Australian Government
Department of the Environment and Energy

Title of Proposal - Toondah Harbour Development

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Tourism and Recreation

1.2 Provide a detailed description of the proposed action, including all proposed activities.

In June 2013, the Queensland Government declared Toondah Harbour a Priority Development Area (PDA) under the Economic Development Act 2012 (ED Act) at the request of Redland City Council (RCC). PDAs are parcels of land within Queensland identified for specific accelerated development, with a focus on economic growth. The Minister for Economic Development Queensland (EDQ) manages the planning of the Toondah Harbour PDA.

The location was identified by the state and local government on the basis that the area includes the existing marine facility that serves as the base for water taxi, passenger and vehicular ferry services between the mainland and North Stradbroke Island, as well as a public boat ramp for recreational vessels. More than a million passengers and 200,000 vehicles move through the port annually.

The PDA has a total area of 67.4 hectares, encompassing 17.9 hectares of existing land and 49.5 hectares of marine and tidal environments, of which 42 ha overlaps with the Moreton Bay Ramsar Wetland. The area is of variable ecological quality as Toondah Harbour has undergone historical disturbance with a large portion of the PDA previously reclaimed from the 1960s onwards. The site continues to be disturbed by intermittent maintenance dredging and vessel traffic associated with the existing barge and ferry terminals and public boat ramp.

In May 2014, the Queensland Government approved the Toondah Harbour PDA Development Scheme to guide future land use, planning and development decisions in the PDA. The planning intent for the site is to reinforce Toondah Harbour PDA’s role as a community destination and the regional gateway to Moreton Bay and North Stradbroke Island. Further, the Queensland Government has committed to phasing out sand mining on North Stradbroke Island by 2019 and expanding the island’s existing industries to ensure a strong, sustainable economy for residents. The revitalisation of Toondah Harbour is important in supporting the economic transition of North Stradbroke Island from sand mining to ecotourism.

In September 2015, Walker Group Holdings, (the Proponent) was announced as the preferred development partner to redevelop underutilised public land in the PDA. In late 2015, the parties entered into binding commercial agreements for the Toondah Harbour Project (the Project), including a development agreement and an infrastructure agreement. Under the development agreement, the Proponent is responsible for designing, financing and delivering the Project

including obtaining environmental and development approvals.

The Project will be constructed over a period of 15 – 20 years including the development or replacement of the existing barge and ferry terminals. The marine operations are part of the existing character of the Moreton Bay Ramsar Wetland and support current residential and tourism traffic to North Stradbroke Island and Moreton Bay. Tourism facilities, marina, mixed use, commercial and residential development, car parking, and public open space will support the new destination and the area's function as a world-class gateway to North Stradbroke Island and Moreton Bay. The project design will also ensure that all components are sympathetic to and support the ecological character of the Moreton Bay Ramsar Wetland to the greatest extent possible. For example, the Project will introduce new conservation areas and a wetland and cultural education centre.

The Project context is provided as Figure 1 with existing approved maintenance dredge areas shown on Figure 1a. A reference design and land use plan is also provided as Figure 2. This forms the referral area, which covers approximately 56 ha including 17.7 ha of waterways, sheltered coves and wetland edges that will not be reclaimed or permanently impacted by the development. Approximately 42 ha of the referral area is located within the boundary of the Ramsar wetland including 12.5 ha of waterways. The current masterplan includes approximately 32 ha of reclaimed land, 10 ha of which is new parklands and conservation areas. The Project has been designed to balance cut and fill with all dredged material to be used for the reclamation.

It is anticipated this footprint will be further refined through detailed ecological and engineering studies as part of the EIS process.

A detailed description of the Project is provided as Attachment 1, including: background to the PDA and Project location; how the Project will integrate with existing boat harbour and operations; a description of the proposed Project land uses; and an outline of how the Project integrates with the ecological character and demonstrates 'wise use' of this part of the Moreton Bay Ramsar Wetland.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Referral Area	1	-27.523969866419	153.28637227378
Referral Area	2	-27.523760546769	153.28680142722
Referral Area	3	-27.523379964568	153.28680142722
Referral Area	4	-27.5222572394	153.28965529761
Referral Area	5	-27.533198563891	153.28969821296
Referral Area	6	-27.532684821717	153.28718766532
Referral Area	7	-27.531314830845	153.28523501715

Area	Point	Latitude	Longitude
Referral Area	8	-27.530173158742	153.28401192984
Referral Area	9	-27.529431065517	153.28195199332
Referral Area	10	-27.527851722232	153.28268155417
Referral Area	11	-27.527661438377	153.28199490866
Referral Area	12	-27.526538756929	153.28238114676
Referral Area	13	-27.526729042727	153.28313216529
Referral Area	14	-27.526272356258	153.28332528434
Referral Area	15	-27.526024983628	153.28476294837
Referral Area	16	-27.525244804767	153.28553542456
Referral Area	17	-27.523969866419	153.28637227378

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

Toondah Harbour PDA is located in Cleveland, which is Redland City's civic, commercial and cultural hub and a principal regional activity centre under the South East Queensland Regional Plan 2009-2031.

The referral area encompasses freehold land owned by Redland City Council and State land above and below High Water Mark. Current terrestrial uses of Project land include multiple ferry terminals and public boat ramp, extensive areas of surface car parking, an office complex, and a disused dredged material disposal pond. The overwater areas are made up of a mix of tidal and intertidal habitats with the majority being intertidal mudflat but also include the existing wet berths, swing basin and public navigation channel.

The Toondah Harbour PDA also contains privately owned land that is not Project land. This includes existing residential areas that are not part of the development proposal, and GJ Walter Park (an existing public park with heritage cricket field and off-leash dog park), which is to be retained.

A site and location plan for the area are provided as Figures 1 and 2.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

The PDA has a total area of 67 ha. The referral area is approximately 52 ha

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title.L58 on SP115554, L1 on RP145396, L33-35 on C618, L20 on SP153278, L79 on SL7088, L119 on SL9713,

1.8 Primary Jurisdiction.

Queensland

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

Yes

1.10.1 Is there a local government area and council contact for the proposal?

Yes

1.10.1.0 Council contact officer details

1.10.1.1 Name of relevant council contact officer.

Peter Kelley, CEO Redland Investment Corp

1.10.1.2 E-mail

Peter.Kelley@redlandinvestmentcorp.com.au

1.10.1.3 Telephone Number

07 3829 8862

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 03/2020

End date 03/2040

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

Project Assessment Process

The Department of Environment and Energy is the administrative authority in Australia that supports the Ramsar Convention. It meets Australia's obligations under the Ramsar Convention by:

§ Providing national wetland policy leadership;

§ Working with state and territory governments through the Standing Council on Environment and Water;

§ Implementing the EPBC Act; and

§ Developing programs to improve wetland management.

Australian state and territory governments, of which the Queensland Government is one, have primary legislative and policy responsibility for the listed wetlands in their jurisdiction including:

§ Management of listed wetlands;

§ Promoting the conservation and wise use of listed wetlands;

§ Reviewing the condition of listed wetlands;

§ Reporting on the status of listed wetlands; and

§ Leading the development of proposed Ramsar List nominations, including consultation and liaison with the Australian Government.

The Queensland Government has primary responsibility for the Moreton Bay Ramsar Site.

The Project will require approvals under Federal and State legislation.

Federal approvals will be required under the EPBC Act and it is anticipated that assessment will be via an EIS process.

Key State approval requirements and associated processes are outlined below.

Toondah Harbour PDA Development Scheme

On 29 May 2014, the State Government approved the Toondah Harbour PDA Development Scheme to guide future land use, planning and development decisions in the PDA.

The Project is located within the Toondah Harbour Priority Development Area (PDA) therefore is subject to the Toondah Harbour PDA Development Scheme which is implemented under the Economic Development Act 2012 (ED Act) and administered by Economic Development Queensland. The PDA Development Scheme is the regulatory document that controls land use,

infrastructure planning and development in the PDA, rather than the local government planning scheme. The Development Scheme overrides other local and state government planning instruments related to the use of the land within the PDA.

The Land use plan part of the Development Scheme regulates development in the PDA and includes a vision, Structure plan, Precinct plan and a Height plan. The Infrastructure plan details the infrastructure necessary to support the Land use plan for the PDA and identifies applicable infrastructure charges. The Implementation strategy describes other strategies and mechanisms that will be used to complement the Land use plan and Infrastructure plan to achieve the outcomes for the PDA.

Development is permissible if it complies with the relevant PDA wide criteria and precinct provisions or does not conflict with the PDA vision and there are sufficient grounds to justify the approval of the development (i.e. superior design outcomes or community need).

The Development Scheme requires the design, siting and layout of development has regard to the environment and:

§ Seeks to first avoid, then minimise and mitigate impacts arising from development within the PDA to sensitive ecological values or Matters of State Environmental Significance within and adjoining the PDA, including koala habitat, intertidal mudflats, mangroves, seagrass beds and fisheries;

§ Seeks to achieve a net gain in koala and marine habitat through the use of compensatory offsets;

§ Establishes vegetated corridors through the PDA which support wildlife habitat, safe fauna movement and open space connections between community focal points;

§ Incorporates landscaping with endemic species, with a preference towards retaining existing vegetation where possible;

§ Utilises planting strategies which are site responsive and reflect the subtropical nature of South East Queensland;

§ Maintains and improves water quality and the functioning and characteristics of the existing hydrological network (including surface and groundwater interactions) and addresses overland flow paths; and

§ Minimises adverse impacts on receiving waters and appropriately manages stormwater including use of total water cycle management and water sensitive urban design principles.

Detailed assessment addressing these issues can be lodged as part of a preliminary approval application or Material Change of Use for the development if sufficient detail is provided.

It is of note that reclamation areas within the Moreton Bay Ramsar Wetland and Marine Park were always considered necessary for the development of Toondah Harbour and are included

in the Development Scheme as Precinct 4 – Marina and Water Based Development. The intent of this precinct is to "include development and works undertaken in water based areas of the PDA. This will include the opportunity for a staged marina and land reclamation. Land reclamation, through the ongoing settlement of dredge spoil, provides an opportunity to create land that will be utilised for development in the future. Any areas created through land reclamation will be integrated with the adjoining precinct".

Following the EIS process under the EPBC Act, the Proponent will submit a development application under the ED Act for a Material Change of Use with Plan of Development and an Operational Works application. For the Toondah Harbour PDA, the Minister for Economic Development Queensland has delegated development assessment powers and authority under the ED Act to a Local Representative Committee (LRC) comprising representatives of the Department of State Development, Manufacturing, Infrastructure and Planning and Redland City Council.

Moreton Bay Marine Park

The PDA includes areas of water within a Habitat Protection Zone of Moreton Bay Marine Park and therefore any development proposed within these areas will require assessment and approval under the Marine Parks Act 2004.

As the Project incorporates major works that are likely to have a significant impact on the marine park, such as marinas, reclamation and capital dredging it will require a legislative amendment to declare a works area, or to revoke the area from the marine park prior to any permit assessment.

Section 62 of the Marine Parks (Moreton Bay) Zoning Plan 2008 sets out the process for declaring a works area. This requires satisfying the minister that:

a) there are no suitable alternatives to the proposed major works;

b) an assessment of the social, cultural, financial and environmental outcomes of the proposed major works has been undertaken and supports the location of the proposed major works;

c) the person proposing to carry out the major works has carried out an analysis of the adverse impacts of the proposed major works in the marine park, and has given sufficient details about how the adverse impacts will be addressed; and

d) sufficient public notice of the proposed major works has been given by the person proposing to carry out the major works.

In preparing an amendment to the Marine Park plan to set aside a works area, the Minister may also consider the nature and extent of anything else proposed to be done in addition to the major works that may be beneficial to the natural and cultural resources of the marine park and

whether the proposed major works will provide facilities for use by, or for the benefit of, the public. The declaration of the works area allows revocation of that area from the Marine Park.

Under the Marine Parks Act 2004 an EIS can be required for carrying out a reclamation/revocation in a Marine Park, and must address the following information:

§ the proposed use of the reclaimed part of the marine park;

§ the potential impacts of the proposed reclamation on the park's environment and use and non-use values and the environment of areas of waters or land contiguous with or adjacent to the park; and

§ the Ramsar Wetland Information Sheet (RIS) about the proposed regulation revoking the declaration of the reclaimed part of the park.

The EIS does not need to be made specifically under the Marine Parks Act 2004 and can be made under another Act or a law of the Commonwealth or another State. The EPBC Act EIS will address all environmental issues associated with reclamation within the marine park. The Queensland Parks and Wildlife Service (QPWS) will be consulted throughout the assessment process to ensure their concerns are addressed. It is anticipated the Works area application will be lodged concurrently or shortly after the draft EIS is released for public consultation.

Other State and Local Approval Requirements

Certain development will also need to be assessed under new Queensland planning legislation, the Planning Act 2016 (PA), which came into effect in July 2017. Assessable development under the PA at Toondah Harbour will entail:

§ Material Change of Use for an Environmentally Relevant Activity (ERA 16- Extractive Industry – Dredging a total of 1000 tonnes or more of material from the bed of naturally occurring surface waters in a year).

Other approvals may be required under the PA if works are undertaken outside the PDA, however this will depend on the outcomes of the EIS process and the final footprint. These may include:

§ Operational work that is tidal works or work carried out completely or partly within a coastal management district if outside the PDA;

§ Disposing of dredge spoil or other solid waste material in tidal water if outside the PDA;

§ Operational work that in the removal, destruction or damage of a marine plant if outside the PDA;

§ Operational work that is clearing of native vegetation if outside the PDA; and

§ An allocation of quarry material under the Coastal Protection and Management Act 1994 if dredged material is placed above the high water mark.

The Chief Executive of DSDMIP is the Assessment Manager for these application types.

A flowchart conceptualising the approval process for the Project is included as Figure 4.

Other Policies and Strategies

The Project aligns with a range of government and community policies at national, state, regional, and local levels including:

Tourism 2020;

Regional Education, Skills and Jobs Plan for Queensland – Logan and Redlands (2013);

Smart Cities Plan;

Toondah Harbour Priority Development Area Development Scheme;

North Stradbroke Island Economic Transition Strategy;

Advancing our cities and regions strategy – delivering economic and community development outcomes;

ShapingSEQ (South East Queensland Regional Plan 2017);

State Infrastructure Plan 2017;

Queensland Charter for Local Content;

Queensland Government Building and Construction Training Policy;

Redland City Tourism Strategy and Action Plan 2015-2020;

Redland City Economic Development Framework 2014-2021; and

Redland City Corporate Plan 2015-20.

In December 2016, the Federal Minister for Trade, Tourism and Investment recognised the Project's national significance by granting it Tourism Major Project Facilitation (TMPF) status.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

Prior to Walker's selection as preferred development proponent for the Toondah Harbour PDA, Redland City Council and Economic Development Queensland conducted comprehensive public consultation on the Toondah Harbour PDA Development Scheme. According to the State Government's public submissions report, consultation was undertaken in two separate phases:

§ The first phase of consultation occurred in August 2013. The reported purpose was to engage with the community in advance of planning for the Toondah Harbour PDA and inform residents of the PDA process. It is understood that engagement included targeted stakeholder meetings, Open House community forms and online surveys. Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) representatives were consulted by RCC at this time.

§ A statutory consultation phase then occurred between 10 January and 24 February 2014 entailing public notification of the draft development scheme for Toondah Harbour PDA. It is understood that, in total, there were 10 community forums, an online submission process and distribution of five community mail-outs, advertisements, and public displays. More than 3000 people participated in these engagement activities and 583 submissions were received. The results of assessment were documented in the submissions report, which is publicly available on EDQ's website.

Based on feedback from the public during the consultation on the draft development scheme, the State Government planners amended elements of the draft development scheme to:

§ reduce maximum building heights to 10 storeys;

§ ensure no net loss of public open space within the PDA;

§ provide greater protection for the recreational function of GJ Walter Park;,

§ reduce the size of the proposed marina from a maximum of 800 berths to 400 berths; and

§ establish a vegetated corridor for koalas and their safe movement.

Further consultation will be undertaken as part of future Federal and State assessment processes. A communication and engagement plan has been prepared, which includes establishment of a project website with Fact Sheets, Project Team contacts, a program of public notices, formal correspondence, static information displays, newsletters, surveys, key stakeholder meetings and briefings, staffed information sessions and events.

Alongside the commissioning of technical studies, public notification and consultation with Indigenous stakeholders will form part of the assessment process, reflecting their important ongoing role and knowledge as custodians of land and sea country and Aboriginal cultural heritage.

Additionally, the State Government, as the owner of the state land, has advised that it intend to negotiate an Indigenous Land Use Agreement (ILUA) in the form of an Area Agreement with parties that hold native title in the area. Public notification of the proposed ILUA commenced in early November 2015.

On 8 March 2017, Queensland South Native Title Services submitted the Quandamooka Coast Claim (QC2017/004) with the National Native Title Tribunal. The claim area includes the Toondah Harbour PDA.

A cultural heritage survey and formal Cultural Heritage Management Plan process will be undertaken as required under Part 7 of the Aboriginal Cultural Heritage Act 2003 (Qld).

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

If the Project is declared a 'controlled action' under the EPBC Act, the project assessment is proposed to be via EIS.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

Yes

2.3.1 Impact table

Wetlands	Impact
Moreton Bay Ramsar Wetland	See attached the Protected Matters Search Tool results (Attachment 2) and technical note (Attachment 3) addressing the Potential Impacts on the Ecological Character of the Moreton Bay Ramsar Wetland from the Toondah Harbour Project. While the EPBC

Wetlands	Impact
	Significant Impact Guidelines provide some guidance on how to assess impacts to a Ramsar Wetland, the criteria are broad and difficult to apply at a site level to large and ecologically diverse wetlands. Moreton Bay covers an area of approximately 113,314 ha and contains a variety of ecosystems ranging from perched freshwater lakes and sedge swamps on the offshore sand islands, to intertidal mudflats, marshes, sandflats and mangroves next to the Bay's islands and the mainland. To provide an accurate assessment of potential impacts to the Ramsar wetland at the site level, a significant impact assessment methodology was developed and provided with Attachment 3. The method is adapted from a previously accepted approach developed for the Great Barrier Reef World Heritage Area (Adaptive Strategies 2016), which, while protected under a different international convention, has many similarities in terms of ecological process and protection. The method comprises two components: 1. Contextual information about ecological character to provide a framework for the analysis; and 2. A process to be applied at the local scale. An ecological character description is still in preparation for Moreton Bay Ramsar wetlands (DoEE 2017a). In the absence of a formal ecological character description for the site, the ecological character of the Moreton Bay Ramsar wetland has been defined as those key environmental values that contribute to the listing criteria of the site. Based on this description a number of key attributes have been identified for the Wetland categorised under seven key environmental features; estuarine/intertidal areas, coastal and sub-coastal vegetation, migratory shorebirds, threatened plant species, marine fauna habitat, fish species, and lakes and enclosed water systems. Assessment of these categories were carried out at the site level with the result summarised below: Estuarine/Intertidal Areas – The PDA contains a moderate to minor presence of estuarine and intertidal habitats

Wetlands	Impact
	including sparse seagrass beds, a small area of mangroves and mud flats providing feeding habitat for migratory shorebirds. The PDA contains less than 0.007% of the total area of potential feeding habitat from migratory birds in Moreton Bay and would be considered to provide a minor contribution to the overall ecological character of the wetland. Coastal and sub-coastal vegetation - No swamps were identified by the terrestrial or aquatic ecological surveys as being present within or adjacent to the PDA therefore the site does not provide a contribution to the ecological character of the wetland for these attributes. Migratory shorebirds – The PDA area contains intertidal feeding habitat for a number of migratory shorebirds including the critically endangered Eastern Curlew, the critically endangered Great Knot and the vulnerable Bar-tailed Godwit (Western Alaskan). Similar habitat is found throughout Moreton Bay with the site providing less than 0.001% of this habitat type. Two high tide roost sites are located adjacent to the PDA being the Nandeebie Claypan and Cassim Island (refer to Plan 2). These areas are recognised as having high importance to shorebirds in the region and site design and management will focus on avoiding any permanent or long term impacts to these areas. The site is considered to provide a moderate to minor contribution to shorebird feeding habitat, while adjacent areas provide a significant contribution to shorebird roosting sites. Threatened Plant Species - No threatened flora species have been recorded within a 1 km radius of the study area on the databases that were searched, none were detected during the field survey of the study area, and the study area does not contain habitat suitable for any of the threatened flora species identified as having the potential to occur. The site does not provide a contribution to the ecological character of the wetland for these attributes. Marine Fauna Habitat - Twenty-one migratory marine species were listed as potentially occurring within 5 km of the Project using the protected matters

Wetlands	Impact
	search tool. Of these listed migratory species, 12 species are also listed as threatened species. Of the listed migratory species, loggerhead turtles, green turtles, Indo-Pacific humpback dolphins and dugong are highly likely and hawksbill turtles are moderately likely to occur in the potential area of impact. While potential habitat for these species is located in Toondah Harbour similar or better habitat is present throughout Moreton Bay. The site is considered to provide a minor contribution to the ecological character of the wetland for its marine fauna habitat attributes. Fish - No protected fish habitat is located within or adjacent to the PDA and no threatened fish species are expected to utilise the areas including Oxleyan pygmy perch, which are generally regarded as restricted to streams, swampy areas and lakes in coastal wallum. The site does not provide a contribution to the ecological character of the wetland for these attributes. Lakes and Enclosed Water Bodies - No lakes or enclosed water bodies are present within or adjacent to the PDA. The site does not provide a contribution to the ecological character of the wetland for these attributes. The Project is likely to result in permanent impacts to a small area of shorebird feeding habitat as a result of dredging and reclamation works. While the impact will be small in comparison to habitat for native species present throughout the Moreton Bay Ramsar wetland, as the impact will be permanent and affect an area of minor to moderate ecological character there is the potential for significant impacts to occur. If detailed studies identify significant impacts will occur, an offsets package would be developed in consultation with the DoEE and in accordance with the EPBC Act Environmental Offsets Policy (refer to section 4 of the referral for further details of proposed offsets and benefits). The proposed total works area within the Moreton Bay Ramsar Wetland is approx. 42 ha. This includes significant land uses that are considered ‘wise use’ in a Ramsar wetland setting, including marina, navigation channel,

Wetlands	Impact
	public open space and recreational facilities and a wetland education and cultural centre. The Ramsar principles of avoid, mitigate and compensate in the masterplanning for Toondah Harbour PDA have also been taken into consideration. Although complete avoidance is not possible given the PDA overlaps with the Moreton Bay Ramsar Wetland by approximately 42ha, substantial setbacks (minimum 250m) from Cassim Island and Nandeebie Claypan roost sites have been provided and more intensive land uses have been located in the non-Ramsar component of the site. Where there are residual post mitigation impacts, it will be necessary to compensate or offset the resultant negative change in ecological character. Ramsar Convention Resolution XI.9 sets out decision criteria to be considered during the development and implementation of compensation measures, which will be addressed as part of the formal EIS process. In addition to the increased buffer zones, the Project will be designed and managed to avoid any permanent impact on the adjacent high tide roost sites (Nandeebie Claypan and Cassim Island) through measures including: Construction of appropriate barriers, such as fences to restrict access; ideally, there should be limited/no public access (by humans and/or domestic animals) to areas identified as important to migratory shorebirds; Landscape and urban design to include sympathetic lighting strategies, vegetation screening and sound attenuation; Increased community education through mechanisms including a wetland education and cultural centre, bird hides, walking trails and interpretive signs; and Creation of approximately 5.1 ha of new intertidal conservation areas. While impacts to the high tide roost sites that adjoin the PDA will be mitigated, it is acknowledged these areas provide a significant contribution to the ecological character of the Moreton Bay Ramsar Wetland. As such, the precautionary principle has been applied and therefore it is considered likely the Project will result in

Wetlands	Impact
	temporary impacts to the roost sites, which may have a significant impact on migratory shorebirds that would need to be mitigated. Further detailed studies will be carried out as part of future assessment processes including development of a shorebird management plan to ensure protection of the high tide roost sites is considered during the planning, construction and ongoing use phases of the development. It is also noted that the sites are mainly utilised by migratory shorebirds over the summer period (approximately December – March) therefore some mitigation measures will be designed to target these times. While appropriate management measures will minimise the potential to impact on the Moreton Bay Ramsar wetland it is acknowledged that, if a precautionary approach is applied, the potential for significant impacts exist. Therefore, the Project is referred as a controlled action to allow more detailed assessment under the EPBC Act to be carried out. It is noted that once projects are within a controlled action process offsets and benefits associated the Project can be considered. The Project will seek to provide an overall benefit to the Moreton Bay Ramsar Wetland through best practice design approaches, mitigation measures and an offsets/compensation package that will provide direct and indirect benefits to the wetland environment. Responses may include in situ and ex situ measures such identifying new areas in Moreton Bay to be designated to the Ramsar wetland, creation of new intertidal habitat around the reclamation area, increased protection of existing high value shorebird animals from disturbance by dogs and people, rehabilitation of areas offsite to increase habitat value, community awareness and education initiatives including a wetland education and cultural centre and improved management of the area through funding for a community ranger program. These beneficial actions will be explored further as part of the controlled action assessment process. There is an approximately 7ha area between the existing public navigation

Wetlands	Impact
	channel and the Nandeebie Claypan roost site, adjoining the PDA that was excluded from the Moreton Bay Ramsar Wetland at the time of mapping in the early 1990s, which has no purpose from a contemporary planning or operational perspective. While this area has high ecological value, it is unprotected and may have value as a direct local compensatory measure. This opportunity, along with other sites, will be assessed as part of the EIS process.

2.3.2 Do you consider this impact to be significant?

Yes

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Loggerhead Turtle (Caretta caretta) Green Turtle (Chelonia mydas) Hawksbill Turtle (Eretmochelys imbricate) Eastern Curlew (Numenius madagascariensis) Bar Tailed Godwit (Limosa lapponica bauera) Great Knot (Calidris tenuirostris) Curlew Sandpiper (Calidris ferruginea) Koala (Phascolarctos cinereus)	See attached technical note (Attachment 4) addressing the Potential Impacts on Threatened Species. Likelihood of occurrence assessments have been carried out by FRC environmental (marine species – refer to Attachment 5) and BAAM (terrestrial species including wader birds – refer to Attachment 6) and using information from the desktop and field surveys assessing the potential for each threatened species and community to utilise the site. The assessments were carried out based on a species potential to utilise any habitats found within the PDA. This approach is considered conservative as the development will not affect all areas of the PDA and the Project will incorporate new wetland and conservation areas that will provide additional habitat for many of the species that may currently utilise the site. Threatened species

Species	Impact
	considered likely to utilise the site are addressed below: Loggerhead Turtle - Moreton Bay supports a significant loggerhead turtle feeding population. Loggerhead turtles are moderately likely to occur in marine habitats within and adjacent to the Project, particularly in the seagrass beds. Green Turtle - Moreton Bay supports feeding populations of green turtles. Green turtles often are observed in the seagrass beds adjacent to the Project. They are highly likely to occur in marine habitats within and adjacent to Toondah Harbour, particularly in the seagrass beds. Hawksbill Turtle - Despite not providing critical habitat, there is a small resident population of hawksbill turtles in Moreton Bay that may feed in, or traverse, the proposed project area. There is a moderate likelihood that hawksbill turtles occur in marine habitats within and adjacent to the Project. Eastern Curlew - During the summer months October 2014 to February 2015, an average of 4.8 and maximum of 7 Eastern Curlew were recorded feeding on mudflats within the study area. Eastern Curlews were also recorded roosting at the Nandeebie Claypan roost site. Bar-tailed Godwit (Western Alaskan) - surveys identified an average of 24.8 and maximum of 36 Bar-tailed Godwits feeding on intertidal mudflats within the Toondah Harbour PDA. The feeding density recorded within the study area (average 0.62 birds/ha, maximum 0.9 birds/ha) is substantially less that the densities of 3 to 8 birds/ha recorded in the highest quality feeding habitats on the eastern side of Moreton Bay. Bar-tailed Godwits were also recorded roosting at the Nandeebie Claypan roost site and at Oyster Point (located 600 m from the PDA). Great Knot – Over all survey periods, a single Great Knot was recorded during the low tide feeding on intertidal mudflats within the Toondah Harbour PDA. The high tide survey results suggest that Great Knot occasionally roosts in relatively small numbers at the Nandeebie Claypan roost site as well as at Oyster Point roost site located 600 m from the PDA. Curlew Sandpiper - During the low tide

Species	Impact
	surveys, Curlew Sandpiper was not recorded feeding on intertidal mudflats within the Toondah Harbour PDA. Furthermore, very few, if any, Curlew Sandpipers appear to use nearby mudflats. This suggests that feeding habitat within the PDA and nearby mudflats is of marginal importance to Curlew Sandpiper. The high tide survey results suggest that Curlew Sandpiper very rarely roosts at the Nandeebie Claypan roost site south of the PDA. Koala - The initial field survey identified 286 koala habitat trees scattered across the western portion of the PDA as a component of the existing urban environment. Koala scats were observed under 33 of these trees, confirming recent Koala use of trees in the PDA. Two Koalas were also observed in habitat trees within the PDA, and up to three Koalas were observed in trees at Nandeebie Park immediately south of the PDA. In late 2016, eight koalas were fitted with tracking devices as part of study initiated by local community groups. Potential direct impacts relate to the removal of habitat or vegetation for infrastructure, dredging or reclamation. The loss of intertidal feeding habitat for threatened migratory shorebird species has the potential to lead to a corresponding decrease in the number of migratory shorebirds using the Moreton Bay wetlands proportional to the loss of habitat IF migratory shorebird populations in Moreton Bay were subject to density-dependent population regulation. However, migratory shorebirds are not currently subject to density-dependent population regulation in Moreton Bay due to the substantial loss of birds from the system. Migratory shorebird populations using Moreton Bay have undergone substantial declines due to outside factors. The declining numbers year on year are mainly associated with disruption in staging sites in other parts of the flyway such as mudflats in the Yellow Sea (refer to Studds et al, 2017). In this case, the loss of a relatively small area of intertidal feeding habitat is unlikely to lead to a corresponding reduction in the number of migratory shorebirds using Moreton

Species	Impact
	Bay. Therefore, the carrying capacity of the Moreton Bay wetlands for supporting migratory shorebirds is likely to be underutilised. The Project will be designed and managed to avoid any permanent impact on high tide roosting sites through the use of buffer areas and a number of other measures including: construction of appropriate barriers, such as fences to restrict access; The project will be designed to avoid public access (by humans and/or domestic animals) to areas identified as important to migratory shorebirds; landscape and urban design to include sympathetic lighting strategies, vegetation screening and sound attenuation; and increased community education through mechanisms such as interpretive signs at access points to shorebird habitats and educational programs through a wetland and cultural heritage centre. Potential impacts to marine turtles include loss of habitat (seagrass) for the green turtle, short-term disturbance through turbidity plumes, and an increased chance of collisions from an increase in boat traffic during construction and ongoing use of the marina. The masterplan has been revised to reduce indirect impacts on marine fauna by reducing the number of marina berths from an allowable 400 berths under the Development Scheme to approx. 200 berths. Management measures will be put in place to minimise the impacts to these species, including: developing thresholds for turbidity and suspended solids, and appropriate management (e.g. triggers for ceasing works) for seagrass and corals and monitoring water quality during construction; monitoring changes in seagrass and coral communities post-construction to determine any potential impacts; fitting the dredge draghead with turtle deflectors; putting in place procedures for observing and avoiding marine turtles during construction; and placing speed limits for areas within and around the harbour for all boat traffic The risk of impacts to marine fauna due to noise and boat strike will be reduced further by preparing a Fauna Management Plan including

Species	Impact
	procedures for observing and avoiding turtle species during construction. Once construction has been completed and residential and tourism uses (including the marina) commence there is the potential for ongoing impacts to threatened and migratory species. The actions with the most potential to cause ongoing impacts include: An increase in boating traffic and other recreational uses such as kayaking in and around the project area; An increase in lighting and noise associated with ongoing uses; and Ongoing maintenance dredging of the harbour, marina and entrance channel. Ongoing impacts to migratory birds and marine fauna can be managed through increased management of the site and surrounds, educational tools and awareness raising. A range of measures have been identified that will assist to minimise, mitigate and offset potential impacts to migratory birds and marine fauna, which will be explored in detail as part of the EIS process. Examples include: Increased management of the local area through a community ranger program; Wetland education and cultural centre; Community awareness campaigns; and Educational signage, in particular in areas surrounding high tide roost sites. Toondah Harbour and the 2.55km entrance channel is already subject to periodic maintenance dredging by the state government and impacts would not be expected to be significantly different to what currently occurs. It is of note that impacts from previous maintenance dredging campaigns are considered to be minor and have not previously required referral under the EPBC Act. All options for treatment and disposal of dredge spoil from maintenance dredging will be examined as part of the EIS process. Potential impacts to the Koala, if not carefully managed, include loss of food trees in an urban area, risk of mortality during clearing and increased risk of mortality due to increased vehicle traffic and dog ownership resulting from urbanisation. It is noted that the area is already highly urbanised and the park area surveyed includes a dog off

Species	Impact
	leash area therefore, these impacts are already present In the region. The potential impacts of the Project on Koalas will be mitigated by: Adopting a landscape and urban design that retains as many of the food trees as possible and includes a linear strip of public open space to serve as a corridor connecting retained Koala food trees with bushland habitat in Nandeebie Park to the south of the PDA; Planting additional Koala food trees both within the PDA and surrounding areas where possible, to mitigate any loss of Koala food trees within the PDA; Ensuring that the clearing of any trees during Project construction is performed under the guidance of a licenced fauna spotter; and Using Koala exclusion fencing to fence off areas that may pose a risk of injury to Koala during construction. While management measures will be put in place to mitigate impacts to threatened species, the removal of an area of low tide feeding habitat has some potential to reduce the area of occupancy for endangered and critically endangered wader bird species and/or disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population. While Moreton Bay's carrying capacity of migratory shorebirds and marine fauna species is unlikely to be affected, the project is referred as a controlled action to allow a more detailed assessment under the EPBC Act to be carried out.

2.4.2 Do you consider this impact to be significant?

Yes

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

Yes

2.5.1 Impact table

Species	Impact
Eastern Curlew (Numenius madagascariensis) Bar Tailed Godwit (Limosa lapponica bauera) Great Knot (Calidris tenuirostris) Curlew Sandpiper (Calidris ferruginea) Whimbrel (Numenius phaeopus) Terek Sandpiper (Xenus cinereus) Grey tailed tattler (Tringa brevipes) Ruddy turnstone (Arenaria interpres) Red knecked stint (Calidris ruficollis) Black tailed godwit (Limosa limosa) Pacific golden plover (Pluvialis fulva)	See attached technical note (Attachment 4) addressing the Potential Impacts on Migratory Species. Database searches identified a total of 33 terrestrial fauna species or sub-species listed as migratory shorebird species under the EPBC Act that may occur within the study area or environs. Eleven of these species were recorded within or immediately adjacent to the study area during field surveys, and a further eight species were identified as having the potential to occur based on database records for the local area and presence of suitable habitat. The remaining 14 species or sub-species were assessed as unlikely to occur. Potential direct impacts relate to the removal of habitat or vegetation for infrastructure, dredging or reclamation. The loss of intertidal feeding habitat for threatened migratory shorebird species has the potential to lead to a corresponding decrease in the number of migratory shorebirds using the Moreton Bay wetlands proportional to the loss of habitat IF migratory shorebird populations in Moreton Bay were subject to density-dependent population regulation. However, migratory shorebird populations using Moreton Bay have undergone substantial declines due to factors outside of Moreton Bay, for example reclamation of mudflats in the Yellow Sea. Therefore, the carrying capacity of the Moreton Bay wetlands for supporting migratory shorebirds is likely to be underutilised. That is, migratory shorebirds are not currently subject to density-dependent population regulation in Moreton Bay due to the substantial loss of birds from the system. The declining numbers year on year are mainly associated with disruption in staging sites in other parts of the flyway (refer to Studds et al, 2017). In this case, the loss of a relatively small area of intertidal feeding habitat is unlikely to lead to a corresponding reduction in the number of migratory shorebirds using Moreton Bay. Other migratory species that may utilise the site include Dugongs and Indo-Pacific humpback dolphins. Potential impacts to these species include temporary disturbance in areas affected

Species	Impact
	by turbidity plumes, boat vessel strike during construction and ongoing use of the harbour and loss of habitat (i.e. seagrass for dugongs). Impacts on migratory species are not expected to be significant and a number of management measures will be put in place to mitigate any indirect impacts (refer to Attachment 4). While Moreton Bay's carrying capacity of migratory shorebirds and marine fauna species is unlikely to be affected, the project is referred as a controlled action to allow a more detailed assessment under the EPBC Act to be carried out.

2.5.2 Do you consider this impact to be significant?

Yes

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

Yes

2.6.1 Is the proposed action likely to have ANY direct or indirect impact on the Commonwealth marine environment?

No

2.6.2 Describe the nature and extent of the likely impact on the whole of the environment.

Impacts to MNES associated with the marine environment are addressed through responses to section 2.3, 2.4 and 2.5. General impacts to the marine environment are also addressed in **Attachment 5**.

Potential direct impacts to the marine environment include the loss of habitat directly under the footprint of the proposed project. There will also be a gain of habitat in some of these areas. Marine fauna may also potentially be trapped or injured in wet extraction areas; however, management measures including the use of fauna spotters would mitigate the potential for fauna to become trapped or injured.

Indirect impacts to the marine ecosystem may include:

§ disturbance of sediments and soil (increasing turbidity, suspended solids, sedimentation,

nutrients, contaminants and potential acid sulfate soils);

§ spills of hydrocarbons and other contaminants;

§ increased stormwater runoff (with greater non-permeable surfaces on the subject site) and associated contaminants and foreshore erosion;

§ altered hydrodynamics;

§ increased site access and boating;

§ spread of weeds and pests; and

§ increased litter.

Following dredging of Fison Channel, water quality is likely to improve around the channel, as deepening the channel will reduce the current disturbance of bottom sediments from boating activities (particularly large passenger and vehicle ferries).

The conceptual masterplan has been revised to reduce indirect impacts on marine fauna by reducing the number of marina berths from up to 400, which are permitted under the Toondah Harbour PDA Development Scheme, to approx. 200.

Significant effort has been invested in the planning and design of the project to minimise impacts on the marine environment and integrate the development with the aesthetic and environmental values of the Moreton Bay Ramsar Wetland. This is achieved through the adoption of ‘wise use’ principles and good practice achieved by successful wetland developments globally. The Project will set out to achieve best practice wetland conservation, education and eco-tourism.

In addition, a number of industry standard measures will be put in place to mitigate these impacts, including:

§ Using the project footprint for any temporary construction and storage;

§ Incorporating structures that provide valuable habitat for fish in the design;

§ Identifying and managing acid sulfate soils and other contaminants;

§ Using temporary enclosures (e.g. complete enclosures such as sheet piles) to reduce the intensity and spatial distribution of turbid plumes during construction;

§ Installing any temporary enclosures at low tide to minimise the number of marine vertebrates caught in the area;

§ Catching any animals that are trapped in the enclosures and releasing them in appropriate habitat outside the area;

§ Using trained marine mammal and turtle spotters prior to commencement of excavation and dredging activities and appropriate management tools to avoid impacts to them (e.g. triggers for cessation of excavation or dredging works);

§ Developing turbidity and suspended solids thresholds and appropriate management (e.g. triggers for ceasing works) for seagrass and corals and monitoring water quality during construction;

§ Avoiding disturbance of sediment and / or soils during important periods of reproduction for coral and seagrass (e.g. late spring and summer);

§ Minimising litter, waste and the use of hydrocarbons and other chemicals;

§ Following national and international best practice standards, including Australian standards relating to antifouling paints and contaminants, *Nature Conservation (Wildlife Management) Regulation 2006*, vessel and vehicle management and site management strategies and fuel storage and handling activities outlined in AS1940;

§ Implementing environmental management plans, including a Marine Fauna Management Plan, Stormwater Management Plan, Sediment and Erosion Management Plan, Waste Management Plan, Weed Management Plan and Spill Management Plan; and

§ Monitoring changes in seagrass and coral communities to determine any potential impacts.

With the use of appropriate mitigation measures, potential impacts to aquatic habitats and communities are likely to be of low significance, other than the direct impacts to marine plants and soft sediment within the footprint, and changes to water quality and soft sediment communities within the dredging and reclamation area.

2.6.3 Do you consider this impact to be significant?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

All Flora and fauna relevant to the project area has been addressed through the assessment of MNES including the Moreton Bay Ramsar Wetland and threatened and migratory species (see **Attachments 3 and 4** to this referral).

Terrestrial and marine ecology technical reports are provided as **Attachments 5 and 6** to this referral.

3.2 Describe the hydrology relevant to the project area (including water flows).

Hydrology

The site is located on the shore of Moreton Bay, away from major rivers or estuarine systems. Consequently, the site is not affected by river flooding.

Being located on the coast, the site may be affected by storm surges. A storm tide hazard study was commissioned by RCC in 2009 to determine storm tide risks in Moreton Bay. The study determined that the 100-year planning level, taking into account storm surge and 0.8 metre sea level rise, should be 3.4 m AHD. This level will be adopted for finished floor levels for the Project.

It is possible that the proposed reclamation and channel dredging could affect coastal currents in the area. Potential impacts will be assessed through detailed hydrological modelling the scope of which will be discussed and agreed with DoEE prior to being carried out.

Existing Water Quality

Three turbidity loggers have been installed at and around Toondah Harbour since September 2015 to provide an indication of baseline water quality. Data collected between 9 September 2015 and 22 September 2017 was summarised and provided as **Attachment 7**.

The mean turbidity over the 24 months of sampling was 20.6 NTU, 30.5 NTU and 12.6 NTU at sites 1, 2 and 3 respectively with 95th percentiles of 74.9, 100 and 40.4. Overall, turbidity was generally highest during the wetter seasons of late spring and summer at all sites. During the

wet season, sediment-laden runoff and resuspension of sediments by strong winds can lead to a reduction in water clarity.

Water quality in Queensland is protected under the Environmental Protection (Water) Policy 2009 (EPP (Water)) using Water Quality Objectives (WQOs). The Moreton Bay Environmental Values and Water Quality Objectives (June 2010) specifies a WQO for the project area for turbidity of 5 NTU. The median turbidity at all three sites over the 24 months (7.8 NTU to 11.1 NTU) exceeded the WQO.

Stormwater Management

Most stormwater runoff from the site is currently not captured or treated and enters Moreton Bay through overland and open channel flow, discharging either to the south into a mangrove area, or to the east through GJ Walter Park. Stormwater within the Project area will be captured and treated to meet best practice water quality requirements.

Within the reclamation area, stormwater would be managed through a combination of kerb and channel, pit and pipe and open channel drainage. Stormwater runoff will be discharged into the marina, Fison Channel, or along the new eastern shoreline. It is planned that Water Sensitive Urban Design (WSUD) features, such as constructed wetlands vegetated swales and/or in-pipe gross pollutant traps (GPT), will be incorporated into the stormwater management system for the development.

A Stormwater Quality Management Plan (SQMP) will developed for the site providing a conceptual assessment and plan of site runoff and how it will achieve stormwater quality management objectives during the operational phase of the development. Stormwater quality objectives for sites in Queensland are highly regulated and governed by the State Planning Policy (DSDIP 2013). Specific performance criteria include:

- 80% reduction in total suspended solids;
- 60% reduction in total phosphorus;
- 45% reduction in total nitrogen; and
- 90% reduction in gross pollutants.

Load reductions will be met and exceeded using a combination of public education and Water Sensitive Urban Design (WSUD) measures such as bioretention basins. Stormwater treatment modelling software such as MUSIC will be used to assess the generation, transportation and treatment of flows and pollutant loads from the site and ensure the reduction criteria will be met.

Education has significant potential to decrease pollutant loads at the source and increases people’s understanding and acceptance of water quality issues and stormwater treatment devices. It is proposed that signage be installed at appropriate locations (e.g. adjacent to

proposed bioretention basins).

Such features will be developed further through the design process with the intention of protecting the environmental characteristics of the Moreton Bay Ramsar Wetland and achieving applicable water quality objectives consistent with the Moreton Bay environmental values and water quality objectives (State of Queensland, 2010) pursuant to the Environmental Protection (Water) Policy 2009.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

The referral area is located in an area of known high risk of ASS presence. A significant volume of marine sediment will likely be dredged and used as reclamation material. The dewatering activities proposed may also generate acidic water with potential resulting risks to the adjacent environment if not treated properly.

Prior to any works occurring, a detailed assessment of the sediments within the project footprint, including the Fison Channel, will be undertaken for both potential contaminants and ASS in accordance with the relevant guidelines including the National Assessment Guidelines for Dredging 2009. Following the investigation, management plans describing the management of potential contaminants (if identified) and ASS will be prepared prior to any construction activities commencing.

ASS will be managed in accordance with the latest version of the Queensland Acid Sulfate Soil Management Guidelines.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

All outstanding natural features present at the site are related to the Moreton Bay Ramsar Wetland. This includes:

Marine Fauna Habitat - 21 migratory marine species were listed as potentially occurring within 5 km of the proposed project using the protected matters search tool. Twelve of these species are also listed as threatened under the EPBC Act. Of the listed migratory species, loggerhead turtles, green turtles, Indo-Pacific humpback dolphins and dugong are highly likely and hawksbill turtles are moderately likely to occur in or near the PDA. While potential habitat for these species is located at Toondah Harbour similar or better habitat is present throughout Moreton Bay.

Estuarine/Intertidal Areas – The PDA contains moderate to minor presence of estuarine and intertidal habitats including sparse seagrass beds, a small area of mangroves and mud flats providing feeding habitat for migratory shorebirds. The PDA contains less than 0.001% of the total area for these habitat types in Moreton Bay.

Migratory shorebird Habitat – The PDA area contains intertidal feeding habitat for a number of

migratory shorebirds including the critically endangered Eastern Curlew, the critically endangered Great Knot and the vulnerable Bar-tailed Godwit (Western Alaskan). Similar habitat is found throughout Moreton Bay with the site providing less than 0.001% of this habitat type. Two high tide roost sites are located adjacent to the PDA being the Nandeebie Claypan and Cassim Island. These areas are recognised as having high importance to shorebirds in the region and site design and management will focus on avoiding any permanent or long term impacts to these areas.

3.5 Describe the status of native vegetation relevant to the project area.

The Toondah Harbour PDA contains patches of vegetation currently mapped by the Queensland Government as remnant vegetation of the following two regional ecosystems (REs), both of which have a 'least concern' status under the VM Act:

§ RE 12.1.2 (Saltpan vegetation including grassland, herbland and sedgeland on marine clay plains); and

§ RE 12.1.3 (Mangrove shrubland to low closed forest on marine clay plains and estuaries).

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

The existing land areas have elevations up to approximately 3 m AHD, gradually grading downwards to the eastern coastline. The tidal area of the PDA ranges in depth up to -1 m AHD (+0.25 m LAT); much of this area is exposed at low tide.

Fison Channel is relatively shallow, with depths of approximately -1.5 m LAT. Maintenance dredging target depths for the channel are -2.5m LAT.

3.7 Describe the current condition of the environment relevant to the project area.

At Toondah Harbour, previous land reclamation and dredging activities have altered the topography and coastline considerably. Part of the referral area under tidal waters and a broader area within the Bay were subject to a coral dredging lease in favour of Queensland Cement Limited until the 1990s.

The aquatic ecological field survey found that the habitats within the Moreton Bay Ramsar Wetland at Toondah Harbour were of varying quality and condition.

The mangrove forests along the foreshore within the referral area are highly disturbed. These mangrove forests receive local runoff from developed areas and litter was caught in the roots and along the shoreline. The mangroves along the shoreline and to the east of the PDA were in fair condition with evidence of insect damage.

The areas of intertidal and sub-tidal, unvegetated mud and sand habitat around Fison Channel are extremely disturbed by frequent boat and ferry traffic, with wash affecting exposed areas at low tide. The rest of the area is moderately disturbed, with runoff from developed areas and impacts due to recreational use.

There has been some disturbance of the seagrass meadows by recreational boat traffic and wash from ferries on the southern section adjacent to the channel. The seagrass meadows are in good condition, although there is some epiphytic algal growth on the leaves.

The saltmarsh near (but outside of) the referral area is highly disturbed, receiving runoff from developed areas along the foreshore. Rubbish was found throughout.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

No Commonwealth Heritage Places are located on or adjacent to the site.

The *Queensland Heritage Act 1992* (QH Act) protects historical (non-Indigenous) heritage that is of known or potential State significance, including archaeological remains and shipwrecks, and establishes the Queensland Heritage Register (QHR). A search of the National Shipwrecks database indicates that there are no known shipwrecks within 1km of the PDA. A search of the QHR indicates that there are seven State heritage sites in proximity to the Toondah Harbour PDA.

One of these, Fernleigh (SHR# 601374), is located within the PDA. An early residence with an external kitchen (formerly the Cleveland school) Fernleigh is situated on Shore Street, across allotments 14/C14563, 15/C14563 and 16/C14563. The proposed development does not impact on Fernleigh. There are a further three State listed sites adjacent to the PDA: St Pauls Anglican Church (SHR# 600769), the Grandview Hotel (SHR# 600771), and Cleveland Hotel (former) (SHR# 601130). Finally, there are three State heritage sites located within 500m of the PDA: Cleveland Police Station and Court House (former) (SHR#601933), Norfolk Island Pine Trees (SHR#602181) and Ye Olde Court House Restaurant (SHR#600770). The proposed development does not impact on any state listed sites in the vicinity of the PDA.

In addition to these registered heritage places, there is also potential for archaeological remains of state significance to be located in this area. Cleveland was an important wool trade port during the first half of the 19th century, boasting its own customs house, wool stores and stone jetty. There is the potential for remains of this early port activity, as well as of the daily lives of Cleveland's inhabitants, to be preserved in and around the PDA.

The QH Act also protects local heritage places in conjunction with the Planning Act 2016 and local planning schemes, in this case the Redlands Planning Scheme. While the PDA supersedes the local planning measures, it should be noted that the Toondah Harbour PDA encompasses a local heritage place, GJ Walter Park, and part of the Cleveland Point Character Precinct, which are not part of the development proposal.

3.9 Describe any Indigenous heritage values relevant to the project area.

Toondah Harbour is located in the traditional lands of the Koobenpul peoples, a coastal tribe of the Jagera language group who spoke Jandai and whose territory extended from the mouth of the Brisbane River to Redland Bay. The *Aboriginal Cultural Heritage Act 2003* (ACH Act), administered by the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP), provides for the recognition, protection and management of Aboriginal cultural heritage.

A search has been undertaken of the Cultural Heritage Register to identify any known places, areas or objects of Indigenous or cultural heritage significance within the project area. No registered Aboriginal Cultural Heritage places were identified in the project area or environs through this search; however, this may be due to lack of survey information rather than the absence of Aboriginal cultural heritage.

The general duty of care under the ACH Act applies to any activity where Aboriginal cultural heritage is located regardless of whether or not it has been identified or recorded in a database. Land users must take all reasonable and practicable measures to ensure their activity does not harm Aboriginal cultural heritage. Potential remains for sub-surface Aboriginal archaeological objects to exist along the original coastal foreshore area.

On 8 March 2017, Queensland South Native Title Services submitted the Quandamooka Coast Claim (QC2017/004) with the National Native Title Tribunal. The claim area includes the Toondah Harbour PDA.

The native title party has successfully registered a cultural heritage body for the area as per the ACH Act. The Quandamooka Yoolooburrabee Aboriginal Corporation RNTBC Pty Ltd is now the registered Cultural Heritage Body for the area, and is the first point of contact for cultural heritage matters.

A Cultural Heritage Management Plan (CHMP) for the project will be developed under Part 7 of the ACH Act during the EIS process.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

The development footprint comprises freehold land and State land including leasehold, reserve and unallocated state lands.

It is understood that the state land is to be vested in Economic Development Queensland (EDQ). In order for this to occur, EDQ has indicated that it intends to:

§ negotiate an ILUA with the native title party;

§ prepare interim leases/licences for current lessees (operators, RCC) during tenure conversion and future leases/licences for new ferry terminal area as appropriate to ensure no interruption to ferry operating services;

§ ensure that all state land that is currently held in trust or is the subject of a lease will be converted to appropriate tenure before it is made available to Walker for the purposes of the Project; and

§ seek a Development Lease under the *Land Act 1994* to facilitate construction of the marina and land reclamation activities on state land below high water mark, with a view to obtaining the freehold over reclaimed land at the completion of the works.

EDQ expects to maintain continuous ownership of the State land, including the reclamation area, throughout the construction phase of the Project.

The developed lots that are reclaimed land will eventually be transferred to private purchasers, with the exception of the ferry terminals and car parking which will be transferred to the ownership of Redland City Council and the foreshore park and road reserves which will be State reserves managed by Council.

The marina will be sold out of state ownership into private ownership either en globo or as a strata subdivision lot by lot.

3.11 Describe any existing or any proposed uses relevant to the project area.

The existing land uses within the Toondah Harbour PDA include:

§ GJ Walter Park, which includes fields, play space and an unfenced) off leash dog park;

§ commercial passenger and vehicle ferry operations and associated car parking;

§ a disused dredge material spoil pond;

§ public boat ramp;

§ former council office facilities subject to a short term lease by a private trade college; and

§ existing privately-owned low and medium density residential development, which is not part of the development proposal.

Large areas of surface car parking dominate the southern part of the PDA, while the green space of GJ Walter Park dominates the northern portion.

Fison Channel provides access for ferries and water taxis which operate between the mainland and North Stradbroke Island.

The proposed use is the Toondah Harbour Development as outlined in this referral.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

Management measures specific to the various MNES that have the potential to be impacted by the action are outlined throughout this referral. In addition to these measures, it is expected that further detailed studies will be carried out as part of the controlled action assessment process. These studies will provide a more detailed analysis of the existing environment and impacting processes and it is expected that the design of the project site included in this referral will be modified in response to these studies

Key studies proposed are outlined below. These studies or expected to be mandated through tailored guidelines issued as part of the EPBC Act controlled action assessment process.

Wise Use through Design

The definition of 'wise use' was adopted by the Ramsar Parties in 1987 and updated in 2005 to state, *'**wise use** of wetlands is the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of **sustainable development** '*.

Ramsar Handbook 1 Wise Use of Wetlands (4th edition) indicates that the phrase "*within the context of sustainable development*" is "*intended to recognise that whilst some wetland development is inevitable and that many developments have important benefits to society, developments can be facilitated in sustainable ways by approaches elaborated under the Convention*". The concept further allows for compromises ("trade-offs") and notes, "*adequate and sustainable financing for wetland conservation and wise use is essential and this can be helped by the use of innovative financial instruments and partnerships between those sectors and stakeholders outside the Ramsar Convention who might not have worked together on wetland issues in the past*".

Ramsar Convention *Guidance on marine and coastal area management* (the guidelines) acknowledges, "*human use on a sustainable basis is compatible with Ramsar principles and*

wetland conservation in general". Human integration with Ramsar wetlands has the potential for significant benefits including education, conservation, mitigation of and adaption to climate change, and the prevention of disease and natural disaster as long as development is implemented utilising the 'wise use' concept.

The wise use concept under the Ramsar Convention sets out to maintain wetland values and functions, while at the same time delivering services and benefits now and into the future, for human well-being. The 'Ramsar Convention guidance on marine and coastal area management' outlines a number of values, functions, goods and services generally supplied by Ramsar and coastal wetlands. These include:

§ Maintenance of existing coastal processes including physical, biological and chemical processes;

§ Mitigation of impacts of natural hazards, pollution, and flooding;

§ Mitigation of, and adaptation to, impacts of climate change and sea-level rise;

§ Providing goods vital for the health, safety and welfare of local populations and services (such as water transport); and

§ Important reservoirs of high species biological diversity, including migratory and non-migratory species and threatened species.

The convention guidance highlights the need to ensure stakeholder participation in conservation and wise use of coastal wetlands. Measures identified include involving local communities and indigenous peoples that have customary rights or tenure in coastal wetlands, and implementing educational programmes that would increase the understanding of the need to protect and conserve coastal wetlands, and their values and functions.

In Australia, Ramsar Wetlands provide the following ecosystem components, processes and benefits:

§ Supporting the diversity and abundance of plants and animals, and providing important habitat and refuges for many migratory, rare or threatened species;

§ Forming part of the natural hydrochloric cycles, providing water passage and storage and the recharge of aquifers;

§ Nutrient cycling and improving water quality by trapping nutrients and sediments;

§ Flood mitigation and providing coastal protection against destructive natural events, such as cyclones;

§ Supporting species to adapt to the effects of climate change by providing refuge and landscape connectivity;

§ Contributing to the sequestration and storage of carbon, to mitigate against climate change;

§ Contributing to Australia's economic productivity by providing essential water sources for agricultural, urban and industrial uses, vital breeding, nursery and harvest sites for edible fish, molluscs and crustaceans, brood-stock for aquaculture and areas of pastures for stock;

§ Contributing to cultural heritage, spiritual values and day-to-day living of Aboriginal and Torres Strait Islander people; and

§ Contributing to the well-being of people through landscape diversity, heritage values, aesthetic appeal and recreation.

(Sourced from the Australian governments Wise Use of Wetlands in Australia Fact Sheet)

The ecological character of the Moreton Bay Ramsar Wetland, including land, water and living resources, have been considered through the master planning process of the Project. The conceptual masterplan has evolved with an emphasis on the ecological enhancement and appreciation of the wetland based on advice from wetland experts and government feedback.

Key themes that have been considered in revising the proposed project include:

§ Conservation – The Project has been revised to reduce its potential impact on the wetland to the extent possible and incorporate the character of the surrounding wetland in its design, while ensuring essential water transport services can be delivered safely and efficiently and the government's objectives for economic and community development of the Toondah Harbour PDA are achieved. Further, the Project will include measures to protect the overall values of the wetland including minimum 250m buffers to high tide roost sites and creation of new intertidal conservation area that will be protected from anthropogenic influences. Offsets for impacts to the Ramsar wetland will also be investigated including the potential to incorporate new areas into the wetland to compensate for reclamation areas.

§ Education – The Ramsar Convention emphasises the importance of education in conservation, having developed their own Capacity building, Education, Participation and Awareness (CEPA) program. This idea will be embraced at Toondah Harbour with the concept of an education/interactive centre in the development with wetland and cultural themes and activities, together with the Conservation Park, educational signage, public art, walking and kayak trails and bird hides.

§ Community welfare and economic transition – Redland City, and particularly North Stradbroke Island (Minjerribah), are undergoing a fundamental change to their economy. In 2016, the Queensland Government legislated to phase out sand mining on the island by 2019. An economic transition strategy is in place that is aimed at expanding the Island's other industries, to ensure a strong sustainable outcome for the community. As the regional gateway to North Stradbroke Island and Moreton Bay and a proposed tourism hub, the Project will support the economic transition from sand mining to eco-tourism. The Project will also offer construction jobs (estimated 1,000 construction related jobs each year during the construction phase) and prospects for permanent job opportunities after its completion (500 jobs each year).

§ Traditional owner involvement – On 8 March 2017 Queensland South Native Title Services filed the Quandamooka Coast Claim (QC2017/004) over 530 km2 of coastal areas and islands in Moreton Bay, including the Toondah Harbour area. The claim was registered by the National Native Title Tribunal from 12 May 2017. The native title party has registered a cultural heritage body for the area under the *Aboriginal Cultural Heritage Act 2003*, namely the Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC). QYAC will lead the cultural heritage survey work for the Project and provide technical input to the EIS process. In addition, the Project will provide a significant business opportunity for indigenous tourism and sharing of cultural awareness (for example, via the wetland education and cultural centre, appropriate interpretation, public art and authentic traditional cultural experiences). It will also deliver an improved stepping off point to North Stradbroke Island (Minjerribah) and the 'Quandamooka Coast', which are ideally placed to become world-leading indigenous tourism destinations.

§ Coastal processes and hazards - A series of interconnected waterways, sheltered coves and wetland edges providing wet berths and marine facilities have been incorporated into the design not only to better integrate the development with the surrounding wetland but to mitigate against the impacts of coastal processes and sea-level rise. Newly created intertidal conservation areas have the potential to provide refuge for flora and fauna during natural hazards and in the event of sea level rise. Detailed hydrodynamic modelling will be carried out as part of the EIS process to further inform the design and maintain existing coastal processes in Moreton Bay.

In addition, key infrastructure items at Toondah Harbour need to be replaced or renewed. This requires substantial investment, and the State Government and Redland City Council have determined that the way to fund those infrastructure works is through redevelopment of the Toondah Harbour PDA. The development proposal within the PDA allows for the necessary improvement of the harbour and marine facilities, which is well overdue.

Site Level Assessment of Ecological Character

An ecological character description (ECD) is being prepared by the State Government for the Moreton Bay Ramsar Wetland. In the absence of a formal ecological character description for the site, this referral has defined the key ecological features of the Moreton Bay Ramsar wetland to be the environmental values that contribute to the listing criteria of the site (refer to **Attachment 3**). Further studies will be carried out early in the environmental impact assessment process to develop an understanding of the features critical to the ecological character of Toondah Harbour and the surrounding area at a site level, within the context of the wider Moreton Bay Ramsar Site.

The site level assessment will follow the approach outlined in the National Framework and Guidance for Describing the Ecological Character of Australian Ramsar Wetlands (DEWHA, 2008). It will include a multi-disciplinary approach to conduct an initial evaluation of the ecological components, ecosystem processes and ecosystem services/benefits with information drawn from the Draft Moreton Bay Ecological Character Description, site-specific ecological studies, as well as empirical data and other sources.

Specific activities will include:

§ Identification of critical ecological components including physical form, soils and substrates, biota and physico-chemical components;

§ Identification of critical ecosystem processes including climate, geomorphology, hydrology, energy dynamics, physical processes, species interactions, and nutrient/biogeochemical cycling;

§ Identification of critical ecosystem services/ benefits including provisioning, regulating, cultural and supporting services and linkages with specific beneficiaries; and

§ Brief rationale for defining each of the elements as 'critical'.

Attachment 3 of this referral provides a preliminary assessment of these features however, it is envisaged this will be further refined and detailed in consultation with DoEE and environment and wetland experts. The site level assessment of ecological character will then form an integral component of the EIS process.

Dredging Requirements and Sediment Analysis

Detailed assessment of all sediments to be dredged will be carried out including:

§ Quantification of the amount of material be dredged and a map of the dredge footprint including proposed staging of dredging activities;

§ Assessment of sediment according to the National Assessment Guidelines for Dredging 2009 (NAGD) including an assessment of the suitability of this material for land deposition and reclamation and offshore disposal at any proposed dredged material disposal ground;

§ Assessment of the risk and potential impacts of acid sulfate soils (ASS) and potential acid sulfate soils (PASS);

§ Consideration of potential impacts of mobilised sediments (e.g. metal or contaminant release);

§ Details of future maintenance dredging requirements over the life of the project. It is expected an on land disposal area will be incorporated into the development; and

§ It is expected that most of the dredged material will be used for the reclamation. However if other disposal options are required, detailed evaluation of all potential onshore and offshore disposal options will be carried out in accordance with the NAGD 2009 and Annex 2 of the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, 1972 (as amended in 2006) (London Protocol) as part of the EIS process.

Dredge Plume Modelling

Peer reviewed, predictive three dimensional modelling of indirect impacts of dredge generated sediment will be carried out as follows:

§ Hydrodynamic modelling;

§ Sediment transport modelling where the range of particle fractions are all modelled;

§ Modelling will include all types of resuspension possibilities including currents and wave-induced bottom shear stresses as well as wave induced mud fluidisation. If not modelled a justification as to why this phenomena was not relevant will be provided;

§ Ecological responses will be included in modelling where possible;

§ The modelling will represent the conditions at the time of year in which the dredging will occur; and

§ Modelling will include likely dispersion and resuspension from both dredging operations and dredge material disposal (if relevant) during a range of probable hydrodynamic conditions, weather events and expected dredge equipment scenarios.

Reclamation

Detailed assessment of the impacts of the proposed reclamation on Moreton Bay will be carried out. Impact assessment will include direct and indirect impacts to ecological features such as seagrass beds, intertidal habitats and roost sites as well as changes to hydrodynamic and coastal processes. Information provided will include:

§ The boundary of the land to be reclaimed, tied to real property boundaries;

§ The location of the line of mean high water spring tide and highest astronomical tide in relation to the area of reclamation;

§ Existing levels of the land and proposed final levels of reclamation in relation to the lowest astronomical tide (LAT) or Australian Height Datum (AHD);

§ Location of marine plants and species habitat within the land to be reclaimed;

§ Typical cross section across the land to be reclaimed showing the proposed finished levels and method of protecting the seaward boundary of the reclamation from erosion;

§ Discussion of how the land reclamation may affect the current erosion and deposition

patterns in terms of changes to the low water mark of the Moreton Bay Ramsar Wetland;

§ Discussion of the impacts to the roosting sites (sand bars) at Cassim Island and the Nandeebie Claypan due to potential hydrological changes from dredging and land reclamation. Impacts to other ecologically sensitive areas will also be addressed once modelling has been completed including intertidal habitat and marine vegetation; and

§ Three-dimensional modelling of the impacts of the land reclamation on the current sediment transport and hydrodynamic patterns within Moreton Bay.

Preliminary modelling will be carried out early in the assessment process to inform design of reclamation and other over water areas. The goal of this modelling will be to provide a high-level evaluation of the impact of the conceptual development proposal on the tidal, storm and sediment dynamics at and provide an initial evaluation of the presence of critical ecosystem processes at and around Toondah Harbour as elements of the ecological character of the area.

In addition the following details will be considered during the design of the reclamation and resulting impacts assessed:

§ Quantities and quality of tail water likely to be generated from dredging activities and the rate of their discharge;

§ The settling rate of fine sediments from all dredge material types;

§ Where relevant the residence time within settling ponds prior to discharge (related to dredge pumping rate, ratio of solids to water in the dredged material, settling rates, available capacity of the disposal and settling areas, potential bulking factor, intensity and duration of rainfall events with consideration given to the worst case scenario for these factors); and

§ The source of material for bunds and bund wall stability.

Ecological Studies

While initial terrestrial and marine ecology studies have been completed for the referral, a more detailed assessment will be carried out as part of the controlled action assessment process encompassing all areas that may be affected by the action. Additional ecological studies will include the following information:

§ Provide information on listed threatened and migratory species, including foraging, roosting, resting and nesting habitats, must include but not be limited to:

o describe and map critical habitat for threatened species, ecological communities and migratory species;

o the importance of habitat in a local, regional, national and international context;

o the status of the population (e.g. abundance) in the area likely to be affected by the proposed development relative to other areas outside the area likely to be affected;

o genetic diversity;

o the viability of the local, regional and overall populations;

o local and regional representation;

o conservation and biodiversity values;

o economic, social and cultural values of species;

o the extent (in hectares) of any areas of important or unique habitat; and

o seasonality influences:

§ Provide a description of biota/biotic habitats, including a map of marine/intertidal habitats (including information on seasonal fluctuations e.g. seagrass prevalence), likely to be affected by the proposed development;

§ Identify, describe and map reef communities and those species supported by reef communities in areas likely to be affected by the proposed development, including information on species diversity and abundance;

§ Identify, describe and map seagrass communities in areas likely to be affected by the proposed development, including information on species diversity, seasonality and abundance;

§ Identify, describe and map soft sediment fauna communities (e.g. infauna, benthic invertebrates) in areas likely to be affected by the proposed development, including information on species diversity, seasonality and abundance; and

§ Identify and describe the existing uses of the area and nearby areas that may be affected by the proposed action (for example; tourism, commercial and recreational fishing, research and traditional use activities).

Direct and indirect impacts to MNES will be assessed from construction to on-going use of the area as a marine transport hub, and for a marina and urban development using information obtained through the above studies. Impact assessment will include a detailed analysis of any effects on the ecological character of the Moreton Bay Ramsar Wetland by building on the assessment carried out for this referral (refer to **Attachment 3**). It is expected that the Method for Assessing Impacts on the Ecological Character of Moreton Bay Wetland will be modified in consultation with DoEE to ensure all potential impacts are addressed adequately. Impact assessment will include consequential and cumulative impacts on the Project area and Moreton Bay.

As previously stated , the development footprint, construction methodology and ultimate

uses of the different components of the development may be modified as a result of detailed assessment to ensure indirect impacts are minimised and mitigated.

Management Measures

Detailed assessment will include information on avoidance measures, proposed safeguards and mitigation measures to deal with the impacts of the action. Environmental management will meet or exceed industry standard and will include the following elements:

§ Identify the level of risk associated with potential impacts identified and those that require mitigation, monitoring or management to avoid or reduce impacts to an acceptable level;

§ A consolidated list of measures proposed to be undertaken to avoid, prevent, minimise or manage the impacts of the action;

§ Particular focus will be given to:

o determining factors in the planning of the proposal so as to avoid damage to the environment;

o measures to avoid or minimise damage to the character of the Moreton Bay Ramsar Wetland;

o articulating conservation objectives for individual MNES with a focus on receptors;

o describing how this project is likely to contribute to protection of MNES;

o outline how any avoidance, safeguards, management and mitigation measures will increase resilience of the environment, ecosystems and MNES within the region;

o demonstrate how impact management and mitigation measures would ensure that MNES in the affected region are maintained or improved;

o characterise, quantify and address uncertainties that may affect the effectiveness of management measures and therefore on the confidence that biodiversity values would be maintained (or improved) during and after the project;

o measures to avoid or minimise disturbance to fauna and flora found around and within the proposal area (particularly listed threatened species and communities and listed migratory species);

o management of the dredged material during the loading of the dredged material;

o management strategies for dredging, loading and dredged material disposal, including trigger levels for management actions linked to quantitative measurements of water quality and

Benthic Primary Producer Habitat (BPPH) based on baseline data;

o management of disposal for reclamation-based dredge material, including how water quality will be monitored and managed to ensure that water quality objectives for this area are achieved and the environmental values of the connected surface water and groundwater are maintained; and.

§ An outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the impacts of the action.

Environmental Benefits

While it is acknowledged offsets cannot be considered as part of the referral they provide an additional tool that can be used during project design and the environmental impact assessment process to ensure a project provides an overall benefit to any MNES impacted. A detailed offsets package will be developed through the controlled action assessment process however Walker Group have held discussions with a number of stakeholders to identify a range of offset measures to be put in place as part of the project. These measures may include:

§ Identifying new conservation areas using the following criteria:

o Be located within or adjacent to the Moreton Bay Ramsar Wetland;

o New areas should contain similar characteristics to those impacted; and

o Conservation outcomes associated with the new areas must be achievable and have an acceptable level of risk of success;

§ Investigating the possibility of modifying the Ramsar wetland boundary to designate new areas of shorebird bird habitat to the Ramsar site. This may include approximately seven hectares of Moreton Bay south of the PDA, which contains features of high ecological value such as mangroves and tidal flats. Tidal areas of Moreton Bay are owned and managed by the State therefore; negotiations will be held with the relevant agencies to identify how this could be accomplished;

§ Community ranger education and sponsorship programs to ensure active land and sea country management in Moreton Bay;

§ A feral pest management program;

§ Programs for improving water quality from the adjacent catchment;

§ Various remediation and rehabilitation projects within and adjacent to the Moreton Bay Ramsar Wetland. These could include management of mangrove incursion in Nandeebie Claypan and rehabilitation of salt marsh south of the PDA. Further opportunities will be

discussed with the community and relevant government agencies;

§ Koala habitat tree planting in the PDA and surrounding koala movement corridors, and a collaring and monitoring program;

§ Use of sea life friendly propellers for vessels using marina (potential Australia first);

§ Development of a wetland centre within the development area;

§ Creation of new conservation park on eastern boundary with restricted access;

§ Implementation of bird hide/s in various areas;

§ Community awareness programs (koalas, birds, marine life, Aboriginal cultural heritage);

§ Exploration of Moreton Bay fishing net buy back partnership; and

§ A pilot migratory shorebird offset in the Yellow Sea, which would address one of the key reasons for a general decline in migratory birds in Moreton Bay.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

The project is expected to impact on the following MNES:

1. Wetlands of international importance

2. Listed threatened species and ecological communities

3. Listed migratory species.

Further information regarding these impacts is provided in this referral. Walker has committed to completing an environmental assessment as part of the approval process through which impacts to MNES will be assessed and environmental outcomes determined (refer to the response to section 4.1).

Where impacts to MNES or other environmental aspects are identified, these impacts will be addressed in accordance with the following mitigation hierarchy:

§ Avoid – measures taken to avoid creating impacts from the outset;

§ Minimise – measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided;

§ Rehabilitate / restore – measures taken to improve degraded or removed ecosystems following exposure to impacts that cannot be completely avoided or minimised; and

§ Offset – measures taken to compensate for any residual, adverse impacts after full implementation of the previous three steps of the mitigation hierarchy.

Walker will explore the appropriateness of outcome-based conditions and advanced offsets as part of the EIS process.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

Wetlands of international importance - Yes

5.1.4 Listed threatened species or any threatened ecological community

Listed threatened species and communities - Yes

5.1.5 Listed migratory species

Listed migratory species - Yes

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

No world heritage properties occur in or near the referral area.

No national heritage places occur in or near the referral area.

The referral area is not located within or adjacent to the Commonwealth Marine Environment.

No Commonwealth land occurs in or near the referral area.

The referral area is not locacted in or near the GBRMP.

The referral does not relate to a water resource, in relation to coal seam gas development and large coal mining development.

The referral does not relate to a nuclear action.

The referral does not relate to a Commonwealth action

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Walker Group Holdings Pty Ltd is the party taking the action and has a satisfactory record of responsible environmental management.

Lang Walker AO is the majority shareholder of both Walker Group Holdings and Walker Corporation Pty Ltd, which was established in the 1960s and is one of Australia's largest private, diversified development companies.

Walker entities have developed more than 1,000 projects in all states and territories and in all property sectors over a period spanning 50 years. Apart from three instances, outlined below, the companies have a strong record of responsible environmental management.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

Walker Group Holdings Pty Ltd has not been subject to proceedings under a Commonwealth, State or Territory Law.

A subsidiary of Walker Group Holdings, Kew Development Corporation was subject to proceedings under State law:

Kew Development Corporation Pty Ltd and Heritage Victoria:

In 2007 Kew Development Corporation (a Walker subsidiary) pleaded guilty to excavating within a Tree Preservation Zone at its Kew Cottages site in Melbourne resulting in the damage to the root of a tree. Kew Development Corporation was required to fund heritage tree protection measures in Kew Cottage's future stages. The tree was retained and is in good health today.

For transparency, Walker Corporation Pty Ltd has been subject to two proceedings under State law:

Director-General Department of Environment and Climate Change (NSW) Walker Corporation Pty Limited:

Walker was found guilty of clearing native vegetation without development consent on land at Picton Road, Wilton NSW on 14 May 2010.

Director-General Department of Environment and Climate Change (NSW) Walker Corporation Pty Limited:

Walker was found guilty of clearing native vegetation without development consent on land at Macquariedale Road, Appin NSW on 30 November 2011.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Walker Group Holdings Pty Ltd is not a publicly listed company and therefore there are no statutory requirements for it to have a formal environmental policy. However, in recognising the value of the surrounding natural environment, Walker is committed to ensuring the proposal is sustainable. All works will be controlled by conditions of consent associated with approvals issued under Federal and State environmental law.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

Yes

6.4.1 EPBC Act No and/or Name of Proposal.

On 25 November 2015, Walker Group Holdings Pty Ltd referred a proposed action to construct a residential, commercial and tourism based development, ferry terminals, open space, and marina at Toondah Harbour, located on the foreshore of Moreton Bay, Queensland (EPBC Act referral 2015/7612). The referral was formally withdrawn on 4 May 2017.

On 11 May 2017, Walker Group Holdings Pty Ltd submitted a new referral for the Toondah Harbour Project with a revised design and impact assessment (EPBC 2017/7939). The action was determined a controlled action on 8 June 2017.

Other Walker entities have previously referred an action, specifically:

· In 2009 Walker Corporation Pty Ltd lodged an EPBC referral for Precinct 1 of the

Buckland Park Residential Subdivision and Development (EPBC 2009/4903). The action was determined as not a controlled action.

· In 2010 Walker Corporation Pty Ltd's proposal to construct and operate a residential and marina development in in Ralphs Bay, Lauderdale was refused (EPBC 2006/3193).

· In 2013 Walker Group Constructions Pty Ltd lodged an EPBC referral for Precinct 2 of the Buckland Park Residential Subdivision and Development (EPBC 2013/6947). The action was determined as not a controlled action.

· In May 2016, Banksia Grove Development Nominees Pty Ltd – a joint venture arrangement in which Walker Corporation has an interest - sought a Prior Authorisation Exemption under the EPBC Act for the Banksia Grove development in Perth, WA.

· In May 2017, Walker Riverside Developments Pty Ltd submitted a referral for the redevelopment of the Adelaide Festival Centre Plaza (EPBC 2017/7945). The action was determined as not a controlled action.

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
Studds et al 2017. Rapid population decline in migratory shorebirds relying on Yellow Sea tidal mudflats as stopover sites. Nature Communications 13 April 2017	High	NA
Adaptive Strategies 2016. Method for identifying the presence of OUV within the Great Barrier Reef World Heritage Area. Prepared for Queensland Department of State Development.	High	NA
FRC Environmental 2017. Toondah Harbour Marine Ecology Report.	High	NA
BAAM 2017. Toondah Harbour Terrestrial Ecology Assessment	High	NA

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

Alternative Location

The Toondah Harbour Development is unique based on its location, PDA status, tenure, history and existing use of the area.

Toondah Harbour is an existing marine transport facility that provides access to North Stradbroke Island for business, residents, and visitors.

The site has been subject to proposals dating back 50 years to develop a major boat harbour for recreational vessels and a 'harbour town' development, while providing improved marine transport facilities.

The Queensland Government declared Toondah Harbour a PDA in 2013 to accelerate economic development at the express request of RCC. The subsequent joint tendering of the underutilised public lands by RCC and the state government, and the execution of commercial project agreements, further underline the unique nature of the Toondah Harbour Development.

Underutilised public land on Moreton Bay not designated as public parkland or nature reserve is scarce in Redland City. This is a major constraint to tourism-supportive economic development activity in the central part of the Bay. In addition, RCC purchased key parcels of freehold land over a number of years for the express purpose of a development of Toondah Harbour.

The project is tied to the Toondah Harbour PDA, which was declared by regulation by the Queensland Government in 2013. Walker Group responded to an expression of interest issued by the State Government (EDQ) and RCC and the proposed action is consistent with the government parties' proposal for the Toondah Harbour PDA, which is aimed at facilitating economic and community development. The project land is defined in the development agreement and Walker does not have an alternative location option.

Additionally the Toondah Harbour PDA is an existing marine transport facility, which acts as the base for barge and passenger ferry services to North Stradbroke Island. The existing pubic navigation channel, the Fison Channel, and the swing basin and ferry berths are dredged periodically without a requirement for an EIS process.

Reduced Footprint Options

Of the land above high water mark (HWM) in the PDA, less than 10 hectares is publicly owned and earmarked for development. This area includes the existing ferry terminals, associated car parking, boat ramp, form CSIRO/Council facilities and a dredge spoil pond. The balance land in the PDA is outside of the development footprint and includes GJ Walter Park and existing low density residential development on privately owned land.

More than 40 percent of the project land above HWM constitutes the existing ferry terminals and car parking. Staging and constructability of the development are key considerations given that at no time during the construction phase can disruption to ferry services or net loss of public car parking occur. Proposals for the areas development, past and present, have all involved dredging and reclamation of Toondah Harbour to provide a platform for staging of new development including the new marine transport facilities.

The current proposal envisages a balance of cut and fill so that the dredge material from the marina and public navigation channel will be beneficially reused to create developable land, open space and intertidal habitat. Early examination of options to transport the material for offsite disposal in a marine or terrestrial environment were unviable and gave rise to significant environmental issues and community impacts, which all parties are keen to avoid.

Without Project Option

The without project option would leave Redland City and the SEQ Region in the untenable position that has persisted for many years at Toondah Harbour: poor amenity, safety and operational issues, limited foreshore access, and dilapidated facilities that cannot cater for existing peak demand. These conditions will not support or foster the desired and necessary transition to ecotourism industry for North Stradbroke Island and Moreton Bay following the cessation of sand mining in 2019.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Australian Government
Department of the Environment and Energy

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

General Manager Development

9.2.2 First Name

Peter

9.2.3 Last Name

Saba

9.2.4 E-mail

peter.saba@walkercorp.com.au

9.2.5 Postal Address

GPO Box 652
Brisbane QLD 4000
Australia

9.2.6 ABN/ACN

ABN

81001215069 - WALKER GROUP HOLDINGS PTY LIMITED

9.2.7 Organisation Telephone

07 3007 7400

9.2.8 Organisation E-mail

peter.saba@walkercorp.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Peter Saba, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:..... Date: 30/5/18

I, Peter Saba, the person proposing the action, consent to the designation of Walker Group Holdings Pty Ltd as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: 30/5/18

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

General Manager Development

9.5.2 First Name

Peter

9.5.3 Last Name

Saba

9.5.4 E-mail

peter.saba@walkercorp.com.au

9.5.5 Postal Address

GPO Box 652
Brisbane QLD 4000
Australia

9.5.6 ABN/ACN

ABN

81001215069 - WALKER GROUP HOLDINGS PTY LIMITED

9.5.7 Organisation Telephone

07 3007 7400

9.5.8 Organisation E-mail

peter.saba@walkercorp.com.au

Proposed designated proponent - Declaration

I, Peter Saba, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:..... Date: 30/5/18

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Principal Environmental Scientist

9.8.2 First Name

Sam

9.8.3 Last Name

Maynard

9.8.4 E-mail

sammaynard@saundershavill.com

9.8.5 Postal Address

9 Thompson Street
Bowen Hills QLD 4006
Australia

9.8.6 ABN/ACN

ABN

24144972949 - Saunders Havill Group Pty Ltd

9.8.7 Organisation Telephone

0732519434

9.8.8 Organisation E-mail

sammaynard@saundershavill.com

Referring Party - Declaration

Australian Government
Department of the Environment and Energy

I, Sam Maynard, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature: ..... Date: 30/5/18

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. 8444_referral_area_v8.zip
2. att_1_-_project_description.pdf
3. att_2_-_pmst_output.pdf
4. att_3_-_ramsar_wetland_assessment.pdf
5. att_4_-_threatened_and_migratory_species_assessment.pdf
6. att_5_-_marine_ecology_technical_report.pdf
7. att_6_-_terrestrial_ecology_technical_report.pdf
8. att_7_-_water_quality_summary.pdf
9. att_7_-_water_quality_summary_revised.pdf
10. figures.pdf
11. submissions-report-toondah-harbour.pdf