GUIDELINES FOR THE CONTENT OF A PUBLIC ENVIRONMENT REPORT

Environment Protection and Biodiversity Conservation Act 1999

Gateway Motorway (Bracken Ridge to Pine River) Upgrade

Department of Transport and Main Roads

Date: 25 June 2024

EPBC 2024/09800

Contents

PREAMBLE

The Queensland Department of Transport and Main Roads proposes to undertake clearing of vegetation, topsoil stripping, earthworks, demolition, and construction for the upgrade of a 5.8 km stretch of the existing Gateway Motorway and associated infrastructure, from Depot Road to Bruce Highway, Backen Ridge and Bald Hills, Queensland.

The action was referred under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) to the Minister for the Environment and a valid referral was received on 18 April 2024.

The Delegate for the Minister determined on 20 May 2024 that approval is required as the action has the potential to have a significant impact on the following matters of national environmental significance (MNES) that are protected under Part 3 of the EPBC Act:

- The ecological character of a declared Ramsar wetland (sections 16 and 17B)
- Listed threatened species and communities (section 18 and 18A)
- Listed migratory species (sections 20 and 20A)

Following the provision of preliminary information, the delegate of the Minister determined, 20 May 2024, that the proposed activity be assessed by a Public Environment Report (**PER**).

Information about the action and its relevant impacts, as outlined below, is to be provided in the PER. This information should be sufficient to allow the Minister 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.

1. GENERAL ADVICE ON GUIDELINES

1.1. General Content

The PER must be written so that any conclusions reached can be independently assessed and:

a. Contain sufficient information to allow the Minister (or delegate) to make an informed decision on whether to approve, under Part 9 of the EPBC Act, the taking of the action for the purposes of each controlling provision.

b. Contain sufficient information to enable interested stakeholders to understand the environmental consequences of the proposed development on matters of national environmental significance (MNES).

c. Ensure all work and conclusions:
    i. are presented clearly, unambiguously, succinctly and objectively
    ii. are evidence based, and the evidence is provided
    iii. are supported by peer reviewed literature, with references provided, or expert opinion.

iv. use scientifically robust methodologies appropriate to the purpose, including a justification of why the methodology/s was selected
v. 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
vi. are supported by maps, plans, diagrams, baseline surveys or other descriptive detail
vii. maps must clearly identify development footprints, buffer zones, and any 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
viii. use active language and state clear commitments (e.g., 'must' and 'will') where appropriate, particularly in describing avoidance, mitigation and management actions and outcomes
ix. demonstrate the use of the most up to date statutory documents* including Approved Listing Advice(s), Conservation Advice(s), Recovery Plan(s), Threat Abatement Plan(s) or comparable policy guidelines, and approved survey methods
x. demonstrate the use of up-to-date; policy guidelines, scientific methods, information, data and species-relevant survey methods; and
xi. appropriately reference all sources using the Harvard standard. The reference list must include the address of any internet pages used as data sources.

d. Relevant documents include, but are not limited to, the resources found in the Species Profile and Threats Database (SPRAT database) and EPBC Act publications and resources.

e. The PER should take into consideration the EPBC Act Significant Impact Guidelines that can be downloaded from the following web site: http://www.environment.gov.au/epbc/guidelines-policies.html.

f. Please ensure that any additional supporting documentation and studies, reports or literature not normally available to the public from which information has been extracted be made available at appropriate locations during the period of public display of the PER.

g. Be able to read as a stand-alone document and must include summaries of all relevant information referenced or provided in appendices. Complex or detailed technical information, studies or investigations necessary to support the main text should be attached to the main document as appendices.

h. The level of analysis and detail in the PER 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.

i. Please note that the proponent is required to make the draft PER available for a period of public comment. Specific instructions regarding publication requirements will be provided as part of the Minister's direction to publish. If it is necessary to make use of material that is considered to be of a confidential nature, the Proponent should consult with the Department on the preferred presentation of that material, before submitting it to the Minister for approval for publication.

j. The Proponent should ensure that the PER assesses compliance of the action with principles of Ecological Sustainable Development as set out in the EPBC Act, and the objects of the Act at Attachment 1. A copy of Schedule 4 of the EPBC Regulations, *Matters to be addressed by draft public environment report and environmental impact statement* is at Attachment 2.

1.2. Format and Style

a. The PER should comprise three elements, namely:

   i. the executive summary
   ii. the main text of the document
   iii. appendices containing detailed technical information and other information that can be made publicly available.

b. The guidelines have been set out in a manner that may be adopted as the format for the PER. This format need not be followed where the required information can be more effectively presented in an alternative way. However, each of the elements must be addressed to meet the requirements of the EPBC Act and Regulations.

c. Include a reference table indicating where to find information and links within the document to relevant sections.

d. Where relevant information was provided in the referral, please incorporate this information as necessary in the PER. The PER 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 of any Internet "web" pages used as data sources.

e. The main text of the PER should include a list of abbreviations, a glossary of terms and appendices containing:

   i. a copy of these guidelines
   ii. a list of persons and agencies consulted during the PER process
   iii. contact details for the Proponent; and
   iv. the names of the persons involved in preparing the PER and work done by each of these persons.

f. Maps, diagrams and other illustrative material should be included in the PER. The PER should be produced on A4 size paper capable of being photocopied, with maps and diagrams on A4 or A3 size and in colour where possible.

g. The Proponent should consider the format and style of the document appropriate for publication on the Internet. The capacity of the website to store data and display the material

may have some bearing on how the document is constructed.

2. INFORMATION TO BE PROVIDED IN THE DRAFT PER

The content below has been determined in accordance with the requirements under schedule 4 of the EPBC Regulations – Matters to be assessed by draft public environment report and environment impact statement (see Attachment 2).

Some of the information required below may have been provided as part of the EPBC referral. However, the PER is a standalone document and must address the requirements of the EPBC regulations. Specific content requirements have been included under each section.

In order to adequately assess the nature, severity and extent of likely impacts, and the adequacy of any proposed avoidance, mitigation and/or compensatory (offset) measures, relevant to the matters listed in the preamble, the following information is required.

2.1. Description of the Action

a. The PER must provide the background and context of the action including (but not limited to):
    i. the title of the action
    ii. the full name and postal address of the designated Proponent
    iii. a clear outline of the objective of the action
    iv. the location of the action
    v. the background to the development of the action
    vi. how the action relates to any other actions (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.
b. The current status of the action; and
c. The consequences of not proceeding with the action.

2.2. Project Details

This should provide the background and context of the action including the following:

a. All construction, operational and ongoing maintenance of the action should be described in detail. This should 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.
b. A description of the anticipated start and completion dates of all actions such as the extent, staging and timing of clearing undertaken over the construction period.
c. The description of the action must also include details on how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts.
d. The location, extent, and size (in hectares) of the total proposed action footprint, disturbance/impact footprint, and of any adjoining areas (beyond the impact area) that may be

subject to indirect or facilitated impacts, including edge effects, noise, light spill, vehicle access, changes to surface and groundwater quality from sedimentation, acid sulfate soil disturbance, litter, road runoff, hazardous substance spills, quantity/availability or other associated activities.

e. A description, with supporting spatial information, detailing all proposed action site access roads and any other shared infrastructure with adjacent projects/areas to be constructed to facilitate the proposed action.

f. A description of the intended land uses proposed as part of the completed development, including of any proposed open space and/or conservation areas and associated ongoing activities, and details of the intended party that would be responsible for future management activities.

g. Details of any local or State Government planning scheme, or plan or policy under any local or State Government planning system that applies or is likely to apply to the proposed action. Details should include (but are not limited to):

    i. what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy?

    ii. application/approval numbers for existing applications where relevant

    iii. obtained approvals or additional approvals that are required.

h. Please describe any changes to project or disturbance footprints that may have occurred since the original referral. Please note these changes may require a formal variation request.

2.3. Feasible Alternatives

a. Any feasible alternatives to the action to the extent reasonably practicable, including:

    i. if relevant, the alternative of taking no action

    ii. a comparative description of the impacts of each alternative on the MNES protected by controlling provisions of Part 3 of the EPBC Act for the action

    iii. sufficient detail to make clear why any alternative is preferred to another

    iv. discussion of the short, medium and long-term advantages and disadvantages of the options should be discussed.

b. For the selected alternative, this section should also consider whether the proposed action will facilitate further growth, and indirectly cause increased pressure on MNES.

c. Wherever possible, mapping and figures should be included to describe any alternative measures/routes.

2.4. Description of the Environment

The PER must provide a description of the environment affected by and surrounding the proposed action, over both the short and long term, including:

a. Details of previous and current land use within and surrounding the proposed action area.

b. Hydrology (surface and groundwater), including flood extents, relevant hydrogeology and local water quality.

c. A description of any potential listed threatened species or ecological community, migratory species or wetlands of international importance that occur in the project area and adjacent areas.

d. Soil and geological characteristics, physical, chemical and biological characterisation of any soils that will be disturbed as a result of the action. Include site investigations conducted to date.

e. A recent preliminary site investigation (PSI), and if considered necessary a detailed site investigation (DSI), undertaken in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013) (ASC NEPM), by an appropriately qualified and experienced environmental consultant consistent with as described in Schedule B9 of the ASC NEPM. The PSI should be sufficient to:

    i) Identify potential sources of contamination and potential contaminants of concern.

    ii) Identify areas of potential contamination.

    iii) Identify potential human and ecological receptors.

    iv) Identify potentially affected media (soil, sediment, groundwater, surface water, indoor and ambient air).

f. A DSI is required when the results of the PSI indicate that contamination is present or is likely to be present and the information available is insufficient to enable site management strategies to be devised. The DSI should identify the nature of the contamination and delineate its lateral and vertical extent to a sufficient degree that an appropriate level of risk assessment may be undertaken and, if necessary, provide the basis for the development of an appropriate remediation or management strategy. The assessment must consider relevant guidelines such as:

    I. Assessment of acid sulfate soils should be undertaken in accordance with the ASC NEPM, and guidance provided by Water Quality Australia (accessed via https://www.waterquality.gov.au/issues/acid-sulfate-soils).

    II. Assessment of water quality should be undertaken in accordance with the National Water Quality Management Strategy (NWQMS, accessed via https://www.waterquality.gov.au/).

g. Assessment of vegetation, not only limited to MNES.

h. Identification of conservation and special use areas.

Please ensure that a recent Protected Matters Search Tool report is generated and used during the assessment before finalising the draft public environment report to identify any additional species (listed at the time of the controlled action decision) that may be affected by the action.

3. MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

This section 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. The description of MNES should focus on the following controlling provisions:

i) Wetlands of international importance (section 16 & section 17B), namely the Moreton Bay Ramsar Site (MBRS).

ii) Listed threatened species and communities (section 18 & 18A).

iii) Listed migratory species (section 20 and 20A).

Output from the protected matters search tool must also be included as an appendix. This can be accessed at the following website: https://www.dcceew.gov.au/environment/epbc/protected-matters-search-tool.

3.1. Threatened Species and Ecological Communities

This section must address all listed threatened species and communities below, and any other threatened species or ecological community listed under the EPBC Act at the time of the controlled action decision that may be impacted by the proposed action. 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.

a. This section must address impacts on threatened species and ecological communities, including (but not limited to) impacts on the following:

- Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland – Endangered
- Coastal Swamp Sclerophyll Forest of New South Wales and Southeast Queensland - Endangered
- Koala (*Phascolarctos cinereus*) combined populations of Queensland and New South Wales – Endangered
- Water Mouse (*Xeromys myoides*) – Vulnerable
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – Vulnerable
- Eastern Curlew (*Numenius madagascariensis*) – Critically Endangered
- Curlew Sandpiper (*Calidris ferruginea*) – Critically Endangered
- Sharp-tailed Sandpiper (*Calidris acuminata*) - Vulnerable
- Ruddy Turnstone (*Arenaria interpres*) - Vulnerable
- Australasian Bittern (*Botaurus poiciloptilus*) – Endangered
- Great Knot (*Calidris tenuirostris*) – Vulnerable

- Greater Sand Plover (*Charadrius leschenaultii*) - Vulnerable
- Lesser Sand Plover (*Charadrius mongolus*) – Endangered
- Asian Dowitcher (*Limnodromus semipalmatus*) – Vulnerable
- Black Tailed Godwit (*Limosa limosa*) – Endangered
- Grey Plover (*Pluvialis squatarola*) – Vulnerable
- Australian Painted Snipe (*Rostratula australis*) – Endangered
- Common Greenshank (*Tringa nebularia*) – Endangered
- Terek Sandpiper (*Xenus cinereus*) – Vulnerable
- Latham's Snipe (*Gallinago hardwickii*) – Vulnerable

Note:

The above list may not be a complete list of listed threatened species and ecological communities and that will be or are likely to be impacted by the action. It is the proponent's responsibility to ensure that any species and ecological communities listed as threatened at the time of the controlled action decision, which will or are likely to be impacted by the action are assessed.

This section must include the following:

3.1.1. Description

a. Describe each listed threatened species and ecological community noted above (including EPBC Act listing status, abundance, condition, distribution, ecology and habitat preferences of the species or communities, etc).

3.1.2. Desktop Analysis

a. Describe the desktop assessment methodology used to inform the field surveys in and within the vicinity of the proposed action site.

b. This section must provide context to the proposed action area by discussing known historical records of listed threatened species and ecological communities within the proposed action area and in the broader region.

3.1.3. Survey Effort and Outcomes

a. Provide details of the scope, methodology, timing and effort of field surveys (undertaken by qualified species experts with demonstrated experience in detecting the above species and ecological communities) in and within the vicinity of the proposed action site. Provide details of:

    i. how surveys were undertaken in accordance with relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys.

    ii. if relevant, the justification for divergence from relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys.

iii. state the total number of records (individuals and evidence of presence) of listed threatened species and ecological communities in and within the vicinity of the proposed action site. Provide maps identifying verified sightings of MNES during studies or surveys.

b. This section should include an assessment of the adequacy of any surveys undertaken (including survey effort and timing). In particular, the extent to which these surveys were appropriate for the species and undertaken in accordance with the Department's relevant survey and policy guidelines (see http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl).

c. This section must provide context to the proposed action area by discussing known historical records of listed threatened species and ecological communities within the proposed action area and in the broader region.

d. When providing survey details, please provide up to date baseline survey data at the proposed action site (impact area), and if relevant, the proposed offset site(s) including:

i. information on the survey methodology or technique used (e.g., thermal detection, camera trapping, tree hollow search, SAT surveys etc)

ii. when surveys were conducted (e.g., dates, time of day, season, etc.) and survey effort (e.g., two hours for every one hectare within a 5-hectare area)

iii. map/s of survey points or transects and how the survey points or transects were selected

iv. Data sheets, flora and fauna species lists and imagery of assessment locations.

3.1.4. Survey Timings

a. Please note that some surveys can take more than a year to complete to ensure they are undertaken in the correct season. The department generally cannot accept survey data that's more than 5 years old because:

i. populations of species can change due to fires, drought, flooding and land management changes

ii. some species' ranges can shift due to climate change or other external factors.

b. If data is older than 4 years at the commencement of project planning, the department recommends further up to date surveys are undertaken. For information on survey methodologies approved by the Australian Government, please refer to https://www.dcceew.gov.au/environment/epbc/advice/surveys-and-data

3.1.5. Precautionary Principle

a. Failing to survey appropriately for MNES present at a site could result in the department

applying the precautionary principle with regard to residual significant impact determinations.

b. That is, if no supporting evidence (such as survey results) is presented to support the claim of MNES absence, then the department may assume that the MNES is in fact present. The department will not accept claimed MNES absence without effective validation such as through application of survey guidelines, other survey techniques (for example, a state guideline or an accepted industry guideline), or statements from relevant subject matter experts. Where a claim of absence is made, proposals must provide robust evaluation of MNES absence.

3.1.6. Habitat Assessment

a. Provide a robust assessment of the potential habitat available in and within the vicinity of the proposed action site for listed threatened species and ecological communities. Habitat assessments must be derived from information obtained from:

   i. field surveys and vegetation assessments

   ii. the Species Profile and Threats (SPRAT) Database

   iii. relevant Departmental documents (e.g., approved conservation advices, recovery plans, listing advices, referral guidelines, etc)

   iv. published research and other relevant sources (where relevant)

   v. The SPRAT Database can be accessed from the following website: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl.

b. The habitat assessments must consider the information in the SPRAT Database and relevant Departmental documents. Where habitat assessments depart from Departmental information, adequate justification must be provided to substantiate its suitability to the assessment.

c. Please note, where habitat for listed threatened species and communities is identified on the proposed action site, an assessment must be undertaken regardless of whether or not the species was recorded. As such, the potential for occurrence of listed threatened species and communities must also be considered and assessed.

d. At a minimum, the habitat assessment for each listed threatened species and ecological community must:

   i. identify any specific habitat requirement/s (e.g. breeding, foraging, dispersal, known important habitat, suitable habitats, roosting, etc)

   ii. provide an assessment of the quality and importance of known or potential habitat for the species or communities within the proposed action area and surrounding areas

   iii. discuss existing threats (e.g. feral predators, traffic, etc.) with reference to threats posed by the proposed action

iv. consider the regional context, describing the connectivity of habitat in the broader landscape, providing maps wherever possible

v. provide the total amount of each type of habitat (in hectares) in the proposed action site.

e. The total amount of each type of habitat must also be presented on a map for each listed threatened species and ecological community. Each map must:

i. include an appropriate base map that provides the geographical context of the proposed action site in the surrounding environment (i.e. aerial imagery)

ii. be specific to the habitat assessment undertaken for each listed threatened species and ecological community

iii. include an overlay of the disturbance footprint within the proposed action site

iv. include known records of listed threatened species or ecological communities derived from desktop analysis and/or field surveys, including clear polygons or point data.

v. present a legend listing mapped features sized in hectares

vi. be of a suitable scale to allow interpretation and representation of mapped features.

3.1.7. Impact Assessment

The PER must include an up-to-date assessment of potential impacts that may occur as a result of the proposed action.

Consideration of impacts must not be confined to the immediate area of the proposed action but must also consider the potential of the proposed action to result in impacts in the vicinity that are likely to contain populations and/or habitat for MNES.

Describe and assess the impacts (direct and indirect) to listed threatened species and communities giving consideration to information provided in the SPRAT Database and relevant departmental policies and guidelines, including the Significant Impact Guidelines 1.1.

a. Include a clear description and maps of the total extent and quality of the following:

i. total extent of habitat present for each relevant protected matter within the disturbance footprint at the proposed action site

ii. direct and indirect impact areas (including the total extent of habitat for each relevant protected matter to be impacted)

iii. total areas proposed to be retained/avoided (including the total extent of habitat present for each relevant protected matter to be avoided).

b. Provide an assessment of the indirect, facilitated, and cumulative impacts that may occur as a result of the proposed action at a site specific and regional scale. The assessment should include consideration of:

i. the nature, likelihood, significance, and extent of impacts and whether any relevant impacts are likely to be unknown, unpredictable or irreversible

ii. timing and whether the impact is temporary or permanent

iii. species specific habitat requirements such as hollow bearing trees, nest trees, refuge habitat, foraging and breeding habitat, sheltering or other microhabitat features relevant to the species within and surrounding the development footprint (if applicable)

iv. whether connectivity and movement opportunities in the surrounding area may be retained, removed or functionally lost or compromised

v. adjacent areas of habitat that may or will be subject to intensification of ongoing impacts (for example, through increased human and vehicle presence)

vi. indirect or facilitated impacts that may result from the proposed action.

c. Cumulative impacts, where potential project impacts on MNES are in addition to existing impacts of other activities (including current or future developments by the proponent and other proponents in the region and vicinity). The PER should also address cumulative impact of the proposal on ecosystem resilience. The cumulative effects of climate change impacts on the environment must also be considered in the assessment of ecosystem resilience. Include details of any policy guidelines, relevant studies, surveys, or consultations with species experts/field specialists, which were not included in the referral or additional information provided in support of the referral.

d. A habitat connectivity analysis detailing, for each listed matter:

i. the existing conditions within the landscape context of the proposed action area, prior to any works being undertaken

ii. proposed habitat connectivity during defined stages of the proposed action, such as early works, habitat and land clearance and modification, construction, rehabilitation and operation

iii. a figure, with aerial imagery and linework showing habitat connectivity for each matter for the proposed action area and surrounding landscape.

e. Wherever possible, this assessment must be substantiated by evidence (i.e. academic literature, case studies).

f. Where relevant to the potential impact, a risk assessment should be conducted and documented.

g. Consider impacts to listed threatened species and ecological communities and their habitats from (but not limited to):

i. Altered hydrology, including volume, timing, duration and frequency of ground and surface water flows (including flood flows) during the construction and operational phase, which may affect the physical structure and vegetation composition of habitat in the vicinity of the proposed action site.

ii. Water quality impacts from sediment, fertiliser, nutrients, litter, pesticides, disturbed ASS,

PFAS and other contaminants of concern in runoff during the construction and operational phase which may impact species habitat in the vicinity of the proposed action. See Section 3.2.3 (ii) for indicative list of parameters (as a minimum) to be considered in water quality assessment.

iii. Edge effects including the potential for the introduction of weed species and pathogens in and within the vicinity of the proposed action area which may impact matters and degrade the habitat condition.

iv. Habitat loss and fragmentation by clearing or modification by infrastructure development.

v. Potential increased risk of vehicle strike to fauna species in the pre-construction, construction, and operation phase of the project.

vi. Potential to generate dust emissions (and impact on vegetation/TEC's and species habitat at and adjacent to the site) from the removal of vegetation and movement of soil in the pre-construction and construction phase of the project.

vii. Species disturbance from increased noise and vibration during construction and operation of the proposed action. This must include an assessment of short and long term impacts, including background noise levels and take into account seasonal variations. The magnitude, duration and frequency of any vibration must be discussed. The potential for avoidance/abandonment of species habitat as a result of noise impacts must be discussed.

viii. Potential impacts of increased lighting associated with construction and operation of the action on relevant MNES (in particular to threatened and migratory birds). This assessment must provide details of the lighting used during all stages (including from any night operations/maintenance and increased vehicle traffic). The assessment of lighting impacts must have regard to the department's National Light Pollution Guidelines for Wildlife 2023. The potential for avoidance/abandonment of species habitat as a result of lighting impacts must be discussed.

ix. In-situ, introduced, and remobilised contaminants, including but not limited to contaminated soils, acid sulfate soils (ASS) / possible acid sulfate soils (PASS), and imported fill material.

x. An assessment of the risks and proposed management measures associated with hazardous chemicals and waste including any fuel to be transported, stored, and used during the construction phase of the action; and / or chemicals such as herbicides and pesticides to be used during the construction and operational phases of the action.

Note:

Please review the following policy statement, providing guidance on what impacts constitute an 'indirect consequences(s)', under paragraph 527E(1)(b) of the EPBC Act

Please include:

a. current maps and coordinates/shapefiles showing the total project footprint, total disturbance/direct and indirect impact areas, areas of habitat for MNES proposed to be retained

b. details of any policy guidelines, relevant studies, surveys, or consultations with species experts/field specialists, which were not included in the referral or additional information provided in support of the referral.

3.1.8. Avoidance, Management and Mitigation Measures

The mitigation hierarchy is a process that is used to limit the amount of damage an action, such as a development, will have on the environment. There are three steps, and each step must be followed in order and to the greatest extent possible before moving on to the next. These steps are:

1. **avoid** harm to the environment within and surrounding the project area.
2. **reduce** or mitigate environmental damage within and surrounding the project area.
3. identify **offsets** within the region that compensate for the significant residual impacts to listed species or ecological communities.

This section should provide:

a. Demonstration that mitigation hierarchy has been applied and all options exhausted to avoid and mitigate harm to protected matters, before resorting to environmental offsets.

b. In doing this, demonstrate that any avoidance or mitigation measures will provide ecological benefits to the species in the long-term. For example, on-site avoidance/conservation areas must be connected or provide connectivity opportunities for species in the broader landscape and must include enduring mitigation of impacts from adjacent development. A detailed description of the proposed measures to avoid, mitigate and manage potential impacts on listed threatened species and ecological communities, including the timing, frequency, and duration of the measures to be implemented.

c. A description of avoidance measures that have been considered and applied. For example, project site selection to avoid valuable habitat, micro-siting of infrastructure to avoid impacts on habitat on site, or avoidance of any activity that may indirectly impact on essential lifecycle processes for species.

d. A description of proposed safeguards and mitigation measures to minimise and manage relevant impacts of the action, with reference to relevant statutory or policy documents at the Commonwealth and State level (e.g., *Guideline: State Development Assessment Provisions (State Code 25)*).

e. Pre-clearance and clearance procedures to ensure that species are detected and managed to minimise mortality, stress, injury, or introduction of disease.

f. Ongoing management of direct and indirect impacts due to increased likelihood of human presence, and injury caused by negotiating various fence types.

g. Details of how speed reduction is to be achieved (e.g., traffic calming devices) and plans showing the locations of each of these features and the manner in which they will be implemented).

h. Information on safe road design and placement, including installation of crossing warning signs, wildlife threshold marking on road (include maps and imagery).

i. Details of management measures to be implemented during the construction and operational phases to limit potential water quality impacts, such as; erosion and sediment control measures, chemical spill control measures, acid sulfate soil management and stormwater management.

j. Identification of the cost of mitigation measures and party responsible for undertaking proposed mitigation and measures, if different to the proponent.

k. The locations and size of any proposed fauna movement solutions, fire breaks, no-go or buffer zones (including buffers between the construction footprint or remaining habitat in the referral area and adjacent to the site), and potential fencing, including:

   i. the location of any movement solutions, fire breaks, buffer zones, or fencing
   ii. the characteristics of the fauna movement solutions, fire breaks, buffer zones and fencing, (i.e., height, length, wildlife proof measures etc); and
   iii. whether the proposed measures, such as fencing will provide a wildlife barrier to/from/within the proposed action area.

l. 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.

m. Information on the timing, frequency, and duration of the measures to be implemented.

n. Provide an assessment of the predicted effectiveness of each proposed avoidance or mitigation measure, noting that the effectiveness of a particular measure is a reflection of confidence in the anticipated outcome. The assessment of effectiveness should be evidence based and include examples of demonstrated success of a particular measure to achieve the desired avoidance/mitigation outcome.

o. For each measure proposed, indicate the:

   i. impacts that are being avoided and/or the significance of impacts being reduced through mitigation
   ii. scientific basis for conclusions being drawn
   iii. an evidence-based likelihood of success/risk assessment
   iv. responsible party
   v. milestones / performance / completion criteria
   vi. proposed monitoring and evaluation program.

p. Describe any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans. Please provide a discussion on how the proposed action is not inconsistent with relevant species' objectives or alternatively, how the proposed avoidance, mitigation/management and offsetting actions will compensate for any residual significant impacts, thereby ensuring consistency with the objective for relevant EPBC Act species.

q. A detailed outline of an Environmental Management Plan (EMP) (or plans) that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing. The EMP must:

i. address the project phases (construction, operation, decommission) separately.
ii. state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue.
iii. 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, inadequate management of ASS / PASS, or saltwater intrusion into ground water.

Note: The draft PER must include detailed measures and use language that clearly identifies whether the measures will be implemented (e.g. 'will be undertaken' rather than 'may', 'where possible', 'if required')

The proposed measures must be based on best available practices, appropriate standards and supported by scientific evidence (e.g. outcomes of successful field trials, research papers, other projects, etc.).

All proposed measures for MNES must be specific, measurable, achievable, relevant and timebound (the 'S.M.A.R.T' principle).

3.1.9. Residual Significant Impact

After consideration of proposed avoidance, mitigation and management measures, provide an assessment of the likelihood of residual significant impacts on relevant listed threatened species and ecological communities.

The PER must provide a clear and definitive conclusion of residual significant impacts on relevant listed threatened species and ecological communities to align with the EPBC Act Environmental Offsets Policy (2012).

3.1.10. Environmental Offsets

If it is determined that a residual significant impact is likely on listed threatened species and ecological communities, see **Section 5** below.

3.1.11. Statutory Requirements

Provide a discussion that clarifies whether the action is consistent or inconsistent with relevant species recovery plans and threat abatement plans and Australia's obligations under the Biodiversity Convention, Apia Convention and CITES.

3.2. Ramsar Wetland

Moreton Bay Ramsar Site

The MBRS was listed under the Ramsar Convention in 1993 as a wetland of international importance. It is notable for its large size, diversity of wetland habitats, connectivity between wetland types, as well as diverse flora and fauna that includes threatened species and ecological communities.

This section must address impacts on the Moreton Bay Ramsar Site and include the following:

3.2.1. Description

Describe the ecological characteristics of the MBRS within, in the vicinity of and downstream of the proposed action area with reference to the draft Ecological Character Description (ECD), or final ECD, if available, Ramsar Information Sheet (RIS) (Ramsar Information Sheet Australia Moreton Bay (dcceew.gov.au) and its attached documents.

The description of the ecological character must also include (but not limited to):

i) Each natural waterbody contributing to and within the MBRS that will or may be adversely impacted by the proposed action.

ii) Current status and condition of parts of the MBRS that will or may be impacted by the proposed action. Consider the past, existing and future threats at the project site scale to features including, but not limited to Tinchi Tamba Wetlands Reserve, Deagon Wetlands and Third Lagoon. Consider impacts at the project site scale in context to the status and condition (past, current and projected trends) of the Ramsar Site.

iii) Ramsar values (identified in the listing criteria in the Ramsar Information Sheet), critical components, processes and services of the MBRS (identified in the Draft Ecological Character Description (ECD) or final ECD if available). This includes:

- extent and types of habitats at the proposed action site and in areas that may be impacted by the proposed action
- listed threatened and migratory species numbers, distribution, habitats and site fidelity in areas that may be impacted by the proposed action
- locations of feeding and roosting habitats for threatened and migratory shorebirds, the behavioural ecology which links these habitats and their usage in the potentially impacted area and in the regional context
- types and levels of disturbances to threatened and migratory shorebirds and shorebird habitat and other species arising from current use of the site
- current water quality of surface and groundwater at and adjacent to the site that contribute to MBRS. Surface water flows and ground water levels must be included
- types and prevalence of invasive plant and animal species

- a description of the soils and sediments, including acid sulfate soils (ASS) and potential acid sulfate soils (PASS) within and adjacent to the proposed action area
- details of any known or potential sources of contaminated land within or in the vicinity of the proposed action site. Describe the risk of the proposed action disturbing contaminated land or leading to land becoming contaminated and the potential consequences to the ecological character of the MBRS, listed threatened species and communities and listed migratory species.

3.2.2. Survey Effort and Outcomes

a. 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 MBRS for all or part of their lifecycles) within, in the vicinity of and downstream of the proposed action site. Provide details of:

   i. how surveys were undertaken in accordance with relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys

   ii. if relevant, the justification for divergence from relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys

   iii. 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 site.

See sections **3.1.3, 3.1.4** and **3.3.3** for further detail regarding survey requirements for species and ecological communities which depend on the MBRS.

3.2.3. Impact Assessment

a. The PER must describe and assess the impacts (direct and indirect) to the MBRS giving consideration to relevant Departmental policies and guidelines, including the *Significant Impact Guidelines 1.1: Environment Protection and Biodiversity Conservation Act 1999 (2013)*. These guidelines can be found at the following website: http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance

b. The PER must include an assessment of direct, indirect, facilitated and cumulative impacts as a result of the proposed action and associated impacts on the MBRS, and discuss whether the proposed action will degrade, damage, or destroy the ecological character of the Ramsar Wetland.

c. The PER must assess and discuss water resources and water quality impacts from the proposed action. Include an assessment of potential alterations to water quality and potential hydrological changes that could impact the MBRS arising as a result of the action.

3.2.3.1 Surface Water

This section must discuss surface water quality and flows including a monitoring program with reference to best practice guidelines for water quality objectives and include but not be limited to:

a. Recent monitoring data provided from the proposed action site, other nearby monitoring sites, including from representative control sites further upstream and downstream from the construction areas. The baseline data set should be sufficient to provide an adequate representation of the existing water sources within and adjacent to the proposed action area. This should include spatial and temporal coverage including seasonal and interannual variation of the water resources and connections between groundwater, surface water, wetlands and estuarine systems. Data can also be drawn from reliable, independent, publicly available datasets. Results should be compared to relevant water quality guidelines including the Australian and New Zealand Guidelines for Fresh and Marine Water Quality or relevant State Water Quality Guidelines.

b. An investigation of potential water quality changes including water quality modelling, with recent data, which considers water quality stressors that include but are not limited to: salinity, electrical conductivity, total suspended solids, pH, turbidity, total nitrogen, total phosphorus, chlorophyll, dissolved oxygen, and toxicants (such as, for example: faecal coliform bacteria, asbestos, hydrocarbons, heavy metals and metalloids, pesticides / herbicides, surfactants, PFAS and persistent organic pollutants).

c. Identification of the monitoring locations for discharge points during construction and operation.

d. Assessment of risks associated with increased erosion due to changes to the landscape including monitoring of sediment loads pre (baseline), during and post construction.

e. A stormwater runoff assessment including quantification of the volume and water quality of the discharge from the proposed action area at the point of entering natural surface waters, estimations of future runoff volumes (including climate change considerations) into the waterbodies (and the MBRS) and consideration of risks due to hazardous substance spills and litter.

f. An assessment of in-situ, introduced, and remobilised contaminants, including but not limited to contaminated soils, acid sulfate soils (ASS) / potential acid sulfate soils (PASS), and imported fill material.

g. An assessment of risks and proposed management measures associated with potential disturbance of ASS and PASS on the proposed action site and the implications on short- and long-term surface water quality in and within the vicinity of the proposed action site and the MBRW including potential impacts to species which rely on the Wetland for parts or all of their lifecycles.

h. An assessment of potential changes to water availability including surface water flows to the MBRW and any waterways in and within the vicinity of the proposed action site.

i. A flood model assessment that includes uncertainty/ sensitivity analysis and climate change considerations.

j. A discussion on the likelihood, significance, and extent of impacts and whether any relevant impacts are likely to be unknown, unpredictable or irreversible.

k. Development of a surface water model to assess potential impacts on surface water quality and hydrological changes associated with the action through both the construction and operational stages. The assumptions, calibration, validation and related uncertainty of any model predictions must be provided.

l. An assessment of the potential impacts from hazardous chemicals and waste including any fuel to be transported, stored, and used during the construction phase of the action; and / or chemicals such as herbicides and pesticides to be used during the construction and operational phases of the action.

3.2.3.2 Groundwater

The PER must include an assessment of the potential impacts to MNES associated with changes to local groundwater resources associated with the proposed action. The impact assessment must define the extent of the area within which groundwater resources are likely to be affected by the proposed action including from groundwater depletion or recharge, and potential to contaminate groundwater resources. The groundwater assessment must include but not be limited to:

a. An assessment of risks and management measures associated with potential disturbance of ASS and PASS on the proposed action site and the implications on short- and long-term groundwater water quality in and within the vicinity of the proposed action site and the MBRS including potential impacts to species which rely on the wetland for parts or all of their lifecycles.

b. A discussion of dewatering activities (if applicable) that may occur and subsequent impact to groundwater by oxidation of ASS, acidification and mobilisation of metals and any other contaminants and toxicants which may impact MNES and species dependant on the MBRS.

c. Evidenced-based conceptualisation of groundwater systems that have potential to be impacted by the proposed development, including baseline groundwater-surface water interactions that are critical to the MBRS and associated waterways and ecosystems, and post development conceptualisation, including conceptualisation of the potential for hydrogeological changes to occur as a result of changes to stormwater and wetland hydrology (surface water) regimes.

d. A discussion on the likelihood, significance, and extent of impacts and whether any relevant impacts are likely to be unknown, unpredictable or irreversible.

e. If impacts to groundwater and/or groundwater-surface water interactions are likely, development of a fit-for-purpose groundwater model that is informed by the evidenced-based hydrogeological conceptualisation and is designed to simulate potential impacts on groundwater flows and groundwater-surface water interactions associated with the action through both the construction and operational stages. The assumptions, calibration, validation and related uncertainty of any model predictions must be provided. Groundwater modelling must include but not be limited to:

i. an assessment of potential changes to availability of groundwater including baseflow contributions to the MBRS and any waterways in and within the vicinity of the proposed action site

ii. an assessment of potential impacts to groundwater dependent ecosystems in and within the vicinity of the proposed action site

iii. short-term and long-term impact assessments and analysis of modelling during both the construction and operational phases of the project including climate change considerations

iv. predictions of groundwater recovery and re-equilibration scenarios, including the influence of tidal effects and potential seawater intrusion on groundwater resources and on nearby groundwater dependent assets, including climate change considerations

v. fit-for-purpose sensitivity and uncertainty analysis.

f. Discuss measures to manage groundwater encountered during the construction process.

g. Any further data collection proposed to characterise groundwater chemistry and inform the installation of monitoring bores.

h. Details of dewatering requirements (if any) and techniques used – including information on the pre-drainage process, treatment and disposal of extracted groundwater.

i. Information on the impacts of dewatering, including an assessment of impacts to local aquifers including potential changes on groundwater drawdown levels and quality.

j. Identification of any other groundwater extraction in the area and an assessment of the potential impacts of the proposed action on these users. Detail of cumulative impacts from the removal and lowering of groundwater (e.g. groundwater recharge, changes to baseflows and downstream impacts on the receiving environments).

k. The PER must include an assessment of the potential direct and indirect impacts to the ecological character of the MBRS (including to species dependant on the MBRS for all or part of their lifecycles) arising from light pollution, noise, and increased human disturbance. This should include:

i. details of the lighting to be used during all stages of the action. The assessment must be consistent with the *National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds* (2023) and the assessment of impacts if habitat is abandoned as a result of disturbance

ii. details of increased noise disturbance during all stages of the action and the assessment of impacts if habitat is abandoned as a result of disturbance

iii. details of human disturbance during all stages of the action (including introduction of pests, litter and vehicle strike) that may disturb MNES or impact habitat and the assessment of

impacts if habitat is abandoned as a result of disturbance

iv. an assessment of the impacts to breeding, roosting or foraging behaviours as a result of light pollution, noise and human disturbance to species that utilise the MBRS, and that may be present at or in the vicinity of the proposed action site.

l. For species that contribute to the ecological character of the Ramsar site with habitat or lifecycle dependant upon the MBRS, assessment of impacts should consider the requirements outlined in Section 3.1.7 for threatened species and ecological communities and Section 3.3.5 for migratory species.

Note:

Please review the following policy statement, providing guidance on what impacts constitute an 'indirect consequence(s)', under paragraph 527E(1)(b) of the EPBC Act

Please include:

- current maps and coordinates/shapefiles showing the total project footprint, total disturbance/direct and indirect impact areas, areas of habitat for MNES proposed to be retained; and
- details of any policy guidelines, relevant studies, surveys, or consultations with species experts/field specialists, which were not included in the referral or additional information provided in support of the referral.

3.2.4. Avoidance, Mitigation and Management Measures

Taking into account the mitigation hierarchy, this section should provide:

a. Demonstration that any avoidance or mitigation measures will provide ecological benefits to the species that utilise the MBRS in the long-term. For example, on-site avoidance/conservation areas must be connected or provide connectivity opportunities for species in the broader landscape and must include enduring mitigation of impacts from adjacent development.

b. A detailed description of the proposed measures to avoid, mitigate and manage potential impacts on listed species that utilise the MBRS, including the timing, frequency, and duration of the measures to be implemented.

c. Details of measures that will be implemented to track the quality of fill material in accordance with the ASC NEPM, noting close proximity of the site to sensitive environmental receptors including the MBRS.

d. Details of measures to be implemented during the construction and operational phases to ensure chemicals used for weed and pest control regimes will meet industry standards and will not lead to direct or indirect impacts on the project site and surrounding sensitive environments such as the MBRS.

e. Details of management measures to be implemented during the construction and operational phases to limit potential water quality impacts, such as; erosion and sediment control measures, chemical spill control measures, acid sulfate soil management and stormwater management.

f. A description of avoidance measures that have been considered and applied. For example (and not limited to) proposed action site selection to avoid valuable habitat, micro-siting of infrastructure to avoid impacts on habitat on the proposed action site, or avoidance of any activity that may indirectly impact on essential lifecycle processes for species.

g. A description of proposed safeguards and mitigation measures to minimise and manage relevant impacts of the action, with reference to relevant statutory or policy documents at the Commonwealth and State level (e.g., *Guideline: State Development Assessment Provisions (State Code 25)*). Pre-clearance and clearance procedures to ensure that species are detected and managed to minimise mortality, stress, injury, or introduction of disease.

h. Ongoing management of direct and indirect impacts including monitoring programs to support an adaptive management approach and determine the effectiveness of measures proposed. This must include adequate monitoring regimes and defined trigger levels that will prompt further management and/or remediation actions. Where the mitigation measure, relates to the ecological character of the MBRS identify design and operational features to maintain and enhance that character where possible, where the proposed action (both construction and operation) may impact on those values.

i. Identification of the cost of mitigation measures and party responsible for undertaking proposed mitigation and measures, if different to the proponent.

j. The locations and size of any proposed fauna movement solutions, fire breaks, no-go or buffer zones (including buffers between the construction footprint or remaining habitat in and within the vicinity of the proposed action site), and potential fencing, including:

   i. the location of any movement solutions, fire breaks, buffer zones, or fencing

   ii. the characteristics of the fauna movement solutions, fire breaks, buffer zones and fencing, (i.e., height, length, wildlife proof measures etc)

   iii. whether the proposed measures, such as fencing will provide a wildlife barrier to/from/within the proposed action area.

k. 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.

l. An assessment of the predicted effectiveness of each proposed avoidance or mitigation measure, noting that the effectiveness of a particular measure is a reflection of confidence in the anticipated outcome. The assessment of effectiveness should be evidence based and include examples of demonstrated success of a particular measure to achieve the desired avoidance/mitigation outcome.

m. For each measure proposed, indicate the:

   i. impacts that are being avoided and/or the significance of impacts being reduced through

mitigation

ii. scientific basis for conclusions being drawn

iii. an evidence-based likelihood of success/risk assessment

iv. responsible party

v. milestones / performance / completion criteria

vi. proposed monitoring and evaluation program.

n. Describe any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans. Provide a discussion on how the proposed action is not inconsistent with relevant species' objectives or alternatively, how the proposed avoidance, mitigation/management and any proposed offsetting actions will compensate for any residual significant impacts, thereby ensuring consistency with the objective for relevant EPBC Act species.

o. A detailed outline of an Environmental Management Plan (EMP) that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing. The EMP must:

i. address the project phases (construction, operation, decommission) separately.

ii. state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue.

iii. 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, inadequate management of ASS / PASS, or saltwater intrusion into ground water.

Note: The draft PER must include detailed measures and use language that clearly identifies whether the measures will be implemented (e.g. 'will be undertaken' rather than 'may', 'where possible', 'if required')

The proposed measures must be based on best available practices, appropriate standards and supported by scientific evidence (e.g. outcomes of successful field trials, research papers, other projects, etc.).

All proposed measures for MNES must be specific, measurable, achievable, relevant and timebound (the 'S.M.A.R.T' principle).

3.2.5. Residual Significant Impact

Taking into account proposed mitigation and management measures, provide an assessment of the residual significant impacts (see **section 5** for further information about offsets in the event of a residual significant impact) on the ecological character of the MBRS. The assessment must:

a. consider the department's Significant impact guidelines 1.1 (2013)

b. provide a clear and definitive conclusion about residual significant impacts, including the extent and nature of residual significant impacts on the ecological character of MBRS; and

c. demonstrate how, with detailed supporting justification, the integrity of the ecological character of the MBRS will be maintained during construction and operation.

3.2.6. Statutory Requirements

a. All actions and mitigation measures relating to the Ramsar Wetlands must be consistent with the Ramsar Convention and the Australian Ramsar management principles, which are set out in Schedule 6 of the EPBC Regulations. The assessment must provide a discussion that clarifies whether the action is consistent or inconsistent with these principles, which include:

   i. to describe and maintain the ecological character of the wetland

   ii. to formulate and implement planning that promotes conservation of the wetland and wise and sustainable use of the wetland

   iii. wetland management that allows for public consultation on decisions and actions that may have significant impact on the wetland

   iv. 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

   v. wetland management should provide for continuing community and technical input.

b. For any referred action that was determined to be likely to have a significant impact on the ecological character of a Ramsar Wetland, the assessment should:

   i. identify any part of the ecological character of the wetland that is likely to be affected by the action

   ii. examine how the ecological character of the wetland might be affected by the action

   iii. provide adequate opportunity for public consultation.

3.3. Migratory Species

This section must address all migratory species listed under the EPBC Act at the time of the controlled action decision that may be impacted by the proposed action. 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.

a. This section must address impacts on migratory species, including (but not limited to) impacts on the following:

   - Eastern Curlew (*Numenius madagascariensis*) – Migratory

   - Curlew sandpiper (*Calidris ferruginea*) – migratory

- Latham's Snipe (*Gallinago hardwickii*) – migratory
- Sharp-tailed Sandpiper (*Calidris acuminata*) – migratory
- Ruddy Turnstone (*Arenaria interpres*) – migratory
- Great Knot (*Calidris tenuirostris*) – migratory
- Greater Sand Plover (*Charadrius leschenaultii*) – migratory
- Lesser Sand Plover (*Charadrius mongolus*) – migratory
- Bar-tailed Godwit (*Limosa lapponica*) – migratory
- Asian Dowitcher (*Limnodromus semipalmatus*) – migratory
- Black Tailed Godwit (*Limosa limosa*) – migratory
- Grey Plover (*Pluvialis squatarola*) – migratory
- Common Greenshank (*Tringa nebularia*) – migratory
- Terek Sandpiper (*Xenus cinereus*) – migratory

Note:

The above list may not be a complete list of migratory species that will be or are likely to be impacted by the action. It is the proponent's responsibility to ensure that any species listed as migratory at the time of the controlled action decision, which will be or are likely to be impacted by the action are assessed.

This section must include the following:

3.3.1. Description

a. Describe each migratory species noted above (including EPBC Act, listing status, abundance, distribution, ecology and habitat preferences of the species or communities, etc).

3.3.2. Desktop Analysis

a. Describe the desktop assessment methodology used to inform the field surveys in and within the vicinity of the proposed action site.

b. This section must provide context to the proposed action area by discussing known historical records of migratory species within the proposed action area and in the broader region.

3.3.3. Survey Effort and Outcomes

a. Provide details of the scope, methodology, timing and effort of field surveys (undertaken by qualified species experts with demonstrated experienced in detecting the above migratory species) in and within the vicinity (upstream and downstream) of the proposed action site. Provide details of:

   i. how surveys were undertaken in accordance with relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys

ii. if relevant, the justification for divergence from relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys

iii. state the total number of records (individuals and evidence of presence) of listed migratory species in and within the vicinity of (upstream and downstream) of the proposed action site. Provide maps identifying verified sightings of MNES during studies or surveys.

b. This section should include an assessment of the adequacy of any surveys undertaken (including survey effort and timing). In particular, the extent to which these surveys were appropriate for the species and undertaken in accordance with the Department's relevant survey and policy guidelines (see EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species - DCCEEW).

c. This section must provide context to the proposed action area by discussing known historical records of listed migratory species within the proposed action area and in the broader region.

d. When providing survey details, please provide up to date baseline survey data at the impact site(s), and if relevant, the proposed offset site(s) site, including:

i. information on the survey methodology or technique used (e.g., thermal detection, camera trapping, tree hollow search, etc)

ii. when surveys were conducted (e.g., dates, time of day, season, etc.) and survey effort (e.g., two hours for every one hectare within a 5-hectare area)

iii. map/s of survey points or transects and how the survey points or transects were selected.

e. Please also note the information supplied in **section 3.1.4** which discusses survey timings and **section 3.1.5** which reiterates the departments application of the precautionary principle.

3.3.4. Habitat Assessment

a. Provide a robust assessment of the potential habitat available in and within the vicinity of (upstream and downstream) of the proposed action site for listed migratory species. Habitat assessments must be derived from information obtained from:

i. field surveys and vegetation assessments

ii. the Species Profile and Threats (SPRAT) Database

iii. relevant Departmental documents (e.g., approved conservation advices, recovery plans, listing advices, referral guidelines, etc)

iv. published research and other relevant sources (where relevant)

v. the SPRAT Database can be accessed from the following website: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl.

b. The habitat assessments must consider the information in the SPRAT Database and relevant Departmental documents. Where habitat assessments depart from Departmental information, adequate justification must be provided to substantiate its suitability to the assessment.

c. Please note, where habitat for migratory species is identified on the proposed action site, an assessment must be undertaken regardless of whether or not the species was recorded. As such, the potential for occurrence of listed migratory species must also be considered and assessed.

d. At a minimum, the habitat assessment for each listed migratory species must:

   i. identify any specific habitat requirement/s (e.g. breeding, foraging, dispersal, known important habitat, suitable habitats, roosting, etc)

   ii. provide an assessment of the quality and importance of known or potential habitat for the species or communities within the proposed action area and surrounding areas

   iii. discuss existing threats (e.g. feral predators, traffic, etc.) with reference to threats posed by the proposed action

   iv. consider the regional context, describing the connectivity of habitat in the broader landscape, providing maps wherever possible

   v. provide the total amount of each type of habitat (in hectares) in the proposed action site.

e. The total amount of each type of habitat must also be presented on a map for each listed threatened species and ecological community. Each map must:

   i. include an appropriate base map that provides the geographical context of the project area in the surrounding environment (i.e. aerial imagery)

   ii. be specific to the habitat assessment undertaken for each listed migratory species

   iii. include an overlay of the disturbance footprint within the proposed action site

   iv. include known records of migratory species derived from desktop analysis and/or field surveys

   v. present a legend listing mapped features sized in hectares

   vi. be of a suitable scale to allow interpretation and representation of mapped features.

3.3.5. Impact Assessment

The PER must include an up-to-date assessment of potential impacts that may occur as a result of the proposed action.

Consideration of impacts must not be confined to the immediate area of the proposed action but must also consider the potential of the proposed action to result in impacts in the vicinity that are likely to contain habitat for migratory species.

Describe and assess the impacts (direct and indirect) to listed migratory species giving consideration to information provided in the SPRAT Database and relevant departmental policies and guidelines, including the Significant Impact Guidelines 1.1.

a. Include a clear description of the total extent and quality of the following:

   i. total extent of habitat present for each relevant protected matter within the disturbance footprint at the proposed action site

   ii. direct and indirect impact areas (including the total extent of habitat for each relevant protected matter to be impacted)

   iii. total areas proposed to be retained/avoided (including the total extent of habitat present for each relevant protected matter to be avoided).

b. Provide an assessment of the indirect, facilitated, and cumulative impacts that may occur as a result of the proposed action at a site specific and regional scale. The assessment should include consideration of:

   i. the nature, likelihood, significance, and extent of impacts and whether any relevant impacts are likely to be unknown, unpredictable or irreversible

   ii. timing and whether the impact is temporary or permanent

   iii. species specific habitat requirements such as hollow bearing trees, nest trees, refuge habitat, foraging and breeding habitat, sheltering or other microhabitat features relevant to the species within and surrounding the development footprint (if applicable).

   iv. whether connectivity and movement opportunities in the surrounding area may be retained, removed or functionally lost or compromised.

   v. adjacent areas of habitat that may or will be subject to intensification of ongoing impacts (for example, through increased human and vehicle presence)

   vi. indirect or facilitated impacts that may result from the proposed action

   vii. cumulative impacts, where potential impacts from the proposed action on MNES are in addition to existing impacts of other activities (including current or future developments by the proponent and other proponents in the region and vicinity). The PER should also address cumulative impact of the proposal on ecosystem resilience. The cumulative effects of climate change impacts on the environment must also be considered in the assessment of ecosystem resilience. Where relevant to the potential impact, a risk assessment should be conducted and documented.

c. Include details of any policy guidelines, relevant studies, surveys, or consultations with species experts/field specialists, which were not included in the referral or additional information provided in support of the referral.

d. A habitat connectivity analysis detailing, for each listed matter:

   i. the existing conditions within and the landscape context of the proposed action area, prior to any works being undertaken

ii. proposed habitat connectivity during defined stages of the proposed action, such as early works, habitat and land clearance and modification, construction, rehabilitation and operation
iii. a figure, with aerial imagery and linework showing habitat connectivity for each matter for the proposed action area and surrounding landscape.

e. Wherever possible, this assessment must be substantiated by evidence (i.e. academic literature, case studies).

f. Where relevant to the potential impact, a risk assessment should be conducted and documented.

g. Consider impacts such as (but not limited to):

i. Altered hydrology, including volume, timing, duration and frequency of ground and surface water flows (including flood flows) during the construction and operational phase, which may affect the physical structure and vegetation composition of habitat in the vicinity of the proposed action site.
ii. Water quality impacts from sediment, fertiliser, nutrients, litter, pesticides, disturbed ASS, PFAS and other contaminants of concern in runoff during the construction and operational phase which may impact species habitat in the vicinity of the proposed action. See Section 3.2.3 for indicative list of parameters (as a minimum) to be considered in water quality assessment.
iii. Edge effects including the potential for the introduction of weed species and pathogens in and within the vicinity of the proposed action area which may impact matters and degrade the habitat condition.
iv. Habitat loss and fragmentation by clearing or modification by infrastructure development.
v. Potential increased risk of vehicle strike to fauna species in the pre-construction, construction, and operation phase of the project.
vi. Potential to generate dust emissions (and impact on species habitat at and adjacent to the site) from the removal of vegetation and movement of soil in the pre-construction and construction phase of the project.
vii. Potential impacts from hazardous chemicals and waste including any fuel to be transported, stored, and used during the construction of the action or chemicals such as fertilisers or pesticides to be used during the operational stages of the action.

m. An assessment of in-situ, introduced, and remobilised contaminants, including but not limited to contaminated soils, acid sulfate soils (ASS) / potential acid sulfate soils (PASS), and imported fill material.

i. Disturbance from increased noise and vibration during construction and operation of the proposed action. This must include an assessment of short and long term impacts, including background noise levels and take into account seasonal variations. The magnitude, duration and frequency of any vibration must be discussed. The potential for avoidance/abandonment of species habitat as a result of noise impacts must be discussed.
ii. Potential impacts of increased lighting associated with construction and operation of the action on relevant MNES (in particular to threatened and migratory birds). This assessment must provide details of the lighting used during all stages (including from any night

operations/maintenance and increased vehicle traffic). The assessment of lighting impacts must have regard to the department's National Light Pollution Guidelines for Wildlife 2023. The potential for avoidance/abandonment of species habitat as a result of lighting impacts must be discussed.

Note:

Please review the following policy statement, providing guidance on what impacts constitute an 'indirect consequence(s)', under paragraph 527E(1)(b) of the EPBC Act

Please include:

- current maps and coordinates/shapefiles showing the total project footprint, total disturbance/direct and indirect impact areas, areas of habitat for MNES proposed to be retained.
- details of any policy guidelines, relevant studies, surveys, or consultations with species experts/field specialists, which were not included in the referral or additional information provided in support of the referral.
- Details of measures that will be implemented to track the quality of fill material in accordance with the ASC NEPM, noting close proximity of the site to sensitive environmental receptors including the MBRS.
- Details of measures to be implemented during the construction and operational phases to ensure chemicals used for weed and pest control regimes, field line marking, rodent control will meet industry standards and will not lead to direct or indirect impacts on the project site and surrounding sensitive environments such as the MBRS.

Relevant statutory documents and guidelines for migratory species can be obtained from the SPRAT profile for each species and the department's website e.g. EPBC Act Policy Statement Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species.

3.3.6. Avoidance, Mitigation and Management Measures

Taking into account the mitigation hierarchy, this section should provide:

a. Demonstrate the mitigation hierarchy has been applied and all options exhausted to avoid and mitigate harm to protected matters, before resorting to environmental offsets.

b. In doing this, demonstrate that any avoidance or mitigation measures will provide ecological benefits to the species in the long-term. For example, on-site avoidance/conservation areas must be connected or provide connectivity opportunities for species in the broader landscape and must include enduring mitigation of impacts from adjacent development. A detailed description of the proposed measures to avoid, mitigate and manage potential impacts on listed threatened species and ecological communities, including the timing, frequency, and duration of the measures to be implemented.

c. A description of avoidance measures that have been considered and applied. For example (but not limited to), proposed action site selection to avoid valuable habitat, micro-siting of

infrastructure to avoid impacts to habitat on site, or avoidance of any activity that may indirectly impact on essential lifecycle processes for species.

d. A description of proposed safeguards and mitigation measures to minimise and manage relevant impacts of the action, with reference to relevant statutory or policy documents at the Commonwealth and State level (e.g., *Guideline: State Development Assessment Provisions (State Code 25)*).

e. Pre-clearance and clearance procedures to ensure that species are detected and managed to minimise mortality, stress, injury, or introduction of disease.

f. Ongoing management of direct and indirect impacts due to increased likelihood of human presence, and injury caused by negotiating various fence types.

g. Details of how speed reduction is to be achieved (e.g., traffic calming devices) and plans showing the locations of each of these features and the manner in which they will be implemented).

h. Information on safe road design and placement, including installation of crossing warning signs, wildlife threshold marking on road (include maps and imagery).

i. Details of management measures to be implemented during the construction and operational phases to limit potential water quality impacts, such as; erosion and sediment control measures, chemical spill control measures, acid sulfate soil management and stormwater management.

j. Identification of the cost of mitigation measures and party responsible for undertaking proposed mitigation and measures, if different to the proponent.

k. The locations and size of any proposed fauna movement solutions, fire breaks, no-go or buffer zones (including buffers between the construction footprint or remaining habitat at or in the vicinity of the proposed action site), and potential fencing, including:

    i. the location of any movement solutions, fire breaks, buffer zones, or fencing.
    ii. the characteristics of the fauna movement solutions, fire breaks, buffer zones and fencing, (i.e., height, length, wildlife proof measures etc)
    iii. whether the proposed measures, such as fencing will provide a wildlife barrier to/from/within the proposed action area.

l. 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.

m. Information on the timing, frequency, and duration of the measures to be implemented.

n. Provide an assessment of the predicted effectiveness of each proposed avoidance or mitigation measure, noting that the effectiveness of a particular measure is a reflection of confidence in the anticipated outcome. The assessment of effectiveness should be evidence based and include examples of demonstrated success of a particular measure to achieve the desired avoidance/mitigation outcome.

o. For each measure proposed, indicate the:

    i. impacts that are being avoided and/or the significance of impacts being reduced through

mitigation.

ii. scientific basis for conclusions being drawn

iii. an evidence-based likelihood of success/risk assessment

iv. responsible party

v. milestones / performance / completion criteria

vi. proposed monitoring and evaluation program.

p. Describe any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans. Please provide a discussion on how the proposed action is not inconsistent with relevant species' objectives or alternatively, how the proposed avoidance, mitigation/management and offsetting actions will compensate for any residual significant impacts, thereby ensuring consistency with the objective for relevant EPBC Act species.

q. A detailed outline of an Environmental Management Plan (EMP) that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing. The EMP must:

i. address the project phases (construction, operation, decommission) separately.

ii. state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue.

iii. 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, inadequate management of ASS / PASS, or saltwater intrusion into ground water.

Note: The draft PER must include detailed measures and use language that clearly identifies whether the measures will be implemented (e.g. 'will be undertaken' rather than 'may', 'where possible', 'if required')

The proposed measures must be based on best available practices, appropriate standards and supported by scientific evidence (e.g. outcomes of successful field trials, research papers, other projects, etc.).

All proposed measures for MNES must be specific, measurable, achievable, relevant and timebound (the 'S.M.A.R.T' principle).

3.3.7. Residual Significant Impact

a. After consideration of proposed avoidance, mitigation and management measures, provide an assessment of the likelihood of residual significant impacts on relevant listed threatened species and ecological communities.

b. The PER must provide a clear and definitive conclusion of residual significant impacts on relevant listed threatened species and ecological communities to align with the EPBC Act Environmental Offsets Policy (2012).

3.3.8. Environmental Offsets

See Section 5 below.

3.3.9. Statutory Requirements

Provide a discussion that clarifies whether the action is consistent or inconsistent with Australia's obligations under the Bonn Convention, CAMBA, JAMBA, ROKAMBA and any other international agreements approved under subsection 209(4) of the EPBC Act.

4. CUMULATVE IMPACTS

a. The PER should identify and address cumulative impacts, where potential project impacts are in addition to existing impacts of other activities (including known potential future expansions or developments by the proponent and other proponents in the region and vicinity).

b. The PER should also address the potential cumulative impact of the proposed action on ecosystem resilience. The cumulative effects of climate change impacts on the environment must also be considered in the assessment of water resources and ecosystem resilience.

c. The PER should also provide a detailed assessment of any likely impact that this proposed action may facilitate on relevant MNES at the local, regional, state and national scale.

5. PROPOSED OFFSETS

INFORMATION REQUIREMENTS FOR EPBC ACT OFFSET PROPOSALS AND OFFSET MANAGEMENT PLANS

An EPBC Act offset proposal must demonstrate that the relevant species or ecological communities significantly impacted by the proposed action is not worse-off when compared to a situation where neither the impact nor the offset occurred.

a. Where residual significant impacts remain after application of all reasonable avoidance and mitigation measures, a compensatory environmental offset in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy (EPBC Offsets Policy) is required.

b. Offsets must be specific to the species or ecological community being impacted, must address the attribute of the protected matter that is impacted, and must deliver an outcome for the protected matter that is demonstrably equal or better than if neither the impact nor the offset occurred. Offsets are not intended to make proposed actions with unacceptable impacts, acceptable.

c. If an offset is required, the PER must include an:

   i. **Offset Proposal** – The Offset Proposal must provide detail about the proposed offset site(s) including baseline survey information, habitat or vegetation quality scores, how the offset

will be managed, and evidence that the protected matter is present or uses the offset site(s). The Offset Proposal must demonstrate how the proposed offset is suitable and meets the principles of the EPBC Act Environmental Offsets Policy and must include sufficient information (in a table with supporting evidence) for the department to assess it using the EPBC Offsets Assessment Guide.

ii. **Offset Management Plan (OMP)** – The OMP supports the Offset Proposal and must detail all the management activities to be undertaken at the offset site(s) including setting environmental objectives, milestones, monitoring and reporting measures. Management plans and activities must be targeted towards the specific plant, animal, ecological community, or place (protected matter) that is being offset. If there is more than one offset site, then a separate OMP must be prepared for each site.

d. If the assessment shows that the proposed action is likely to have a significant residual impact on migratory shorebirds or their habitat or Ramsar wetlands, please discuss with the Department before proceeding with an offset proposal.

5.1. Habitat Quality Assessment

a. A methodology that is suitable for each listed threatened species, threatened ecological community or migratory species (i.e., endorsed by the department or supported by literature) where there is a residual significant impact must be used to assess habitat quality, noting the same scoring mechanism must be used at both impact and offset sites.

b. The department encourages proponents to consult and seek endorsement from the department on a proposed method prior to undertaking any habitat quality assessment at both impact and offset site(s).

c. The department currently prefers habitat quality scoring methods for each prescribed matters to be consistent with the Modified Habitat Quality Assessment (MHQA) method. The MHQA tool derives habitat quality scores using an adaptation of the Queensland Government's 'Guide to determining terrestrial habitat quality version 1.2 (DEHP Guide).

d. The MHQA aligns, as far as possible the DEHP Guide with the requirements of the EPBC Act Environmental Offsets Policy for determining habitat quality scores. In aligning with this policy, all habitat quality scoring methods are required to generate future scores for 'with' and without' offset scenarios. Forecast gains or loss in habitat quality score must be substantiated by scientific information and via the endorsed MHQA (or alternative) method.

e. To support the habitat quality assessment, a link to the DEHP Guide, a MHQA scoring guide, and a MHQA scoring spreadsheet template (.xlsx) are provided herein. When calculating offsets, please refer to the department's published guidance: How to use the Offsets Assessment Guide.

f. A precautionary approach to forecasting scores should be applied, with all limitations and uncertainties considered, documented and integrated within the 'Confidence in Result % (Quality)' value applied in the Offset Assessment Guide (offset calculator). Please also note the following:

i. If a habitat quality gain of more than 2 points is proposed, or an achieved future habitat

quality score 'with offset' of 9 or 10, it becomes less certain that the conservation outcome can be achieved. The justification of effectiveness of the proposed management measures and associated habitat quality score improvements and (reflected in the confidence in result) must be supported by substantial evidence.

ii. Higher habitat quality gains will generally be associated with lower 'confidence in result' scores in the Offset Assessments Guide to reflect the difficulty associated with achieving the conservation outcomes. In these cases, it is likely that outcomes-based commitments will be required in the associated management plan for the site(s), including specifying binding metrics to be met to demonstrate quality improvement. For further information, please contact the department to discuss the metrics that will be used to demonstrate achievement of quality standards.

g. If an alternative methodology is proposed for assessing and scoring habitat quality for any/all of the prescribed matters likely to experience significant residual impacts as a result of the proposed action, the alternative methodology must:
   i. directly relate to habitat requirements of the species and factors associated with the viability of the prescribed matter, and align with information contained in the SPRAT database and relevant statutory/departmental documents, and
   ii. be substantiated with appropriate field surveys in accordance with the relevant survey guidelines or using a scientifically robust and repeatable methodology.

h. Where there are any inconsistencies between the habitat assessment approach and information contained in the SPRAT database, the inconsistencies must be discussed with the department prior to the submission of the assessment documentation and must be supported by scientific evidence including published research, independent expert advice and information derived from field surveys.

5.2. Offset Proposal Requirements

a. The offset proposal must include, but not be limited to, the following:
   i. A detailed project description, including a site description and how and to what extent the proposed action will impact on protected matters.
   ii. Details of the protected matters being impacted by the proposed action, including the total number of individuals or extent of habitat being impacted.

b. Details about the offset proposal/offset site, including:
   i. A description of the proposed offset site(s) including location, size, and relevant ecological/species habitat features, landscape context and cadastre boundaries of the offset site(s) (supported by mapping).
   ii. Information about how the proposed offset/s area will provide connectivity with other relevant habitats and biodiversity corridors.
   iii. Information how the proposed offset site/s contribute to relevant State and/or regional plan/s or initiatives for the conservation of the protected matter.
   iv. Evidence of the presence of, or usage by, relevant MNES on, or adjacent to the proposed offset site(s).

v. Evidence that the location of the offset site is suitable and provides a conservation benefit to the impacted protected matter. Note: The EPBC Offsets Policy states that in most cases, the offset site should be as close to the impact as possible.

vi. Up to date surveys and baseline data confirming the current condition/quality of vegetation on the proposed offset site (including number of hollow bearing trees if relevant), the extent and presence of weeds, and the extent of threats.

vii. Information about the ecosystems present, current usage of the proposed offset site, its general condition and location in the landscape/region.

viii. An assessment of how the offset and impacts sites are like-for-like, i.e., the environmental values for the MNES at the offset are of the same type or equivalent to that affected by the proposed action.

ix. The methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to the proposed offset site for each relevant MNES, including:

- total area of habitat (in hectares)
- habitat quality (as discussed in section 6.1)
- time over which loss is averted (max. 20 years)
- time until ecological benefit
- risk of loss (%) without offset
- risk of loss (%) with offset
- confidence in result (%)
- details and execution timing of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the potential offset area/s against development incompatible with conservation.

c. The Offset Proposal must demonstrate how the offset meets the principles of the EPBC Offsets Policy and EPBC Offsets Assessment Guide to inform the Minister's decision on whether or not the project should be approved under the EPBC Act.

d. Details of the actual or estimated cost of the offset proposal including costs associated with proposed mitigation and management measures onsite.

e. Details of the protective mechanism proposed to be applied at any offset site/s to provide enduring protection to the site for at least the duration of the impact, including a draft of the protective mechanism and its terms.

5.3. Offset Management Plan (OMP) Requirement

a. An offset management plan is a practical document that outlines what must be done to manage an offset site. A plan must detail all the management activities at the offset site and how progress will be monitored and reported. An OMP provides confidence that the outcomes described in an offset proposal can and will be achieved. The OMP must include, but may not be limited to:

i. A description of the proposed offset site(s) including location, size, condition, existing and future tenure, and relevant ecological/species values present and surrounding land uses.

ii. 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).
iii. Baseline survey information showing MNES presence and the extent and quality of the respective habitat(s) at the proposed offset site(s) in accordance with the relevant survey guidelines or using a scientifically robust and repeatable methodology.
iv. Summarised details of the nature of the conservation gain to be achieved for relevant MNES, including the creation, restoration and revegetation of habitat in the proposed offset area/s.
v. Information about how the proposed 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. This should include information about how the proposed offset/s area contributes to any state and/or regional plan/s for the conservation of the protected matter.
vi. Mechanisms for protection, for at least the full duration of the impact, under a conservation covenant or otherwise accepted method, noting that protection mechanisms for permanent impacts should continue in perpetuity.
vii. Completion criteria and, if necessary, performance targets that evidence protection or improvement of EPBC Act listed communities, species and their habitat. For the purpose of the plan:
    - Completion criteria are longer term time-bound values, specified for measurable parameters, that if attained and maintained ensure the plan's environmental objectives are achieved; and For example: 'By Year 20, the approval holder must reduce non-native plant cover to within 5% of the benchmark value associated with each Regional Ecosystem.'
    - Performance targets are time-bound short and medium term targets, for management interventions and environmental condition, that are used to monitor, evaluate, review and improve the effectiveness of the plan to offset impacts. For example: 'By Year 10, the approval holder must reduce non-native plant cover to within 10% of the benchmark value associated with each Regional Ecosystem.'

b. The plan includes management measures that will protect or improve EPBC Act listed threatened ecological communities and/or species and their habitat. Each management measure:
    i. is specifically linked to the attribute of the protected matter for which the management measure applies
    ii. has timeframes for implementation
    iii. is described sufficiently to avoid ambiguity and to inform plan implementation
    iv. is related to attaining/maintaining completion criteria and/or performance targets; and
    v. is derived from recognised principles, practice, or guidelines, and is justified – technically, scientifically and legally (e.g. by recommendation in a national recovery plan) – as an effective and appropriate measure to attain and/or maintain the plan's completion criteria and/or performance targets.

c. Management activities must be targeted towards the needs of the protected matter that is offset, and must align with the recovery objectives for the species as identified in relevant National Recovery Plans or Conservation Advices.
d. The plan identifies and manages uncertainty. To this end the plan specifies:
    i. key data/information used to formulate the plan
    ii. the limitations and/or uncertainty associated with the use of that data/information
    iii. the risks that limitation and/or uncertainty represents for plan failure
    iv. how limitations and/or uncertainty, and associated risks, are mitigated during plan implementation. For example, where a margin of safety is applied to management measures until uncertainty is reduced to an acceptable level or performance targets/completion criteria are attained/maintained.
e. The plan assesses the risk of failure to achieve the plan's performance targets and/or completion criteria. To this end the plan:
    i. states the plan's performance targets and/or completion criteria
    ii. identifies events or circumstances that prejudice attainment/maintenance of performance targets and/or completion criteria. The events or circumstances must address scientific/ecological uncertainty, stochastic events and legal/land use planning factors that may represent risks
    iii. includes a qualitative assessment of the likelihood and consequence of those events or circumstances, and the residual risk of failure to achieve those criteria due to identified events or circumstances (assuming management measures will be implemented)
    iv. characterises risk as low, medium, high or severe, and derived from likelihood (highly likely, likely, possible, unlikely, rare) and consequence (minor, moderate, high, major and critical)
    v. outlines how consequence, likelihood and risk level for each risk have been determined.
f. The plan manages the risk of failure to achieve performance targets and/or completion criteria by:
    i. specifying management measures that will be implemented to attain/maintain the completion criteria and/or performance targets
    ii. enhancing monitoring and management measures for high risk events or circumstances, thereby providing a 'margin of safety' to detect, avoid or mitigate the likelihood and/or impacts of the event or circumstance
    iii. specifying measurable events or circumstances (management triggers) that detect actual or potential issues in a timely manner to avoid, minimise or mitigate adverse impacts
    iv. ensuring the monitoring program includes activities to detect management triggers, and explains how monitoring activities may inform the selection and implementation of corrective actions
    v. specifying methods to be used to determine whether the management trigger is project

attributable

vi. specifying effective and appropriate corrective actions that may be implemented if a management trigger is realised

vii. monitoring the effectiveness of corrective actions and implementing appropriate responses in the event corrective actions are not effective.

g. The plan assesses the risk of failure to achieve the plan's performance targets and/or completion criteria. To this end the plan:

i. states the plan's performance targets and/or completion criteria

ii. identifies events or circumstances that prejudice attainment/maintenance of performance targets and/or completion criteria. The events or circumstances must address scientific/ecological uncertainty, stochastic events and legal/land use planning factors that may represent risks

iii. includes a qualitative assessment of the likelihood and consequence of those events or circumstances, and the residual risk of failure to achieve those criteria due to identified events or circumstances (assuming management measures will be implemented)

iv. characterises risk as low, medium, high or severe, and derived from likelihood (highly likely, likely, possible, unlikely, rare) and consequence (minor, moderate, high, major and critical)

v. outlines how consequence, likelihood and risk level for each risk have been determined.

h. The plan describes the monitoring methods that will be implemented, and:

i. demonstrates the relevance of the monitoring methods to the protection of the relevant aspect of the protected matter(s) for which the offset is implemented

ii. includes quantitative (e.g. on-ground survey results) and qualitative baseline data (e.g. photo-point monitoring sites) that establish the start quality/condition of the environment and which can be used to measure performance against

iii. describes the sampling strategy (including monitoring area, site selection and sampling intensity over space and time) and statistical analyses to be employed

iv. justifies the sampling strategy/monitoring methods, including through

v. an assessment of effectiveness and constraints to use

vi. capacity to detect change in environmental condition due to management interventions

vii. capacity to demonstrate attainment of performance targets and/or completion criteria

viii. the statistical power of the strategy/method

ix. commits to engage appropriately qualified experts to design and conduct monitoring and survey activities, and analyse monitoring results

x. accounts for seasonal/climatic variability

xi. details the location, nature and number of monitoring sites, including benchmark/reference sites to evaluate management performance.

i. The plan includes commitments to report on plan implementation and success as well as opportunities for improvement. This is achieved by:
    i. if the project is approved, identifying relevant reporting obligations under the EPBC approval, or otherwise proposing appropriate regular reporting intervals, objectives and methods
    ii. specifying how plan/strategy implementation will be reported in accordance with those obligations
    iii. including a reporting template specifying key risk management, management measures, monitoring and adaptive implementation outcomes for the reporting period
    iv. including a schedule and triggers for reporting types (e.g. annual compliance, incident, non-compliance, contingency).

6. ENVIRONMENTAL OUTCOMES

a. The PER should provide information on the outcomes that the proponent will achieve for MNES. Outcomes need to be specific, measurable, and achievable, and must be based on robust baseline data. To allow application of outcomes-based conditions, the PER should include:
    i. consideration of the Outcomes-based conditions policy 2016 and Outcomes-based conditions guidance 2016, with suitable justification for considerations identified in the policy and guidance
    ii. the specific environmental outcomes to be achieved, and reasoning for these in reference to relevant Recovery Plans, Conservation Advices and Threat Abatement Plans. For each proposed outcome:
        - the risks associated with achieving the outcome
        - the measurability of the outcome, including all suitable performance measures
        - appropriate baseline data upon which the outcome has been defined and justified
        - the likely impacts that the proposed outcome will address
        - demonstrated willingness and capability of achieving the outcome
        - commitments to independent and periodic audits of performance towards achieving outcomes, and
        - details of proposed management to achieve the outcome including, but not limited to, performance indicators, periodic milestones, proposed monitoring and adaptive management, and record keeping, publication and reporting processes.

7. OTHER APPROVALS AND CONDITIONS

a. The PER must include information on any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action. This must include:
   i. 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:
      - what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy
      - how the scheme provides for the prevention, minimisation and management of any relevant impacts
      - a description of any approval that 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
      - a statement identifying any additional approval that is required
      - a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

8. CONSULTATION

a. Provide details of any consultation that has occurred concerning the action, including:
   i. any consultation that has already taken place
   ii. proposed consultation about relevant impacts of the action
   iii. if there has been consultation about the proposed action, any documented response to, or result of, the consultation
   iv. identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

Indigenous Consultation

a. Identify 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 and the potential for managing those impacts.
b. Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. This should include:
   i. 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 site. Note the consultation recommendations by the National Indigenous Australians Agency (NIAA) at Attachment 3 and must be addressed in the PER.
   ii. a discussion about how impacts to areas and/or objects of Indigenous cultural significance (tangible and intangible) are avoided, mitigated or minimised.

c. The department considers that best practice consultation, in accordance with the Interim Engaging with First Nations People and Communities on Assessments and Approvals under the EPBC Act (2023).

9. ENVIRONMENTAL RECORD OF PERSON(S) PROPOSING TO TAKE THE ACTION

a. The information provided must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

i. the person proposing to take the action

ii. for an action for which a person has applied for a permit, the person making the application

iii. if the person is a body corporate—the history of its executive officers in relation to environmental matters

iv. If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework must also be included

v. if the person is a body corporate that is a subsidiary of another body or company (the parent body)—the history in relation to environmental matters of the parent body and its executive officers.

10. ECONOMIC AND SOCIAL MATTERS

a. The economic and social impacts of the action, both positive and negative, must be analysed. Analysis must include:

i. Projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies. Where possible, please include the total economic capital investment and economic ongoing value of the project.

ii. Economic and employment opportunities expected to be generated by the project (including construction and operational phases).

b. Economic and social impacts should be considered at the local, regional and national levels. Details of the relevant cost and benefits of alternative options to the proposed action, as identified in **section 2.3** above, should also be included.

11. PROMOTING ECOLOGICALLY SUSTAINABLE DEVELOPMENT

a. The draft PER must describe how the action will conform to the principles of ecologically sustainable development (ESD), which are as follows:

i. Decision making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.

ii. 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.

iii. 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.

iv. The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making.

12. INFORMATION SOURCES PROVIDED IN THE PER

a. For information given in a draft Public Environment Report, the draft must state:
   i. the source of the information
   ii. how recent the information is
   iii. how the reliability of the information was tested
   iv. what uncertainties (if any) are in the information.

Ecological data provision

The PER 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 department to update the relevant species distribution models that underpin the publicly available Protected Matters Search Tool (PMST).

The species occurrence records must be provided in accordance with the department's *Guidelines for biological survey and mapped data* (2018) using the species observation data template provided with this request for additional information. Sensitive ecological data must be identified and treated in accordance with the department's *Sensitive Ecological Data – Access and Management Policy V1.0* (2016) or subsequent revision.

13. CONCLUSION

An overall conclusion as to the environmental acceptability of the action should be provided, including discussion on compliance with principles of ESD and the objects and requirements of the EPBC Act. Reasons justifying undertaking the action in the manner proposed should also be outlined.

Measures proposed or required by way of offset for any unavoidable impacts on MNES, and the relative degree of compensation, should be restated here.

ATTACHMENT 1

THE OBJECTS AND PRINCIPLES OF THE

ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

SECTIONS 3 AND 3A

3 Objects of the Act

(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance;

(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources;

(c) to promote the conservation of biodiversity;

(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples;

(e) to assist in the co-operative implementation of Australia's international environmental responsibilities;

(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and

(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.

3A Principles of Ecologically Sustainable Development

The following principles are principles of ecologically sustainable development.

(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.

ATTACHMENT 2

MATTERS THAT MUST BE ADDRESSED IN A PER AND EIS

(SCHEDULE 4 OF THE EPBC REGULATIONS 2000)

1 General information

1.01 The background 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;

(e) the background to the development of the action;

(f) how the action relates to any other actions (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; and

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

2 Description

2.01 A description of the action, including:

(a) all the components of the action;

(b) the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts;

(c) how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts;

(d) relevant impacts of the action;

(e) proposed safeguards and mitigation measures to deal with relevant impacts of the action;

(f) any other requirements for approval or conditions that apply, or that the Proponent reasonably believes are likely to apply, to the proposed action;

(g) to the extent reasonably practicable, any feasible alternatives to the action, including:

(i) if relevant, the alternative of taking no action;

(ii) a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action; and

(iii) sufficient detail to make clear why any alternative is preferred to another;

(h) any consultation about the action, including:

(i) any consultation that has already taken place;

(ii) proposed consultation about relevant impacts of the action; and

(iii) if there has been consultation about the proposed action — any documented response to, or result of, the consultation; and

(i) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

3 Relevant impacts

3.01 Information given under paragraph 2.01(d) must include

(a) a description of the relevant impacts of the action;

(b) a detailed assessment of the nature and extent of the likely short term and long term relevant impacts;

(c) a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;

(d) analysis of the significance of the relevant impacts; and

(e) any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

4 Proposed safeguards and mitigation measures

4.01 Information given under paragraph 2.01(e) must include:

(a) a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures;

(b) any statutory or policy basis for the mitigation measures;

(c) the cost of the mitigation measures;

(d) an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;

(e) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program; and

(f) a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including mitigation measures proposed to be taken by State governments, local governments or the Proponent.

5 Other Approvals and Conditions

5.01 Information given under paragraph 2.01(f) must include:

(a) 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:

(i) what environmental assessment of the proposed action has been, or is being carried out under the scheme, plan or policy; and

(ii) how the scheme provides for the prevention, minimisation and management of any relevant impacts;

(b) a description of any approval that 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;

(c) a statement identifying any additional approval that is required; and

(d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

6 Environmental record of person proposing to take the action

6.01 Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

(a) the person proposing to take the action; and

(b) for an action for which a person has applied for a permit, the person making the application.

6.02 If the person proposing to take the action is a corporation — details of the corporation's environmental policy and planning framework.

ATTACHMENT 3:

Comments from the National Indigenous Australians Agency (NIAA) on EPBC 2024/09800, referral for the Gateway Motorway (Bracken Ridge to Pine River) Upgrade

First Nations engagement

The NIAA recommends that proponents ensure they have identified and engaged with the Traditional Owners and other First Nations stakeholders with interests in a project and have provided them with sufficient time and information to make informed assessments of the possible impact of the project on their interests. We recommend that proponents engage directly and actively with the Traditional Owners and any other First Nations stakeholders on the range of potential environmental, cultural, social and economic interests and concerns they may have in relation to a project. We recommend that this engagement be ongoing for the life of the project, including development, construction, operation and any project decommissioning.

Recent guidance on principles for culturally appropriate and respectful First Nations engagement is provided by the Department of Climate Change, Energy, the Environment and Water in *Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999*. The Guide, *Clean Energy Agreement Making on First Nations Land*, also includes useful points for proponents to consider.

The NIAA recommends that proponents ensure they engage with the Traditional Owners who speak for particular Country. There may be a number of different First Nations people, groups and organisations with rights and interests related to a particular project. Proponents should be aware of the Native Title, land owning, representative, community or First Nations local government organisations in their area, who can often help in the identification of the relevant Traditional Owners and groups for consultation.

It can be helpful for proponents to develop First Nations stakeholder engagement plans. The plans should be developed in collaboration with the relevant First Nations stakeholders and document their preferences for engagement methods and frequency.

To support and strengthen relationships between proponents and Traditional Owners, the NIAA encourages proponents to consider developing a formal agreement with the relevant Traditional Owner group. Where relevant, this may be an Indigenous Land Use Agreement (ILUA) with Native Title claimants or Native Title holders. An agreement can provide a framework for ongoing consultations, dispute management, environmental and cultural heritage management, land and water access, and economic opportunities and partnerships.

Native Title

Proponents are advised to ascertain whether there are any Native Title claims, determinations or settlements relevant to a proposed project. The National Native Title Tribunal's website and Native Title Vision (nntt.gov.au) may provide related information. Where a Native Title claim, determination or settlement is identified, we recommend the proponent consult with the claimants, Native Title holders or settlement body through their relevant Native Title representative body and service provider, legal representative, Prescribed Body Corporate or other relevant organisation. Native Title Vision provides some information on the relevant bodies.

The NIAA advises that the absence of Native Title claims or determinations over all or sections of a project area does not necessarily mean Native Title does not exist. While Native Title rights and interests will likely have been extinguished over any freehold land tenure, it may still exist over other land tenures, such as Crown Land and leases or offshore areas. Where a project is not on freehold or exclusive land tenure types, we recommend that proponents seek advice from the relevant state or territory government on whether any requirements under the future act provisions of the *Native Title Act 1993* apply prior to commencing works.

Cultural Heritage

The NIAA recommends that proponents assess the potential cultural heritage impacts of a project in collaboration with the relevant Traditional Owners, knowledge holders and other First Nations stakeholders, who may include First Nations organisations appointed under state or territory First Nations cultural heritage legislation. We recommend that this assessment include on-site inspections with the Traditional Owners and knowledge holders, and consideration of both tangible and intangible cultural heritage values. Intangible values can include songlines, dreaming sites, associations with biogeographic features, and culturally significant flora and fauna species.

The NIAA recommends that proponents collaborate with the relevant Traditional Owners, knowledge holders and other relevant First Nations stakeholders following the cultural heritage assessment to develop agreed measures for the protection and management of First Nations cultural heritage. Depending on the nature, size and potential impacts of a project, we recommend that proponents consider developing a Cultural Heritage Management Plan (CHMP) for the project that includes:

- the outcomes of the cultural heritage assessment;
- measures agreed with the Traditional Owners for the protection and management of both tangible and intangible cultural heritage values and mitigation of impacts;
- agreed protocols for the identification, protection and management of any cultural heritage values discovered during the project; and
- delivery of cultural awareness training to project staff and contractors to ensure that CHMP measures are implemented.

Economic opportunities and partnerships

The NIAA encourages the engagement of First Nations employees and businesses to help realise the economic benefit of a project for the local First Nations community. We encourage proponents to discuss opportunities for First Nations people and businesses with Traditional Owners and other First Nations stakeholders.

To support First Nations economic participation, we recommend proponents develop a First Nations employment, training and procurement plan incorporating participation targets. The Department of Infrastructure, Transport, Regional Development, Communications and the Arts' *Indigenous Employment and Supplier-use Infrastructure Framework* and the Australian Government's *Indigenous Procurement Policy* contain useful tools for setting employment and business procurement targets respectively.

Proponents may wish to contact local employment providers such as Workforce Australia to connect with potential First Nations employees. Likewise, Supply Nation maintains an online directory that can be used to identify suitable First Nations businesses to support a project.