RECOMMENDATION REPORT

Abbot Point Growth Gateway Project, Abbot Point, Queensland (EPBC 2015/7467)

1. <u>Recommendation</u>

That the proposed action, to undertake capital dredging, onshore placement and reuse of dredge material at Abbot Point, approximately 25km north of Bowen, North Queensland, be approved subject to the conditions specified below.

Dredging

- 1. The **approval holder** may only undertake the dredging using a **Cutter Suction Dredge**.
- 2. The approval holder must ensure that:
 - a) dredging only occurs in the berth pockets and apron areas identified as 'Dredging footprint' in <u>Appendix A</u>;
 - b) that no more than 1.1 million cubic metres of **dredge material** is removed from those areas; and
 - c) the dredge material must be placed in the dredge material containment area.

Dredge material containment area

- 3. The **dredge material containment area** (**DMCA**) must be located in the area identified in <u>Appendix B</u> and a liner to minimise potential lateral seepage must be installed in the sides of the **DMCA**.
- 4. **Construction** and operation of the **DMCA** must not occur within the **buffer zone** as identified in <u>Appendix B</u>. The **buffer zone** must be a minimum of 50 metres from the **wetland fringe** of the Caley Valley Wetlands, as identified in <u>Appendix B</u>.
- 5. The **approval holder** must undertake pre-clearance surveys prior to **commencement** of the **action**.
- 6. **Construction** of the **DMCA** must not be undertaken between the months of December and March inclusive.

Pipelines

- 7. The **approval holder** must ensure that **construction** and operation of the dredge material delivery pipeline and the return water pipeline only occurs together within a corridor that is no more than 12 metres wide.
- The approval holder must ensure there is an appropriate buffer zone between the dredge material delivery pipeline and the return water pipeline and any turtle nests to ensure there is no disturbance to turtle nests located along the coastal zone at Abbot Point.

Dredge Management Plan

- 9. The approval holder must submit a Dredge Management Plan (DMP) for the Minister's approval prior to commencement of the action. The approval holder must not commence the action unless the Minister has approved the DMP. The DMP must contain at least the following:
 - a) details of management measures including controls, performance targets, early warning trigger levels, adaptive management strategies, corrective actions, auditing review and non-compliance reporting for **impacts** from **dredging activities** to each of the **matters of national environmental significance**, including measures to:
 - i. minimise the impacts related to **construction** and placement of the pipeline from the dredge area to the **DMCA**, and the return water pipeline from the **DMCA** to the offshore discharge location;
 - ii. avoid disturbance to marine fauna;
 - iii. avoid the introduction of marine pest species;
 - iv. minimise the disturbance and release of dredge material;
 - v. manage risks associated with extreme weather events;
 - vi. manage the risk associated with the carriage, storage and use of hazardous materials on **vessels**; and
 - vii. avoid **vessel** accidents, oil spills and accidental release of **dredge material**.
 - b) management measures to implement the *Water Quality Guidelines for the Great Barrier Reef Marine Park* (2010) for water released into the marine environment through the return water pipeline;
 - c) details (including a map) of the placement of the dredge material delivery pipeline and the return water pipeline referred to in the final environmental impact statement;
 - d) details of management measures to ensure the **buffer zone** required under condition 8 is maintained;
 - e) a program to monitor marine water quality for the period of dredging, and for a specified period before and after dredging. The program must be capable of establishing a pre-dredging baseline and confirming when, after dredging is completed, that water quality has returned to baseline levels;
 - f) water quality trigger levels relating to photosynthetic active radiation, turbidity and/or total suspended solids, taking account of water quality guidelines that are currently applicable within the Great Barrier Reef. The water quality trigger levels must be linked to adaptive management strategies in the event that trigger levels are reached. Trigger levels must include:
 - i. early-warning trigger levels for modifying the **dredging activity**; and
 - ii. trigger levels for ceasing the dredging activity.

- g) procedures that provide for the approval holder to notify the **Department** (in writing) within three (3) business days if a trigger level requiring modification or ceasing of the dredging activity outlined under condition 9a, 9b and 9f are reached;
- h) procedures that provide for the approval holder to report, within one week of any initial notification required by condition 9g, advising of the cause of a trigger level exceedance, what adaptive management measures and corrective actions were implemented.
- i) a peer review of the adequacy of the draft DMP, in relation to dredging activities, by a suitably qualified independent expert and a table of any changes made in response to the peer review.
- 10. The approved DMP, or a subsequent version of the DMP as provided for under condition 24, must be implemented.

Onshore Environmental Management Plan

- 11. The approval holder must submit an Onshore Environmental Management Plan (OEMP) for the Minister's approval prior to commencement of the action. The approval holder must not commence the action unless the Minister has approved the OEMP (except in the case of the activities for which sub-plans under conditions 11b)i., 11b)ii and 11b)iii are separately approved). The OEMP must address the following:
 - a) details of management measures including controls, performance targets, early warning trigger levels, adaptive management strategies, corrective actions, auditing review and non-compliance reporting for **impacts** related to onshore components of the **action** to each of the **matters of national environmental significance**, including measures to:
 - i. manage potential and actual acid sulfate soils;
 - ii. manage erosion and sediment;
 - iii. mitigate impacts to water quality (surface and groundwater);
 - iv. implement stormwater management;
 - v. mitigate impacts related to noise and vibration;
 - vi. manage emergency responses (including response to **extreme weather events**);
 - vii. avoid impacts related to feral animals and weeds;
 - viii. avoid impacts related to vegetation clearing, habitat fragmentation and edge effects.
 - b) details of management measures including controls, performance targets, adaptive management strategies, corrective actions, auditing review and non-compliance reporting for **impacts** related to onshore components of the **action** to each of the **matters of national environmental significance**, including measures to:
 - i. Construction
 - a. avoid impacts related to **construction** of infrastructure, earthworks and embankments;
 - b. ensure the design of the DMCA includes:

- a. how the design is consistent with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*;
- b. lining of the sides of the DMCA; and
- c. sufficient freeboard to contain a 1 in 20 year average recurrence Interval (ARI) event.
- ii. Operation
 - a. ensure the ongoing maintenance of infrastructure; and
 - b. ensure ongoing stormwater and erosion control.
- iii. Decommissioning
 - a. ensure the beneficial reuse of dredge material; and
 - *b.* rehabilitation of the site used for the **DMCA**.
- c) a peer review of the adequacy of the OEMP, in relation to each element of the design, construction and operation of the DMCA, by a suitably qualified independent expert and a table of changes made in response to the peer review.
- 12. Sub-plans provided for at condition 11b)i, 11b)ii and 11b)iii may be submitted separately to the **Minister** for approval. The activities provided for under sub-plans 11b)i, 11b)ii and 11b)iii must not **commence** until the **Minister** has approved them.
- 13. The approved OEMP and sub-plans, or a subsequent version of the OEMP and subplans as provided for under condition 24, must be implemented.

Dredge Material Management Plan

- 14. The **approval holder** must submit a Dredge Material Management Plan (DMMP) for the **Minister's** approval prior to **commencement** of the **action**. The **approval holder** must not **commence** the **action** unless the **Minister** has approved the DMMP. The DMMP must contain at least the following:
 - a) a program to monitor the integrity of the DMCA that includes:
 - i. proposed locations of monitoring points, methods and frequency of monitoring;
 - ii. management measures for the **DMCA** including controls, performance targets, early warning trigger levels, adaptive management strategies, corrective actions, auditing review and non-compliance reporting;
 - iii. management measures to maintain the integrity of the **DMCA** in the case of **extreme weather events**; and
 - b) procedures for notifying the **Department** (in writing) within three (3) business days when discharge from the return water pipeline commences;
 - c) procedures that provide for the approval holder to notify the **Department** (in writing) within three (3) business day when a discharge trigger level outlined under condition 14a is exceeded;

- d) procedures that provide for the approval holder to report, within one week of any initial notification under condition 14c, advising of the cause of trigger level exceedance, what adaptive management measures and corrective actions were implemented; and
- e) a peer review of the DMMP, in relation to the operation of the **DMCA**, by a **suitably qualified independent expert** and a table of changes made in response to the peer review.
- 15. The approved DMMP, or a subsequent version of the DMMP as provided for under condition 24, must be implemented.

Completion Report

16. At the completion of dredging the approval holder must submit a Completion Report to the Minister. The Completion Report must include details of modelling used to determine the actual amount (tonnes) of fine sediment returned to the marine environment as a result of the action during dredging and dewatering of the dredge material.

Offset Management Strategy

- 17. The approval holder must submit an Offset Management Strategy (OMS) for the Minister's approval prior to commencement. The approval holder must not commence the action unless the Minister has approved the OMS. The OMS must include the following :
 - a) details on how the approval holder will achieve a reduction of sediment entering the marine environment from the Burdekin and/or Don catchments equal to 150% of the fine sediment determined in accordance with condition 16;
 - b) details of how the approval holder will provide a contribution to the Reef Trust or equivalent to compensate for the loss of potential seagrass habitat within the dredge footprint taking account of the equivalence of the density of seagrass coverage;
 - c) details of how the proposed contributions to programs or incentives align with the broader strategies and programs for the Great Barrier Reef, including but not limited to the Reef 2050 Long-term Sustainability Plan;
 - d) a process for annual reviews of the performance of the OMS for the life of the **approval** including timeframes for conducting the reviews and for publishing the findings of each review on the **approval holder**'s website.
- 18. If pre-clearance surveys, required by condition 5, identify the presence of squatter pigeon (*Geophaps scripta scripta*) on the **project site**, the approval holder must provide details of how an offset will be secured for impact to squatter pigeon habitat that is consistent with the **EPBC Act Environmental Offsets Policy**.
- 19. The approved OMS must be implemented.

Standard conditions

- 20. Within 10 days after the **commencement of the action**, the **approval holder** must advise the **Department** in writing of the actual date of **commencement**.
- 21. The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans and strategy required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.
- 22. Unless otherwise agreed to in writing by the **Minister**, within three months of every 12 month anniversary of the **commencement** of the **action**, the **approval holder** must publish a report on its website addressing compliance with each of the conditions of this **approval**, including implementation of any management plans and strategy as specified in the conditions. Documentary evidence providing proof of the date of publication and details of non-compliance with any of the conditions of this **approval** must be provided to the **Department** at the same time as the compliance report is published.
- 23. Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor and audit criteria must be approved by the Minister prior to the commencement of the audit. The audit report must address the approved criteria to the satisfaction of the Minister.
- 24. The approval holder may choose to revise a management plan approved by the Minister under conditions 9, 11 and 14 without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan or strategy would not be likely to have a new or increased impact. If the approval holder makes this choice it must:
 - i. notify the **Department** in writing that the approved plan or strategy has been revised and provide the **Department** with an electronic copy of the revised plan or strategy;
 - ii. implement the revised plan or strategy from the date that the plan or strategy is submitted to the **Department**; and
 - iii. for the life of this approval, maintain a record of the reasons the approval holder considers that taking the action in accordance with the revised plan or strategy would not be likely to have a new or increased impact.
- 25. The **approval holder** may revoke its choice under condition 24 at any time by notice to the **Department**. If the **approval holder** revokes the choice to implement a revised plan or strategy, without approval under section 143A of the Act, the plan or strategy most recently approved by the **Minister** must be implemented.
- 26. Condition 24 does not apply if the revisions to the approved plan or strategy include changes to environmental offsets provided under the plan or strategy in relation to a matter protected by a controlling provision for the **action**, unless otherwise agreed in

writing by the **Minister**. This does not otherwise limit the circumstances in which the taking of the **action** in accordance with a revised plan or strategy would, or would not, be likely to have **new or increased impacts**.

- 27. If the **Minister** gives a notice to the **approval holder** that the **Minister** is satisfied that the taking of the **action** in accordance with the revised plan or strategy would be likely to have a **new or increased impact**, then:
 - i. condition 24 does not apply, or ceases to apply, in relation to the revised plan or strategy; and
 - ii. the **approval holder** must implement the plan or strategy most recently approved by the **Minister**.

To avoid any doubt, this condition does not affect any operation of conditions 24, 25 and 26 in the period before the day the notice is given.

At the time of giving the notice the **Minister** may also notify that for a specified period of time that condition 24 does not apply for one or more specified plans or strategies required under the **approval**.

- 28. Conditions 24, 25, 26 and 27 are not intended to limit the operation of section 143A of the **EPBC Act** which allows the **approval holder** to submit a revised plan or strategy to the **Minister** for approval.
- 29. If, at any time after 5 years from the date of this **approval**, the **approval holder** has not substantially **commenced** the **action**, then the **approval holder** must not substantially **commence** the **action** without the written agreement of the **Minister**.
- 30. Unless otherwise agreed to in writing by the **Minister**, the **approval holder** must publish all management plans, strategies and reports, referred to in these conditions of **approval** on its website. Each management plan and/or strategy must be published on the website within 1 month of being approved by the **Minister**.

Definitions

Action: the Abbot Point Growth Gateway Project as referred under the EPBC Act (EPBC 2015/7467).

Approval holder: the person to whom the approval is granted or any person acting on their behalf, or to whom the approval is transferred under section 145B of the EPBC Act.

Bulk earth works: includes the removal, movement or borrowing of large quantities of soil or rock from around or to the project area by cutting into or filling of the surface of the ground.

Buffer zone: a zone providing distance separation between the predicted habitat or known location of a matter of national environmental significance and the location of any part of the **action**.

Commencement/Commence: the action commences when the **approval holder** begins **bulk earth works** associated with the **construction** of the dredge material containment area, dredging activities, laying pipes and the **construction** of any infrastructure associated with the proposed action. Commencement does not include **preliminary works**.

Construction: includes clearing of vegetation, laying pipelines and the use of heavy duty equipment for the purpose of **bulk earth works**.

Cutter Suction Dredge: a vessel that uses a rotating cutter head to loosen seabed material and a suction inlet designed to draw the loosened material into a pipe to be transported for disposal.

Department: the Australian Government Department or any other agency administering the EPBC Act from time to time.

Dewatering: the removal of water from the dredge material in the DMCA.

Dredge material: dredged seabed material mixed with water.

Dredge material containment area (DMCA): the onshore area, including structures to contain solid dredge material, and allow controlled removal of water, located in the area marked 'dredge material containment area' in <u>Appendix B</u>.

Dredging activities: includes all activities associated with capital dredging, pumping and deposition of **dredge material** in the **dredge material containment area** and release of return water to the marine environment.

EPBC Act: the Environment Protection and Biodiversity Conservation Act 1999 (Cth).

EPBC Act Environmental Offsets Policy: *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy* (2012). Commonwealth of Australia.

Extreme weather event: includes but not limited to periods of high rainfall, strong winds, very high tides, wild fire, severe drought and cyclones.

Final environmental impact statement: Abbot Point Growth Gateway Project - Environmental Impact Statement as submitted to the **Department** on 26 October 2015.

Fine sediment: <15.6µm fine silt and clay.

Impact/s/ed: has the definition assigned to it in section 527E of the EPBC Act.

Manual for Assessing Consequence Categories and Hydraulic Performance of Structures: Department of Environment and Heritage Protection (2014). *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*, EM635 Version 4. Queensland.

Matters of national environmental significance: in the context of this approval: Great Barrier Reef World Heritage Area, Great Barrier Reef National Heritage place; listed threatened species and communities as identified in the **Final environmental impact statement**, listed migratory species as identified in the **Final environmental impact statement**, Commonwealth marine area and the Great Barrier Reef Marine Park.

Minister: the Minister administering the EPBC Act and includes a delegate of the Minister.

New or increased impact: an **impact** on any matter protected by the controlling provisions for the **action**, which is new or increased when compared to the **impact** described in the plan or strategy that has been approved by the **Minister**.

Potential impact: includes **potential impacts** related to, but not limited to, noise, light, dust, accidental release of dredge material, marine water quality, vessel accidents, and **extreme weather events**.

Potential seagrass habitat: seagrass in the berth pockets and apron area (61 hectares) identified as 'Dredging footprint' in <u>Appendix A</u>.

Preliminary works: include the erection of fences and signage, transport and storage of equipment and materials and facilities of a temporary nature necessary to undertake site surveys, investigations and to prepare the project area for development.

Project site: Onshore components of the **action** as described in the **final environmental impact statement**, including dredge material delivery pipeline corridor, return water pipeline corridor, **dredge material containment area**, soil stockpile area, site office and laydown area.

Reef Trust: a financial mechanism assisting in the delivery of the **Reef 2050 Long-Term Sustainability Plan**.

Reef 2050 Long-term Sustainability Plan: *Reef 2050 Long-Term Sustainability Plan,* Commonwealth of Australia 2015.

Suitably qualified independent expert: a person, approved by the **Minister**, who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relevant current protocols, standards, methods and/or literature.

Vessels: means all boats and/or ships travelling near the port of Abbot Point including those used during the dredging operation.

Wetland fringe: means the wetland fringe of the Caley Valley Wetlands as defined in Volume 4 of the **final environmental impact statement**. The wetland fringe includes salt couch, samphire and sedgeland.

Appendix A - Dredging footprint





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2. Background

Project location

2.1. The project is located at the Port of Abbot Point, approximately 25 kilometres (km) north of Bowen on the North Queensland coast.

Description of the proposed action

- 2.2. A detailed description of the proposed action is provided in section 2 (volume 1) and in Volume 4 of the Abbot Point Growth Gateway Environmental Impact Statement (**EIS**).
- 2.3. The Queensland Government Department of State Development (**the proponent**) proposes to undertake capital dredging, onshore placement and beneficial reuse of dredged material at Abbot Point (**the project**). The project will enable shipping access to Terminal 0 at the Port of Abbot Point. Terminal 0 has not yet been built and was subjected to a separate approval (EPBC 2011/6194 –approved 10 December 2012).
- 2.4. The project has two key components the offshore capital dredging operation located within the Great Barrier Reef World Heritage Area and the onshore disposal and reuse of dredge material, adjacent to the Great Barrier Reef World Heritage Area.
- 2.5. The project involves:
 - construction of onshore dredged material containment area (DMCA) on the site previously allocated for the development of the 'Terminal 2' (T2) coal export terminal and adjoining industrial land;
 - capital dredging of approximately 1.1 million cubic metres (Mm³) in situ of previously undisturbed seabed for new berth pockets and ship apron areas to support the development of Terminal 0 (T0);
 - relocation of the dredge material to the onshore **DMCA** and offshore discharge of return water draining out of the dredged material; and
 - ongoing management of the dredged material including its removal, treatment and beneficial reuse within the port area and the Abbot Point State Development Area, where appropriate.

Offshore capital dredging operation

- 2.6. The area to be dredged is located approximately 3 km offshore from Abbot Point and is wholly contained within the port limits of the existing Port of Abbot Point.
- 2.7. The proponent proposes to dredge up to 1.1 Mm³ of marine sediments within a dredge footprint of approximately 61 hectares (**ha**). Dredging and deposition of the dredge material will be completed in a single campaign over approximately 5 to 13 weeks.
- 2.8. Based on historical and recent geotechnical assessments, the marine sediments to be dredged comprise a stratified matrix of sand, silt, clay and gravel. The material is estimated to comprise 60 percent (%) coarse material (sands and gravels) and 40% of fine material (silts and clays).

EPBC 2015/7467

2.9. The proposed dredging operation will be undertaken using a cutter suction dredge, and dredge material will be transported via pipelines to the onshore dredged material containment areas.

Figure 1. Location of project



- 2.10. The Department notes that a number of ancillary dredging activities may also be required including bunkering (e.g. refuelling and transfer of waste and sewage), temporary anchorages (e.g. refuelling vessels) and bed levelling of the seafloor.
- 2.11. Modelling and historical data contained in the assessment documentation suggests that future maintenance dredging requirements would be relatively minor, due to the topographic and hydrodynamic characteristics of the Abbot Point environment.
- 2.12. The proponent considers that potential impacts associated with the proposed dredging include boatstrike, vessel noise, dredge suction and sedimentation impacts on marine flora and fauna, and impacts resulting from diminished water quality caused by mobilisation and resuspension of sediments.

Pipelines

- 2.13. Submerged and floating pipelines will be installed to convey dredged material from the cutter suction dredger to the onshore placement area. The dredged material is proposed to be suspended in seawater slurry.
- 2.14. Three pipeline options have been proposed: indicative 1, indicative 2 and alternate routes (**Figure 1**).

- 2.15. The pipeline corridor width for the onshore section is expected to be up to 12 metres (**m**) wide when the dredge material and return pipelines run concurrently.
- 2.16. The proponent considers that potential impacts associated with the installation and operation of the placement pipework include damage to the seabed and associated sedimentation from dragging pipework, the risk of rupture resulting in uncontrolled sedimentation, the barrier effect of the floating pipework and boatstrike and noise impacts associated with installation.

Onshore disposal and reuse of dredge material

- 2.17. The proposed onshore DMCA is located (Figure 1):
 - on land that has been disturbed by, and allocated for industrial development;
 - in proximity to the existing port and proposed dredging activities;
 - outside of the Caley Valley Wetlands; and
 - to meet the requirements for T0 only.
- 2.18. The design of the DMCA has not yet been finalised, however, preliminary designs indicate the height of the embankment from the ground is expected to be between 4 m to 7 m.
- 2.19. The proponent states that earth embankments will be used to construct the DMCA, and material for the embankments will be sourced from the site. The embankment crest will be capped with a gravel layer, and external batters will be vegetated to provide erosion protection. A low density polyethylene liner or similar will be installed on the inside face of the embankments to assist in managing internal erosion and potential lateral seepage from the DMCA. The floors of the DMCA will not be lined.
- 2.20. The EIS notes that the DMCA has been designed to account for cyclonic rainfall and wind events for both short duration and wet season events. The DMCA will have the capacity to store water for rainfall events up to 20 years Average Recurrence Interval (**ARI**).
- 2.21. The DMCA will also have stormwater management measures in place to minimise run-off from the project site during construction and operation of the DMCA. This will include permanent outlet structures designed to disperse flow and minimise the potential for erosion at the base of the discharge points.

Management of the dredge material

- 2.22. The process proposed for placement of dredge material is described in Section 2.5 (volume 1) and in volume 4 of the EIS.
- 2.23. The proponent considers that potential impacts associated with management of dredge material include the risk of activating potential acid sulfate soils or concentrating any other contaminants during the settlement process, the risk of overtopping (or otherwise breaching) DMCA embankments and contaminating adjacent terrestrial and brackish / freshwater aquatic ecosystems, and the risk of inadequate settlement resulting in the release of turbid waters to receiving environments. Operation of the

DMCA may also involve the use of noise emitting equipment including pumps and earthmoving equipment from time to time.

- 2.24. The proponent has modeled the extent of potential acid sulfate soil, based on marine sediment sampling and onshore field testing. The proponent concludes that while potential acid sulfate soils exist at the site of the proposed dredging and within the DMCA, and are likely to be disturbed in association with the project, bulk sediments are likely to be self-neutralising. The proponent has also concluded that remedial management of acid sulfate soils (chiefly through liming) would be undertaken if required.
- 2.25. The EIS also notes that the DMCA has been designed to include a spillway to avoid overtopping and potential dam failure. The spillway will include a fuseplug to control the outflow and minimise potential erosion of the embankment, reducing the risk of embankment failure.
- 2.26. Sediments were tested in accordance with the National Assessment Guidelines for Dredging (Department of the Environment, Water, Heritage and the Arts, 2009) and were found not to have concentrations of contaminants that would impact on the surrounding marine environment.
- 2.27. The proponent has indicated that management of dredge material would be through a dredge material management plan.

Return water pipeline

- 2.28. The return water pipeline will run from the DMCA discharge point to a shallow subtidial area near the Abbot Point headland, and will operate 100% of the time to maintain water levels in the DMCA.
- 2.29. Return water will be discharged at a depth of 4 m lowest astronomical tide (LAT), subject to meeting licensed discharge criteria. The return water pipeline will include approximately 300 m of offshore pipeline, and approximately 4 km of onshore pipeline.
- 2.30. Depending on the dredge contractor, two return pipelines may be required to meet dredging requirements.
- 2.31. The proponent considers that potential impacts associated with the return water pipeline primarily relate to the quality and characteristics of discharged water in relation to the receiving environment, but also include physical and installation impacts resulting from onshore placement pipework.

Lighting

- 2.32. Directional night lighting will be required to facilitate safe working conditions. Indicative lighting requirements for the project include:
 - embankment construction minimum four to six light towers per working area;
 - liner installation minimum four to six light towers per working area;
 - haul roads minimum six to eight light towers depending on number of critical points on the road (e.g. corners and ramps); and

- work areas additional lighting will be required at administration areas for both construction and dredging phases, and the stockpile area (if required).
- 2.33. Subject to appropriate regulatory approvals being in place, the proponent has indicated that dredge material may be beneficially reused as general fill in the construction of future ports development such as T0 or T3 or remain on T2.
- 2.34. The DMCA has a design life of 10 years. There is potential that the DMCA could be made available for future dredging campaigns such as for T3 and maintenance dredging, if this is able to be accommodated within the operational life of the DMCA. The EIS notes that the DMCA may be decommissioned at or prior to the 10 years, and detail of the decommission process will be discussed with regulators no later than 2 years prior to decommissioning.

Project alternatives

- 2.35. Section 2.4 (volume 1) of the EIS discusses the proposed alternatives to this project.
- 2.36. The EIS notes that the proponent has developed the project in line with current port development policies. Previous alternatives to this current proposal include:
 - the use of longer trestles for jetty structures to avoid the need for dredging;
 - disposal of the dredged material in the Great Barrier Reef Marine Park;
 - onshore disposal of dredged material with no potential for reuse;
 - the use of a trailing suction hopper dredger for dredging activities; and
 - disposal of dredged material in the Caley Valley Wetlands.
- 2.37. The proponent considers that the proposed action will have reduced adverse impacts on matters of national environmental significance overall compared to the alternative offshore and onshore options described in Section 2.4 (volume 1) of the EIS.

Related projects

2.38. Abbot Point services the coal mines of the Bowen Basin, along with the Port of Gladstone and the Port of Hay Point and would also service various proposed coal mines recently approved to access coal reserves in the Galilee Basin. In addition, a number of rail lines and proposed rail lines provide mine to port connectivity. The proponent has identified that the proposed action is related to a number of other projects, listed below:

Abbot Point

- Abbot Point Coal T3 Project (EPBC 2008/4468), proposed by GVK Hancock Coal Infrastructure Pty Ltd approved 4 October 2012.
- Abbot Point Coal T2 project (EPBC 2011/6185), proposed by BHP Billiton withdrawn 23 October 2013.
- Abbot Point Coal T0 Project (EPBC 2011/6194), proposed by Adani Abbot Point Terminal Pty Ltd – approved 10 December 2013.

• Abbot Point T0, T2 and T3 Capital Dredging Project (EPBC 2011/6213)¹, proposed by North Queensland Bulk Ports Corporation – approved 10 December 2013.

Galilee Basin coal mines

- Alpha Coal Mine and Rail proposal, Galilee Basin, Queensland (EPBC 2008/4648), proposed by Hancock Alpha West Pty Ltd, Hancock Coal Pty Ltd and Hancock Coal Infrastructure – approved 23 August 2012.
- Kevin's Corner Project, Open Cut and Underground Coal Mine and Associated Infrastructure, 50km north of Alpha township, Galilee Basin, Queensland (EPBC 2009/5033), proposed by Hancock Galilee Pty Ltd – approved 1 November 2013.
- Galilee Coal and Rail Project, Galilee Basin, Queensland (EPBC 2009/4737), proposed by Waratah Coal Pty Ltd approved 19 December 2013.
- South Galilee Coal Project (EPBC 2010/5496), proposed by AMCI (Alpha) Pty Ltd approved 15 July 2015.
- Carmichael Coal Mine and Rail Infrastructure Project, Queensland (EPBC 2010/5736) proposed by Adani Mining Pty Ltd – approved 14 October 2015.

Associated railways

 North Galilee Basin Rail Project, Abbot Point to Galilee Basin, Queensland (EPBC 2013/6885), proposed by Adani Mining Pty Ltd – approved 14 October 2015.

Cumulative impacts

- 2.39. Section 6 (Volume 2) of the EIS includes the Abbot Point Cumulative Impact Assessment (**Abbot Point CIA**) undertaken by the proponents associated with development at the Port of Abbot Point – Adani, GVK Hancock, North Queensland Bulk Ports Corporation (**NQBP**) and BHP Billiton. The Abbot Point CIA provides an assessment of potential cumulative impacts arising from these projects. Since the finalisation of this assessment, BHP Billiton's proposed T2 project has been withdrawn under the EPBC Act.
- 2.40. The EIS concludes that the cumulative impacts described for the proposed project will be of lesser significance than those considered in the Abbot Point CIA, due to the reduction in scale and type of development proposed at the port.
- 2.41. The impacts of development associated with dredging and disposal and increased shipping from T0, T1 and T3 have been considered with those of the proposed project as they have the potential to have overlapping spatial and temporal impacts.
- 2.42. The EIS states that threats with the potential to result in cumulative impacts are:
 - exotic species the potential for introduction of marine pests to the local marine environment from construction and operation, including increased shipping, resulting from development of the T0 and T3 projects; and

¹ The currently proposed action has been proposed by the Queensland Government as a preferable alternative to the previous dredging project (EPBC 2011/6213), which involved the dredging of 3 million m³, and disposal offshore. On 2 June 2015 the Australian Government amended the Great Barrier Reef Marine Park Regulations 1983 to ban capital dredge disposal in the Great Barrier Reef Marine Park.

- land clearing and habitat loss the potential for land clearing and habitat loss to result in significant residual impacts for conservation significant species.
- 2.43. The Department considers that providing the proposed mitigation measures and recommended conditions are implemented (discussed in Sections 5 to 10), the cumulative impacts of the project on matters of national environmental significance at Abbot Point will be minimised.

Shipping impacts

- 2.44. The EIS notes that no commercial shipping activity will occur as part of the project, however shipping has been assessed as a consequential impact, as dredging will enable the T0 project to proceed.
- 2.45. The EIS notes that an assessment of the potential increase in shipping was undertaken as part of the T0 project. The assessment found that phase 1 and 2 of the T0 project was likely to result in 560 additional ship calls to the port of Abbot Point per annum.
- 2.46. The proponent considers that impacts of increased shipping include vessel collision and strikes on marine species, potential water contamination (spills and waste), noise, lighting, disturbance of marine habitat from anchoring, and introduction of invasive species.
- 2.47. The EIS states that these impacts and proposed management procedures were addressed in the environmental impacts statement for T0 project (EPBC 2011/6194). Furthermore, the EIS notes that conditions relating to the management of shipping impacts were imposed as part of the T0 project approval.
- 2.48. Consequential impacts as a result of increased shipping have been considered in this report where relevant to matters of national environmental significance (discussed in paragraphs 5.44 and 5.65.

Greenhouse gas emissions

- 2.49. The EIS notes that the project may result in increased greenhouse gas emissions (**GHG**).
- 2.50. The EIS notes that the proponent is required to report on GHG emissions under the provisions of the *National Greenhouse and Energy Reporting Act 2008* (Cwlth) (NGER Act). The NGER Act prescribes an accounting methodology and requires the publication of results. Under the NGER Act, boundaries have been established to assist in determining emissions attributable to a project. In terms of emissions boundaries, three scopes have been identified:
 - Scope 1 (direct) emissions—includes the release of GHG emissions as a direct result of activities undertaken at a facility. They are emissions over which the entity has a high level of control.
 - Scope 2 (energy direct) emissions—includes the release of GHG emissions from the generation of purchased electricity, steam, heating or cooling consumed by a facility, but do not form part of the facility. Scope 2 emissions are indirect emissions that

entities can easily measure and significantly influence through energy efficiency measures.

- Scope 3 (indirect) emissions—includes all indirect emissions that are not included in Scope 2. They are a consequence of the activities of the facility, but occur at sources or facilities not owned or controlled by the entity. Scope 3 emissions are not defined in the NGER Act because reporting them is not mandatory.
- 2.51. The EIS has determined that the project emissions are considered to include emissions resulting from:
 - construction of onshore DMCA;
 - dredging of undisturbed seabed for new berth pockets and ship apron areas; and
 - relocation of the dredged material to the DMCA and offshore discharge of return water, ongoing management and removal of the dredged material.

Scope	emissions (t CO2-e)	activities that relate to the project
scope 1	84 464	emissions from combustion of purchased fuel, fugitive emissions of GHGs for site equipment or vegetation clearance
scope 2	24	fuel combustion and vegetation removal
scope 3	18 160	Extraction, production and transport of fossil fuels consumed
		Extraction, production and transportation of fuels consumed in the generation of electricity
		Embodied emissions in key construction material
		Road transport of construction and equipment material, and construction crew between the camp and the APGG Project sites.
total (scope 1, 2 &3)	102 648	

2.52. The EIS includes the following calculation of GHG emissions from the project:

Conclusion

- 2.53. The EIS concludes that there are minimal GHG emissions directly associated with the construction and operation of the project.
- 2.54. Scope 1, 2 and 3 GHG emissions are likely to occur within Australia if the project proceeds. Australia has set targets to reduce GHG emissions through a climate change policy framework that includes the Emission Reduction Fund.
- 2.55. Noting that this project is not a coal mining operation, the Department considers that consequential GHG emissions associated with the project will be managed and mitigated and offset through national and international emissions control frameworks operating in Australia and within countries that are the import market for coal.

Description of the environment

- 2.56. The dominant ecological features of Abbot Point are the coastal waters, which are part of the Great Barrier Reef World Heritage Area (<u>Figure 2</u>) (and, in places, the Great Barrier Reef Marine Park); the adjacent Caley Valley Wetlands; and Mount Luce, which is not expected to be impacted by the proposed action.
- 2.57. The Caley Valley Wetlands are located to the south west of the proposed site and cover an area of around 5,150 ha. The wetlands comprise an aggregation of subtidal

and intertidal marine and estuarine wetlands as well as a large fresh to brackish wetland area, and provide habitat for listed threatened and migratory bird species.

2.58. The proposed action includes the dredging of an area of approximately 61 ha, approximately 3 km offshore from Abbot Point, an area located entirely within the limits of the existing Port of Abbot Point and the Great Barrier Reef World Heritage Area. The project is not located within the Great Barrier Reef Marine Park.

Assessment process

- 2.59. The project was referred on 15 April 2015 and determined a controlled action on 14 May 2015 due to likely significant impacts on World Heritage properties (sections 12 and 15A); National Heritage places (sections 15B and 15C); Commonwealth marine areas (sections 23 and 24A); listed threatened species and ecological communities (sections 18 and 18A); listed migratory species (sections 20 and 20A); and the Great Barrier Reef Marine Park (sections 24B and 24C).
- 2.60. On the same day, the Minister decided that the proposed action would be assessed by environmental impact statement. Environmental impact statement guidelines were provided to the proponent on 4 July 2015.
- 2.61. The proponent submitted a draft EIS on 14 August 2015. The draft EIS was determined by the Department to meet the requirements of the EIS guidelines. Subsequently, the draft EIS was published for a public comment period of 21 business days ending 18 September 2015. The proponent received 55,127 submissions on the draft EIS.
- 2.62. The final EIS, including the response to submissions made on the draft EIS, was submitted to the Department on 26 October 2015, commencing the 40 business day period in which to make a decision on whether or not to approve the project.
- 2.63. Submissions made on the draft EIS have been taken into account during the assessment of the project. Issues raised during the comment period were addressed by the proponent in finalising the EIS and are discussed throughout this recommendation report.
- 2.64. On 4 November 2015, the EIS was published in accordance with section 104(4) of the EPBC Act.

3. State Assessment and Approval

- 3.1. This proposal is not being assessed under the bilateral agreement with Queensland.
- 3.2. The project will be subject to a number of Queensland State approvals and permits.
- 3.3. Offshore works (including dredging and pipeline infrastructure) will be wholly located within Strategic Port Land and will therefore be subject to the approval process under the *Sustainable Planning Act 2009* (Qld) and the associated Integrated Development Assessment System process.
- 3.4. Onshore works will be wholly located within the Abbot Point State Development Area (**APSDA**), and will be subject to the approval process under the APSDA Development Scheme (November 2014).

Figure 2 – Location of project in relation to the Great Barrier Reef World Heritage Area and Great Barrier Reef Marine Park.



4. Mandatory Considerations – section 136(1)(a) Part 3 controlling provisions

- 4.1. The following provisions of Part 3 of the EPBC Act are the controlling provisions for assessment (listed in the order in which they are discussed below):
 - sections 12 and 15A World heritage properties;
 - sections 15B and 15C National heritage places;
 - sections 18 and 18A Listed threatened species and ecological communities;
 - sections 20 and 20A Listed migratory species;
 - sections 23 and 24A Commonwealth marine areas; and
 - sections 24B and 24C Great Barrier Reef Marine Park.

5. World heritage properties (sections 12 and 15A)

- 5.1. The 2012 Reactive Monitoring Mission by the World Heritage Centre and the International Union for the Conservation of Nature identified that the current and potential threats to the long-term conservation of the Great Barrier Reef World Heritage Area are climate change, catchment runoff, coastal development, ports and shipping and direct extractive use.
- 5.2. In July 2011, the Australian and Queensland governments' provided a commitment to the UNESCO World Heritage Committee to undertake a strategic assessment of the Great Barrier Reef and prepare a long-term plan for sustainable development.
- 5.3. On 11 August 2014, the Great Barrier Reef Marine Park Authority (**GBRMPA**) and Queensland Government final strategic assessment programs were endorsed under Part 10 of the EPBC Act.
- 5.4. The Reef 2050 Long-Term Sustainability Plan (**Reef 2050 Plan**) represents the Australian and Queensland governments' commitment to working with industry and the community to undertake and coordinate wide-ranging actions to ensure the Reef's ongoing health and resilience.
- 5.5. The EIS notes that the Reef 2050 Plan includes measures to ensure that development in the Great Barrier Reef coastal zone occurs in an ecologically sustainable manner and negative impacts on the Outstanding Universal Value are avoided. To meet this objective, developers of port-related projects are required to:
 - develop a direct benefit environmental offset management plan to maximise the Reef's health and resilience;
 - restrict capital dredging to within port limits;
 - prohibit the sea-based disposal of material into the Great Barrier Reef World Heritage Area;
 - consider the beneficial reuse of port-related capital dredging; and
 - demonstrate the proposed port is commercially viable.
- 5.6. The Great Barrier Reef World Heritage Area was inscribed on the World Heritage List in 1981 for all four of the natural heritage criteria in place at the time of listing. Currently, this is specified in the United Nations Educational, Scientific and Cultural Organisation's 2012 Operational Guidelines for the Implementation of the World Heritage Convention; as criteria (vii), (viii), (ix) and (x).
- 5.7. The current natural heritage criteria for World Heritage properties are that they:
 - vii. contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;
 - viii. be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

- ix. be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals; and
- x. contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation.
- 5.8. The Great Barrier Reef World Heritage Area stretches more than 2,300 km along the northeast coast of Queensland, from the tip of Cape York to just north of Bundaberg. Its width varies from around 90 km to around 300 km.
- 5.9. The EIS includes a discussion of the specific heritage values that contribute to the Outstanding Universal Value of the World Heritage Area. Twenty-nine specific natural heritage values of the World Heritage Area are recognized. Of these, the following three attributes were considered by the proponent to be relevant to the proposed action:
 - aesthetics
 - birds
 - marine mammals.
- 5.10. The EIS notes that coral reef complexes will not be impacted by the project. Other attributes, such as other less complex corals are acknowledged to be represented at Abbot Point, but not at a sufficient scale, intensity or level of importance to warrant detailed consideration.
- 5.11. For the purposes of assessment under the EPBC Act, and based on the EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area, May 2014 (listing criterion appears in parentheses), the Department considers that these attributes reflect the following values:
 - aesthetics → superlative natural beauty above and below the water (7), unique and varied seascapes and landscapes (8).
 - birds → breeding colonies of seabirds (7), other fauna including microfauna (9), important role of birds, such as the pied imperial pigeon, in processes such as seed dispersal and plant colonisation (9), diversity supporting marine and terrestrial species (global conservation significance) (10), 242 species of birds (10), 22 seabird species breeding (cays and some continental islands have globally significant breeding sites) (10).
 - marine mammals → migrating whales (7), other fauna including microfauna (9), diversity supporting marine and terrestrial species (global conservation significance) (10), dugong (10), species of whales (10), species of dolphins (10), humpback whale calving (10).
- 5.12. The Department considers that the following values are also relevant:
 - corals coral assemblages of hard and soft corals (7), coral reef ecosystems (8), coral reefs, sand banks and coral cays (9), coral reefs and coral cays (10).
 - marine turtles green turtle breeding (7, 10), nesting turtles (7), marine turtle (10), marine turtle rookeries (10).

 wetland values – thousands of species of reef fish (7), significant spawning aggregations of many reef fish (7), over 4000 species of molluscs and over 1500 species of fish, plus a great diversity of sponges, anemones, marine worms, crustaceans and many others (9), other fauna including microfauna (9), diversity supporting marine and terrestrial species (global conservation significance) (10), diversity of mangroves (10), plant species diversity and endemism (10).

Aesthetics – Superlative natural beauty above and below the water (7), Unique and varied seascapes and landscapes (8)

- 5.13. A visual impact assessment undertaken by Cardno Chenoweth in 2012 as part of the Abbot Point Cumulative Impact Assessment concluded that Abbot Point does not encompass areas of exceptional natural beauty, but does support superlative natural phenomena, specifically in the form of aggregations of birds and migrations of marine mammals and other iconic species. The assessment concludes that these values are represented at Abbot Point only in a 'minor' way or 'in a way which contributes to overall [World Heritage Area] scenic diversity; but [are] neither outstanding per se nor uniquely expressed at Abbot Point.
- 5.14. The EIS states the visual impact of the project is assessed as minor given all activities will be undertaken within port limits or the coastal area adjacent to the existing port infrastructure, and there are no residential areas nearby with view of the project area. In addition, the project is limited to a temporary and stationary dredge plant that will be in operation for a short period of time.
- 5.15. Increased shipping as a result of dredging for the T0 project has the potential to result in an increasing number of ships required to be at anchorage offshore from Abbot Point. The inner route passes between the outer reef and the mainland, and ships using this route are visible to recreational and tourism vessels which may be travelling from the mainland to the reef.
- 5.16. The EIS notes that management of shipping in the Great Barrier Reef is subject to higher level strategic policies that have been developed in consideration of industry trends (including the continued expansion of the export coal industry). These policies include the recently released North-East Shipping Management Plan (Australian Marine Safety Authority, 2014). The North-East Shipping Management Plan address the impacts of the current and increased shipping on the world heritage values of the Great Barrier Reef and sets out additional measures to further reduce risk.
- 5.17. In addition, the EIS notes that the EPBC approval for the T0 project has a requirement to establish and implement an environmental management plan to address marine and shipping impacts on the Great Barrier Reef World Heritage Area. The EIS concludes that the cumulative impacts of shipping on world heritage values of the Great Barrier Reef will be managed through government regulation and industry codes of practice.
- 5.18. The Department accepts the assessment provided in the EIS and concludes that any impacts of the proposed action on these two world heritage values of the World Heritage Area would be insignificant and therefore not unacceptable. No specific avoidance or mitigation measures are considered necessary.

EPBC 2015/7467

Birdlife – Important role of birds, such as the pied imperial pigeon, in processes such as seed dispersal and plant colonisation (9), 242 species of birds (10), 22 seabird species breeding (cays and some continental islands have globally significant breeding sites) (10)

- 5.19. The EIS notes that whilst the Caley Valley Wetlands are not located within the World Heritage Area, it is a significant aggregation site for birds including shorebirds and other waterbirds. The Caley Valley Wetlands are located to the south west of the proposed DMCA. The EIS notes that there will be a minimum 50 m buffer between the DMCA and the wetland habitat.
- 5.20. The potential impacts associated with the project on birdlife include noise, dust, light spill, increased activity, and changes to stormwater and groundwater regimes.
- 5.21. The area of habitat for bird species that may be potentially disturbed by noise is approximately 21.9 ha or 0.4 % of the wetland; and 115 ha or 2.2% of the wetland will be disturbed by dust (particulate matter 10 micrometres or less in diameter (PM10)). The EIS notes that these impacts are considered small relative to the total area of habitat available (5,154 ha).
- 5.22. The project is located within a port industrial precinct, and immediately adjacent to the existing T1 operating coal terminal. In this context, the EIS notes that the lighting from the project will add to that which is already present in the existing landscape. Night time construction activities will be supported by mobile and directional towers, reducing the amount of light spill from the source to approximately 60 m. The EIS notes that the direct light spill from the project is expected to be contained within the buffer area between the project and the wetland. The EIS concludes that impacts from light on bird species are assessed as low.
- 5.23. Disturbance from human activity has the potential to disturb bird foraging and nesting behaviour. Research has also shown that the energetic costs of disturbance of shorebirds can be quite high and may compromise their capacity to build enough energy reserves to undertake their migration.
- 5.24. The EIS states that there is variability in the response of bird species to disturbance, and that the proposed buffer between the project and wetland habitats is likely to mitigate the risk of disturbance.
- 5.25. Increased activity has the potential to increase bird mortality through direct vehicle strikes. The EIS notes that the overall risk of mortality as a result of vehicle strike is expected to be low however, there is an increased potential for this to occur during construction. The EIS includes measures to minimise the risk of vehicle strike on bird species as outlined in paragraph 5.28 below.
- 5.26. Based on groundwater modelling undertaken for the project, the EIS states that changes to the water quality of the wetland utilised by shorebirds is not expected. Worst case scenario modelling has indicated that there is the potential of an increase in groundwater salinity within the wetland. The EIS notes that this is expected to be minimal (less than 2 parts per thousand (ppt)), and substantial changes to wetland vegetation are unlikely.
- 5.27. The EIS notes that the DMCA have been designed to account for cyclonic rainfall and wind events for both short duration and wet season events (discussed in

paragraph 2.20). The design of the ponds includes management measures to control stormwater run-off and the potential for dam failure (discussed in paragraph 2.25). In the event of emergency stormwater discharge, the EIS concludes that impacts will be localised and mitigated by the large amount of water flowing naturally through the wetland.

- 5.28. The EIS provides a number of general mitigation measures to minimise impacts associated with the project on bird species. These include:
 - limit the extent of vegetation clearing;
 - wetting of surfaces including roads, exposed stockpiles and embankments to minimise dust;
 - install physical barriers such as bund or wind breaks;
 - reduce speed limits for all vehicles and ensure speed limits are clearly sign-posted;
 - vehicles will be restricted to designated roads and tracks;
 - maintain a buffer area of 50m between the DMCA and the Caley Valley Wetland;
 - design of plant machinery to minimise noise;
 - use of directional lighting and shrouds to protect adjacent areas from direct light; and
 - use of mobile towers that can be moved and adjusted during construction to minimise the need to light unused areas.
- 5.29. In addition to the mitigation measures outlined above, the proponent has committed to preparing and implementing an environmental management plan for the construction and operation of the DMCA. The aim of the plan is to provide a framework to ensure the environmental risks associated with the project are properly managed during design, construction and operation.
- 5.30. The environmental management plan will include control strategies, objectives and targets, responsibilities, monitoring, corrective actions and reporting for all stages of the project.
- 5.31. To minimise impacts associated with extreme weather events and disturbance on birdlife habitat in the Caley Valley Wetlands, the Department recommends that construction of the DMCA must not occur between December and March; and a 50 m buffer zone be maintained between the DMCA and the wetland fringe of the Caley Valley Wetlands.
- 5.32. To ensure the integrity of the DMCA, the Department recommends that you attach a condition requiring the proponent to provide a detailed design of the DMCA, prior to commencing construction, including how the design is consistent with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* and has sufficient freeboard to contain a 1 in 20 ARI.
- 5.33. In addition, the Department recommends that you attach a condition requiring the proponent to implement a dredge management plan, including measures to monitor and mitigate impacts and provide triggers for corrective actions. The dredge management material plan must be independently reviewed.

- 5.34. The Department recommends that you attach a condition requiring the development and implementation of an onshore environmental management plan that incorporates appropriate mitigation measures, such as those discussed above, and includes an adaptive management and monitoring program that will effectively manage, monitor and mitigate impacts of the project on bird species and their habitat.
- 5.35. The Department considers that provided the recommended conditions and proposed mitigation measures are implemented, impacts of the project on these three world heritage values of the World Heritage Area would not be unacceptable.

Marine mammals – Migrating whales (7), Dugong (10), Species of whales (10), Species of dolphins (10), and Humpback whale calving (10)

- 5.36. Humpback whales (*Megaptera novaeangliae*) and dugongs (*Dugong dugon*) are both known to pass through the waters off Abbot Point. Although there are some local seagrass meadows that provide a potential foraging resource for dugongs, the area has not been identified as being important to either species for breeding, calving or foraging.
- 5.37. Inshore dolphins, in particular the Australian snubfin dolphin (*Orcaella heinsohnii*) and Indo-Pacific humpback dolphin (*Sousa chinensis*) are also known to occur in the waters off Abbot Point. Neither of these species is well understood in terms of their distribution, biology or behaviour, although the EIS suggests that individual populations may be genetically important. The EIS acknowledges that 'the conservation importance of Australian snubfin and Indo-Pacific humpback dolphins in a local context should therefore be considered high'.
- 5.38. The Department considers that this group of species is likely to be at risk from impacts associated with the project noise, turbidity, and vessel strike. Additionally, dugongs may be indirectly impacted by impacts on seagrass meadows, addressed separately in paragraphs 5.70 to 5.80.
- 5.39. Based on predicted noise modelling, the EIS notes that underwater noise may cause behavioural changes to some marine mammal species, and they may move further away from activity. The EIS concludes that given the short-term nature of the dredge activities and proposed mitigation measures, impacts from underwater noise on marine mammals is not expected to be significant at a local or Great Barrier Reef World Heritage Area scale.
- 5.40. Marine water quality impacts are discussed in detail in section 4.3.5 of the EIS. The EIS notes that operation of the cutter suction dredge will reduce the amount of sediment entering the water column compared with the operation of other dredgers. Dredge material will be pumped to the onshore DMCA, reducing the amount of sediment entering the marine environment to only fugitive sediments released from the action of the cutter suction head. The EIS states that dredging and the return water discharge is expected to contribute to approximately 9,938 tonnes (t) of fine sediment to the marine environment.
- 5.41. Based on sedimentation/plume modelling, the EIS concludes that changes in marine water quality from increased sediments will be short-lived and isolated to within a 500m radius of the dredging operation. The proponent considers that changes in water

quality near the return water discharge point are also expected to be localised and of short duration.

- 5.42. The cutter suction dredge is anchored during dredging and moves at slow speed, either with self-propulsion or the use of support vessels. The EIS notes that the use of a support vessel has been reduced due to the pumping of the dredge material to the DMCA. The EIS includes proposed management measures, including restricting the location of the cutter suction dredge, visual monitoring for marine fauna in the immediate vicinity of the dredger and maintaining speed to minimise impacts of vessel strike on marine mammals. The EIS concludes that given the limited number of vessel movements and proposed mitigation measures, the impacts of vessel collision is expected to be low.
- 5.43. The Department considers that the project has the potential to facilitate increased shipping in the Great Barrier Reef World Heritage Area and this may increase the risk of vessel collision with marine mammals. The EIS notes that the impacts relating to shipping including vessel collision have been addressed in the environmental assessment of the T0 project.
- 5.44. In addition, the EIS notes that management of shipping in the Great Barrier Reef is subject to higher level strategic policies that have been developed in consideration of industry trends (including the continued expansion of the export coal industry). These policies include the North-East Shipping Management Plan (Australian Marine Safety Authority, 2014). The EIS concludes that the cumulative impacts of shipping on world heritage values of the Great Barrier Reef have been addressed and will be managed through government regulation and industry codes of practice.
- 5.45. The proponent has committed to preparing and implementing a dredge management plan. The dredge management plan will include best practice mitigation and management measures for dredging operations that are known to be effective in addressing the potential impacts identified above.
- 5.46. The proponent has also proposed additional measures to provide improvements in water quality through a contribution to the Reef Trust to undertake activities aligned with the Reef 2050 Plan (discussed in section 11). This may involve, for example, funding gully erosion projects to reduce sediment entering the Great Barrier Reef. The Department has recommended that a condition be imposed requiring the proponent to provide further details of the proposed management measures (discussed in section 11).
- 5.47. To minimise impacts of vessel strike and water quality on marine mammals, the Department recommends you attach a condition specifying that dredging must be undertaken using a cutter suction dredge, and that no more than 1.1 Mm³ of dredge material be removed from the dredge footprint.
- 5.48. The Department recommends attaching a condition of approval that requires the development and implementation of a dredge management plan that incorporates management actions, including monitoring to mitigate the impacts of the project on marine mammals and their habitat. The plan must include measures to: modify dredging activity and / or stop works if specified water quality triggers levels are reached; to avoid the introduction of marine pests and disturbance to marine fauna;

and ensure the return water discharge complies with the Water Quality Guidelines for the Great Barrier Reef Marine Park (2010).

5.49. The Department considers that provided the proposed mitigation measures and recommended conditions are implemented, impacts of the project on these five world heritage values of the World Heritage Area would not be unacceptable.

Coral communities - coral assemblages of hard and soft corals (7), coral reef ecosystems (8), coral reefs, sand banks and coral cays (9), coral reefs, coral cays (10)

- 5.50. Volume 4 of the EIS describes the coral communities present at Abbot Point. The EIS stated that survey results located hard and soft coral in the project area however, they are sparsely distributed and do not represent complex coral communities. In contrast, Camp Island, located 20km to the west of the dredging area, has extensive fringing coral growing on underwater rocky outcrops and is considered to be an important coral community. The EIS states that the closer coral locations are likely to be important to some local residents for fishing and diving.
- 5.51. The EIS states that increased sedimentation and a reduction in light availability have the potential to impact on coral communities in the project area. Marine water quality impacts are discussed in section 5.40. Based on sedimentation / plume modelling, the EIS concludes that changes in marine water quality from increased sediments (greater than 5mg/L) will be short lived and isolated to within a 500m radius of the dredging operation and that complex coral communities will not be impacted by the project.
- 5.52. The Department notes that there is likely to be temporary anchoring of vessels for dredging activities. Anchors can result in coral breakage and tissue damage from the scraping of anchor chains. The Department notes that coral may take years to rebuild from damage and in some cases may not recover. The Department considers that given there are no complex coral communities within the dredge footprint, impacts associated with anchoring are unlikely to occur.
- 5.53. The proponent has committed to preparing and implementing a dredge management plan that will include best practice mitigation and management measures for dredging operations to address the potential impacts to corals.
- 5.54. The Department recommends attaching a condition of approval that requires the development and implementation of a dredge management plan that incorporates management actions, including monitoring to mitigate any potential impacts of the project on complex coral communities.
- 5.55. The Department considers that provided the recommended conditions are implemented, impacts of the project on these four world heritage values of the World Heritage Area would not be unacceptable.

Marine turtles – Green turtle breeding (7, 10), nesting turtles (7), marine turtle (10), marine turtle rookeries (10)

5.56. Five species of marine turtle, loggerhead turtle (*Caretta caretta*), hawksbill turtle (*Eretmochelys imbricata*), olive ridley (*Lepidochelys olivacea*), green turtle (*Chelonia mydas*) and flatback turtle (*Natator depressus*) are known or expected to occur in the waters off Abbot Point.

- 5.57. The EIS states that while loggerhead, hawksbill and olive ridley turtles are known to occur in the Abbot Point area, the area is unlikely to be important for these turtle species. They utilise a variety of marine habitats and no known nesting beaches or notable foraging resources for these species have been recorded in the vicinity of Abbot Point.
- 5.58. Only the green turtle and flatback turtle are considered likely to be significantly impacted by the proposed action, as they are known to nest on the sandy beaches on either side of the Abbot Point headland.
- 5.59. Marine turtles are considered likely to be at risk from noise, turbidity, and vessel strike associated with the project. Suction from trailing hopper suction dredges can also pose a risk to marine turtles. The EIS notes that this is not considered to be a concern with cutter suction dredges as the disturbance associated with vibration from the cutter suction dredger and the slow progression of the dredger provides significant time for resting turtles to relocate.
- 5.60. In addition, the EIS notes that predator tracks (primarily pigs) were identified on mainland coastal beaches at Abbot Bay including Abbot Point. Feral Pigs are known to prey upon marine turtle eggs. The EIS notes that the environmental management plan will include pest control measures to reduce the impacts of feral species on matters of national environmental significance including marine turtle species.
- 5.61. Green turtles may also be indirectly affected by impacts on seagrass meadows. This matter is addressed in paragraphs 5.70 to 5.80 and section 11.
- 5.62. Nesting turtles may be impacted by construction noise and vibration, but are at most risk from light spill. Lighting can disrupt turtle nesting, which typically occurs at night, by disorientating adult females as they approach the beach to lay their eggs, or hatchlings as they emerge and move towards the water. Nesting may also be impacted by the deployment of dredging pipework if the beach is to be used for temporary construction or storage of pipework.
- 5.63. The EIS states that mitigation measures will be implemented to reduce the impacts of light spill on nesting turtles, including the use of mobile towers that can be adjusted during construction to minimise lighting of unused areas.
- 5.64. The Department considers that the project has the potential to facilitate increased shipping in the Great Barrier Reef World Heritage Area and this may increase the risk of vessel collision with marine turtles.
- 5.65. The EIS notes that the impacts relating to shipping, including vessel collision, have been addressed in the environmental assessment of the T0 project. Further, management of shipping in the Great Barrier Reef is subject to higher level strategic policies, including the North-East Shipping Management Plan (Australian Marine Safety Authority, 2014).
- 5.66. As discussed in paragraphs 5.29, 5.30 and 5.45, the proponent is committed to preparing and implementing an environmental management plan and a dredge management plan. The Department considers that the impacts described above can be

readily managed through a suite of measures in accordance with best practice dredging activities.

- 5.67. To minimised impacts on turtle nesting beaches, the Department recommends you attach a condition requiring the proponent to maintain a buffer zone between the proposed dredge material delivery pipelines and any identified turtle nest areas located along the coastal zone at Abbot Point.
- 5.68. The Department also recommends attaching a condition requiring the development and implementation of an onshore environmental management plan and a dredge management plan that incorporates appropriate mitigation and management measures. These plans must also include adaptive management and monitoring programs that will mitigate impacts of the project on marine turtle species and their habitat.
- 5.69. The Department further considers that the proposed additional management measures in relation to seagrass (discussed in section 11) and water quality (addressed in section 11) would also sufficiently address any residual significant impacts on marine turtles. The Department has recommended that a condition be imposed requiring the proponent to provide further details of the proposed management measures (discussed in section 11). The Department therefore concludes that impacts of the proposed action on these four world heritage values of the World Heritage Area would not be unacceptable.
- Seagrass Diversity of seagrass (10), plant species diversity and endemism (10)
 - 5.70. Seagrass meadows are an ecological feature of importance to many other values of the World Heritage Area (including as a foraging resource for green turtle and dugong) and also contribute to the integrity of the World Heritage Area by consolidating marine sediments and consuming excess nutrients.
- 5.71. Seagrass surveys undertaken in December 2014 identified seagrass at one site in the proposed apron area. The area of seagrass found in the dredging footprint consisted of less than 1% cover of the deepwater seagrass *Halophila decipoens*.
- 5.72. The EIS notes that while seagrasses are mostly absent from the 61 ha dredge footprint, where they are present, it is at low densities (1% to 5% cover). The proposed dredging will result in direct impacts on approximately 61 ha of actual and potential seagrass habitat within the dredge foot point.
- 5.73. The EIS states that dredging of the T0 berth pocket will deepen the seabed, resulting in reduced light levels, with the potential to preclude recolonisation of seagrass from an area of approximately 10.5 ha. This represents approximately 0.04% of the available seagrass mapped at Abbot Point.
- 5.74. Dredging of the apron area is likely to directly impact on 50.5 ha of potential seagrass habitat. However the EIS states that this is expected to be a temporary impact due to: the dredging depth of the apron areas being no more than 18.5 LAT, and that this is unlikely to alter benthic light to preclude seagrass re-establishment; and characteristic (texture and composition) of the seabed in the apron area, after dredging, is expected to be similar to pre-dredging, thus allowing for recolonisation of seagrass.

- 5.75. In addition, the EIS notes that further impacts on seagrass communities may occur due to increased sedimentation from dredging activities and the return water discharge from the DMC, however these impacts are expected to be temporary.
- 5.76. As mentioned above, seagrass provides foraging resources marine species. The EIS states that given there is an additional 27,000 ha of mapped seagrass outside of the proposed dredging area it is unlikely marine species would be dependent on the ephemeral deepwater seagrass patches that are occasionally found in the dredge footprint.
- 5.77. The EIS concludes that the potential permanent loss of 10.5 ha of seagrass habitat as a result of the project is considered a negative impact in relation to the world heritage values that cannot be further mitigated. The proponent has proposed a contribution to the Reef Trust to provide improvement in the water quality and enhance the resilience of seagrass ecosystems in the Great Barrier Reef World Heritage Area. Details of this proposal are discussed separately in section 11.
- 5.78. The Department supports this approach, which is consistent with the Reef 2050 Plan. However the Department considers that there is a risk that the seagrass within the apron areas will not recolonise. Although seagrass has the potential to recolonise in some of these areas, the Department considers that this process is likely to be slow and / or incomplete, given the ongoing disturbance of port operations including the potential for maintenance dredging. Therefore recommends that the proponent prepare and implement an offset management strategy to compensate for the loss of 61 ha of potential seagrass habitat within the dredge footprint.
- 5.79. As discussed in paragraph 5.48, to minimise impacts associated with dredging the Department recommends that you attach a condition requiring the proponent to prepare and implement a dredge management plan. The plan must provide management measures including controls, performance targets, early warning trigger levels, adaptive management strategies and corrective actions.
- 5.80. The Department considers that providing the recommended conditions are implemented, impacts of the project on these two world heritage values of the World Heritage Area would not be unacceptable.

Miscellaneous – Breeding colonies of seabirds and marine turtles (7), Other fauna including microfauna (9), Diversity supporting marine and terrestrial species (global conservation significance) (10), beds of Halimeda algae (9)

- 5.81. The EIS identifies the presence of macroalgae, including three species of *Halimeda*, in the Abbot Point project area. Surveys identified macroalgae to be widespread but patchy in distribution and typically with a low (less than 5%) cover. No macroalgae are present in the dredge footprint.
- 5.82. Macroalgae provides foraging resources for marine species such as dugongs and turtles. The EIS notes that impacts on macroalgae communities may occur due to increased sedimentation from dredging activities.

- 5.83. The EIS concludes that changes in marine water quality from increased sediments will be short lived and isolated to within a 500m radius of the dredging operation. In addition, the proponent has committed to prepare and implement a dredge management plan to address impacts from dredging.
- 5.84. The matters discussed above in relation to birds (paragraphs 5.19 to 5.35) marine mammals (paragraphs 5.36 to 5.49), marine turtles (paragraphs 5.56 to 5.69) and seagrass (paragraphs 5.70 to 5.80) also contribute to these four world heritage values. The Department therefore considers that proposed mitigation measures and recommended conditions equally apply and impacts of the proposed action on these four values of the World Heritage Area would not be unacceptable.

Integrity

- 5.85. The proposed action would slightly expand the Port of Abbot Point (albeit still within existing port limits), but without causing any fragmentation of values other than the minor and temporary fragmentation caused by submerged and floating pipework. Approximately 61 ha of potential seagrass habitat would be modified.
- 5.86. The proposed action poses a number of other risks to the integrity of the World Heritage Area, such as the potential for introduction of pest species and contamination resulting from the catastrophic failure of dredging infrastructure and the DMCA.
- 5.87. The EIS states that, given the scale of the Great Barrier Reef World Heritage Area, it is not considered likely that the size of the project alone would influence the integrity of the Great Barrier Reef World Heritage Area.
- 5.88. The proponent has committed to preparing and implementing management plans, to ensure that impacts are mitigated, monitored and adaptive management strategies implemented if required.
- 5.89. The Department does not expect the proposed action to have an unacceptable impact on the integrity of the World Heritage Area primarily due to the relatively small scale of the anticipated impacts and the temporary nature of certain impacts.

Property management arrangements

5.90. The Department does not consider that the proposed action would result in a change in the protection and management mechanisms of the World Heritage Area. The proposed action, if approved, would be managed through a range of conditions imposed by the Commonwealth and / or Queensland Governments. The actions are also consistent with the designation of the area as a working port.

Summary conclusions

5.91. Based on the recommended conditions and proposed mitigation measures, the Department is of the view that the project will not have an unacceptable impact on the world heritage values of the Great Barrier Reef World Heritage Area. The Department has considered the World Heritage Convention and the World Heritage Management Principles in assessing the impacts, mitigation measures and in making the recommendations discussed in paragraphs 12.31 to 12.55

6. National Heritage Places (sections 15B and 15C)

- 6.1. In May 2007, the Great Barrier Reef was placed on the National Heritage List. This list comprises natural and cultural places that contribute to our national identity, providing a tangible link to past events, processes and people.
- 6.2. The Great Barrier Reef National Heritage place has national heritage values in respect of the following national heritage criteria:
 - the place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history;
 - the place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history;
 - the place has outstanding heritage value to the nation because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history;
 - the place has outstanding heritage value to the nation because of the place's importance in demonstrating the principal characteristics of:
 - i. a class of Australia's natural or cultural places; or
 - ii. a class of Australia's natural or cultural environments;
 - the place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.
- 6.3. The heritage values that cause the Great Barrier Reef National Heritage place to meet the criteria (its national heritage values), are similar to the values that cause it to meet the world heritage criteria set out above.
- 6.4. Therefore, the impacts of the project to the national heritage values of the Great Barrier Reef National Heritage place are commensurate with the impacts from the project on the world heritage value of the Great Barrier Reef World Heritage property. Mitigation, management and offset measures equally apply to the Great Barrier Reef National Heritage place.

Conclusion for assessment of impacts on natural heritage place

6.5. Based on the recommended conditions and proposed mitigation measures, the Department is of the view that the project will not have an unacceptable impact on the national heritage values of the Great Barrier Reef National Heritage Place. The Department has considered the National Heritage Management Principles in assessing the impacts, mitigation measures and in providing the recommendations discussed in paragraphs 12.56 to 12.59.

7. Great Barrier Reef Marine Park (sections 24B and 24C)

7.1. The Great Barrier Reef Marine Park is discussed in Section 4 (volume 2) of the EIS against the significance impact guidelines. The significant impact guidelines state that an action may have a significant impact on the Great Barrier Reef Marine Park if it is likely to:

- modify, destroy, fragment, isolate or disturb an important, substantial, sensitive or vulnerable area of habitat or ecosystem component such that an adverse impact on marine ecosystem health, functioning or integrity in the Great Barrier Reef Marine Park results;
- have a substantial adverse effect on a population of a species of cetacean including its life cycle (for example, breeding, feeding, migration behaviour, life expectancy) and spatial distribution;
- result in a substantial change in air quality or water quality (including temperature) which may adversely impact on biodiversity, ecological health or integrity or social amenity or human health;
- result in a known or potential pest species being introduced or becoming established in the Great Barrier Reef Marine Park;
- result in persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, or social amenity or human health may be adversely affected, or
- have a substantial adverse impact on heritage values of the Great Barrier Reef Marine Park, including damage or destruction of an historic shipwreck.
- 7.2. Relevant impacts on the habitat and ecosystems (including seagrass) and marine mammals are discussed above in World and National Heritage (section 5 and 6), listed threatened species and ecological communities (section 8) and listed migratory species (section 9). Additional matters relating to water quality, marine pest, heritage and community benefits are discussed below.

Water quality

- 7.3. Water quality is a key environmental value of the Great Barrier Reef Marine Park. The EIS notes that the project may result in impacts on water quality through increase in sedimentation in the water column from dredging activities.
- 7.4. Results of the hydrodynamic modelling indicate that the suspended sedimentation plumes resulting from the increased sedimentation (less than 5 mg/L) is mainly confined to the dredging area in during the wet and dry seasons. The EIS notes that during the wet season the extent of predicted sediments less than 5 mg/L is approximately 4.4 km compared to the dry season's extent of 8.8 km. At the return water discharge location, sedimentation is expected to be localised within 100 m for both seasons.
- 7.5. Based on the water quality assessment undertaken across the dredge footprint, the EIS notes that sediments released into the marine environment are not expected to contain organic chemicals, heavy metals or other harmful chemicals at concentrations that are of environmental concern or toxic to marine species.
- 7.6. The EIS notes that water quality impacts will be mitigated through best practice dredging and the use of sediment thresholds for discharge of return water. Protocols for management of hazardous materials, including contingency responses, would also serve to reduce the risk of water pollution resulting from fuel or other contaminants entering the marine environment.

- 7.7. The EIS states that the project will have no significant residual impacts on matters of national environmental significance. However, it also states that it has the potential to have negative impacts on water quality and seagrass habitat.
- 7.8. The proponent has committed to providing a contribution to the Reef Trust for activities to improve the water quality within the Great Barrier Reef World Heritage Area. The Department considers that the potential for improved water quality in the Great Barrier Reef World Heritage Area would also provide a benefit to the environmental values of the Great Barrier Reef Marine Park.
- 7.9. The Department recommends that the proponent prepare and implement a dredge management plan that incorporates appropriate mitigation measures, and includes an adaptive management and monitoring program.
- 7.10. The Department also recommends that you attach a condition requiring the proponent to prepare and implement an offset management strategy. The offset strategy must include details of how the proponent will improve water quality in the Great Barrier Reef World Heritage Area through activities aligned with Reef 2050 Plan.

Marine Pests

- 7.11. The EIS notes that whilst it is unlikely, there is a potential for invasive species to be introduced into the marine environment as a result of dredging activities. Introduced species can be translocated to regions through use of ballast water (to control trim and draft of vessel) and biofouling (for example organisms on hulls and propellers).
- 7.12. The EIS notes that high risk ballast water is not accepted at Abbot Point, and all dredging vessels will adhere to the Australian mandatory ballast water reporting system, and mandatory ballast water management will need to meet the Australian Quarantine and Inspection Service arrangement.
- 7.13. In addition the proposed dredge management plan will incorporate risk assessment procedures consistent with the *National System for the Prevention and Management of Marine Pest Incursion* guidelines. In addition to providing ballast water management, the guidelines also provide practical measures to manage biofouling.
- 7.14. As discussed in paragraph 5.48 the department recommends that you attach a condition requiring the proponent to submit a dredge management plan that includes measure to avoid the introduction of marine pest species as a result of the project.

Social

7.15. The EIS notes that the project may impact on fisheries, tourism or other uses of the Great Barrier Reef Marine Park; however, these impacts are expected to be limited due to the location, scale of dredging, and the temporary and confined nature of most of the anticipated impacts within the immediate environs of an operating port. A discussion of the social and economic matters associated with this project is discussed in section 12.

Heritage values

7.16. The EIS notes that the Catalina Plan wreck is located 32 km from the T0 dredging footprint and has been declared a Maritime Cultural Protection Special Management

Area. The EIS states that no predicated impacts to this site are expected as a result of the project.

- 7.17. The EIS also notes that the project is not likely to directly or indirectly impact on the heritage values of the Great Barrier Reef Marine Park.
- 7.18. The Department accepts the assessment provided in the EIS and concludes that impacts of the proposed action on these heritage values of the Great Barrier Reef Marine Park would not be unacceptable. No additional avoidance or mitigation measures are considered necessary.

Conclusion for assessment of impacts on Great Barrier Reef Marine Park

7.19. Based on the proposed mitigation measures and recommended conditions, the Department considers that the project will not have an unacceptable impact on the Great Barrier Reef Marine Park.

8. Listed threatened species and ecological communities (sections 18 and 18A)

- 8.1. The Department's Environment Reporting Tool (ERT) indicates that a total of 26 EPBC Act listed threatened species and one EPBC Act listed ecological community may occur within a 5 kilometre radius of the subject site (report generated on 20 November 2015). In accordance with section 158A of the EPBC Act, only species listed under the EPBC Act at the time of the controlled action decision have been considered in this recommendation report.
- 8.2. Based on the location of the action and likely habitat present in the area, coupled with the data presented in the EIS, the Department considers potential impacts may occur on the following listed threatened species and ecological community:

Semi-evergreen vine thickets of the Brigalow Belt (north and south) and Nandewar Bioregion – endangered

Squatter pigeon (southern) (Geophaps scripta scripta) – vulnerable

Australian painted snipe (Rostratula australis) - endangered

Green turtle – vulnerable (also listed migratory)

Flatback turtle – vulnerable (also listed migratory)

Humpback whale - endangered (also listed migratory)

<u>Semi-evergreen vine thickets of the Brigalow Belt (north and south) and Nandewar Bioregion –</u> endangered

- 8.3. Semi-evergreen vine thickets of the Brigalow Belt (north and south) and Nandewar Bioregions (semi-evergreen vine thickets) are listed as endangered under the EPBC Act. This community is composed of dry seasonal subtropical rainforest, and is also known as bottle tree scrub or vine scrub.
- 8.4. Semi-evergreen vine thickets occur naturally as discrete patches associated with other vegetation types. Surviving fragments outside protected areas are frequently located in agricultural landscapes where there is a risk of weed invasion, fire incursion or clearing for fences.

- 8.5. The EIS states that no semi-evergreen vine thickets ecological community has been recorded within the footprint of the DMCA or pipeline alignments. However, ecological surveys identified patches of this ecological community adjacent to the project site. The closest record is located approximately 50 m from the proposed pipeline alignment between the DMCA and the beach to the north.
- 8.6. The EIS notes that these semi-evergreen vine thickets are generally in good condition but some are degraded to varying degrees by invasion by the exotic rubber vine (*Cryptostegia grandiflora*) or other weeds.

Assessment of Impacts

- 8.7. The National Recovery Plan for the "Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions" (semi-evergreen vine thickets recovery plan) was developed and approved on 6 April 2010. The overall objective of the plan is to maintain and conserve the environmental values of the community over the long term, by minimising the loss of both remnant and regrowth fragments and improving their condition and management.
- 8.8. The semi-evergreen vine thickets recovery plan identifies the main threat to this community as broad-scale clearing; establishment of weeds; increased fire regimes; livestock grazing; coastal development; and increase in vertebrate pest such as rabbits and pigs. The threat abatement plans relevant to the management of semi-evergreen vine thickets are discussed in paragraph 8.46.
- 8.9. The EIS notes that whilst the project will not result in any clearing of the semi-evergreen vine thickets, it has the potential to result in indirect impacts on this ecological community through increases in weeds and alteration of fire regimes.

Mitigation measures

- 8.10. The EIS proposes a number of mitigation measures designed to minimise impacts to the semi-evergreen vine thickets ecological community, including:
 - areas to be cleared for the project will be surveyed and marked out to ensure no areas of semi-evergreen vine thickets are inadvertently cleared;
 - all imported soil will be certified as weed-free prior to use;
 - soil and fill material from weed-affected areas within the project area will not be transported to clean sites; and
 - fire prevention measures will be implemented including appropriate storage of flammable material; fitting spark controls to equipment and ensuring adequate fire fighting equipment is available.

Conclusion of Assessment on Semi-evergreen vine thickets Ecological Community

- 8.11. The Department considers the proposed avoidance of impacts from the project and the proposed mitigation measures are consistent with the actions included in the semievergreen vine thickets recovery plan.
- 8.12. The Department considers that any impacts of the proposed action on semi-evergreen vine thickets would not be unacceptable.

Squatter Pigeon (southern) (Geophaps scripta scripta) – Vulnerable

- 8.13. The squatter pigeon (southern) occurs mainly in grassy woodlands and open forests dominated by eucalypts. The species is commonly observed in habitats that are within 3km of a suitable waterbody and has also been recorded in sown grasslands and scattered remnant trees, disturbed habitats, scrub and acacia regrowth.
- 8.14. The EIS states the squatter pigeon has been observed regularly in small numbers in the coastal areas near Dingo Beach and in the Caley Valley wetlands. Whilst this species has not been recorded on the project site, the EIS notes that there is habitat for this species on the project site.

Assessment of Impacts

- 8.15. The approved Conservation Advice for the Squatter Pigeon (TSSC 2015) states the main threats to the squatter pigeon include loss of habitat due to clearing for agriculture or development purposes; degradation of habitat by grazing species; predation and illegal shooting. Threat abatement plans relevant to the management of the squatter pigeon are discussed in paragraph 8.46.
- 8.16. The EIS states that the project will result in clearing of approximately of 94 ha of suitable habitat. This includes 75 ha associated with the DMCA and a further 18.6 ha associated with the soil stockpile, alternative pipeline route and pipeline laydown area.
- 8.17. In addition, the EIS notes that other impacts on the squatter pigeon may occur as a result of increase in vehicle strike and the potential destruction of ground nests during the construction phase; habitat fragmentation; increase in predation and edge effects.
- 8.18. Based on the Significant Impact Guidelines 1.1, the EIS concludes that the squatter pigeon at Abbot Point does not meet the criteria for an important population or habitat critical to the survival of the species for the following reasons:
 - the species is ubiquitous in this part of its geographic range;
 - species is not restricted by habitat availability in the region;
 - numbers recorded at Abbot Point are small and the species is neither rare nor disjunct from the broader population;
 - it is not at the edge of the range of the species and is therefore not important in terms of range expansion and recovery; and
 - there is no evidence to suggest the individuals found at Abbot Point are important in term of maintaining genetic diversity.

Mitigation measures

- 8.19. The proponent is proposing a number of mitigation measures designed to minimise impacts to the squatter pigeon. These include:
 - restricting clearing to the minimum footprint;
 - survey and marking of areas to be cleared to ensure no additional habitat is inadvertently disturbed;
 - pre-clearance surveys to be undertaken prior to vegetation clearance to flush individuals and determine the location of any nests. If nests are identified,

translocation of eggs/young may be undertaken by suitably qualified personnel, if appropriate; and

• education of personnel operating equipment to ensure they are aware that squatter pigeon occur on the project site and where habitat has been identified.

Conclusion of Assessment of Impacts on the squatter pigeon

- 8.20. The EIS states that the squatter pigeon has been recorded within a variety of habitats in the local area and habitat on the project site is representative of the available habitat throughout the region. In addition, the squatter pigeon is a habitat generalist, known to occur within both disturbed and remnant areas. Given the availability of habitat in the local area, low number of squatter pigeon records, and mobility of the species, the EIS concludes that the loss of habitat is unlikely to be significant for this species.
- 8.21. The EIS notes that approximately 241 ha of squatter pigeon habitat will be disturbed as a result of the T0 and T3 project at Abbot Point; and this project will result in further loss of habitat for this species.
- 8.22. Whilst the squatter pigeon has not been recorded on the project site, the site does contain suitable habitat for the species. The Department notes that the proponent has committed to undertaking pre-clearance surveys for this species. The Department recommends that you attach a condition requiring the proponent to undertake pre-clearance surveys for the squatter pigeon. Further, the Department recommends that if the species is identified, the proponent be required to provide an offset to compensate for the loss of squatter pigeon habitat. The offset amount must be in accordance with the Department's *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* (October 2012).
- 8.23. The Department concludes that the proposed mitigation measures, if implemented, will avoid or minimise any impacts to the squatter pigeon and its habitat and that the project will not have unacceptable impacts on the squatter pigeon.

Australian painted snipe (Rostratula australis) – endangered

- 8.24. The Australian painted snipe is listed as endangered under the EPBC Act. It is a stocky wading bird usually found in shallow inland terrestrial freshwater (occasionally brackish), including temporary and permanent dams, lakes, ponds, swamps and claypans, as well as inundated or waterlogged grassland and irrigated crop land. This species requires suitable wetland areas even in drought conditions.
- 8.25. The Australian painted snipe is widespread across much of Australia (particularly throughout the Murray-Darling Basin), although its area of occupancy has declined along with the decline of wetland habitats since European settlement. The species typically occurs only in small numbers.
- 8.26. The Caley Valley Wetlands are considered a stronghold for the species. The assessment documentation indicates that the Caley Valley Wetlands support approximately 1.87% of the total population of the species. The species has been detected in relatively large numbers (24 birds in one count) in both wet and dry conditions and chicks and juveniles have been observed, suggesting local breeding.

EPBC 2015/7467

8.27. The EIS states that the Australian painted snipe has been sighted on nine occasions adjacent to the project site and to the north, south and west of the project site.

Assessment of Impacts

- 8.28. The approved Conservation Advice for *Rostratula australis* (Australian painted snipe) (TSSC 2013) notes that loss of high quality habitat is a major threat to the species and recommends, 'no disturbance in areas where the species is known to breed'. Relevant threat abatement plans are discussed in paragraph 8.46.
- 8.29. Potential impacts associated with the project on the Australian painted snipe include noise, dust, light spill, increased human activity and impacts to wetland habitat due to changes to stormwater and groundwater regimes. These impacts and proposed mitigation measures are discussed above in paragraphs 5.19 to 5.35.
- 8.30. As discussed in paragraphs 5.26 to 5.27, based on the proponent's worst case scenario modelling, impacts associated with changes in hydrology regimes are expected to be low, less than 2 parts per thousand (ppt). The EIS also notes that changes in wetland habitat for this species are unlikely to be significant, if they occur at all.

Conclusion of Assessment of Impacts on the Australian Painted Snipe

- 8.31. To ensure habitat for the Australian painted snipe is protected, the Department recommends the proponent submit to the Minister for approval, an onshore environmental management plan.
- 8.32. The onshore environmental management plan must detail how potential impacts to the Australian painted snipe during construction and operation will be avoided, mitigated, monitored and managed. The onshore environmental management plan should ensure impacts on the Australian painted snipe and its habitats are minimised.
- 8.33. To minimise impacts associated with changes to stormwater and groundwater on the Australian painted snipe and its habitats, the Department recommends you attach a condition requiring the proponent to prepare and implement a dredge material management plan. The dredge material management plan must include monitoring, triggers and corrective actions. The Department also recommends the dredge management material plan be independently reviewed.
- 8.34. To minimise impacts associated with extreme weather events and disturbance on Australian painted snipe habitat in the Caley Valley Wetlands, the Department recommends that construction of the DMCA must not occur between December and March; and a 50 m buffer zone be implemented and maintained between the DMCA and the wetland fringe of the Caley Valley Wetlands.
- 8.35. The Department is of the view that the project will not have unacceptable impacts on the Australian painted snipe provided the above recommendations and proposed mitigation measures are implemented.

Listed threatened marine turtle species.

- 8.36. The green turtle and flatback turtle are known to occur at Abbot Point.
- 8.37. There is currently no approved conservation advice for the green turtle or the flatback turtle. The threat abatement plans relevant to the management of marine turtles are discussed in paragraph 8.46.
- 8.38. The overall recovery objective of the National Marine Turtle Recovery Plan (for the green, flatback, leatherback, olive ridley, loggerhead and hawksbill turtle species) is to reduce detrimental impacts on Australian populations of marine turtles and hence promote their recovery in the wild. The National Marine Turtle Recovery Plan noted the continued decline of the eastern Australian population of the loggerhead turtle and identified the need for its conservation to be implicit in all actions. The specific objectives identified in the National Marine Turtle Recovery Plan are as follows:
 - To reduce the mortality of marine turtles and, where appropriate, increase natural survivorship, including through developing management strategies with Aboriginal and Torres Strait Islander communities for the sustainable use of marine turtles.
 - To develop programs and protocols to monitor marine turtle populations in Australia, assess the size and status of those populations, the causes of their mortality and address information gaps.
 - To manage factors that affect marine turtle nesting.
 - To identify and protect habitats that are critical for the survival of marine turtles.
 - To communicate the results of recovery actions and involve and educate stakeholders.
 - To support and maintain existing agreements and develop new collaborative programs with neighbouring countries for the conservation of shared turtle populations.
- 8.39. A discussion of the impacts associated with the project, mitigation measures and the Department's recommendations for these two marine turtles is provided in paragraphs 5.56 to 5.69.
- 8.40. The Department is of the view that the project will not have unacceptable impacts on the green turtle and flatback turtle provided the recommended conditions and proposed mitigation measures are implemented.

Humpback whale (Megaptera novaeangliae) – endangered (also listed migratory)

- 8.41. The EIS notes that humpback whales have been observed in waters off Abbot Point only during September, suggesting they may use the area as resting habitat as they migrate north to breeding grounds and south to their feeding grounds in Antarctica.
- 8.42. The approved conservation advice for *Megaptera novaeangliae* (Humpback Whale) (TSSC 2015) identifies the following threats to the species: whaling; climate and oceanographic variability and change; overharvesting of prey; noise interference; habitat degradation (including port expansions); entanglement; and vessel strike.

- 8.43. There is one threat abatement plan that is relevant to the management of the Humpback Whale Marine Debris Threat Abatement Plan.
- 8.44. The Department considers that the project, mitigation measures and recommended conditions are not inconsistent with or Marine Debris Threat Abatement Plan.
- 8.45. The Department considers that significant impacts of the proposed action on the humpback whale are unlikely, providing the recommended conditions and proposed mitigation measures (discussed in paragraphs 5.36 to 5.49) are implemented. These measures aim to minimise impacts on the marine habitat of the humpback whale. The Department therefore concludes that impacts of the proposed action on the humpback whale would not be unacceptable.

Threat abatement plans

- 8.46. The following threat abatement plans have been identified as relevant to the listed threatened species and ecological community considered above:
 - Marine Debris Threat Abatement Plan
 - European Red Fox Threat Abatement Plan
 - Feral Cat Threat Abatement Plan
 - Tramp Ant Threat Abatement Plan
 - Rabbits Threat Abatement Plan
- 8.47. The goal of the above threat abatement plans is to minimise the impact of exotic species on biodiversity in Australia and its territories by protecting affected threatened species, and preventing further species and ecological communities from becoming threatened.
- 8.48. The Department notes that the project has the potential to further increase the occurrence of pest species and marine debris during the construction and operation of the project. The EIS notes that the proponent has committed to preparing and implementing an onshore environmental management plan and a dredge management plan. These plans will include management measures to minimise threats through pest and weed controls and waste management.
- 8.49. The Department considers that likely impacts on listed threatened species and ecological communities will be avoided and mitigated by the proponent to a reasonable degree under the proposed conditions. Approving the project subject to the proposed conditions would therefore not be inconsistent with the relevant Threat Abatement Plans identified above.

Conclusion for assessment of impacts on listed threatened species and communities

8.50. The Department considers that provided the recommended conditions and proposed mitigation measures discussed above are implemented, there will not be an unacceptable impact on listed threatened species and ecological communities.

9. Listed migratory species (sections 20 and 20A)

- 9.1. The Department's ERT indicates that a total of 36 listed migratory species may occur within a 5 km radius of project. In accordance with section 158A of the EPBC Act, only species listed under the EPBC Act at the time of the controlled action decision (14 May 2015) have been considered in this recommendation report.
- 9.2. The Department has identified a number of listed migratory species that are potentially significantly impacted by the proposed action. These are addressed below.

Listed Migratory Birds Species

- 9.3. Information relating to listed migratory bird species is provided in section 3 (volume 1) and section 4 (volume 2) of the EIS.
- 9.4. Based on ecological surveys and proximity of habitat, the EIS identified the project may have potential impacts on the following migratory species:
 - Eastern great egret (*Ardea modesta*)
 - Sharp-tailed sandpiper (*Calidris acuminata*)
 - Curlew sandpiper (*Calidris ferruginea*)
 - Red-necked stint (*Calidris ruficollis*)
 - Latham's snipe (*Gallinago hardwickii*)
 - Caspian tern (*Hydroprogne caspia*)

- Eastern curlew (*Numenius* madagascariensis)
- Australian painted snipe (*Rostratula australis*) (also listed as endangered)
- Little tern (Sterna albifrons)
- Common greenshank (*Tringa nebularia*)
- Marsh sandpiper (*Tringa stagnatilis*)
- 9.5. On 30 June 2015, the Australian painted snipe was delisted as a migratory species under the EPBC Act. Therefore, this species has not been considered further in the discussion on EPBC listed migratory species (but see paragraphs 8.24 to 8.35).

Threats and Assessment of Impacts

- 9.6. The Background Paper to the Wildlife Conservation Plan for Migratory Shorebirds (AGDEH 2005) identified the main threats to migratory shorebirds as:
 - Loss of habitat one of the many complexities of the life cycle of a migratory shorebird is its tendency for site fidelity, generally returning to the same sites year after year. Habitat of a certain type (e.g. coastal mudflats at the mouth of a river) and location, although apparently suitable habitat for shorebirds, may not be visited by shorebirds in significant numbers, or at all. Appropriate management of specific sites that support significant numbers of migratory shorebirds is, therefore, more important than defining habitat type. However, as our knowledge of migratory shorebirds and their habitat is incomplete, particularly for those species of migratory shorebirds that do not aggregate or are widely dispersed, there is a case for some level of protection for potential habitat;

- Modification and degradation of habitat migratory shorebirds are particularly
 vulnerable to modification of habitat. Their ability to complete long flights depends
 on the availability of suitable habitat at sites across the Flyway and the capacity of
 those habitats to provide adequate food and resting opportunities (roosts), so that
 birds can build enough energy reserves to sustain their annual migration;
- Disturbance of shorebirds disturbance of migratory shorebirds may occur as a
 result of many activities, such as industrial operations and construction, recreational
 fishing, four wheel driving on beaches, unleashed dogs and jet skiing. Migratory
 shorebirds are most susceptible to disturbance during daytime roosting and foraging
 periods. Research suggests that the energetic costs of disturbance of shorebirds
 can be quite high and may compromise their capacity to build enough energy
 reserves to undertake their migration; and
- Introduced species many wetlands across Australia have been adversely affected by the introduction of plant species such as water hyacinth *Eichhornia crassipes*, *Ludwigia peruviana, Salvinia sp.* and *Mimosa pigra*. These plants can lead to longterm changes of the nature and biodiversity of the wetlands; in turn, this has had significant effects on the use of these wetlands by shorebirds and other species. Introduced animals such as pigs, cane toads and European carp are also well known for their destructive impacts on wetland areas. Of particular concern for migratory shorebirds is the introduction of exotic marine pests that may result in loss of benthic food sources at important intertidal migratory shorebird habitat.
- 9.7. The potential impacts associated with the project on listed migratory birds includes noise, dust, light spill, increased human activity, and changes to stormwater and groundwater regimes. These impacts are discussed in paragraphs 5.19 to 5.29 in regards to impacts on birdlife. The Department considers the impacts would be of a similar nature and scale to those described in these sections.
- 9.8. The Department consider that the proposed mitigation measures and recommendations in paragraphs 5.31 to 5.34 relating to the preparation and implementation of an onshore environmental management plan and dredge material management plan, timing of dredging and buffer zones are relevant to listed migratory birds.
- 9.9. The Department is of the view that provided the mitigation measures are implemented and the recommended conditions adhered to, long-term impacts to listed terrestrial and marine migratory birds will not be unacceptable.

Listed Migratory Marine Species

- 9.10. The following listed migratory marine species have been identified as occurring in the Port of Abbot Point:
 - Loggerhead turtle
 - Hawksbill turtle
 - Olive ridley
 - Green turtle
 - Flatback turtle
 - Dugong

- Humpback whale
- Australian snubfin dolphin
- Indo-Pacific humpback dolphin
- 9.11. The impacts of the project, mitigation measures and recommendations for listed migratory marine species have been addressed in section 5 (marine turtles paragraphs 5.56 to 5.69; marine mammals paragraphs 5.36 to 5.49).
- 9.12. The Department is of the view that provided the mitigation measures are implemented, and conditions adhered to, long-term impacts to listed marine species, as discussed above, will not be unacceptable.

Conclusion for assessment of impacts on listed migratory species

9.13. The Department considers that the project will not have an unacceptable impact on listed migratory species.

10. Commonwealth marine areas (sections 23 and 24A)

- 10.1. Within Queensland, the Commonwealth marine area overlaps with the boundaries of the GBRMP and the GBRWHA. At Abbot Point, the values (boundary) of the GBRMP (discussed in section 7) are equivalent to those of the Commonwealth marine area and similar to those in those in the GBRWHA (discussed in section 5).
- 10.2. The EIS states that the potential project impacts to the environment in the Commonwealth marine area are:
 - nutrients and sediment from runoff;
 - increased sediments as a result of dredging activities;
 - noise and physical impacts to threatened and migratory species; and
 - increased shipping.
- 10.3. Dredging will occur outside the Commonwealth marine area and plume modelling outlined in the EIS indicates that sediment migration will be highly localised from the dredging site and will not significantly affect the Commonwealth marine area. There will be no disposal of dredge material in the Commonwealth marine area.
- 10.4. The proponent has stated that potential indirect impacts to benthic communities as a result of project activities may extend into the Commonwealth marine area however are expected to be temporary. Plume influences on light attenuation are considered comparable to observed inter-seasonal variability. As such, the effects of the plume on light availability are not predicted by the proponent to result in detectable losses of seagrass or have detectable impacts on potential seagrass habitat.
- 10.5. The EIS states that return waters from the DMCA will contain higher than natural levels of suspended solids. The EIS states that the sediments are expected to quickly disperse and any impact to deepwater ephemeral seagrass habitat in the Commonwealth marine area is likely to be temporary in nature.
- 10.6. The EIS notes that no commercial shipping activity will occur as part of the project, however shipping has been assessed as a consequential impact, as dredging will enable the T0 project to proceed.

10.7. As discussed in paragraphs 2.44 to 2.48, the EIS notes that the cumulative impacts of shipping have been addressed and will be managed through government regulation and industry.

Conclusion for assessment of impacts on Commonwealth marine areas

10.8. Direct or indirect impacts to environment that occur in the Commonwealth marine area are expected to be limited. The Department concludes that the impacts of the project on the environment of the Commonwealth marine area are not likely to be unacceptable.

11. Additional management measures

- 11.1. The EIS states that the proponent's assessment of the project has determined that the project will not result in a residual significant impact on matters of national environmental significance, and therefore there is no requirement to offset impacts in accordance with the EPBC Act Environmental Offset Policy (2012). However, the EIS notes that the project is likely to have a negative impact on the Great Barrier Reef World Heritage Area through:
 - the exposure of 9,938 t of fine sediment available for resuspension from dredging activities; and
 - permanent loss of 10.5 ha of potential seagrass habitat within the proposed berth pockets.
- 11.2. Section 5 of the EIS provides details on the management measures to be implemented to minimise impacts associated with the project on matters of national environmental significance, and notes that management actions to improve the world heritage values of the Great Barrier Reef World Heritage Area are set out in the Reef 2050 Plan.
- 11.3. The proponent proposes to provide an improvement in water quality and seagrass in the Great Barrier Reef World Heritage Area by contributing funds to actions delivered under the framework that implements the strategies of the Reef 2050 Plan, via Reef Trust. This includes:
 - A contribution to catchment management actions that will prevent sediment, equivalent to 150% of the fine sediment predicted to be mobilised in the marine environment.
 - An assessment of the costs to implement a hypothetical (yet feasible) cost effective gully erosion management plan to reduce erosion from active gullies in the grazing areas of the Lower Burdekin and Don River catchments.
 - Financial contributions to undertake a seagrass recovery and restoration program within the Great Barrier Reef World Heritage Area.
- 11.4. The Department considers the proposal would contribute to the Reef 2050 target to achieve up to 50% reduction in anthropogenic end-of-catchment sediment loads and provide compensation for impacts on water quality and seagrass habitat.
- 11.5. The EIS notes that further information is required, including additional calculations, to determine the amount of funding and specific details of relevant projects that could be delivered through the Reef Trust.
- 11.6. To determine the actual amount of fine sediment mobilised from dredging, the Department recommends you attach a condition to the approval requiring the Page 47 of 62

proponent to provide a report on completion of the dredging. The completion report must include details of modelling used to determine the actual amount of fine sediment discharge to the marine environment. These data can be used to calculate the contribution required to achieve a 150% reduction in fine sediment entering the marine environment.

- 11.7. The Department considers that there is a risk that the seagrass within the apron areas will not recolonise, therefore it is recommended that the proponent prepare and implement an offset management strategy to compensate for the loss of 61 ha of seagrass habitat within the dredge footprint. This includes the permanent loss of 10.5 ha of seagrass associated with the dredging of the berth pockets.
- 11.8. Based on the information in the EIS, the Department recommends that a condition be attached the approval requiring the proponent to prepare and implement an offset management strategy, to be approved prior to commencing the project. The offset management strategy must provide details on how the proponent will achieve an improvement in water quality and seagrass habitat in the Great Barrier Reef World Heritage Area.

12. Mandatory considerations – section 136(1)(b) Economic and social matters

- 12.1. You must consider economic and social matters when deciding whether or not to approve the project and what conditions to attach to such an approval.
- 12.2. The EIS notes the project is expected to generate up to 164 jobs during the construction phase. The ongoing operating costs of managing the port over a nominal five year period will be a total of \$6.25 million. The EIS further notes the annual operating economic benefit of the project, operating at the maximum capacity of 120 Mtpa of coal, is estimated to be \$2.39 million.
- 12.3. The EIS estimates the construction phase of the project will contribute between \$95.75 million and \$191.49 million to the Mackay, Isaac and Whitsunday region. This includes an estimated direct economic contribution of between \$74.27 million and \$148.54 million to the region. The project will also indirectly enable employment opportunities through Adani Mining's Galilee Basin projects, which could potentially provide an overall investment of up to \$21.7 billion in Queensland and create approximately 9,500 direct jobs.
- 12.4. The project has been calculated to cause a capitalised loss of \$351,923 from approximately 61 ha of impacted vegetation communities (seagrass meadows and other benthic communities).
- 12.5. The matters considered in the social impact assessment included employment and business opportunities, community values and lifestyle, housing and accommodation, and community infrastructure and services, with generally positive conclusions.
- 12.6. The registered Aboriginal cultural heritage sites and areas at Abbot Point do not fall within the project site. No European cultural heritage is expected to be impacted by the project.
- 12.7. Stakeholder feedback from the Bowen community indicated a desire for the area to grow and identified the resource industry as being able to bring much needed business

and employment opportunities to the region. The EIS further notes there is community uncertainty around the economic climate in Bowen if the project does not go ahead.

12.8. The potential negative impacts of the proposed action may occur through local businesses possibly being unable to tender for the main aspects of the project due to their size and nature, shipping and dredging activities having an impact on the local tourism industry, the potential degradation or loss of recreation and commercial fishing grounds, and increased pressure on community infrastructure and services.

Considerations for Approval and Conditions

Factors to be taken into account – section 136(2)(a) Principles of ecologically sustainable development and section. 391 (precautionary principle)

- 12.9. A discussion on the principles of ecologically sustainable development is provided in section 1.5 (volume 1) of the EIS.
- 12.10. The principles of ecologically sustainable development, as defined in section 3A of the EPBC Act, are:
 - *i.* The integration principle;
- 12.11. In accordance with section 3A (a) of the EPBC Act; decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.
- 12.12. In recommending approval of the project, the Department has considered the long and short-term economic impacts as well as other environmental, social and equitable impacts in accordance the integration principle.
- 12.13. The Department considers that the likely impacts on the environment as a result of the project are satisfactory in terms of their long term and short term social and equitable impacts.

ii. The precautionary principle;

- 12.14. In accordance with section 3A (b) and 391 of the EPBC Act; 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.
- 12.15. The Department has considered the precautionary principle in making the approval recommendation. In recommending approval of the project the Department notes that there is sufficient scientific information to conclude that the proposal will be unlikely to result in unacceptable impacts to the world heritage values and national heritage values of the Great Barrier Reef World Heritage Area and National Heritage place, listed migratory species, listed threatened species and communities, the Commonwealth marine environment and the environment of the Great Barrier Reef Marine Park, if taken in accordance with the mitigation measures and the recommended conditions.
 - iii. The intergenerational equity principle;
- 12.16. In accordance with section 3A(c) of the EPBC Act; the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

- 12.17. The Department has taken the intergenerational equity principle into consideration in recommending that the project be approved. The recommended conditions of approval include measures that the Department considers are adequate for mitigating impacts to the world heritage values and national heritage values of the Great Barrier Reef World Heritage Area and National Heritage place, listed migratory species, listed threatened species and communities, the Commonwealth marine environment and the environment of the Great Barrier Reef Marine Park.
- 12.18. The recommended conditions allow for the project to be delivered and operated in a sustainable way to protect the Great Barrier Reef World Heritage Area and National Heritage place, listed migratory species, listed threatened species and communities, the Commonwealth marine environment and the environment of the Great Barrier Reef Marine Park and the environment for future generations.

iv. The biodiversity principle (Ecologically sustainable development (ESD));

12.19. Section 3A (d) of the EPBC Act requires the conservation of biological diversity and ecological integrity as a fundamental consideration in decision making. The Department has considered the biodiversity principle and ecological integrity in relation to all of the controlling provisions for the project, and has recommended conditions that will mitigate and offset impacts to Great Barrier Reef World Heritage Area and National Heritage place, listed migratory species, listed threatened species and communities, the Commonwealth marine environment and the environment of the Great Barrier Reef Marine Park.

v. The valuation principle;

- 12.20. Section 3A (e) of the EPBC Act requires the promotion of improved valuation, pricing and incentive mechanisms. The referral and assessment documentation includes information on a range of proposed mitigation measures for reducing impacts to the world and national heritage values of the Great Barrier Reef World Heritage Area and National Heritage place, listed migratory species, listed threatened species and ecological communities, the Commonwealth marine environment and the Great Barrier Reef Marine Park.
- 12.21. The Department considers that the impacts of the project will be suitably compensated through requirements for offsets for all unavoidable residual significant impacts. The Department considers that the cost of the required offsets will be commensurate with the likely impacts on matters of national environmental significance.
- 12.22. In formulating this recommendation, the Department has taken into account the principles of ecologically sustainable development outlined above. In particular:
 - This report and the assessment documentation (specifically the finalised EIS and associated appendices) contain information on the long-term and short-term economic, environmental, social and equity considerations that are relevant to the decision and are presented for your consideration.
 - Any lack of certainty in relation to the potential impacts of the project is addressed by conditions that restrict impacts, impose monitoring requirements and adopt standards that if not achieved, require the application of response mechanisms in a timely manner to avoid adverse impacts.
 - The proposed conditions will ensure that the potential impacts of the project on world and national heritage values of the Great Barrier Reef World Heritage Area Page 50 of 62

and National Heritage place, listed migratory species, listed threatened species and ecological communities, the Commonwealth marine environment and the Great Barrier Reef Marine Park resulting from the project are avoided and mitigated to the greatest extent possible. Any residual impacts that are regarded as significant in accordance with the Department's policies and guidelines are required to be offset. The purpose of offsets is to ensure the project results in conservation gains for the environment that will be maintained in the long-term. To safeguard against any uncertainties associated either with the proposed offsets or measures to manage potential impacts to environmental values, contingency measures have also been incorporated into the proposed conditions of approval.

- The Department has considered the importance of conserving biological diversity and ecological integrity in relation to all of the controlling provisions for the project, and the advice provided within this document reflects that consideration.
- The Department's advice includes reference to the economic and social impacts of the project. The Department has sought to ensure that financial costs of compliance with the proposed approval decision are reasonable to the extent that the project can proceed whilst also making a fair contribution to environmental protection.

Factors to be taken into account – section 136(2)(ca) – environmental impact statement

- 12.23. In accordance with section 136(2)(ca)(i) the finalised EIS Statement relating to the action given to you under section 104.
- 12.24. In accordance with section 136(2)(ca)(ii) this document forms the Secretary's recommendation report relating to the action given to you under section 105.

Any other information the Minister has on the relevant impacts of the action – section 136(2)(e)

12.25. All information on the relevant impacts of the action is available in this briefing package, including the *Comprehensive Strategic Assessment of the Great Barrier Reef World Heritage Area.*

Bioregional Plans – section 176(5)

- 12.26. In accordance with section 176(5), the Minister is required to have regard to a bioregional plan in making any decision under the Act to which the plan is relevant.
- 12.27. The project is not located within or near an area designated by a bioregional plan. The Department considers that there are no bioregional plans relevant to the project

Person's environmental history – section 136(4)

- 12.28. The proponent of the project, with ongoing management responsibilities, is the Queensland Department of State Development.
- 12.29. There are no compliance related proceedings against the Queensland Department of State Development relating to the protection of the environment or the conservation and sustainable use of natural resources under a Commonwealth, State or Territory law.
- 12.30. The EIS notes that the proponent operates within and in accordance with a planning and environmental framework which promotes environmental responsibility, protects

environmental values and ensures development is ecologically sustainable. This framework includes a range of legislation, policies and instruments that provide for the protection of Queensland's environment, management of the state's natural resources and regulation of land uses.

Requirements for decisions about World Heritage – section 137

- 12.31. In deciding whether or not to approve, for the purposes of section 12 or 15A, the taking of an action and what conditions to attach to such an approval, the Minister must not act inconsistently with:
 - (a) Australia's obligations under the World Heritage Convention; or
 - (b) the Australian World Heritage management principles; or
 - (c) a plan that has been prepared for the management of a declared World Heritage property under section 316 or as described in section 321.

World Heritage Convention

- 12.32. The World Heritage Convention aims to promote cooperation among nations to protect heritage around the world that is of such outstanding universal value that its conservation is important for current and future generations.
- 12.33. Australia is a State Party to the World Heritage Convention and ratified the convention on 22 August 1974.
- 12.34. Australia's key obligations under the World Heritage Convention are:
 - a. to ensure the identification, protection, conservation, presentation and transmission to future generations of cultural and natural heritage (Article 4);²
 - b. to ensure the protection, conservation and presentation of natural heritage within its territory:
 - i. as far as possible and as appropriate for Australia to:
 - adopt general policies to give world heritage values a function in the life of the community (Article 5(a));
 - develop scientific and technical studies and research and to work out operating methods to make Australia capable of counteracting dangers that threaten its cultural and natural heritage (Article 5(c));
 - take the appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of this heritage (Article 5(d)); and
 - c. to endeavour to strengthen appreciation and respect by their peoples of the cultural and natural heritage (Article 27).
- 12.35. The project was assessed by an environmental impact statement which included a process for public review. The details of the process are set out in paragraphs 2.59 to

² Articles 1 and 2 of the convention define "cultural heritage" and "natural heritage" respectively (and these terms constitute world heritage values of for the purposes of the EPBC Act (sections 12(3) and 12(4)).

2.64. The EIS identified the impacts of the project on the world heritage values of the Great Barrier Reef, examined how the world heritage values would be affected and proposed mitigation measures to minimise the impacts. The key world heritage impacts, identified in the EIS, include disturbance to marine mammals, turtles and bird life; and water quality impacts on the marine environment including seagrass habitat.

- 12.36. In addition to the mitigation measures proposed by the proponent (discussed in paragraphs 5.28, 5.29, 5.30, 5.45 and 5.63) the Department has recommended that you attach a series of conditions to the approval, which aim to address the world heritage impacts of the project so as to ensure the protection and conservation of the World Heritage values of the Great Barrier Reef. Those conditions and the impacts they addressed are as follows:
 - a. Water quality impacts on the marine environment:
 - The proponent is required to use using a cutter suction dredge, and cannot remove more than 1.1 Mm³ of dredge material from the dredge footprint.
 - The dredge material must be placed in a dredge material containment area onshore. No dredge material will be dumped in the Great Barrier Reef.
 - The proponent must submit for approval, and implement, once approved, a dredge management plan that contains: a program for monitoring marine water quality; early warning trigger levels for modifying the dredging activity; trigger levels for the cessation of dredging; and management measures for impacts to all marine fauna.
 - The dredge management plan must provide management measures to ensure water returned to the marine environment through the return water pipeline is in accordance with the current water quality guidelines
 - At the completion of dredging the proponent must submit a completion report identifying the actual amount of sediment released into the marine environment as a result of the project.
 - The required dredge management plan must provide details of management measures for impacts to seagrass.
 - To reduce the threat of an extreme weather event causing the release of sediment into the marine environment, construction of the DMCA can only be undertaken outside the peak cyclone season.
 - To reduce impacts on water quality associated with the construction and operation of the DMCA the proponent must submit for approval, and implement once approved an onshore environmental management plan. This plan must provide measures to manage: stormwater; erosion and sediment; and avoid surface and groundwater impacts.
 - b. Impacts to marine fauna from changes to water quality:
 - The required dredge management plan must contain details of management measures for reducing impacts to all marine fauna.

- c. Impacts to turtles from the laying of pipelines, and light impacts:
 - To reduce the impacts on turtles, the proponent must implement a buffer zone between the pipelines and any turtle nests located along the coastal zone at Abbot Point.
- d. Impacts from construction on migratory birds:
 - No dredge material will be dumped in the Caley Valley Wetlands (that provide habitat for migratory birds).
 - The proponent must implement and maintain a minimum buffer zone of 50 m between the DMCA and the Caley Valley Wetland.
 - The proponent must submit and implement once approved an onshore environmental management plan which contains details how the DMCA will be designed with sufficient freeboard to contain a 1 in 20 year average recurrence interval (ARI) event.
- 12.37. The Department has also recommended that you attach a condition to the approval requiring the proponent to submit an offset management plan for approval. The aim of the offset management plan is to provide compensation for water quality impacts and loss of seagrass habitat. The offset management plan must: detail how the proponent will achieve a 150% reduction of sediment entering the marine environment; and provide details of a financial contribution to the Reef Trust or equivalent to compensate for the loss of potential seagrass habitat within the dredge footprint taking account of the equivalence of the density of seagrass coverage.
- 12.38. The Department considers that the offset management plan would detail the methodology for calculating the contribution to undertaken actions to reduce sediments entering the Great Barrier Reef. The methodology will then be used to determine the final funding amount to Reef or equivalent, based on the completion report.
- 12.39. The Department considers that the implementation of the offset management plan will improve water quality within the Great Barrier Reef, thus providing a positive outcome for the attributes likely to be impacted by the project. Impacts, mitigation measure and the Department's recommendations on world heritage values are discussed in section 5.
- 12.40. The Department considers that the recommended conditions are consistent with Article 4 and Article 5(d) as they provide measures for the protection, and conservation of the Great Barrier Reef World Heritage Area through: the implementation of management plans specially designed to avoid and manage impacts on the world Heritage values; financial measures to improve water quality and seagrass habitat; restricting dredge activities including the requirement that dredge material be placed on land; and providing buffers to protect birdlife and turtle species.
- 12.41. In addition, the management plans will also include a process for reporting, including results from monitoring that will be made publicly available and can be used as a resource for future decision making, the Department considers this is consistent with Article 27.

- 12.42. As explained in paragraphs 5.13 to 5.84, the Department considers that if the project is taken in accordance with the mitigation measures proposed by the proponent, and the recommended approval conditions, the project will not have unacceptable impacts on the world heritage values of the Great Barrier Reef World Heritage Area.
- 12.43. In light of the matters identified in paragraphs 12.32 to 12.42, the Department considers that the approval of the proposed action and the approval conditions are not inconsistent with Australia's obligations under the World Heritage Convention.
- 12.44. The World Heritage Convention is available at: <u>http://whc.unesco.org/en/convention/</u>.

World Heritage management principles

12.45. The Australian World Heritage management principles are at Schedule 5 of the EPBC Regulations.

Assessment and approval of the action, including public consultation

- 12.46. The project was assessed by an environmental impact statement which included a process for public review. The details of the process are set out in paragraphs 2.59 to 2.64. The EIS identified the impacts of the project on the world heritage values of the Great Barrier Reef and proposed mitigation measures to minimise the impacts. The key world heritage impacts, identified in the EIS, include disturbance to marine mammals, turtles and bird life; and water quality impacts on the marine environment including seagrass habitat (Principles 1.02, 1.03, 3.02 and 3.03).
- 12.47. The recommended approval of the project is subject to conditions that aim to address the world heritage impacts of the project. These conditions are explained in paragraphs 12.36 to 12.37. As noted in paragraphs 12.32 to 12.42 above, the Department considers that these conditions are consistent with Australia's obligations under the World Heritage Convention. The Department considers that these conditions are necessary to ensure the protection, conservation, preservation or transmission to future generations of the World Heritage values of the Great Barrier Reef (Principle 3.05).
- 12.48. The Department considers that if the project is taken in accordance with the mitigation measures proposed by the proponent and the recommended conditions of approval, it will not have any unacceptable world heritage impacts. As such, the Department considers that the approval of the project would not be inconsistent with the protection, conservation, preservation or transmission to future generations of the World Heritage values of the Great Barrier Reef (Principle 3.04).

Reef 2050 Plan

- 12.49. The Reef 2050 Plan represents the Australian and Queensland governments' commitment to working with industry and the community to undertake, determined, coordinated wide-ranging actions to ensure the Reef's ongoing health and resilience.
- 12.50. The Reef 2050 Plan includes measures to ensure that development in the Great Barrier Reef coastal zone occur in an ecologically sustainable manner and negative impacts on the world heritage values are avoided.
- 12.51. To meet this objective, the Reef 2050 Plan outlines a series of principles that are to inform decision making in relation to the Great Barrier Reef. These principles include

- a. Maintaining and enhancing outstanding universal value in every action.
- b. Basing decisions on the best available science.
- c. Delivering a net benefit to the ecosystem.
- d. Adopting a partnership approach to management.
- 12.52. The Reef 2050 Plan identifies a number of actions to restore ecosystem health and resilience including reducing the impacts of ports and dredging.
- 12.53. The Department notes that the project will be undertaken in a priority port area and that there will be no discharge of dredge material in the Great Barrier Reef World Heritage Area. Additionally, the proponent has proposed measures to improve ecosystem resilience (discussed in section 11). The Department considers the proposed mitigation measures and recommended conditions are not inconsistent with the Reef 2050 Plan.

Conclusion

12.54. In light of the matters discussed in paragraphs 12.31 to 12.53, the Department considers that the approval of the project, and the approval conditions, are not inconsistent with the Australian World Heritage management principles.

A plan for the management of Great Barrier Reef World Heritage Property

12.55. A plan of management for the Great Barrier Reef World Heritage Area has not been prepared under section 316 or section 321 of the EPBC Act.

Requirements for decisions about National Heritage places – section 137A

- 12.56. In deciding whether or not to approve for the purposes of section 15B or 15C of the EPBC Act the taking of an action, and what conditions to attach to such an approval, the Minister must not act inconsistently with:
 - a. the National Heritage management principles; or
 - b. an agreement to which the Commonwealth is party in relation to a National Heritage place; or
 - c. a plan that has been prepared for the management of a National Heritage place under section 324S or as described in section 324X.
- 12.57. The Commonwealth has not reached agreement with any party in relation to the management of the national heritage values of the Great Barrier Reef. A management plan for the Great Barrier Reef has not been prepared under section 324S or section 324X of the EPBC Act.
- 12.58. The National Heritage management principles as prescribed in Schedule 5B of the EPBC Regulations are at: http://www.comlaw.gov.au/Details/F2010C00413.
- 12.59. For the reasons set put in paragraphs 12.46 to 12.48, the Department considers the recommended conditions and proposed mitigation measures are not inconsistent with National Heritage management principles or the Reef 2050 Plan.

Requirements for decisions about listed threatened species and communities – section 139

- 12.60. In deciding whether or not to approve for the purposes of a subsection of section 18 or section 18A the taking of an action, and what conditions to attach to such an approval, the Minister must not act inconsistently with:
 - (a) Australia's obligations under:
 - (i) the Biodiversity Convention; or
 - (ii) the Apia Convention; or
 - (iii) CITES; or
 - (b) a recovery plan or threat abatement plan.
- 12.43 If:

(a) the Minister is considering whether to approve, for the purposes of a subsection of section 18 or section 18A, the taking of an action; and

(b) the action has or will have, or is likely to have, a significant impact on a particular listed threatened species or a particular listed threatened ecological community;

(c) the Minister must, in deciding whether to so approve the taking of the action, have regard to any approved conservation advice for the species or community.

The Convention on Biological Diversity

- 12.44. The Convention on Biological Diversity is available for your consideration at: www.cbd.int.
- 12.45. The objectives of the Biodiversity Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources and by appropriate funding.
- 12.46. The project was assessed by an environmental impact statement which included a process for public review. The details of the process are set out in paragraphs 2.60 to 2.65. The EIS identified the impacts of the project on matters of national environment significance, including Semi-evergreen vine thickets of the Brigalow Belt (north and south) and Nandewar Bioregions (semi-evergreen vine thickets), squatter pigeon, Australian painted snipe, Humpback whale and listed marine turtles. In the EIS, the proponent identified a series of mitigation measures to address the project's impacts on biodiversity. These measures are described in paragraphs 5.62, 5.63, 5.66 8.10, 8.19, and 8.48.
- 12.47. In addition to the mitigation measures proposed by the proponent, the Department has recommended that you attach a series of conditions to the approval, which aim to address the impacts of the project on biodiversity. The recommended approval requires information related to the proposed action to be publically available to ensure equitable sharing of information and improved knowledge relating to biodiversity.

- 12.48. In light of the matters discussed in paragraphs 12.46 to 12.47, the Department considers that you could be satisfied that the approval of the project, and the approval conditions, are not inconsistent with the Biodiversity Convention.
- The Convention on the Conservation of Nature in the South Pacific (Apia Convention)
- 12.49. The Apia Convention is available at: http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1990/41.html.
- 12.50. The Apia Convention encourages the creation of protected areas which together with existing protected areas will safeguard representative samples of the natural ecosystems occurring therein (particular attention being given to endangered species), as well as superlative scenery, striking geological formations, and regions and objects of aesthetic interest or historic, cultural or scientific value.
- 12.51. The Apia Convention was suspended with effect from 13 September 2006. While this Convention has been suspended, Australia's obligations under the Convention have been taken into consideration. The Department considers that the approval of the project, and recommend approval conditions are not inconsistent with the Convention which has the general aim of conserving biodiversity.

The Convention on International Trade in Endangered Species of Wild Fauna

- 12.52. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is available for your consideration at: www.cites.org.
- 12.53. CITES is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.
- 12.54. The Department considers that the approval of the project, and the conditions of approval, are not inconsistent with CITES as the proposed action does not involve international wildlife trade.

Recovery Plans and Threat Abatement Plans

12.55. The Recovery Plan(s) relevant to the proposed action and assessment is/are:

Environment Australia (2003). Recovery Plan for Marine Turtles in Australia. Commonwealth of Australia, Canberra. (<u>http://www.environment.gov.au/system/files/resources/6d26f4aa-751e-4b72-9ab0-984a1d6e0fea/files/marine-turtles.pdf</u>)

McDonald, W.J.F. (2010). National Recovery Plan for the Semi-evergreen vine thicket of the Brigalow Belt (North and South) and Nandewar Bioregions ecological community. Report to Department of the Environment, Water, Heritage and the Arts, Canberra. (<u>http://www.environment.gov.au/system/files/resources/7994b254-82ed-40cf-9985-29fa09138ff4/files/semi-evergreen-vine-thickets.pdf</u>)

12.56. The Recommendation Report provides a discussion of the Recovery Plans in respect of each listed threatened species and community (see discussion above in Assessment section 8). For the reasons set out in section 8, the Department believes you could be satisfied that the approval of the project, and the conditions of approval, are not inconsistent with the above recovery plans. 12.57. The Threat Abatement Plan(s) relevant to this action is/are:

Department of Environment and Heritage (DEH) (2006) Threat Abatement Plan for the Reduction in Impacts of Tramp Ants on Biodiversity in Australia and its Territories. Commonwealth of Australia, Canberra.

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2008). Threat Abatement Plan for Competition and Land Degradation by Rabbits, Commonwealth of Australia, Canberra.

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2008b). Threat Abatement Plan for Predation by the European Red Fox. Commonwealth of Australia, Canberra.

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2015). Threat abatement plan for predation by feral cats. Commonwealth of Australia, Canberra.

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2009). Threat Abatement Plan for the Impacts of Marine Debris on Vertebrate Marine Life. Commonwealth of Australia, Canberra.

- 12.61. The goal of the above threat abatement plans is to minimise the impact of exotic species on biodiversity in Australia and its territories by protecting affected threatened species, and preventing further species and ecological communities from becoming threatened.
- 12.58. The Department has taken the goals of the threat abatement plans in account in assessing the impacts of the project, proposed mitigation measure and recommending conditions. The Department believes you could be satisfied that the approval of the project, and the conditions of approval, are not inconsistent with the above threat abatement plans.

Conservation Advice

12.59. The approved conservation advice(s) relevant to this proposed action is/are:

Threatened Species Scientific Committee (2013). Approved Conservation Advice for *Rostratula australis* (Australian Painted Snipe). Commonwealth of Australia, Canberra.

Threatened Species Scientific Committee (2015). Approved Conservation Advice for *Megaptera novaeangliae* (Humpback Whale). Commonwealth of Australia, Canberra.

Threatened Species Scientific Committee (2015). Approved Conservation Advice for *Geophaps scripta scripta* (Squatter Pigeon (southern)). Commonwealth of Australia, Canberra.

12.60. The Department has had regard to the Approved Conservation Advices relevant to this project and has given consideration to the likely impacts of the project on listed threatened species and ecological communities. The Department considers that the approval of this project would not be inconsistent with these conservation advices.

Requirements for decisions about listed migratory species – section 140

12.61. In deciding whether or not to approve for the purposes of section 20 or 20A the taking of an action relating to a listed migratory species, and what conditions to attach to such

an approval, the Minister must not act inconsistently with Australia's obligations under whichever of the following conventions and agreements because of which the species is listed:

- (a) the Bonn Convention;
- (b) CAMBA;
- (c) JAMBA;
- (d) an international agreement approved under subsection 209(4).
- 12.62. This section requires that you must not act inconsistently with Australia's obligations under the Bonn Convention on Migratory Species (Bonn Convention), the Japan-Australia Migratory Bird Agreement (JAMBA), the China-Australia Migratory Bird Agreement (CAMBA) or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

The Bonn Convention is available for your consideration at: http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1991/32.html.

CAMBA is available for your consideration at: http://www.austlii.edu.au/au/other/dfat/treaties/1988/22.html.

JAMBA is available for your consideration at: http://www.austlii.edu.au/au/other/dfat/treaties/1981/6.html.

ROKAMBA is available for your consideration at: http://www.austlii.edu.au/au/other/dfat/treaties/2007/24.html.

- 12.63. The Department has taken these agreements into account for the assessment of the project and has given consideration to the likely impacts of the project on listed migratory species. For the reasons set out in paragraphs 9.3 to 9.13, the Department considers that the long-term impacts of the project on listed migratory species will not be unacceptable.
- 12.64. Bearing this in mind the impacts of the project and the recommended approval conditions, the Department considers that approval of this project, and the conditions attached to the approval, would not be inconsistent with Australia's obligations under the above conventions and treaties.

Consideration in deciding on conditions – secetion134 (4)

- 12.65. In accordance with section 134(4), in deciding whether to attach a condition to an approval the Minister must consider:
 - a) any relevant conditions that have been imposed, or that the Minister considers are likely to be imposed, under a law of a State or self-governing Territory or another law of the Commonwealth on the taking of the action;
- 12.66. As discussed in section 3 the project is currently being assessed under the relevant Queensland legislation. At the time of preparing this report no conditions have been imposed under State or other Commonwealth Law regarding this project. The Department has recommended that you consult with the Queensland Government on your proposed conditions of approval.

- b) any information provided by the person proposing to take the action or by the designated proponent of the action; and
- 12.67. The referral and assessment documentation provided by the proponent has been has been considered by the Department in preparing this proposed decision package. The proponent will be given up to 10 business days to comment on the proposed decision, and the practicability of proposed conditions recommended in section 1 of this report. The comments the proponent provides on the proposed approval decision, including on any conditions attached to that approval, will be included in the final decision package.
 - c) the desirability of ensuring as far as practicable that the condition is a cost effective means for the Commonwealth and the person taking the action to achieve the object of the condition.
- 12.68. The Department considers that the proposed conditions of approval will be cost effective and will ensure that matters of national environmental significance are protected over time.

13. Conclusion

13.1. The Department considers the proposal should be approved, subject to the conditions recommended in section 1 of this report to ensure the impacts on listed threatened species and ecological communities, listed migratory species, world heritage properties and natural heritage places, Commonwealth marine areas and the Great Barrier Reef Marine Park, are not unacceptable.

14. Duration of approval

14.1. The Department recommends that the approval remain valid for a period of 15 years to allow sufficient time for the completion of construction, the implementation of measures to protect matters of national environmental significance and the conservation benefit of the required offset to be realised.

15. Material used to prepare Recommendation Report

- 15.1. In addition to the material listed in the References section, the Department also considered the following documents:
 - Referral Documentation for the project
 - ERT Report
 - Final Environmental Impact Statement (includes the Draft EIS and Volume 4 Supplementary report)
 - Advisian Worley Parson Group Technical Memorandum Cost of sediment reduction
 - Advisian Worley Parson Group Technical Memorandum seagrass restoration
 - Recovery plans
 - Conservation Advices
 - Threat Abatement Plans
 - Departmental Policies and Guidelines
 - Reef 2050 Long term Sustainability Plan

- Comprehensive Strategic Assessment of the Great Barrier Reef World Heritage Area.
- The Statement of Outstanding Universal Value of the Great Barrier Reef, 2012.
- North East Shipping Management Plan (October 2014).
- Queensland State Planning Policy Strategic Ports.
- Gladstone Bund Wall Review (April 2014)
- The Australian Government Response to: The independent review of the Port of Gladstone (July 2013) and The independent review of the bund wall at the Port of Gladstone (April 2014) (August 2015)
- Departmental Line Advice (Wildlife, Heritage and Marine Division; Compliance and Enforcement Branch) and advice from the Great Barrier Reef Marine Park Authority.