137 Provide details of any consultation that has occurred concerning the action, including:

(a) any consultation that has already taken place

(b) proposed consultation about relevant impacts of the action and plans for future consultation throughout the life of the proposed action

(c) if there has been consultation about the proposed action, any documented response to, or result of, the consultation and management measures to address community concerns

(d) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views

(e) documents detailing consultation and agreement, including any relevant statements of consent from land holders or managers (including Registered Native Title Body Corporates).

Indigenous engagement

30.138 Demonstrate how existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action have been identified and include consideration of the potential for managing those impacts.

30.139 Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. This should include:

(a) details regarding the specific Indigenous groups and Traditional Owners consulted and an indication of the areas, both tangible and intangible, of cultural significance across the proposed action footprint

(b) a discussion about how impacts to areas and/or objects of Indigenous cultural significance (tangible and intangible) are avoided, mitigated or minimised.

30.140 Best practice consultation, in accordance with the Interim engaging with First Nations People and Communities on assessments and approvals under the EPBC Act includes:[92]

(a) identifying and acknowledging all relevant affected Indigenous peoples and communities

(b) committing to early engagement

(c) building trust through early and ongoing communication for the duration of the project, including approvals, implementation and future management

(d) setting appropriate timeframes for consultation

(e) demonstrating cultural awareness.

30.141 Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.

30.142 Describe employment, training and business participation opportunities (including Indigenous employment targets) expected to be generated by the project.

Environmental record of person proposing to take the action

30.143 Include details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

(a) the person proposing to take the action

(b) for an action for which a person has applied for a permit, the person making the application.

30.144 If the person proposing to take the action is a corporation—details of the corporation's environmental policy and planning framework.

[92] Australian Government, Department of Climate Change, Energy the Environment and Water, *The Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environmental Protection and Biodiversity Conservation Act 1999* (interim guidance), 2023

Principles of ecologically sustainable development

30.145 Describe how the proposed action meets the principles of ecologically sustainable development, as defined in section 3A of the EPBC Act, which are as follows:

(a) decision making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations

(b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation

(c) the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations

(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making

(e) improved valuation, pricing and incentive mechanisms should be promoted.

Information sources

30.146 For information given in the EIS, the EIS must state:

(a) the source of the information

(b) how recent the information is

(c) how the reliability of the information was tested

(d) what uncertainties (if any) are in the information.

Ecological data

30.147 The MNES chapter must include an appendix of occurrence records (both sightings and evidence of presence) for all listed threatened and migratory species identified during field surveys for the proposed action. This data may be used by the Australian Government to update the relevant species distribution models that underpin the publicly available Protected Matters Search Tool.

30.148 The species occurrence records must be provided in accordance with the *Guidelines for biological survey and mapped data*[93] and presented using the Commonwealth's species observation data template.[94] Provision of Ecological data and any potential sensitivities should be considered against the Commonwealth's Policy on accessing and sharing biodiversity data[95].

Conclusion

30.149 An overall conclusion as to the environmental acceptability of the proposal should be provided, including discussion on compliance with principles of ecologically sustainable development and the objects and requirements of the EPBC Act. Reasons justifying undertaking the proposal in the manner proposed should also be outlined.

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[93] Australian Government, Department of the Environment and Energy, *Guidelines for biological survey and mapped data*, 2018
[94] The species observation data template can be found at **www.dcceew.gov.au/sites/default/files/documents/species-observation-data-template.xlsx**
[95] Australian Government, Department of Climate Change, Energy, the Environment and Water, *Policy on accessing and sharing biodiversity data*, 2024, available at **www.dcceew.gov.au/environment/environmental-information-data/policy-accessing-and-sharing-biodiversity-data**

30.150 Key mitigation proposed, as well as any offsets proposed for any unavoidable residual significant impacts on MNES, should be summarised here.

31. Conclusions and recommendations

31.1 The EIS must include an overall conclusion that sets out:

(a) a summary of the impacts of the project

(b) a description of the approach that the proponent has taken to avoiding, then minimising and mitigating the impacts of the project

(c) a description of the environmental management framework that is proposed to apply to the project.

31.2 The EIS must include recommended conditions for each approval identified in Appendix 2 as being sought as an outcome of the EIS process.

32. Appendices to the EIS

32.1 Appendices are to provide the complete technical evidence used to develop assumptions, statements and findings in the main text of the EIS. No significant issue or matter is to be mentioned for the first time in an appendix; such matters are to be addressed in the main text of the EIS.

32.2 The EIS must also include the following appendices:

(a) a table listing the section of the EIS (to the lowest possible subsection) where each requirement of the TOR is addressed

(b) a list citing all reference material used or relied on in the EIS organised by chapter

(c) a glossary of terms and a list of acronyms and abbreviations

(d) a consolidated commitment register that lists all mitigation measures (including monitoring programs and management plans) proposed in the EIS to protect or enhance environmental values.

Glossary and acronyms

The definitions of terms frequently used in this TOR includes but is not limited to the below.

Table 1 Glossary

Term	Definition
approvals	Means approvals, authorisations, permits, designations, licences or other instruments that approve development or works under State law.
environmental value	Consistent with section 9 of the EP Act means: • a quality or physical characteristic of the environment that is conducive to ecological health or • a quality or physical characteristic of the environment that is conducive to public health, safety or amenity or • a quality or physical characteristic of the environment that contributes to its biological diversity and integrity, intrinsic or

	attributed scientific value or interest, amenity, harmony and sense of community or • another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.
land use planning instruments	Means any applicable local government planning scheme, development scheme for a State development area, land use plan for strategic port land, development schemes or interim land use plans for a priority development area or other land use planning document that regulates development and land use of the site.
matters of national environmental significance or MNES	The nine matters protected by the EPBC Act - world heritage properties, national heritage places, wetlands of international importance ('Ramsar Wetlands'), nationally threatened species and ecological communities, migratory species, Commonwealth marine areas, the Great Barrier Reef Marine Park, nuclear actions (including uranium mining), and a water resource in relation to coal seam gas development and large coal mining development.[96]
matters of state environmental significance or MSES	Means MSES as defined in Queensland Government State Planning Policy, 2017. For the purpose of environmental offsets, prescribed environmental matters – matters of state environmental significance are defined in Schedule 2 of the Environmental Offsets Regulation 2014.
project	Means the project as described in the EIS.
project footprint	Means the physical area occupied by the project and includes all buffers, accesses and temporary areas that support the project.
residual impact	An impact that remains following the implementation of mitigation measures.
sensitive place	As described in the *Noise and vibration – EIS information guideline*[97]; includes a sensitive receptor as defined in the Environmental Protection (Noise) Policy 2019.

Table 2 Acronyms and abbreviations

Acronym/abbreviation	Definition
CHMP	Cultural Heritage Management Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DTMR	Department of Transport and Main Roads
EIS	environmental impact statement
EMP	environmental management plan
EP Act	*Environmental Protection Act 1994*
EP Regulation	Environmental Protection Regulation 2019
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999* (Cth)
ERA	environmentally relevant activity
ESD	ecologically sustainable development
EV	Environmental value
GDA2020	Geocentric Datum of Australia 2020

[96] Australian Government, Department of the Environment, Water, Heritage and Arts, *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance,* 2013, page 2.
[97] Queensland Government, *Noise and vibration – EIS information guideline*, ESR/2020/5305.

GHG	greenhouse gas
GHG Guideline	Queensland Government, *Guideline – Greenhouse gas emissions*, ESR/2024/6819
GTIA	Queensland Government, *Guide to Traffic Impact Assessment*, 2018
MLES	matters of local environmental significance
MNES	matters of national environmental significance
MSES	matters of state environmental significance
OAMP	Offset Area Management Plan
Offsets Policy	EPBC Act Environmental Offsets Policy
PFAS	per-and poly-fluoroalkyl substances
SDAP	State Development Assessment Provisions
SDPWO Act	*State Development and Public Works Organisation Act 1971*
SIA	social impact assessment
SIA Guideline	Queensland Government, *Social impact assessment guideline*, July 2025
SIA Supplementary Material	Queensland Government, *Supplementary material for assessing and managing the social impacts of projects under the Coordinator-General's Social Impact Assessment Guideline July 2025*
SPRAT	Species Profile and Threats
SRI	significant residual impact
TOR	Terms of Reference
WQG	Water Quality Guidelines
WQO	Water Quality Objectives

Appendices

Appendix 1. Formatting

Table A1.1 Requirements for public notification of the draft EIS

Document requirements	
☐	An unsecured version of the draft EIS in PDF format. The PDFs must allow for text to be copied and pasted. The unsecured version is for internal working purposes only and will not be made publicly available.
☐	A secured version of the full draft EIS in PDF, that meets the format and spatial requirements in Table A1.2 and Table A1.3.
☐	High resolution versions of all maps/diagrams/figures used in the draft EIS (excluding technical reports) in JPEG format (minimum resolution 300 dpi). These images are for internal use only, for possible reproduction in the Coordinator-General's evaluation report.
Electronic and printed copies available on request	
☐	Produce a small number of copies of the draft EIS on A4-size paper, with maps and diagrams of A4 or A3 size (discuss the copy and distribution requirements with the Office of the Coordinator-General in the early stages of the EIS process). These hard copies may be required for public viewing locations, such as libraries.
☐	Produce a small number of electronic copies of the draft EIS for public distribution by the proponent on request. Discuss this requirement with the Office of the Coordinator-General, as the requirements may vary depending on the location of the audience.

Table A1.2 Format requirements

Document size	Each PDF file should not be larger than 20 MB and must meet the accessibility requirements described in the 'creating accessible PDFs' guidance information, available at **www.helpx.adobe.com/au/acrobat/using/creating-accessible-pdfs.html**
Format and style	The format and style of the document is to be appropriate for publication on the Internet.
Plans, maps, diagrams and other illustrative material	All plans, maps, diagrams, and other illustrative material is to be provided at a suitable scale and must be included in a PDF format so they are legible and easily understood.
	Plans, maps and diagrams are to be located within the appropriate draft EIS chapter(s), as close as possible to where referenced in the text.
	Plans, maps and diagrams are to be to scale on A4 or A3 size with the scale clearly displayed on each. The plan, map or diagram is also to state the original size (e.g. A1). Each should be in colour, where possible, and have a resolution between 300 and 900 dpi.
Locations	All geographical coordinates throughout the draft EIS are to be provided in latitude and longitude against the Geocentric Datum of Australia 2020 (GDA2020).
Elevations	Elevations detailed in the draft EIS are to be provided to the Australian Height Datum. Plans, maps and diagrams included in the draft EIS should have contours at suitable increments relevant to the scale, location, potential impacts and components of the project.
References	All sources must be appropriately referenced using the Harvard standard. The reference list should include the address of any Internet webpages used as data sources.

Table A1.3 Spatial data file format requirements

Guidelines	Refer to *Guideline – Spatial information submission*[98]
File names	File names are to be descriptive and provided in one of the following formats: • ESRI file geodatabase • (.GDB) – preferred
Data attributes	Provide raw sampling and monitoring data in the form of both pdf and excel spreadsheets as an appendix to the EIS. Provide other numerical data at the request of the administering authority. All data is to contain descriptive attributes or columns, including but not limited to the following: • date data was created • version number • who created the data (i.e. the company name) • datum (e.g. GDA2020) • category or stage.
Projection	Data can be provided in any projection; however, a geographic projection system is preferred. The datum is to be GDA2020.
Metadata	• ISO 19115:2015 • ANZLIC ISO 1.1.

[98] Queensland Government, *Guideline – Spatial information submission*, ESR/2018/4337.

Appendix 2. Project approvals

The EIS must include a comprehensive list of all approvals that are required for the project. Where an exemption from obtaining an approval applies, this must be set out in the table below.

The table below provides a template and examples of approvals that may be required for the project. The proponent must provide a comprehensive list of approvals required for the project, including the detail of any environmentally relevant activities and development approvals. The proponent must nominate whether conditions of an approval are being sought through the EIS process, and if so, whether these would be imposed, stated or recommended conditions.

Table A2.4 Project approvals

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
Commonwealth				
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	EPBC Act referral and approval (if a controlled action)	Australian Government Minister for the Environment and Water (Australian Government Environment Minister) / Department of Climate Change, Energy, the Environment and Water (DCCEEW)	An action that has, will have or is likely to have a significant impact on a matter of national environmental significance, and that the Minister has determined is a controlled action. The proponent should provide confirmation that a referral for the project has or will be made, or that a referral is not required. If a controlled action decision has been made, the proponent must detail: • the controlling provisions • the assessment approach • who the designated proponent is for the EPBC Act.	Approval to be obtained from DCCEEW following release of the Coordinator-General Evaluation Report.

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
EPBC Act Environmental Offsets Policy (2012)	Controlled action offset strategy and offset area management plan (OAMP)	Australian Government Minister for the Environment and Water (Australian Government Environment Minister) / DCCEEW	The proponent must identify if significant impacts on matters of national environmental significance (MNES), which will be determined in the EPBC referral, cannot be mitigated or avoided. The proponent must outline the approach to offset the project's impacts and submit an OAMP.	Yes, recommended conditions for the controlled action offsets. No, approval to be sought separately.
Native Title Act 1993	Indigenous Land Use Agreement or other future act validation process	National Native Title Tribunal / Queensland Department of	The proponent must set out details of the relevant native title parties for the project footprint and the compliance pathway under the *Native Title Act 1993.*	No. Agreement required prior to commencement of construction
State				
Aboriginal Cultural Heritage Act 2003 and the *Torres Strait Islander Cultural Heritage Act 2003*	Cultural Heritage Management Plan	Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism	The proponent must engage in an approved CHMP and demonstrate compliance with the cultural heritage duty of care. Traditional Owners are to be engaged early in project development and CHMP approved prior to project	No.

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
Environmental Protection Act 1994	Environmental authority for an environmentally relevant activity (ERA) for:	Department of the Environment, Tourism, Science and Innovation	The proponent must identify ERA thresholds triggered under the Environmental Protection Regulation 2019, including concurrence and prescribed ERAs.	E.g.: Yes, stated conditions for the environmental authority
Planning Act 2016 Planning Regulation 2017	Development permit for [insert]	Department of State Development, Infrastructure and Planning and Brisbane City Council	The proponent must identify each relevant assessment trigger under the Planning Regulation 2017 or the relevant local government planning scheme. The proponent must identify any referral agency trigger under the Planning Regulation 2017. The proponent must ensure that the EIS contains the information required to support the application.	
Marine Parks Act 2004	Marine Park Permit	Department of the Environment, Tourism, Science and Innovation		
Coastal Protection and Management Act 1995	Allocation of quarry material permit	Department of the Environment, Tourism, Science and Innovation		

Appendix 3. MNES listed threatened species and communities and listed migratory species

Table A3.5 lists the threatened species and ecological communities, Table A3.6 lists the listed migratory species, and Table A3.7 lists the marine species (including whales and other cetaceans) relevant to the controlled action under the EPBC Act, which at a minimum, is to be included in the impact assessment in the MNES chapter.

Note: The lists at Table A3.5, Table A3.6 and Table A3.7 may not be a complete list of threatened species and communities, listed migratory species, and listed or otherwise relevant marine species(respectively) that will or are likely to be impacted by the action. It is the proponent's responsibility to ensure that any listed threatened species and communities and listed migratory species at the time of the controlled action decision, which will or are likely to be impacted by the action are assessed for the Australian Government Minister for the Environment's consideration. Any listing events that occur after the controlled action decision made on 20 September 2024 are not required to be considered in the assessment.

Table A3.5 Listed threatened species and communities (section 18 and section 18A)

Ecological community/species name	Status under the EPBC Act
Curlew Sandpiper (*Calidris ferruginea*)	critically endangered and migratory
Latham's Snipe (*Gallinago hardwickii*)	vulnerable and migratory
Sharp-tailed Sandpiper (*Calidris acuminata*)	vulnerable and migratory
Ruddy Turnstone (*Arenaria interpres*)	vulnerable and migratory
Great Knot (*Calidris tenuirostris*)	vulnerable and migratory
Greater Sand Plover (*Charadrius leschenaultii*)	vulnerable and migratory
Lesser Sand Plover (*Charadrius mongolus*)	endangered and migratory
Asian Dowitcher (*Limnodromus semipalmatus*)	vulnerable and migratory
Nunivak Bar-tailed Godwit (*Limosa lapponica baueri*)	endangered
Black-tailed Godwit (*Limosa limosa*)	endangered and migratory
Grey Plover (*Pluvialis squatarola*)	vulnerable and migratory
Sooty Shearwater (*Ardenna grisea*)	vulnerable, migratory
Common Greenshank (*Tringa nebularia*)	endangered and migratory
Terek Sandpiper (*Xenus cinereus*)	vulnerable and migratory
Red Knot (*Calidris canutus*)	vulnerable and migratory
Australian Fairy Tern (*Sternula nereis nereis*)	vulnerable
Australian Painted Snipe (*Rostratula australis*)	endangered
White's Seahorse (*Hippocampus whitei*)	endangered
Leatherback Turtle (*Dermochelys coriacea*)	endangered and migratory
Loggerhead Turtle (*Caretta caretta*)	endangered and migratory
Green Turtle (*Chelonia mydas*)	vulnerable and migratory
Hawksbill Turtle (*Eretmochelys imbricata*)	vulnerable and migratory
Olive Ridley Turtle (*Lepidochelys olivacea*)	endangered and migratory
Flatback Turtle (*Natator depressus*)	vulnerable and migratory

Ecological community/species name	Status under the EPBC Act
Sei Whale (*Balaenoptera borealis*)	vulnerable and migratory
Fin Whale (*Balaenoptera physalus*)	vulnerable and migratory
Southern Right Whale (*Eubalaena australis*)	endangered, migratory (as *Balaena glacialis australis)*
Grey Nurse Shark (*Carcharias taurus*) (east coast population)	critically endangered and migratory (as *Carcharias taurus*)
Eastern Curlew (*Numenius madagascariensis*)	critically endangered and migratory
White Shark (*Carcharodon carcharias*)	vulnerable, migratory (as *Carcharodon carcharias*)
Black Rockcod (*Epinephelus daemelii*)	vulnerable
Water Mouse (*Xeromys myoides*)	vulnerable
Sand Yabby (*Cherax robustus*)	vulnerable
Non-parasitic Lamprey (*Mordacia praecox*)	endangered
Blue Whale (*Balaenoptera musculus*)	endangered, migratory
Whale Shark (*Rhincodon typus*)	vulnerable, migratory
Hairy-joint Grass (*Arthraxon hispidus*)	vulnerable (as *Arthraxon hispidus*)
Lowland Rainforest of Subtropical Australia	critically endangered
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	endangered
Subtropical and Temperate Coastal Saltmarsh	vulnerable
Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community	endangered

Table A3.6 Listed migratory species (sections 20 and 20A)

Migratory species name	Status under the EPBC Act
Green Turtle (*Chelonia mydas*)	vulnerable and migratory
Loggerhead Turtle (*Caretta caretta*)	endangered and migratory
Leatherback Turtle (*Dermochelys coriacea*)	endangered, migratory
Eastern Curlew (*Numenius madagascariensis*)	critically endangered and migratory
Common Noddy (*Anous stolidus*)	migratory
Double-banded Plover (*Charadrius bicinctus*)	migratory
Curlew Sandpiper (*Calidris ferruginea*)	critically endangered and migratory
Latham's Snipe (*Gallinago hardwickii*)	vulnerable and migratory
Sharp-tailed Sandpiper (*Calidris acuminata*)	vulnerable and migratory
Ruddy Turnstone (*Arenaria interpres*)	vulnerable and migratory
Great Knot (*Calidris tenuirostris*)	vulnerable and migratory
Greater Sand Plover (*Charadrius leschenaultii*)	vulnerable and migratory
Lesser Sand Plover (*Charadrius mongolus*)	endangered and migratory
Asian Dowitcher (*Limnodromus semipalmatus*)	vulnerable and migratory
Black-tailed Godwit (*Limosa limosa*)	endangered and migratory
Grey Plover (*Pluvialis squatarola*)	vulnerable and migratory

Migratory species name	Status under the EPBC Act
Common Greenshank (*Tringa nebularia*)	endangered and migratory
Terek Sandpiper (*Xenus cinereus*)	vulnerable and migratory
Red Knot (*Calidiris canutus*)	vulnerable and migratory
Hawksbill Turtle (*Eretmochelys imbricata*)	vulnerable and migratory
Olive Ridley Turtle (*Lepidochelys olivacea*)	endangered and migratory
Flatback Turtle (*Natator depressus*)	vulnerable and migratory
Sei Whale (*Balaenoptera borealis*)	vulnerable and migratory
Fin Whale (*Balaenoptera physalus*)	vulnerable and migratory
Southern Right Whale (*Eubalaena australis*)	endangered, migratory (as *Balaena glacialis australis)*
Grey Nurse Shark (*Carcharias taurus*) (east coast population)	critically endangered and migratory (as *Carcharias taurus*)
Broad-billed Sandpiper (*Limicola falcinellus*)	migratory
Bar-tailed Godwit (*Limosa lapponica*)	migratory
Little Curlew (*Numenius minutus*)	migratory
Whimbrel (*Numenius phaeopus*)	migratory
Pacific Golden Plover (*Pluvialis fulva*)	migratory
Oriental Plover (*Charadrius veredus*)	migratory
Ruff (*Calidris pugnax*)	migratory
Grey-tailed Tattler (*Tringa brevipes*)	migratory
Wandering Tattler (*Tringa incana*)	migratory
Marsh Sandpiper (*Tringa stagnatilis*)	migratory
Common Sandpiper (*Actitis hypoleucos*)	migratory
Swinhoe's Snipe (*Gallinago megala*)	migratory
Sanderling (*Calidris alba*)	migratory
Red Knot (*Calidiris canutus*)	vulnerable and migratory
Pectoral Sandpiper (*Calidiris melanotos*)	migratory
Red-necked Stint (*Calidris ruficollis*)	migratory
Little Tern (*Sternula albifrons*)	migratory
Bryde's Whale (*Balaenoptera edeni*)	migratory
Killer Whale (*Orcinus orca*)	migratory
Giant Manta Ray (*Mobula birostris*)	migratory
Reef Manta Ray (*Mobula alfredi*)	migratory
Porbeagle (*Lamna nasus*)	migratory
Humpback Whale (*Megaptera novaeangliae*)	migratory
Australian Snubfin Dolphin (*Orcaella heinsohni*)	migratory
Australian Humpback Dolphin (*Sousa sahulensis*)	migratory
Dugong (*Dugong dugon*)	migratory
Omura's Whale (*Balaenoptera omurai*)	migratory
Sooty Shearwater (*Ardenna grisea*)	vulnerable, migratory,

Migratory species name	Status under the EPBC Act
White Shark (*Carcharodon carcharias*)	vulnerable, migratory (as *Carcharodon carcharias*)
Blue Whale (Balaenoptera musculus)	vulnerable, migratory
Whale Shark (*Rhincodon typus*)	vulnerable, migratory

Table A3.7 – Listed Marine Species, Whales, and other Cetaceans

Marine species name	Status under the EPBC Act
Eastern Curlew (*Numenius madagascariensis*)	critically endangered, migratory, marine
Curlew Sandpiper (*Calidris ferruginea*)	critically endangered, migratory, marine
Lesser Sand Plover (*Charadrius mongolus*)	endangered, migratory, marine
Black-tailed Godwit (*Limosa limosa*)	endangered, migratory, marine
Australian Painted Snipe (*Rostratula australis*)	endangered, marine
Common Greenshank (*Tringa nebularia*)	endangered, migratory, marine
Sooty Shearwater (*Ardenna grisea*)	vulnerable, migratory, marine (as *Puffinus griseus*)
Ruddy Turnstone (*Arenaria interpres*)	vulnerable, migratory, marine
Sharp-tailed Sandpiper (*Calidris acuminata*)	vulnerable, migratory, marine
Red Knot (*Calidris canutus*)	vulnerable, migratory, marine
Great Knot (*Calidris tenuirostris*)	vulnerable, migratory, marine
Greater Sand Plover (*Charadrius leschenaultii*)	vulnerable, migratory, marine
Latham's Snipe (*Gallinago hardwickii*)	vulnerable, migratory, marine
Asian Dowitcher (*Limnodromus semipalmatus*)	vulnerable, migratory, marine
Grey Plover (*Pluvialis squatarola*)	vulnerable, migratory, marine
Terek Sandpiper (*Xenus cinereus*)	vulnerable, migratory, marine
White's Seahorse (*Hippocampus whitei*)	endangered, marine
Leatherback Turtle (*Dermochelys coriacea*)	endangered, migratory, marine
Olive Ridley Turtle (*Lepidochelys olivacea*)	endangered, migratory, marine
Loggerhead Turtle (*Caretta caretta*)	endangered, migratory, marine
Flatback Turtle (*Natator depressus*)	vulnerable, migratory, marine
Green Turtle (*Chelonia mydas*)	vulnerable, migratory, marine
Hawksbill Turtle (*Eretmochelys imbricata*)	vulnerable, migratory, marine
Common Noddy (*Anous stolidus*)	migratory, marine
Whimbrel (*Numenius phaeopus*)	migratory, marine
Common Sandpiper (*Actitis hypoleucos*)	migratory, marine
Marsh Sandpiper (*Tringa stagnatilis*)	migratory, marine
Pacific Golden Plover (*Pluvialis fulva*)	migratory, marine
Sanderling (*Calidris alba*)	migratory, marine
Double-banded Plover (*Charadrius bicinctus*)	migratory, marine

Marine species name	Status under the EPBC Act
Bar-tailed Godwit (*Limosa lapponica*)	migratory, marine
Oriental Plover (*Charadrius veredus*)	migratory, marine
Pectoral Sandpiper (*Calidris melanotos*)	migratory, marine
Grey-tailed Tattler (*Tringa brevipes*	migratory, marine
Red-necked Stint (*Calidris ruficollis*)	migratory, marine
Ruff (*Calidris pugnax*)	migratory, marine (as *Philomachus pugnax*)
Swinhoe's Snipe (*Gallinago megala*)	migratory, marine
Broad-billed Sandpiper (*Limicola falcinellus*)	migratory, marine
Wandering Tattler (*Tringa incana*)	migratory, marine
Little Curlew (*Numenius minutus*)	migratory, marine
Little Tern (*Sternula albifrons*)	migratory, marine (as *Sterna albifrons*)
Bryde's Whale (*Balaenoptera edeni*)	migratory, whales and other cetaceans
Killer Whale (*Orcinus orca*)	migratory, whales and other cetaceans
Humpback Whale (*Megaptera novaeangliae*)	migratory, whales and other cetaceans
Dugong (*Dugong dugon*)	migratory, marine
Australian Snubfin Dolphin (*Orcaella heinsohni*)	migratory, whales and other cetaceans
Australian Humpback Dolphin (*Sousa sahulensis*)	migratory, whales and other cetaceans
Omura's Whale *(Balaenoptera omurai)*	migratory, whales and other cetaceans
Red-capped Plover (*Charadrius ruficapillus*)	marine
Red-necked Avocet (*Recurvirostra novaehollandiae*)	marine
Magpie Goose (*Anseranas semipalmata*)	marine
Pied Stilt (*Himantopus himantopus*)	marine
Cattle Egret (*Bubulcus ibis*)	marine
A sea krait (*Laticauda laticaudata*)	marine
Eastern Turtle-headed Sea Snake (*Emydocephalus annulatus*)	marine
Horned Sea Snake (*Hydrophis peronii*)	marine
Yellow-bellied Sea Snake (*Hydrophis platura*)	marine
Elegant Sea Snake (*Hydrophis elegans*)	marine
Tryon's Pipefish (*Campichthys tryoni*)	marine
Girdled Pipefish (*Festucalex cinctus*)	marine
Fijian Banded Pipefish (*Corythoichthys amplexus*)	marine
Tiger Pipefish (*Filicampus tigris*)	marine
Orange-spotted Pipefish (*Corythoichthys ocellatus*)	marine

Marine species name	Status under the EPBC Act
Ornate Ghostpipefish (*Solenostomus paradoxus*)	marine
Double-end Pipehorse (*Syngnathoides biaculeatus*)	marine
Beady Pipefish (*Hippichthys penicillus*)	marine
Spotted Seahorse (*Hippocampus kuda*)	marine
Flat-face Seahorse (*Hippocampus planifrons*)	marine
White Shark (*Carcharodon carcharias*)	vulnerable, migratory, marine (as *Carcharodon carcharias*)
Blue Whale (*Balaenoptera musculus*)	endangered, migratory, whales and other cetaceans
Minke Whale (*Balaenoptera acutorostrata*)	whales and other cetaceans
Bottlenose Dolphin (*Tursiops truncatus s. str.)*	whales and other cetaceans
Risso's Dolphin (*Grampus griseus*)	whales and other cetaceans
Common Dolphin (*Delphinus delphis*)	whales and other cetaceans
Indian Ocean Bottlenose Dolphin (*Tursiops aduncus*)	whales and other cetaceans

Appendix 4. MNES – controlling provisions

If the project triggers either World Heritage Properties (sections 12 and 15A) or National Heritage Places (sections 15B and 15C), amend and insert Table A4.7 as indicated in section 30 of the TOR.

If the project triggers Ramsar Wetlands (sections 16 and 17B), amend and insert Table A4.8 as indicated in section 30 of the TOR.

Table A4.8 Ramsar Wetlands

Ramsar wetlands (sections 16 & 17B) The primary purpose of management of a declared Ramsar wetland must be, in accordance with the Ramsar Convention, to describe and maintain the ecological character of the wetland by promoting the conservation of the wetland and wise and sustainable use of the wetland for the benefit of humanity in a way that is compatible with the maintenance of the natural properties of the ecosystem.
Similar to listed threatened species and communities, the assessment of the Moreton Bay Ramsar site in the MNES chapter is to have the following structure and detail: • description • survey efforts and outcomes • impact assessment • avoidance, mitigation and management • significant impact assessment • statutory requirements.
Description
Identify and provide a comprehensive description of its ecological character and state the characteristics that make the Moreton Bay Ramsar site a wetland of international importance under the Ramsar Convention. Describe the values of the wetland that are likely to be impacted by the action; include and refer to the criteria for identifying wetlands of international importance.
The MNES chapter is to describe the current pressures on the Moreton Bay Ramsar site and the ecological characteristics and surrounds in the context of (but not limited to): • erosion, sediments and salinity (i.e. turbidity) • indirect and facilitated impacts of increased intensification and expansion of agriculture and development • changes in hydrological regime (i.e. connected groundwater and wetland systems, flow changes, hydrological connectivity, increased flooding) • change to the physicochemical status of the wetland (e.g. nutrients, other chemicals) • habitat modification/loss and/or disruption of lifecycle of listed species • introduction or establishment of pest species.
Overall, the MNES chapter is to demonstrate how, with detailed supporting justification, the integrity of the ecological character of the wetland will be maintained throughout the undertaking of the proposed action, including operation.
In consultation with relevant regulatory agencies, identify the key components, processes and services (CPS) aligned to each Ramsar Criteria.
The description of the environmental values within and surrounding the Moreton Bay Ramsar site is to be supported by baseline data derived from field surveys, scientific evidence derived from research papers and expert advice, public consultation, other approval processes, and information collected from desktop research (e.g. Commonwealth and State government databases/websites [including CSIRO], universities, outcomes of previous field surveys, modelling, scientific investigations, etc.).
Survey efforts and outcomes
Provide details of the scope, methodology, timing and effort of field surveys (undertaken by qualified experts with demonstrated experienced in detecting species and ecological communities

which depend on the Moreton Bay Ramsar Wetland for all or part of their lifecycles) within, in the vicinity of and downstream of the proposed action area. Provide details of:

- how surveys were undertaken in accordance with relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys
- if relevant, the justification for divergence from relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys
- state the total number of records (individuals and evidence of presence) for those species that contribute to the ecological character of the Ramsar site as well as listed threatened species, migratory species, and ecological communities in and within the vicinity, (upstream and downstream) of the proposed action area.

Impacts assessment

Discuss the relevant direct, indirect, facilitated and cumulative impacts of the that endanger the ecological character and/or integrity of the Moreton Bay Ramsar site including, but not limited to:

- nutrient and sediment from catchment runoff
- pesticide and herbicide from catchment runoff
- other pollutants (e.g. pharmaceuticals, chemicals, heavy metals) from catchment runoff)
- hydrological regime modifications
- barriers to water flow
- modification of coastal habitats
- increase of erosional and depositional processes from alteration to hydrological regime
- known or potential pest species being introduced or established (including existing pest species being spread or increased in numbers)
- impacts on listed threatened and migratory species, and marine species
- greenhouse gas emissions.

Avoidance, mitigation and management

Describe all relevant measures proposed to avoid, mitigate and manage potential impacts on the Moreton Bay Ramsar site a wetland of international importance including but not limited to:

(a) mitigation measures to be implemented throughout construction

(b) mitigation measures to be implemented during operation.

Significant impact assessment

After consideration of proposed avoidance, mitigation and management measures, provide an assessment of the likelihood of residual significant impacts on the ecological character of the Moreton Bay Ramsar site. The significant impact assessment must consider the *Significant impact guidelines.*[99]

The MNES chapter must provide a clear and definitive conclusion (i.e. 'likely' or 'unlikely'), including the extent and nature, of residual significant impacts on the ecological characteristics of the Moreton Bay Ramsar site to align with the EPBC Offsets Policy.

Overall, the MNES chapter must demonstrate how, with detailed supporting justification, the integrity of the ecological character of the Moreton Bay Ramsar site will be maintained throughout the undertaking of the proposed action.

Statutory requirements

Demonstrate that the project will not be inconsistent with:

- the Ramsar Convention
- the Australian Ramsar management principles
- if a plan for managing the Moreton Bay Ramsar site has been prepared in accordance with section 333 of the EPBC Act – that plan.

[99] Australian Government, Department of the Environment, Water, Heritage and Arts, *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance,* 2013 (or subsequent revision).

Appendix 5. Documents relevant to assessment of MNES

Listing advice, conservation advice, and recovery plans

Listing advice

- Commonwealth Listing Advice on Lowland Rainforest of Subtropical Australia, 2011, available at **http://www.environment.gov.au/biodiversity/threatened/communities/pubs/101-listing-advice.pdf**
- Appendices to Commonwealth Listing Advice on Lowland Rainforest of Subtropical Australia, 2011, available at **http://www.environment.gov.au/biodiversity/threatened/communities/pubs/101-listing-advice-appendices.pdf**
- Commonwealth Listing Advice on *Carcharias taurus*, Grey Nurse Shark (East Coast population), 2001, available at **http://www.environment.gov.au/biodiversity/threatened/species/c-taurus.html**
- Commonwealth Listing Advice on *Dermochelys coriacea*, 2009, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/1768-listing-advice.pdf**
- Commonwealth Listing Advice on *Epinephelus daemelii* (Black Rock-cod), 2012, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/68449-listing-advice.pdf**
- Commonwealth Listing Advice on *Rhincodon typus* (Whale shark), 2001, available at **http://www.environment.gov.au/biodiversity/threatened/species/r-typus.html**
- Commonwealth Listing Advice on *Rostratula australis* (Australian Painted Snipe), 2013, **http://www.environment.gov.au/biodiversity/threatened/species/pubs/77037-listing-advice.pdf**
- Commonwealth Listing Advice on *Sternula nereis nereis* (Fairy Tern), 2011, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/82950-listing-advice.pdf**

Conservation advice

- Approved Conservation Advice for the Lowland Rainforest of Subtropical Australia,2011, available at **http://www.environment.gov.au/biodiversity/threatened/communities/pubs/101-conservation-advice.pdf**
- Approved Conservation Advice for *Arthraxon hispidus* (Hairy-joint Grass), 2008, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/9338-conservation-advice.pdf**
- Approved Conservation Advice for *Dermochelys coriacea* (Leatherback Turtle), 2008 available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/1768-conservation-advice.pdf**
- Approved Conservation Advice for *Epinephelus daemelii* (black cod), 2012, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/68449-conservation-advice.pdf**

- Approved Conservation Advice for *Rostratula australis* (Australian painted snipe), 2013, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/77037-conservation-advice.pdf**
- Approved Conservation Advice for *Sternula nereis nereis* (Fairy Tern), 2011, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/82950-conservation-advice.pdf**
- Conservation advice (incorporating listing advice) for the Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community, 2018, available at **http://www.environment.gov.au/biodiversity/threatened/communities/pubs/141-conservation-advice.pdf**
- Conservation Advice for Subtropical and Temperate Coastal Saltmarsh, 2013, available at **http://www.environment.gov.au/biodiversity/threatened/communities/pubs/118-conservation-advice.pdf**
- Conservation Advice for the Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland , 2021, available at **http://www.environment.gov.au/biodiversity/threatened/communities/pubs/171-conservation-advice.pdf**
- Conservation Advice for *Ardenna grisea* (sooty shearwater), 2023, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/82651-conservation-advice-21122023.pdf**
- Conservation Advice for *Arenaria interpres* (ruddy turnstone), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/872-conservation-advice-05012024.pdf**
- Conservation Advice for *Calidris acuminata* (sharp-tailed sandpiper), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/874-conservation-advice-05012024.pdf**
- Conservation Advice for *Calidris canutus* (red knot), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/855-conservation-advice-05012024.pdf**
- Conservation Advice for *Calidris ferruginea* (curlew sandpiper), 2023, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/856-conservation-advice-18122023.pdf**
- Conservation Advice for *Calidris tenuirostris* (great knot), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/862-conservation-advice-05012024.pdf**
- Conservation Advice for *Charadrius leschenaultii* (greater sand plover), 2023, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/877-conservation-advice-18122023.pdf**
- Conservation Advice for *Gallinago hardwickii* (Latham's snipe), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/863-conservation-advice-05012024.pdf**
- Conservation Advice for *Limnodromus semipalmatus* (Asian dowitcher), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/843-conservation-advice-05012024.pdf**
- Conservation Advice for *Limosa lapponica baueri* (Alaskan bar-tailed godwit), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/86380-conservation-advice-05012024.pdf**

- Conservation Advice for *Limosa limosa* (black-tailed godwit), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/845-conservation-advice-05012024.pdf**
- Conservation Advice for *Mordacia praecox* (precocious lamprey), 2023, available at, **http://www.environment.gov.au/biodiversity/threatened/species/pubs/81530-conservation-advice-25032023.pdf**
- Conservation Advice for *Numenius madagascariensis* (far eastern curlew), 2023, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/847-conservation-advice-18122023.pdf**
- Conservation Advice for *Orcaella heinsohni* (Australian snubfin dolphin), 2025, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/81322-conservation-advice-05032025.pdf**
- Conservation Advice for *Pluvialis squatarola* (grey plover), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/865-conservation-advice-05012024.pdf**
- Conservation Advice for *Sousa sahulensis* (Australian humpback dolphin), 2025, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/87942-conservation-advice-05032025.pdf**
- Conservation Advice for *Sternula albifrons* (little tern), 2025, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/82849-conservation-advice-05032025.pdf**
- Conservation Advice for *Tringa nebularia* (common greenshank), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/832-conservation-advice-05012024.pdf**
- Conservation Advice for *Xenus cinereus* (terek sandpiper), 2024, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/59300-conservation-advice-05012024.pdf**
- Conservation Advice for *Xeromys myoides* (Water Mouse), 2021, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/66-conservation-advice-29092021.pdf**
- Conservation Advice *Balaenoptera borealis* sei whale, 2015, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/34-conservation-advice-01102015.pdf**
- Conservation Advice *Balaenoptera physalus* fin whale, 2015, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/37-conservation-advice-01102015.pdf**
- Conservation Advice *Charadrius mongolus* Lesser sand plover, 2016, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/879-conservation-advice-05052016.pdf**
- Conservation Advice *Cherax robustus* sand yabby, 2023, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/91922-conservation-advice-07092023.pdf**
- Conservation Advice *Hippocampus whitei* White's Seahorse, 2020, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/66240-conservation-advice-12122020.pdf**
- Conservation Advice *Rhincodon typus* whale shark, 2015, available at **http://www.environment.gov.au/biodiversity/threatened/species/pubs/66680-conservation-advice-01102015.pdf**

Recovery plans

- Conservation Management Plan for the Blue Whale - A Recovery Plan under the Environment Protection and Biodiversity Conservation Act 1999, 2015, available at **http://www.environment.gov.au/biodiversity/threatened/publications/recovery/blue-whale-conservation-management-plan**
- National Recovery Plan for the Australian Fairy Tern (*Sternula nereis nereis*), 2020, available at **http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/fairy-tern-2022**
- National Recovery Plan for the Australian Painted Snipe (*Rostratula australis*), 2022, available at **http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/australian-painted-snipe-2022**
- National Recovery Plan for the Southern Right Whale *Eubalaena australis*, 2024, available at **http://www.dcceew.gov.au/environment/biodiversity/threatened/recovery-plans/southern-right-whale**
- National Recovery Plan for the Water Mouse (*Xeromys myoides*), 2022, available at **http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/water-mouse-2023**
- Recovery Plan for Marine Turtles in Australia, 2017, available at **http://www.environment.gov.au/marine/publications/recovery-plan-marine-turtles-australia-2017**
- Recovery Plan for the Grey Nurse Shark (*Carcharias taurus*), 2014, available at **http://www.environment.gov.au/resource/recovery-plan-grey-nurse-shark-carcharias-taurus**
- Issues Paper for the Grey Nurse Shark (*Carcharias taurus*), 2014, available at **http://www.environment.gov.au/resource/recovery-plan-grey-nurse-shark-carcharias-taurus**
- Conservation Management Plan for the Southern Right Whale, 2011, available at **https://www.dcceew.gov.au/environment/biodiversity/threatened/recovery-plans/conservation-management-plan-southern-right-whale-recovery-plan-2011-2021**
- Whale Shark (*Rhincodon typus*) Recovery Plan 2005-2010, 2005, available at **https://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/whale-shark-rhincodon-typus-recovery-plan-2005-2010**
- Recovery Plan for the White Shark (*Carcharodon carcharias*), 2013, available at **http://www.environment.gov.au/biodiversity/threatened/recovery-plans/recovery-plan-white-shark-carcharodon-carcharias**

Conservation plans

- Blue Whale Conservation Management Plan , 2015, available at **https://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/blue-whale-conservation-management-plan**
- Guidance on key terms within the Blue Whale Conservation Management Plan, 2021, available at **https://www.dcceew.gov.au/environment/epbc/publications/guidance-key-terms-blue-whale-conservation-management-plan**
- Wildlife Conservation Plan for Migratory Shorebirds, 2015, available at **http://www.environment.gov.au/biodiversity/publications/wildlife-conservation-plan-migratory-shorebirds-2016**
- Wildlife Conservation Plan for Seabirds, 2020, available at **http://www.dcceew.gov.au/environment/biodiversity/publications/wildlife-conservation-plan-seabirds-2022**

Survey and industry guidelines

Survey guidelines

- National Guidelines for the Survey of Cetaceans, Marine Turtles and the Dugong, 2024, available at **https://www.dcceew.gov.au/environment/epbc/publications/national-guidelines-survey-cetaceans-marine-turtles-dugong**
- Survey Guidelines for Australia's threatened birds , 2010, available at **https://www.dcceew.gov.au/environment/epbc/publications/survey-guidelines-australias-threatened-birds**
- Survey guidelines for Australia's threatened fish. EPBC Act survey guidelines 6.4, 2011, available at **http://www.environment.gov.au/epbc/publications/threatened-fish.html**
- Survey guidelines for Australia's threatened mammals. EPBC Act survey guidelines 6.5, 2011, available at **http://www.environment.gov.au/epbc/publications/threatened-mammals.html**
- Survey Guidelines for Australia's threatened reptiles, 2011, available at **https://www.dcceew.gov.au/environment/epbc/publications/survey-guidelines-australias-threatened-reptiles**

Industry guidelines and advice

- Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species, 2015, available at **https://www.dcceew.gov.au/environment/epbc/publications/shorebirds-guidelines**
- Referral guideline for the vulnerable water mouse *Xeromys myoides*, 2015, available at **https://www.dcceew.gov.au/environment/epbc/publications/referral-guideline-vulnerable-water-mouse**
- National Light Pollution Guidelines for Wildlife, 2023, available at **https://www.dcceew.gov.au/environment/biodiversity/publications/national-light-pollution-guidelines-wildlife**

Key threatening processes

Key threatening processes

- Injury and fatality to vertebrate marine life caused by ingestion of, or entanglement in, harmful marine debris, 2003, available at **http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=14**
- Land clearance, 2001, available at **http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=9**
- Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants, 2010, available at, **http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=19**
- Loss of climatic habitat caused by anthropogenic emissions of greenhouse gases, 2001, available at **http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=7**
- Novel biota and their impact on biodiversity, 2013, available at **http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=20**
- Predation by feral cats, 2000, available at **http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=3**
- Predation by the European red fox (*Vulpes vulpes*), 2000, available at **http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=1**

- The reduction in the biodiversity of Australian native fauna and flora due to the red imported fire ant, *Solenopsis invicta* (fire ant), 2003, available at **http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=13**

Threat abatement plans

- Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi*, 2018, available at **http://www.environment.gov.au/biodiversity/threatened/publications/threat-abatement-plan-disease-natural-ecosystems-caused-phytophthora-cinnamomi-2018**
- Threat abatement plan for predation by feral cats 2024, 2024, available at **http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats**
- Threat abatement plan for predation by the European red fox, 2008, available at **http://www.environment.gov.au/biodiversity/threatened/publications/tap/predation-european-red-fox**
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