

Referral of proposed action

Project title: Toondah Harbour Project

1 Summary of proposed action

1.1 Short description

The Toondah Harbour Project (the project) is a joint initiative of Redland City Council (RCC) and the State Government through Economic Development Queensland (EDQ). In June 2015, Walker Group Holdings Pty Ltd (Walker) was selected as the preferred developer and will enter into a development agreement with EDQ and RCC to undertake the project over a 15 to 20 year period. Walker is the project proponent for the purpose of obtaining approvals necessary for the project.

Toondah Harbour is an existing marine area that serves as the base for water taxi, passenger and vehicular ferry services between the mainland and North Stradbroke Island. It is located approximately one kilometre east of the Cleveland CBD – Redland City's civic, commercial and cultural hub.

In June 2013, at the request of RCC, Toondah Harbour was declared a priority development area (PDA) under the *Economic Development Act 2012* by the State Government. The PDA was declared to provide opportunities for mixed use and medium density residential development in addition to tourism and retail based development, ferry terminals, open space and a marina.

The PDA has a total area of 68.4 hectares, encompassing 17.9 hectares of existing land and 50.5 hectares of marine and tidal environments. Much of the landward portion of the PDA was previously reclaimed from the 1960s onwards.

The size of the referral area for the Toondah Harbour project is 167.5 hectares. Not all of the referral area will be disturbed as the area includes a substantial buffer around the currently proposed development footprint within the PDA.

Part of the proposed development extends into the Moreton Bay Ramsar wetland site and the Moreton Bay Marine Park. The marine environment supports protected turtle, dugong and migratory shorebirds and has ecological and fishery values. In addition, an urban koala population has been observed utilising trees within the PDA.

Walker proposes to deliver the following at Toondah Harbour:

- residential development
- retail uses capped at 5,000m²
- commercial uses capped at 2,500m²
- up to 400 berth marina
- new ferry terminals and navigation channel improvements
- public open space and boardwalks providing foreshore access.

The proposed action will include placement of dredge material with an indicative volume of 1,450,000m³ after dewatering and treatment. This consists of:

- ~ 1,350,000m³ of dredge material from the marina basin which will have a placed volume of ~1,100,000m³
- ~500,000m³ of dredged material associated with the widening and deepening of the existing channel, which will have a placed volume of ~350,000m³.

Structural reclamation for the project (i.e. area of residential and commercial development) is estimated to require ~1,200,000m³ of fill. Initial volume estimates indicate that a surplus of material will be available.

Achieving a net material balance within the development footprint (i.e. volume of dredged material equal to the volume of reclamation) will be a design objective for the project. The overall aim will be to maximise the beneficial reuse of dredge material and minimise the need for disposal of dredged material. The feasibility of this objective will be tested as the project design and EIS progresses. It is proposed that surplus material be reused in the first instance for reclamation works to create foreshore parklands.

Depending on the final excavation volume and geotechnical properties of the excavated material, additional fill may need to be imported to the site and/or excess material may need to be disposed of offsite. Accordingly, alternative sources of fill material and disposal strategies for surplus dredge material may need to be investigated during the EIS process. To address this need should it arise, two locations for potential additional supply or disposal of material

have been included in this referral. Middle Banks sand extraction area has been identified as a preliminary option for sourcing reclamation material if there is a need to import fill material to the site. Similarly, Mud Island dredge material disposal area has been identified as an early option for disposal of surplus dredge material in the event that dredged material is deemed unsuitable for reclamation, however land based options will be preferred if there is a need to do so. This will be investigated in detail during the EIS process.

The project will trigger Commonwealth and State legislation, requiring a range of approvals and authorities from various agencies. Walker intends to seek declaration of the project as a 'coordinated project' in Queensland under the *State Development and Public Works Organisation Act 1971* to streamline environmental assessment processes. If determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999*, the project assessment is proposed to be conducted under the Queensland environmental assessment bilateral agreement with the Federal Government.

1.2 Latitude and longitude

Table 1 identifies the latitude and longitude details of the boundary of the referral area encompassing the Toondah Harbour project footprint. The figure included as Attachment A illustrates the location of the referral area in a regional context. A local context is provided by Attachment B.

Table 1 Latitude and longitude of the referral area

| Point ID | Latitude | Longitude |
|----------|---------------|---------------|
| 1 | -27.523207042 | 153.286201042 |
| 2 | -27.523059010 | 153.286247001 |
| 3 | -27.523185040 | 153.286760017 |
| 4 | -27.523184041 | 153.286763020 |
| 5 | -27.523174906 | 153.286786016 |
| 6 | -27.522227645 | 153.286948866 |
| 7 | -27.520710958 | 153.290324072 |
| 8 | -27.520707243 | 153.291843930 |
| 9 | -27.523584591 | 153.293873703 |
| 10 | -27.526079422 | 153.293881824 |
| 11 | -27.527365381 | 153.292367006 |
| 12 | -27.530008836 | 153.292375576 |
| 13 | -27.536489737 | 153.297399697 |
| 14 | -27.537974518 | 153.299119270 |
| 15 | -27.541429838 | 153.306447579 |
| 16 | -27.543244187 | 153.305940094 |
| 17 | -27.539066572 | 153.296653999 |
| 18 | -27.535521767 | 153.293846796 |
| 19 | -27.532898652 | 153.286615989 |
| 20 | -27.531110392 | 153.283516984 |
| 21 | -27.529488369 | 153.282082208 |
| 22 | -27.529153026 | 153.281153977 |
| 23 | -27.529087994 | 153.281131015 |
| 24 | -27.529040000 | 153.281119035 |
| 25 | -27.528970009 | 153.281093973 |
| 26 | -27.528917041 | 153.281086991 |
| 27 | -27.528889958 | 153.281089009 |
| 28 | -27.528897004 | 153.281264971 |
| 29 | -27.528608961 | 153.281276012 |
| 30 | -27.528268000 | 153.281300029 |
| 31 | -27.527715983 | 153.281338037 |
| 32 | -27.527713015 | 153.281288011 |
| 33 | -27.527651989 | 153.281293033 |
| 34 | -27.527610012 | 153.281296016 |
| 35 | -27.527557023 | 153.281298971 |
| 36 | -27.527547995 | 153.281300033 |
| 37 | -27.527486971 | 153.281303969 |
| 38 | -27.527425043 | 153.281308989 |
| 39 | -27.527364019 | 153.281313009 |

| | | |
|----|---------------|---------------|
| 40 | -27.527260025 | 153.281320008 |
| 41 | -27.526923035 | 153.281344035 |
| 42 | -27.526807035 | 153.281352006 |
| 43 | -27.526536036 | 153.281371023 |
| 44 | -27.526412992 | 153.281379979 |
| 45 | -27.526083045 | 153.281403021 |
| 46 | -27.525901957 | 153.281416003 |
| 47 | -27.525816017 | 153.281421963 |
| 48 | -27.525684039 | 153.281430980 |
| 49 | -27.525357966 | 153.281457036 |
| 50 | -27.525351026 | 153.281808979 |
| 51 | -27.525346980 | 153.281845041 |
| 52 | -27.525269012 | 153.282015018 |
| 53 | -27.525215973 | 153.282132036 |
| 54 | -27.525189042 | 153.282193006 |
| 55 | -27.525094027 | 153.282401017 |
| 56 | -27.525010979 | 153.282583005 |
| 57 | -27.524929016 | 153.282763993 |
| 58 | -27.524845970 | 153.282944979 |
| 59 | -27.524788031 | 153.283074006 |
| 60 | -27.524764004 | 153.283126968 |
| 61 | -27.524598992 | 153.283489023 |
| 62 | -27.524516034 | 153.283671010 |
| 63 | -27.524433978 | 153.283851996 |
| 64 | -27.524376043 | 153.283979019 |
| 65 | -27.524357040 | 153.284003019 |
| 66 | -27.524228971 | 153.284306967 |
| 67 | -27.524215006 | 153.284338995 |
| 68 | -27.524155983 | 153.284468019 |
| 69 | -27.524147004 | 153.284489038 |
| 70 | -27.524114999 | 153.284559013 |
| 71 | -27.524065036 | 153.284671026 |
| 72 | -27.523867015 | 153.285106973 |
| 73 | -27.523860030 | 153.285123989 |
| 74 | -27.523817959 | 153.285216984 |
| 75 | -27.523735990 | 153.285398970 |
| 76 | -27.523657018 | 153.285572030 |
| 77 | -27.523653028 | 153.285581037 |
| 78 | -27.523566977 | 153.285773033 |
| 79 | -27.523404025 | 153.286140012 |

In addition to the referral footprint delineated by the coordinates in Table 1, two potential additional locations of project activities are included in this referral. The coordinates for these locations are as follows:

- Mud Island dredge material disposal area, located at -27.333019°, 153.221569°.
- Middle Banks sand extraction area, located at -27.217405°, 153.314454°.

Locations of the Middle Banks material extraction area and Mud Island material disposal area are shown in Attachment A. It is our understanding that activities in these areas have not historically been deemed 'controlled actions' under the EPBC Act.

If it becomes necessary to investigate other options for the import or disposal of material, this will form part of the EIS process. Section 2.3 addresses this issue in more detail.

1.3 Locality and property description

Toondah Harbour is located on the foreshore of Moreton Bay, 1.5km from the region's principal activity centre of Cleveland and 30km southeast of Brisbane.

The referral area encompasses freehold land and State land, including land below High Water Mark (refer to Table 2).

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- 1.4 Size of the development footprint or work area (hectares)
- The size of the referral area for the Toondah Harbour project is approximately 167.5 hectares. Not all of the referral area will be disturbed as the area includes a substantial buffer around the currently proposed development footprint.
- The development footprint (including land reclamation) within the referral footprint will be approximately 62.2 hectares (preliminary estimate).
- The reclamation component is approximately 43.5 hectares (preliminary estimate).

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- 1.5 Street address of the site
- The landward portion of the Toondah Harbour PDA is bounded by Shore Street East to the north, Wharf Street to the west and Queen Street to the south. Refer to Attachment C.

1.6 Lot description

Table 2 describes the affected land parcels within the PDA, including lot and plan details, tenure, landowner and current use. Tenure within the terrestrial portion of the referral area is shown in Attachment C.

Walker will have development rights over the project land, with RCC and the State Government maintaining ownership of their respective land holdings throughout the construction phase.

Table 2 Summary of lots, tenure, landowner and current use

| Lot No. | Current Tenure | Landowner | Current Use | Area (ha) |
|--|---------------------------------------|--|---|-----------|
| L58 SP115554 | Freehold | RCC | Leased to Transit Systems for use as a maintenance facility | 0.712 |
| L1 RP145396 | Freehold | RCC | Council facility | 0.616 |
| L33 to L35 C618 | Freehold | RCC | Council facility | 0.442 |
| L19 SP115544 | Freehold | RCC | Council facility | 0.759 |
| L20 SP153278 | Reserve for Strategic Land Management | State land held in Trust by RCC | Car park and boat ramp | 1.392 |
| L79 SL7088 | Reserve for Local Government Purposes | State land held in trust by RCC | Ferry operations and car park | 0.307 |
| L119 SL9713 | Reserve for Local Government Purposes | State land held in trust by RCC | Public amenities | 0.016 |
| Part of L66 SP115554 (excluding green space) | Reserve for Park | State land held in trust by RCC | 1A is subleased to Transit Systems, 1B is car park | 0.617 |
| L80 SL9713 | Leasehold | State land leased to Stradbroke Island Ferries | Ferry operations | 0.773 |
| L22 SP153278 | Leasehold | State land leased by RCC | Ferry operations | 0.167 |
| L4 SL12281 | Freehold | RCC | Council facility | 0.172 |
| L21 SP125288 | Reserve for Strategic Land Management | State land held in trust by RCC | Ex-dredge material pond | 0.795 |

1.7 Local Government Area and Council contact (if known)

The referral area is located in the Redland City local government area (LGA).

The primary RCC contact for the project is Peter Kelley, Chief Executive Officer, Redland Investment Corporation, who can be contacted on (07) 3829 8862 or Peter.Kelley@redlandinvestmentcorp.com.au.

1.8 Time frame

The Toondah Harbour project will be delivered in stages over a 15 to 20 year period.

The dredging and land reclamation activities will occur in discrete stages that in aggregate amount to approximately three to five years of intermittent activity.

The component activities as currently proposed include:

- Construction of the containment bund – The program allows for two stages of eight and six weeks respectively.
- Dredging of the marina basin - Two dredging campaigns of 11 weeks each are anticipated for the creation of the marina basin
- Dredging of the Fison Channel - Two campaigns of five and 14 weeks respectively are anticipated.
- Material treatment and drying - Following each dredge campaign, there will be material treatment and drying periods that will range from 11 to 20 weeks depending on the properties of the material to be handled.
- Importation of fill - Two periods of four and nine weeks have been allowed for importation of fill if this is required – for example if insufficient material appropriate for reclamation is generated through dredging works and/or fill needs to be brought in earlier to start the project.
- Structural fill/stockpiling - At least five structural fill/stockpile stages will be undertaken with work periods ranging from two to four weeks. Pre-load periods are expected to last up to 22 weeks.

The timeframes above are preliminary and intended to illustrate the timeframes for component parts of the construction activity. The program and methodology will be confirmed through the detailed site investigation and design process to be undertaken as part of the EIS.

Once the reclamation has been completed (potentially in stages), construction activities will include the construction of the ferry terminal, external roadworks, installation of trunk services (water, sewer, stormwater, power etc.), establishment of roads and landscaping and building construction.

The marina, commercial and residential buildings will be delivered in stages precinct by precinct in accordance with market demand.

Throughout the construction stage there is to be:

- continuity of ferry operations
- no net loss of car parking associated with ferry operations
- no net loss of public open space within the PDA.

| | | | |
|------|---------------------------------|---|--|
| 1.9 | Alternatives to proposed action | | No |
| | | X | Yes, you must also complete Section 2.2 |
| 1.10 | Alternative time frames etc. | X | No |
| | | | Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant). |
| 1.11 | State assessment | | No |
| | | X | Yes, you must also complete Section 2.5 |
| 1.12 | Component of larger action | X | No |
| | | | Yes, you must also complete Section 2.7 |
| 1.13 | Related actions/proposals | X | No |
| | | | Yes, provide details: |

| | | | |
|------|--------------------------------|---|--|
| 1.14 | Australian Government funding | X | No |
| | | | Yes, provide details: |
| 1.15 | Great Barrier Reef Marine Park | X | No |
| | | | Yes, you must also complete Section 3.1 (h), 3.2 (e) |

2 Detailed description of proposed action

2.1 Description of proposed action

The proposal includes the reclamation of approximately 43.5 hectares for urban development and public open space using a combination of fill sourced from the referral area and/or imported from off-site (if required). It also includes the excavation of a marina and the widening, deepening and lengthening of Fison Channel, which is the existing entrance channel to Toondah Harbour.

Construction

The general approach for construction of the reclamation is currently proposed to use material excavated from the Fison Channel, and the development of the marina as fill material. A perimeter reclamation bund would be established to contain the fill, and limit the amount of fine material to be released to the environment. The preliminary concept is that the bund will be aligned across the marina entrance to allow the site to be dewatered and earthworks to occur 'in the dry'. This will be confirmed through the design process to be undertaken as part of the EIS. The design of the reclamation bund will depend on geotechnical conditions and project construction methodology; it may include a permanent rock bund with geotextile separation fabrics, a sheet-pile wall or a combination. The reclamation bund would remain in place as coastal structures (e.g. as revetment walls within the marina and rock sea wall for foreshore protection). Detailed design of the structures will depend on hydrodynamic modelling.

Material will be dredged from the Fison Channel and placed in the reclamation area. Initial estimates indicate that approximately 500,000m³ of material will be excavated from within the channel's current limits. The material from the dredging is expected to consist of silty-muds to stiffer clays, with some sand. After geotechnical treatment in the reclamation area, this is expected to have a 'placed' volume of approximately 350,000m³.

Material will be excavated from the marina bed and placed in the reclamation area; this is expected to be undertaken in a staged manner from 2017 to 2020. Initial estimates indicate that approximately 1,350,000m³ of material in total will be excavated from the marina bed. The material from the marina is expected to consist of soft muds to stiffer clays. After geotechnical treatment in the reclamation, this is expected to have a 'placed' volume of approximately 1,100,000m³. The current proposal is that the marina would be excavated to a depth of approximately -13 m AHD; however this will be subject to value engineering during the EIS phase.

The structural reclamation (i.e. area of residential and commercial development) is estimated to require approximately 1,200,000m³ of fill. A total of approximately 1,450,000m³ of fill will be available from the Fison Channel dredging and marina excavation, indicating a potential surplus of fill. It is proposed that potential surplus material be used for reclamation works within the referral area.

A reclamation options analysis is planned in the early stages of the EIS, which will consider options for the dredging method, sourcing of fill and material disposal; these options are described below. The preferred option will be selected based on an assessment of the geotechnical properties of the material, feasibility in terms of cost and program, staging options and potential environmental impacts.

Dredging method

Material will be dredged from Fison Channel using suitable dredge equipment (e.g. cutter suction dredger (CSD), barge-mounted backhoe dredger). The preferred type of dredger will be selected based on the material properties of the dredged material and the proposed reclamation method. Similarly, material may be dredged from the marina using a CSD, barge-mounted backhoe or other suitable equipment if this is better suited to the site than excavating in the dry.

Importation of fill

Depending on the final excavation volumes and geotechnical properties of the excavated material or if fill needs to be brought in earlier to start the project, fill may need to be imported to the site. Potential options being considered include:

- Additional fill imported from terrestrial sources. Fill could be obtained from quarries or suitable surplus material from construction projects and trucked to site.
- Additional fill may be imported from a marine source. Sand could be dredged from Middle Banks in Moreton Bay using suitable dredge equipment such as a trailing suction hopper dredger (TSHD), transported close to the site in the dredger's hopper and would then be pumped to site. Middle Banks is a sand extraction area that has previously been used as a fill source for infrastructure projects such as the Brisbane Airport New Parallel Runway.

Disposal of surplus material

Depending on the final excavation volumes and geotechnical properties of the excavated material, excess material may need to be disposed of offsite. Potential options being considered include:

- Land-based disposal will be investigated as part of the options assessment. Disposal options that provide a beneficial reuse would be preferred, and any identified disposal option would seek to minimise potential environmental impacts.
- Disposal offsite at the designated material disposal area to the west of Mud Island. The potential suitability of the option would depend on the geotechnical properties and contaminant levels of the material to be excavated from Fison Channel and the marina.

For the adopted construction methodology option, measures would be put in place to limit the mobilisation and release of fines during dredging, excavation, fill placement and compaction. Measures may include timing works to avoid high current speeds that could affect sediment transport, and placing silt curtains around dredging activities and fill placement areas. Such measures will be developed further through the design process with the intention of protecting the environmental values of Moreton Bay with recognition for the applicable water quality objectives.

The material dredged from Fison Channel and excavated from the marina may contain acid sulphate soil (ASS), which will be managed accordingly. Tailwater produced during the reclamation will also be handled appropriately.

Maintenance dredging

Rates of maintenance dredging for the marina and Fison Channel will be determined through the design and EIS process. Disposal of dredged material will depend on the construction methodology. Options that will be considered include:

- Disposal of material into the marina, which will be excavated to a depth of approximately -13m. The material would consolidate within the void over time, and this could potentially provide a spoil disposal solution for a number of decades.
- Disposal of material to land, either for beneficial re-use or to landfill. Disposal options that provide a beneficial reuse would be preferred, and any identified disposal option would seek to minimise potential environmental impacts.
- Disposal of material offsite at the designated material disposal area to the west of Mud Island. As discussed above, the potential suitability of the option would depend on the geotechnical properties and contaminant levels of the material expected to be dredged.

2.2 Alternatives to taking the proposed action

The project is tied to the availability of government landholdings in the Toondah Harbour PDA. Walker 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. No alternatives to taking the proposed action have therefore been considered.

2.3 Alternative locations, time frames or activities that form part of the referred action

There are no alternative locations, time frames or activities that form part of the referred action.

2.4 Context, planning framework and state/local government requirements

2.4 (a) Context

In June 2013, the State Government declared a PDA at Toondah Harbour pursuant to the *Economic Development Act 2012* to provide opportunities for mixed use and medium density residential development in addition to tourism and retail based development, ferry terminals, open space and a marina. The Toondah Harbour PDA Development Scheme was approved by the state government on 29 May 2014.

In July 2014 the state government and RCC jointly tendered the development rights to their respective landholdings in the Toondah Harbour PDA to attract private sector investment in public and private infrastructure that will create tourism opportunities and improved amenity for the local community.

In June 2015, following a competitive bid process for the development rights Walker was selected as the preferred development proponent. Walker proposes to develop a bayside village with private marina at Toondah Harbour. In return for the rights to develop the government land, Walker will deliver a range of community infrastructure that will help realise the vision for the PDA including:

- external civil works
- road upgrades
- capital dredging to widen, deepen and extend the Fison Channel
- parklands and publicly accessible waterfront
- passenger and vehicle ferry terminals with ticket and tourism centre
- associated retail
- bus interchange
- car parking.

2.4 (b) Planning framework

Development within the PDA boundary will require development approval pursuant to the *Economic Development Act* (ED Act) and will be assessed against the Toondah Harbour PDA Development Scheme. The Minister for Economic Development Queensland (MEDQ) is the assessing authority under the Act.

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.

Proposed assessable development outside of the PDA boundary (for example, reconfiguring a lot, operational works for tidal works, operational works including removal, destruction or damage to marine plants) will require development approval under the *Sustainable Planning Act 2009* (the SPA).

The State Assessment and Referral Agency (SARA) within the Department of Infrastructure, Local Government and Planning (DILGP) will be the assessing authority for the SPA application and will coordinate the state government's response to the development applications.

As the assessing agency, DILGP must assess and decide the development application with consideration for the purposes of the SPA and prescribed matters such as the *State Development Assessment Provisions* (SDAP) and the *State Planning Policy*.

A development approval under the ED Act or the SPA does not remove the need to obtain any further approval for the work that may be required pursuant to other legislation.

2.4 (c) Other approvals and authorities

Environmental Protection and Biodiversity Conservation Act 1999

An approval for undertaking a controlled action is required if the project is determined to be a controlled action under the EPBC Act.

Marine Parks Act 2004

As the referral area includes tidal water within the General Use Zone and the Habitat Protection Zone (HPZ02 Moreton Bay to Broadwater) of the Moreton Bay Marine Park, the proposed project actions will require assessment and approval under the *Marine Parks Act 2004*. Reclamation within the Moreton Bay Marine Park requires permission under section 15 of the MP Act and generally requires an EIS to be undertaken.

Environmental Protection Act 1994

As the proposed dredging at Toondah Harbour is a prescribed environmentally relevant activity under the *Environmental Protection Act 1994* (ERA 16 – Dredging), an environmental authority will be required.

Coastal Protection and Management Act 1995

Toondah Harbour is in the coastal zone and falls within a coastal management district under the *Coastal Protection and Management Act 1995* (Coastal Act). Development approval for operational works for tidal works or development within a coastal management district is required. In addition, removing quarry material from land under tidal water (for example for the reclamation) will require an allocation of the resource under section 73 of the Coastal Act. While an allocation notice allows for the taking and use of quarry material in tidal waters, the allocation notice holder is not allowed to remove quarry material until the holder has a development permit and an environmental authority as identified above.

Nature Conservation Act 1992

The *Nature Conservation Act 1992* (NC Act) and associated regulations are the principal legislation for managing and conserving threatened species in Queensland and are administered by the Queensland Department of Environment and Heritage Protection. A rehabilitation permit (spotter catcher) may be required under the NC Act and/or a Species Management Program/s.

Vegetation Management Act 1999

The Vegetation Management Act regulates clearing of native remnant vegetation mapped as Endangered, Of Concern and Least Concern Regional Ecosystems (REs). Remnant vegetation present in the referral area includes estuarine wetlands RE12.1.2 and RE12.1.3 that have a Least Concern status. The clearing of native vegetation on freehold land or Unallocated State Land that is PDA-related development is not assessable; however a development permit under the SPA may be required for clearing of remnant native vegetation outside the boundary of the PDA (but within the referral area) if proposed.

Fisheries Act 1994

All marine plants, including mangroves, seagrass, salt couch and samphires, are protected under Queensland law through section 123 of the *Fisheries Act 1994* (Fisheries Act). The destruction, damage or disturbance of marine plants without prior approval from Fisheries Queensland is prohibited. There are areas of marine plants at Toondah Harbour, particularly mangroves, saltmarsh and seagrass, which have moderate to high fisheries value based on the habitat structure, condition

and presence of particular species. While some property maintenance of minor impact works requiring the removal, damage or destruction of marine plants may be undertaken in compliance with an assessable code, any other works are regarded as assessable development and will require a development approval from DILGP under the SPA.

The Fisheries Act also regulates commercial and recreational fisheries through the designation of Fish Habitat Areas. There is no declared Fish Habitat Area in the referral area and the nearest is more than five kilometres away.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

If the proposed project is declared a 'controlled action' under the EPBC Act, the project assessment is proposed to be conducted under the Queensland environmental assessment bilateral agreement.

Walker intends to seek declaration of the project as a 'coordinated project' under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) to streamline environmental assessment processes. It is proposed that the Coordinator-General's coordinated process will address the assessment requirements of the EPBC Act (if deemed a 'controlled action'), Marine Parks Act (excluding assessments for marine park permits) and development applications under the SPA.

The relevant contact officer for the proposed coordinated project is Anthony Mines, Office of the Coordinator-General, Department of State Development, who can be contacted on (07) 3452 7458 or Anthony.Mines@coordinatorgeneral.qld.gov.au.

2.6 Public consultation (including with Indigenous stakeholders)

Prior to Walker's involvement in the project, extensive public consultation was undertaken by RCC and EDQ in preparing the Toondah Harbour PDA development scheme, including consultation with the Quandamooka People.

Further consultation will be undertaken as part of the EIS process. An EIS communication and engagement plan has been prepared, which includes establishment of a project EIS 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.

Public notification and consultation with Indigenous stakeholders will form a key part of the EIS process, reflecting their important ongoing role and knowledge as custodians of the land and sea country and Aboriginal cultural heritage.

There is no registered native title claim over land within the referral area. The State Government, as the owner of much of the project land, has advised that it intends to negotiate an Indigenous Land Use Agreement (ILUA) in the form of an Area Agreement with parties that have or may possibly hold native title in the area. This will occur in parallel with the EIS process. Public notification of the proposed ILUA commenced in early November 2015.

Also during the course of the EIS process, Walker will issue public and written notices inviting Indigenous stakeholders to participate in a formal Cultural Heritage Management Plan process as required under Part 7 of the *Aboriginal Cultural Heritage Act 2003* (Qld). Walker will endeavour to align EIS consultations with these processes to ensure all potential native title holders and endorsed parties for the Cultural Heritage Management Plan are informed and consulted.

2.7 A staged development or component of a larger project

The proposed action is not a component of a larger action.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

3.1 (a) World Heritage Properties

Description

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

Nature and extent of likely impact

N/A

3.1 (b) National Heritage Places

Description

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

Nature and extent of likely impact

N/A

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

The referral area includes approximately 138.9 hectares contained within the Moreton Bay Ramsar site, which is listed under the Convention of Wetlands of International Importance 1971 (Ramsar Convention). The Moreton Bay Ramsar wetlands are nationally and internationally significant as one of the largest estuarine bays in Australia enclosed by barrier islands of vegetated dunes, which—together with the permanent lakes of the sand island components—provide a diverse and rich suite of wetland habitats. The wetlands are significant as habitat for dugong and migratory shorebirds.

The Moreton Bay Ramsar Wetlands extend over 113,314 hectares in total. The relationship between the referral area and the Moreton Bay Ramsar wetlands at a regional and local level is shown in Attachment A.

Based on the results of a recent field survey by frc environmental and Biodiversity Assessment and Management (BAAM), the Ramsar wetland habitats within the referral area include:

- intertidal mud and sand flats that provide low value foraging habitat for migratory shorebirds and have a relatively high cover of rubble and shells
- mangrove forests which provide moderate habitat value in the northern section of the referral area and higher value in the southern and eastern sections
- intertidal seagrass meadows, particularly in the northern section of the referral area, which provide moderate to high value foraging habitat for migratory shorebirds—except along the fringes of the existing dredged shipping channel where the value is low—and important foraging areas for marine turtles and nursery areas for fish.

Nature and extent of likely impact

The proposed action will have a direct impact on the ecological character of a small portion (<0.13%) of the Moreton Bay Ramsar wetland as it will or has potential to result in:

- areas of the wetland within the referral area being removed or substantially modified through dredging, excavation and/or land reclamation activities
- an impact on habitat values (seagrass, mangroves and intertidal mudflats)
- impact on the lifecycle of native species such as migratory shorebirds who forage and roost in or near the referral area
- a change in the hydrological regime of the wetland and consequent changes to water quality, sedimentation and aquatic habitats
- potential short-term change in the water quality of the wetland during construction and maintenance related to possible increases in turbidity associated with excavation, dredging, dredge material handling and material placement
- introduction and/or proliferation of pest species in the referral area as a result of an increase in activity and disturbance of vegetation.

The extent of Ramsar wetland within the referral area is shown in Attachment A. Associated shorebird habitats and roosting sites are shown in Attachment E.

In addition to direct impacts, the project has potential to contribute to increased usage of the broader Moreton Bay Ramsar wetland area. Walker is not in control of how Queensland state agencies, RCC, commercial ferry operators and private individuals may or may not take advantage of the proposed Toondah Harbour project. Potential indirect impacts may include increased tourist visits to Moreton Bay islands and associated increased vessel frequency. However, in the context of the overall regional usage of the Moreton Bay Ramsar wetland area, the enhanced access via Toondah Harbour and the proposed marina are not expected to lead to a significant impact on its ecological values.

Direct, indirect and facilitated impacts to the Moreton Bay Ramsar wetlands will be assessed in detail through the environmental impact assessment process.

3.1 (d) Listed threatened species and ecological communities

Description

Listed threatened species

Listed threatened species and ecological communities were identified using the Commonwealth's Protected Matters Search Tool. The results are contained in the BAAM report at Attachment G. Initial terrestrial and marine ecological surveys were then conducted within the referral area. These surveys identified seven threatened species, listed under the EPBC Act, as having potential to occur within the referral area (refer Table 3).

Table 3 Occurrence of listed threatened species in the referral area under the EPBC Act at Toondah Harbour

| Species | Common name | EPBC Act | Occurrence |
|-------------------------------|------------------------|-----------------------|------------|
| <i>Phascolarctos cinereus</i> | Koala | Vulnerable | Known |
| <i>Pteropus poliocephalus</i> | Grey-headed flying fox | Vulnerable | Likely |
| <i>Caretta caretta</i> | Loggerhead turtle | Endangered, Migratory | Potential |
| <i>Chelonia mydas</i> | Green turtle | Vulnerable, Migratory | Likely |
| <i>Eretmochelys imbricate</i> | Hawksbill turtle | Vulnerable, Migratory | Potential |
| <i>Lepidochelys olivacea</i> | Olive Ridley turtle | Endangered, Migratory | Unlikely |
| <i>Dermochelys coriacea</i> | Leatherback turtle | Vulnerable, Migratory | Unlikely |

Source: "Expert advice in ecology (marine and terrestrial) and coastal processes for input to the preparation of a structure plan and development scheme for Toondah Harbour and Weinam Creek Priority Development Areas" (frc environmental and BAAM, December, 2013)

No terrestrial flora threatened species listed under the EPBC Act are known or considered likely to occur in the referral area.

Koala

There is no bushland habitat within the PDA therefore there is 'no habitat critical to the survival of koala'. However, koalas are known to move through the western, terrestrial portion of the referral area, visiting favoured food trees that have been retained or planted in the urban environment. A July 2013 terrestrial ecology field survey undertaken by BAAM identified a total of 286 habitat trees important for koala scattered across 85 locations in the referral area, with koala scats observed under 33 of these trees. These trees appear to support several individuals of the local urban koala population whose home range incorporates urban and semi-urban parts of the referral area. Other important food trees these koalas are likely to visit include larger patches of suitable habitat along the foreshore immediately south of the referral area boundary and scattered food trees in the urban footprint to the west of the referral area. Occurrence of koala food trees north of the referral area is limited. Attachment D identifies the location of koala food trees within the referral area.

Grey-headed flying fox

While grey-headed flying fox is likely to occur as a regular visitor to flowering trees in the referral area, no flying fox camp occurs within or adjoining the referral area.

Marine turtles

Three species of threatened marine turtles— specifically loggerhead, green and hawksbill turtles – have potential to occur in the sub-tidal and tidal areas in and adjacent to the referral area. Of these, only sub-adult and adult green turtles are likely to occur in and adjacent to the referral area. Green turtles spend large portions of time in shallow sub-tidal habitats (depths less than three metres) including dredged channels, such as the shallow margins of the referral area.

Listed threatened ecological communities

Subtropical and temperate coastal saltmarsh

In the south western corner of the referral area, there is a 0.14 hectare area of Subtropical and Temperate Coastal Saltmarsh (RE12.1.2), which is listed as a threatened ecological community (vulnerable) under the EPBC Act. Attachment D identifies the location of the coastal saltmarsh ecological community in relation to the referral area.

Nature and extent of likely impact

Koala

The proposed action is not expected to result in significant loss of habitat for koala as the design and layout of the proposed development retains the corridor in which most of the existing trees are located. The corridor links the existing parklands in the northern part of the referral area with a broader habitat corridor to the south.

Proposed offset plantings for any koala trees removed from development sites will be provided at strategic locations within and/or outside of the referral area to enhance connectivity with more important koala habitat to the south.

Facilitated impacts as a result of urban development could increase the risk of vehicle strike on koalas. The risk is expected to be minimised through the planning, design and layout of roads and landscaping treatment within the referral area, which will facilitate safe movement opportunities for koala between habitat tree patches. Road signage and public education activities will increase community awareness of the presence of koalas in the area.

The extent and significance of potential impacts will be assessed as part of the EIS.

Grey-headed flying fox

Given the relatively small quantity of potential food trees in the referral area and the abundant availability of such trees in the region, the proposed action is not expected to have a significant impact on this species. Any offset plantings for koala will also benefit the grey-headed flying fox.

Marine turtles

The reduction in seagrass habit as a result of land reclamation, excavation and dredging activities is expected to have an impact on marine turtles.

Turtles may be also be directly impacted by construction and maintenance activities including dredging and dredged material placement, for example, vessel strike from dredgers, trapping in dry excavation areas or silt curtains, disturbance from artificial light, underwater noise and increased activity during dredging, and changes to marine water quality.

Facilitated boat traffic may increase the chance of boat strike on turtles, both in the referral area and the broader environs of the Marine Park.

Increased litter as a result of increased population and use of the area may adversely impact turtle populations.

The extent of the potential impacts will be identified through the EIS.

Subtropical and temperate coastal saltmarsh

The saltmarsh communities within the referral area are to be retained, and there will not be any direct impacts on them.

The proposed development and the saltmarsh communities will be managed to minimise the risk of indirect impacts, in particular:

- hydrology, including stormwater inflows and tidal inundation, will not be altered
- access by recreational vehicles and pedestrians will be restricted as they pose major threatening processes leading to damage of the saltmarshes
- weed and litter incursion will be minimised by restricting access and through public education activities.

Opportunities to restore and preserve the adjacent saltmarsh communities will be explored through the EIS.

3.1 (e) Listed migratory species

Description

Listed migratory species were identified using the Commonwealth's Protected Matters Search Tool. The results are contained in the BAAM report at Attachment G. Based on the results of initial terrestrial and marine ecology field surveys, the following migratory species have potential to be impacted by the proposed development:

- shorebirds
- marine turtles
- dugong
- Indo-Pacific humpback dolphins.

Migratory shorebirds

The Moreton Bay Ramsar site is nationally and internationally significant as habitat for migratory shorebirds. The Moreton Bay shorebird area, which stretches 130 kilometres from Caloundra in the north to Southport in the south, has been reported to support around 30,000 migratory shorebirds during the summer months. Due to its recognition as an internationally important migratory shorebird area, habitats utilised by migratory shorebirds for foraging or roosting in Moreton Bay are characterised as 'important habitat' for migratory shorebirds under the EPBC Act.

Habitat for migratory shorebirds within or near the referral area includes intertidal mudflats, seagrass beds and known roost sites, notably the Cassim Island mangrove roost site to the east of the referral area and the Nandeebie Claypan roost site to the south. Attachment E includes a map of migratory shorebird habitat and roosting sites within or near the referral area.

Targeted field surveys confirm that Cassim Island and the Nandeebie Claypan are important roosting habitat for migratory shorebirds based on the relatively large total numbers of migratory shorebirds utilising these roost sites. Up to 920 migratory shorebirds of four species known to roost in mangrove trees were recorded at Cassim Island, while up to 1,060 migratory shorebirds were recorded roosting at the Nandeebie Claypan. Table 4 summarises the EPBC listed species that were identified during the field survey.

Table 4 Summary of migratory shorebirds roosting or foraging within and immediately adjoining the Toondah Harbour PDA

| Species | Common Name | EPBC Status |
|----------------------------------|---------------------|----------------------------------|
| <i>Numenius phaeopus</i> | Whimbrel | Migratory |
| <i>Tringa brevipes</i> | Grey-tailed Tattler | Migratory |
| <i>Arenaria interpres</i> | Ruddy Turnstone | Migratory |
| <i>Xenus cinereus</i> | Terek Sandpiper | Migratory |
| <i>Limosa limosa</i> | Bar-tailed Godwit | Migratory |
| <i>Numenius madagascariensis</i> | Eastern Curlew | Migratory, Critically Endangered |
| <i>Calidris tenuirostris</i> | Great Knot | Migratory |
| <i>Limosa limosa</i> | Bar-tailed Godwit | Migratory |
| <i>Calidris ruficollis</i> | Red-necked Stint | Migratory |

Marine turtles

The reduction in seagrass habit as a result of land reclamation, excavation and dredging activities is expected to have an impact on marine turtles.

Turtles may be also be directly impacted by construction and maintenance activities including dredging and dredged material placement, for example, vessel strike from dredgers, trapping in dry excavation areas or silt curtains, disturbance from artificial light, underwater noise and increased activity during dredging, and changes to marine water quality.

Facilitated boat traffic may increase the chance of boat strike on turtles, both in the referral area and the broader environs of the Marine Park.

Increased litter as a result of increased population and use of the area may adversely impact turtle populations.

The extent of the potential impacts will be identified through the EIS.

Dugong

There are approximately 800 to 900 dugongs in Moreton Bay. Dugongs typically avoid areas of high human activity, and in Moreton Bay are mainly found in the area around the South Passage Bar and Moreton and Amity Banks. Dugong may occasionally feed on seagrass in the north east of the referral area but are not likely to occur in large numbers due to the marginal nature of the seagrass habitat and boat traffic from the existing ferry terminals. This was confirmed by aerial survey in 1995, with only 10% of Moreton Bay's dugong population located in the zone which includes the waters of Toondah Harbour¹.

Dolphins

While there are several species of dolphin in Moreton Bay, boat traffic from the existing ferry terminals at Toondah Harbour is likely to deter dolphins from the immediate area. Notwithstanding, the EPBC listed (vulnerable) Indo-Pacific humpback dolphins may occasionally feed over the tidal flats.

¹ Lanyon, J.M (2003). Distribution and abundance of dugongs in Moreton Bay, Queensland, Australia. Wildlife Research 30: pp 397-409.

Nature and extent of likely impact

Migratory shorebirds

The habitats present within and surrounding the referral area comprise a small percentage of similar habitats found within the broader Moreton Bay Ramsar wetlands. Initial migratory shorebird counts within the referral area have recorded less than 0.5% of the estimated total number of migratory shorebirds that utilise the whole of the Moreton Bay Ramsar wetland area during summer.

The proposed action will result in loss of intertidal foraging habit important for migratory birds within the referral area as a result of dredging, excavation or reclamation activities.

Other potential impacts from the proposed action include potential habitat degradation due to impacts on surface water quality and hydrology and disturbance related impacts including noise, light, dust and increased activity.

Indirect impacts may include disturbance related impacts as a result of increased population and use of the area may include noise, visual disturbance and increased activity.

The significance of these impacts will be assessed as part of the environmental impact assessment process.

Marine turtles, dugongs and Indo-Pacific humpback dolphin

Potential direct impacts from the proposed action on these species include habitat removal, such as seagrass meadow and intertidal mudflat, and potential for habitat degradation due to changes in water quality. Appropriate offset strategies will be identified during the EIS process, including offsets if practicable.

Dredging, excavation and reclamation activities have potential to result in harm to marine turtles or mammals from vessel strike by dredgers, trapping in dry excavation areas or by silt curtains, or disturbance from underwater noise. While the risk of death or injury to marine mammals during excavation/dredging operations is low, spotters will be utilised during works to ensure that work ceases whenever marine mammals or reptiles are at risk of harm.

Facilitated recreational boat traffic arising from provision of new harbour facilities may increase the chance of disturbance and/or boat strike on marine fauna, both in the referral area and the broader environs of the Marine Park. Utilising the existing channel may reduce the likelihood of increased risk of boat strike on marine fauna. This risk may be further reduced through implementation of speed restrictions and 'go slow' areas for recreational vessels in the channel and community awareness strategies such as signage and public education.

Increased litter as a result of increased population and use of the area may adversely impact turtle populations.

The significance of the above potential impacts will be assessed as part of the environmental impact assessment.

3.1 (f) Commonwealth marine area

Description

The referral area is located within state controlled coastal waters and does not fall within a Commonwealth Marine Area.

Nature and extent of likely impact

N/A

3.1 (g) Commonwealth land

Description

The referral area does not include Commonwealth land.

Nature and extent of likely impact

N/A

3.1 (h) The Great Barrier Reef Marine Park

Description

The referral area is not within the Great Barrier Reef Marine Park.

Nature and extent of likely impact

N/A

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

The proposed action is not a coal seam gas development or large coal mining development.

Nature and extent of likely impact

N/A

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

| | | | |
|---|--|-------------------------------------|-----------------------------|
| 3.2 (a) | Is the proposed action a nuclear action? | <input checked="" type="checkbox"/> | No |
| | | <input type="checkbox"/> | Yes (provide details below) |
| If yes, nature & extent of likely impact on the whole environment | | | |
| N/A | | | |
| 3.2 (b) | Is the proposed action to be taken by the Commonwealth or a Commonwealth agency? | <input checked="" type="checkbox"/> | No |
| | | <input type="checkbox"/> | Yes (provide details below) |
| If yes, nature & extent of likely impact on the whole environment | | | |
| N/A | | | |
| 3.2 (c) | Is the proposed action to be taken in a Commonwealth marine area? | <input checked="" type="checkbox"/> | No |
| | | <input type="checkbox"/> | Yes (provide details below) |
| If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f)) | | | |
| N/A | | | |
| 3.2 (d) | Is the proposed action to be taken on Commonwealth land? | <input checked="" type="checkbox"/> | No |
| | | <input type="checkbox"/> | Yes (provide details below) |
| If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g)) | | | |
| N/A | | | |
| 3.2 (e) | Is the proposed action to be taken in the Great Barrier Reef Marine Park? | <input checked="" type="checkbox"/> | No |
| | | <input type="checkbox"/> | Yes (provide details below) |
| If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h)) | | | |
| N/A | | | |

3.3 Other important features of the environment

3.3 (a) Flora and fauna

The referral area contains intertidal and shallow subtidal habitats including:

- mangrove forests
- intertidal and subtidal unvegetated mudflats and sand banks
- seagrass meadows
- subtropical coastal saltmarsh community.

Each of these habitats extends beyond the referral area and is widely represented in the Moreton Bay region. These habitats provide a range of ecological values and are important for fisheries, biodiversity and ecosystems.

Mangrove forests

The mangrove forests in the referral area are located along the upper intertidal zone and bordered by mud and sand flats. They are dominated by grey mangroves and stilted mangroves, with sparse individual river mangroves and yellow mangroves.

Intertidal and subtidal unvegetated mudflats and sand banks

The sediments within and adjacent to the referral area are bioturbated muds and sands, with a layer of rubble below the surface. This zone is along the lower intertidal zone and includes the current dredged channel for boat and ferry access to Moreton Bay. The unvegetated mud and sand habitat is bordered by mangrove forests in the upper intertidal zone and seagrass beds in the subtidal areas.

Seagrass meadows

There are extensive seagrass meadows in the eastern half of the referral area. The composition and cover of the seagrass meadows within the referral area are similar to other coastal seagrass meadows located throughout Moreton Bay.

Subtropical coastal saltmarsh community

Saltmarsh is located in the south-western corner of the referral area along the upper most intertidal zone and is bordered by mangrove forest. Another saltmarsh community adjoins the referral area to the south and is dominated by marine couch with common samphire and seablite also present.

3.3 (b) Hydrology, including water flows

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 rise², should be 3.4 m AHD. This level will be adopted for finished floor levels for the Toondah Harbour development.

It is possible that the proposed reclamation and channel dredging could affect coastal currents in the area. Potential impacts will be assessed through the environmental impact assessment.

Most stormwater runoff from the site is currently managed as overland and open channel flow, discharging either to the south into a mangrove area, or to the east through G J Walter Park (refer to Attachment F). Preliminary stormwater plans for the proposal are to maintain these overland flow paths and discharge points. 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 vegetated swales and/or in-pipe gross pollutant traps (GPT), will be incorporated into the stormwater management system for the development. Such features will be developed further through the design finalisation process with the intention of protecting the environmental values of Moreton Bay 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*.

² As per the Queensland Coastal Plan (DEHP, 2012) and Module 10, Coastal Protection of the State Development Assessment Provisions.

3.3 (c) Soil and Vegetation characteristics

The referral area is located in an area of known high risk of ASS presence. A significant volume of marine sediment is required to 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. 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*.

Vegetation characteristics are described in 3.3(a) and (e).

3.3 (d) Outstanding natural features

The Moreton Bay Ramsar site wetlands are nationally and internationally significant as one of the largest estuarine bays in Australia, enclosed by barrier islands of vegetated dunes, which together with the permanent lakes of the sand island components provide a diverse and rich suite of wetland habitats.

3.3 (e) Remnant native vegetation

The referral area contains patches of vegetation currently mapped by the Queensland Department of Environment and Heritage Protection as remnant RE 12.1.2 and RE 12.1.3—Estuarine wetlands that have a 'Least Concern' status under the *Vegetation Management Act 1999*. During the terrestrial field survey, one of these polygons was also found to contain a small area RE 12.3.5 (Palustrine wetland), which also has 'Least Concern' status under the *Vegetation Management Act 1999*.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The proposal covers an existing terrestrial area at Cleveland and an associated tidal area. The project footprint may also include Middle Banks in Moreton Bay and/or the material disposal area near Mud Island and other sources of fill or material disposal area options, depending on the materials and the preferred construction methodology.

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 CD); much of this area is exposed at low tide. The final development levels would range from approximately -13 m AHD in the marina to 3 m AHD for the final reclamation level. During construction of the reclamation, temporary surcharge may be placed, which would temporarily increase the ground levels in parts of the reclamation above 3 m AHD.

Fison Channel is relatively shallow, with depths of approximately -2.7 m AHD (-1.5 m CD). The proposal includes extending, straightening, widening and deepening the channel to -4.25 m AHD (-3 m CD).

The optional sand extraction area at Middle Banks, west of Moreton Island, ranges from approximately -10 m AHD to -20 m AHD (BAC, 2006). It is positioned on a sand shoal.

The optional dredged material disposal area, near Mud Island, has depths ranging from approximately -6.9 m AHD to -11.7 m AHD (-5.7 m CD to -10.5 m CD)³.

3.3 (g) Current state of the environment

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 (frc environmental, November 2014) 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.

³ Moreton Bay Nautical Chart. Maritime Safety Queensland, November 2006.

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 within the referral area is highly disturbed, receiving runoff from developed areas along the foreshore. Rubbish was found throughout.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

There are no listed Commonwealth Heritage Places in the referral area.

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 on 29 September 2015 indicates that there are no known shipwrecks within 1km of the PDA. A search of the QHR conducted on the 29 September 2015 indicates that there are seven State heritage sites in proximity to the Toondah Harbour PDA (Figure 1).

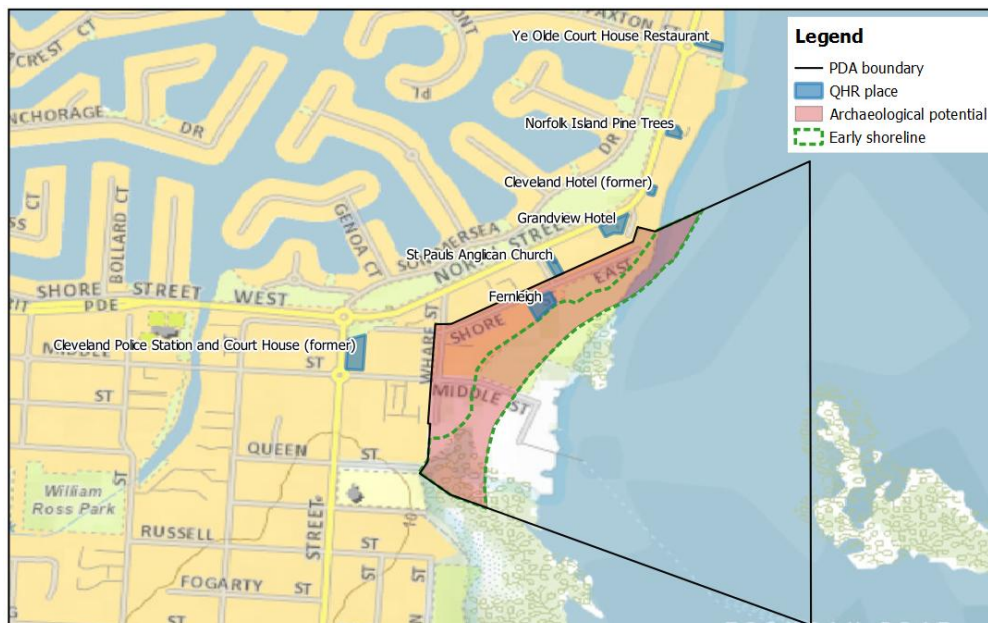


Figure 1 State heritage places and archaeological potential showing 1927 high and low tide shorelines

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. 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).

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. This potential is particularly high in the areas around early buildings, and along the former coast line (Figure 1), which may retain evidence of maritime structures or domestic refuse.

The QH Act also protects local heritage places in conjunction with the *Sustainable Planning Act 2009* 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 PDA encompasses a local heritage place, GJ Walter Park, and part of the Cleveland Point Character Precinct.

3.3 (i) Indigenous heritage values

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 Bay⁴.

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.

During the course of the EIS process, Walker intends to issue public and written notices inviting Aboriginal communities and individuals who wish to participate in a formal Cultural Heritage Management Plan (CHMP) process for the project under Part 7 of the ACH Act. Requirements for a cultural heritage survey will be addressed through the consultation process.

3.3 (j) Other important or unique values of the environment

The referral area is partly located within the Moreton Bay Marine Park, which is managed by the Department of National Parks, Sport and Racing through the Queensland Parks and Wildlife Service. The marine park, which covers 3,400 square kilometres and stretches 130 kilometres from Caloundra to the Gold Coast, encompasses most of the bay's tidal waters including many estuaries and extends seawards to the limit of Queensland waters.

The Park comprises areas of marine national park zones and conservation park zones. The *Marine Parks (Moreton Bay) Zoning Plan 2008* is the primary tool used to manage the marine park.

3.3 (k) Tenure of the action area (e.g. freehold, leasehold)

As outlined in Section 1.6 and Table 2, 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 EDQ.

In order for this to occur, EDQ has indicated that it intends to:

- negotiate an ILUA with parties that have or may possibly hold native title in the area
- 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
- 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 ownership with the exception of the ferry terminals and car parking which will be transferred to the ownership of RCC 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 in globo or as a strata subdivision lot by lot.

3.3 (l) Existing land/marine uses of area

The existing land uses within the referral area include:

- GJ Walter Park, which includes fields, play space and a dog park
- commercial passenger and vehicle ferry operations and associated car parking
- a dredge material spoil pond

⁴ RCC, 2010. In the Beginning: Before Settlement. Viewed 17/11/2015.

<http://www.redland.qld.gov.au/AboutRedlands/History/Pages/In-the-beginning.aspx>

- public boat ramp
- council-owned office facilities
- existing low and medium density residential development.

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.

3.3 (m) Any proposed land/marine uses of area

Walker proposes to develop a master planned community in line with the vision for the Toondah Harbour PDA. Proposed land uses include:

- single detached, semi-detached and attached dwellings of varying heights in a range of 'village' precincts
- retail and commercial tenancies that provide supporting tourism, entertainment, cultural and specialist services – these will be delivered as part of mixed use development, primarily with ground floor retail and commercial and residential apartments above
- site for short-term accommodation/hotel with conference facilities providing tourism support industries to build upon the function of the site as a key tourism gateway hub
- commercial marina with public and private pontoons
- terminals for vehicular and passenger ferries, water taxis and charter vessels
- additional public parklands
- dedicated conservation areas to enhance and protect existing areas of environmental significance including Cassim Island and the existing koala food trees
- a connected marina and foreshore walkway that provides a dedicated pedestrian and cycle route
- launching and storage facilities for small recreational boats and kayaks.

4 Environmental outcomes

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 3.1 (c) – (e).

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.

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
- 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.

Further information about potential mitigation/offset measures is summarised in Section 6.

5 Measures to avoid or reduce impacts

A preliminary assessment of potential risks to MNES has been undertaken according to the criteria in Table 5. A summary of potential risks, mitigation and potential and residual risk is presented in Table 6.

Table 5 Risk assessment matrix for MNES

| Probability | Consequence | | | | |
|-----------------------|--|---------------------------|--------------------------------|--|------------------------------------|
| | Catastrophic Irreversible Permanent (5) | Major Long-term (4) | Moderate Medium-term (3) | Minor Short-term Manageable (2) | Insignificant Manageable (1) |
| Almost Certain (5) | (25) Extreme | (20) Extreme | (15) High | (10) Medium | (5) Medium |
| Likely (4) | (20) Extreme | (16) High | (10) Medium | (8) Medium | (4) Low |
| Possible (3) | (15) High | (12) High | (9) Medium | (6) Medium | (3) Low |
| Unlikely (2) | (10) Medium | (8) Medium | (6) Medium | (4) Low | (2) Low |
| Rare (1) | (5) Medium | (4) Low | (3) Low | (2) Low | (1) Low |

Table 6 Summary of significance and possible mitigation of potential impacts to MNES

| Activity | Constr. | Operation | Description | Possible Mitigation / Offset | Significance (Unmitigated) | Significance (Mitigated) |
|--|---------|-----------|--|--|--|--|
| Removal of a small number of koala habitat trees | Y | | Loss of habitat. Harm to koalas as a result of construction activity | Avoid – Retain koala habitat trees within green areas Mitigate and Offset – Design landscape to provide food, shelter and movement opportunities Mitigate and Offset – Provide planting in strategic areas to enhance safe movement networks on and off site. Avoid – Adopt construction measures that avoid harm to koalas Mitigate – Any clearing is undertaken sequentially under the guidance of a koala spotter | Koala – medium | Koala – low |
| Facilitated impacts of urban development | | Y | Increased risk of vehicle strike on koala Increased risk of koala death or injury as a result of interaction with dogs | Minimise – Provide safe koala movement opportunities through design and layout of development Minimise – Design roads near potential koala crossing points to limit speeds by incorporating go slow features and ensure high visibility along roadsides Avoid – Fence dog park Minimise – Provide signage and public education | Koala – medium | Koala – ow |
| Reclamation of tidal areas | Y | | Administrative removal of part of Ramsar wetland area Loss of habitat for shorebirds Loss of mangroves and seagrass that provide habitat for fish, and food for turtles. | Avoid – Avoid disturbance of mangroves at Cassim Island. Offset – Provide environmental offsets specific to migratory birds. Offset – Provide offset for | Ramsar wetland – high Shorebirds – high Flying fox – low Marine turtles – low Dugong – low | Ramsar wetland – medium Shorebirds – medium Flying fox – low Marine turtles – low Dugong – low |

| Activity | Constr. | Operation | Description | Possible Mitigation / Offset | Significance (Unmitigated) | Significance (Mitigated) |
|--------------------------------|---------|-----------|---|---|---|--|
| | | | Loss of unvegetated benthic habitat. | loss of marine plants (may include fish friendly structures on jetties, public education, angler bins etc.). Minimise – If feasible, schedule high disturbance activities to avoid periods of high shore bird use. | Humpback dolphin – low | Humpback dolphin – low |
| Dredging/ excavation | Y | Y | Increased turbidity and sediment deposition, release of nutrients and other contaminants due to dredging/ excavation. Damage to marine mammals and reptiles during excavation/ dredging. Fish, marine mammals or turtles trapped in dry excavation areas or by silt curtains. | Mitigate – Implement dredge management plan including assessment of material to be dredged according to relevant guidelines. Avoid – Employ spotters during works, cease work whenever marine mammals or turtles are at risk of damage. Minimise – Fit turtle deflection device to dredger head if possible. Avoid - Design dry excavation to maximise drainage prior to dewatering. Avoid - Salvage fish and relocate prior to dewatering. Mitigate - If silt curtains are used, install at low tide. | Ramsar wetland – medium Shorebirds – medium Marine turtles – medium Dugong – low Humpback dolphin – low | Ramsar wetland – low Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low |
| Dredge material placement | Y | Y | Increased turbidity and sediment deposition, release of nutrients and other contaminants. | Mitigate – Design and construct a containment system that minimises the release of turbid water and sediment from the filling operation to the marine environment. | Ramsar wetland – medium Shorebirds – medium Marine turtles – medium Dugong – low Humpback dolphin – low | Ramsar wetland – low Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low |
| Erosion and sedimentation from | Y | Y | Increased turbidity and sediment deposition, release | Mitigate – Design and implement a site based | Ramsar wetland – medium Shorebirds – low | Ramsar wetland – low Shorebirds – low |

| Activity | Constr. | Operation | Description | Possible Mitigation / Offset | Significance (Unmitigated) | Significance (Mitigated) |
|---|---------|-----------|---|---|--|---|
| site works | | | of nutrients and other contaminants from activities other than dredging and dredge material placement. | management plan to reduce and manage runoff from the site. | Marine turtles – low Dugong – low Humpback dolphin – low Coastal saltmarsh – low | Marine turtles – low Dugong – low Humpback dolphin – low Coastal saltmarsh – low |
| Change in hydrological regime | Y | Y | Change in the hydrological regime of the Ramsar wetland through dredging and land reclamation works and consequent changes to water quality, sedimentation and aquatic habitats | Minimise - For the adopted construction methodology option, measures would be put in place to limit the mobilisation and release of fines during dredging, excavation, fill placement and compaction. Avoid – Tailwater produced during reclamation works will be appropriately handled and treated to minimise impacts. | Ramsar wetland – medium Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low Coastal saltmarsh – low | Ramsar wetland – low Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low Coastal saltmarsh – low |
| Disturbance of acid sulfate or potential acid sulphate sediment | Y | Y | Disturbance of acid sulfate or potential acid sulphate sediment by dredging or other site works. | Minimise – Implement acid sulfate soil management plan, including testing of all sediment to be disturbed in accordance with most recent Queensland guidelines. | Ramsar wetland – medium Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low Coastal saltmarsh – low | Ramsar wetland – low Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low Coastal saltmarsh – low |
| Hydrocarbon contamination | Y | Y | Contamination due to spill during transportation of fuel or equipment refuelling. | Minimise – Implement environmental management plan. | Ramsar wetland – medium Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low Coastal saltmarsh – low | Ramsar wetland – low Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low Coastal saltmarsh – low |
| Heavy metal contamination | Y | Y | Run off from site contains heavy metals. | Minimise – Implement erosion and sediment control plans and stormwater management plan. | Ramsar wetland – medium Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low | Ramsar wetland – low Shorebirds – low Marine turtles – low Dugong – low Humpback dolphin – low |

| Activity | Constr. | Operation | Description | Possible Mitigation / Offset | Significance (Unmitigated) | Significance (Mitigated) |
|------------------------------|---------|-----------|---|--|---|---|
| | | | | | Coastal saltmarsh – low | Coastal saltmarsh – low |
| Increased activity and noise | Y | Y | Disturbance of shorebirds, marine mammals and reptiles by increase in activity and noise. | <p>Avoid – Avoid disturbance of mangroves at Cassim Island HAT roost site</p> <p>Avoid – If feasible, schedule high-disturbance activities to avoid periods of high shore bird use.</p> <p>Mitigate - Implement appropriate buffer zones between the outer edge of the mangrove roost site and the reclamation area boundary.</p> <p>Avoid – Eliminate disturbance at critical sites using a range of techniques such as fencing sites, seasonal closures, range patrols, installation of hides and signage</p> <p>Minimise – Employ spotters and cease work if marine mammals and turtles in the area are adversely impacted.</p> <p>Mitigate – Encourage establishment of eco-tourism programs that provide environmental education and interpretation</p> <p>Offset – Traditional Owner involvement and land and sea country management</p> | <p>Ramsar wetland – medium</p> <p>Shorebirds – high</p> <p>Marine turtles – low</p> <p>Dugong – low</p> <p>Humpback dolphin – low</p> | <p>Ramsar wetland – low</p> <p>Shorebirds – low</p> <p>Marine turtles – low</p> <p>Dugong – low</p> <p>Humpback dolphin – low</p> |
| Increased litter and debris | Y | Y | Increase in litter and debris resulting in entanglement and ingestion by marine turtles. | <p>Avoid – Design and implement site management plan to ensure no increase in litter or debris to marine environment during construction and operation</p> | <p>Ramsar wetland – medium</p> <p>Shorebirds – low</p> <p>Marine turtles – low</p> <p>Dugong – low</p> <p>Humpback dolphin – low</p> | <p>Ramsar wetland – low</p> <p>Shorebirds – low</p> <p>Marine turtles – low</p> <p>Dugong – low</p> <p>Humpback dolphin – low</p> |

| Activity | Constr. | Operation | Description | Possible Mitigation / Offset | Significance (Unmitigated) | Significance (Mitigated) |
|------------------------------------|---------|-----------|---|---|--|---|
| | | | | including stormwater management plan. Minimise – Environmental management plan including for example litter collection and tangle bins, trash racks. Minimise – Public Education Offset – Traditional Owner involvement and land and sea country management | Coastal saltmarsh – low | Coastal saltmarsh – low |
| Facilitated increased boat traffic | | Y | Increase in boat traffic leading to boat strike of marine mammals and turtles, damage to surrounding intertidal areas, erosion (see also noise and activity above). | Minimise – Utilise the existing channel for all boat traffic Minimise – Implement speed restrictions and ‘go slow’ areas in channel. Assist in implementation in broader region e.g. through funding of boating and fisheries patrol. Minimise – public education. | Marine turtles – medium Dugong – low Humpback dolphin – low | Marine turtles – low Dugong – low Humpback dolphin – low |
| Facilitated increased access | | Y | Increased access leading to disturbance and degradation of habitats, in particular coastal saltmarsh. | Minimise – Limit public access. Mitigate by assisting Council with improved management of nearby coastal saltmarsh community | Ramsar wetland – medium Shorebirds – medium Coastal saltmarsh – medium | Ramsar wetland – low Shorebirds – low Coastal saltmarsh – low |
| Increase in pest species | Y | Y | Increase in activity and disturbance of vegetation may lead to introduction and proliferation of pest species into coastal saltmarsh and terrestrial habitats. | Minimise – Implement weed management strategy. Minimise – Restrict access to coastal saltmarsh and native vegetation. | Ramsar wetland – medium Coastal saltmarsh – low | Ramsar wetland – low Coastal saltmarsh – low |

Environmental Management Plan

Measures to avoid, minimise and mitigate impacts on matters protected under the EPBC Act during the construction and operational phases of the project will be included in a comprehensive Environmental Management Plan (EMP) that will be developed for the project. This EMP will be developed and implemented for a range of specific issues including but not limited to:

- Vegetation management including coastal saltmarsh and weeds
- Shorebirds
- Marine mammals and reptiles
- Fauna relocation and handling procedures
- Acid sulfate soils (in accordance with the latest version of the Queensland Acid Sulfate Soil Management Guidelines)
- Dredging and excavation
- Placement of dredge material both during construction and maintenance phases
- Stormwater
- Noise
- Litter
- Public education
- Traditional Owner participation in management of land and sea country in the vicinity of Toondah Harbour
- Introduction of pest species
- Waste management.

6 Conclusion on the likelihood of significant impacts

Identify whether or not you believe the action is a controlled action (i.e. whether you think that significant impacts on the matters protected under Part 3 of the EPBC Act are likely) and the reasons why.

6.1 Do you THINK your proposed action is a controlled action?

| | |
|-------------------------------------|---------------------------|
| <input type="checkbox"/> | No, complete section 6.2 |
| <input checked="" type="checkbox"/> | Yes, complete section 6.3 |

6.2 Proposed action IS NOT a controlled action.

N/A

6.3 Proposed action IS a controlled action

Matters likely to be impacted

| | |
|-------------------------------------|---|
| <input type="checkbox"/> | World Heritage values (sections 12 and 15A) |
| <input type="checkbox"/> | National Heritage places (sections 15B and 15C) |
| <input checked="" type="checkbox"/> | Wetlands of international importance (sections 16 and 17B) |
| <input checked="" type="checkbox"/> | Listed threatened species and communities (sections 18 and 18A) |
| <input checked="" type="checkbox"/> | Listed migratory species (sections 20 and 20A) |
| <input type="checkbox"/> | Protection of the environment from nuclear actions (sections 21 and 22A) |
| <input type="checkbox"/> | Commonwealth marine environment (sections 23 and 24A) |
| <input type="checkbox"/> | Great Barrier Reef Marine Park (sections 24B and 24C) |
| <input type="checkbox"/> | A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E) |
| <input type="checkbox"/> | Protection of the environment from actions involving Commonwealth land (sections 26 and 27A) |
| <input type="checkbox"/> | Protection of the environment from Commonwealth actions (section 28) |
| <input type="checkbox"/> | Commonwealth Heritage places overseas (sections 27B and 27C) |

The referral area contains marine and terrestrial ecological values of local, state and national significance. The proposed action has potential to result in a significant impact on the ecological character of a small portion of the Moreton Bay Ramsar wetland during the construction phase of the project.

Specifically, tidal works such as the excavation of quarry material from land under tidal water, capital dredging of the navigation channel and land reclamation will result in a loss of seagrass meadow and intertidal mudflats that have aquatic ecological and fisheries value and provide foraging habitat for EPBC listed migratory species, such as migratory shorebirds, dugong and marine turtles.

7 Environmental record of the responsible party

| | Yes | No |
|---|-----|----|
| <p>7.1 Does the party taking the action have a satisfactory record of responsible environmental management?</p> <p>Provide details</p> <p>Walker Group Holdings Pty Ltd. is the party taking the action and has a satisfactory record of responsible environmental management.</p> <p>Lang Walker 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.</p> <p>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.</p> <p>Refer http://www.walkercorp.com.au/ for more information about Walker projects.</p> | X | |
| <p>7.2 Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?</p> <p>If yes, provide details</p> <p>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:</p> <p><u>Kew Development Corporation Pty Ltd and Heritage Victoria:</u></p> <p>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.</p> <p>For transparency, Walker Corporation Pty Ltd has been subject to two proceedings under State law:</p> <p><u>Director- General Department of Environment and Climate Change (NSW) Walker Corporation Pty Limited:</u></p> <p>Walker was found guilty of clearing native vegetation without development consent on land at Picton Road, Wilton NSW on 14 May 2010.</p> <p><u>Director- General Department of Environment and Climate Change (NSW) Walker Corporation Pty Limited:</u></p> <p>Walker was found guilty of clearing native vegetation without development consent on land at Macquariedale Road, Appin NSW on 30 November 2011.</p> | X | |
| <p>7.3 If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?</p> | X | |

| | | |
|--|---|--|
| <p>If yes, provide details of environmental policy and planning framework</p> <p>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 State environmental law including the <i>Sustainable Planning Act 2009</i>; <i>Coastal Protection Management Act 1995</i>; <i>Marine Parks Act 2004</i>; <i>Environmental Protection Act 1994</i>; <i>Vegetation Management Act 1999</i>; <i>Nature Conservation Act 1992</i>; and <i>Fisheries Act 1994</i>.</p> | | |
| <p>7.4 Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?</p> <p>Provide name of proposal and EPBC reference number (if known)</p> <p>Walker Group Holdings Pty Ltd has not previously referred an action under the EPBC Act or been responsible for undertaking an action referred under the EPBC Act.</p> <p>Other Walker entities have previously referred an action, specifically:</p> <p>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).</p> <p>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.</p> <p>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.</p> | X | |

8 Information sources and attachments

8.1 References

Reference material used to prepare this document is summarised in Table 7.

Table 7 Source material

| Attachment Reference | Title and description | Authors |
|----------------------|--|--|
| Attachment G1 | <p><i>Expert advice in ecology (marine and terrestrial) and coastal processes for input to the preparation of a structure plan and development scheme for Toondah Harbour and Weinam Creek Priority Development Areas (January 2014)</i></p> <p>(Publicly available at http://www.redland.qld.gov.au/Business/Pages/PDA-initial-technical-reports)</p> <p>The report outlines the findings of assessment of fauna and flora, the investigation of environmental constraints and the assessment of options and strategies for the PDAs in relation to matters on national, state and local environmental significance.</p> | BAAM and frc environmental on behalf of RCC |
| Attachment G2 | <p><i>Migratory Shorebird Assessment – Toondah Harbour and Weinam Creek Priority Development Areas (November 2014)</i></p> <p>The report details the results of a survey and assessment of migratory shorebird species abundances and habit uses with the Toondah Harbour and Weinam Creek PDAs.</p> | BAAM for frc environmental on behalf of Walker |
| Attachment G3 | <p><i>Toondah Harbour PDA – Ecological studies in support of works area determination (November 2014)</i></p> <p>The report describes the marine plants and benthic habitat currently within and adjoining the referral area, the aquatic fauna associated with that habitat and discusses how the proposed action may impact habitat and associated flora and fauna.</p> | frc environmental for Walker |
| Attachment G4 | <p><i>Toondah Harbour and Weinam Creek Priority Development Area migratory shorebird survey results (July 2015)</i></p> <p>This technical memorandum for Palaris on behalf of Walker for the purpose of providing a summary of the results of three summer season and one winter migratory shorebird surveys of the Toondah Harbour and Weinam Creek Priority Development Areas undertaken between January and June 2015.</p> | BAAM for Walker |

8.2 Reliability and date of information

A literature and data review was undertaken to provide a description of the aquatic and terrestrial habitats and floral and faunal communities and species of Toondah Harbour contained in the December 2013 BAAM report for RCC. This included a review and searches of:

- relevant previous surveys undertaken by frc environmental and BAAM
- other published reports and literature
- listed threatened aquatic and terrestrial species or ecological communities on the Commonwealth's EPBC Act online Protected Matters Search Tool database

This information provided the study team with details of EVNT species, ecologically significant habitat and communities, habitat and communities particularly sensitive to disturbance (including those protected under federal, state and local legislation and guidelines) and species and communities of scientific, educational, cultural and historical interest. The likely occurrence and distribution of exotic species was also determined.

The reliability and relevance of information sources were evaluated to identify key knowledge gaps. This informed the design of focused field surveys to verify the information gathered during the desktop study and to fill any information gaps.

Marine ecology field surveys were completed by frc environmental over three days between 5 and 8 July 2013 to assess the current condition, value and extent of marine and estuarine systems in the Toondah Harbour area. The surveys included ground-truthing of habitat mapping to:

- verify habitat boundaries using GPS
- characterise habitats (including mangroves, seagrass, soft sediment benthos and rocky reef) according to species composition and cover
- estimate habitat quality and value using a qualitative assessment of parameters including abundance, species composition, per cent cover, and presence and abundance of epiphytes and epifauna
- obtain a photographic record of habitat types, including underwater videography
- observe coastal processes such as areas of siltation or erosion.

All surveys were completed in accordance with relevant permits issued to frc environmental.

Terrestrial ecology field surveys were undertaken by terrestrial ecologists from BAAM in fine, sunny weather conditions on 5 July 2013. The surveys involved ground-truthing of existing habit mapping, including:

- verification of vegetation mapping
- assessment of the actual or likely presence of significant terrestrial species and associated habitat (Commonwealth, state and local species)
- verification of habitat boundaries using GPS plotters, and characterisation of the quality, condition and connectivity of the habitats present
- obtaining a photographic record of reach of the habitat types present.

A particular focus of the terrestrial fauna study was surveying all non-juvenile habitat trees for koala (i.e. a food tree of the *Eucalyptus*, *Corymbia*, *Melaleuca* or *Lophostemon* genera or a preferred shelter species such as *Angophora* species, with a height of more than four metres or a trunk with a circumference of more than 31.5 centimetres at 1.3 metres above the ground). This involved identifying and taking a GPS point at each non-juvenile habitat tree (or group of clustered trees), estimating the tree height and searching the base of the tree for koala scats as confirmation of recent koala activity.

Migratory Shorebird Assessment – Toondah Harbour and Weinam Creek Priority Development Areas

The migratory shorebird assessment was undertaken by BAAM for frc environmental on behalf of Walker in November 2014. The assessment combined two field surveys spaced several days apart with a review and assessment of survey data sourced from the Queensland Wader Study Group, a special interest group within Birds Queensland that monitors shorebird populations in Queensland and conducts regular shorebird surveys of parts of the Queensland coast that have large shorebird populations. A desktop review of published information was also undertaken to review migratory shorebird habitat requirements and sensitivity to habitat change and disturbance.

The field surveys were conducted in accordance with the survey guidelines outlined in the *EPBC Act Policy Statement 3.21: Significant Impact Guidelines for 36 Migratory Shorebird Species* (DEWHA 2009). Specifically, the surveys were conducted as close to the time of low tide as practicable and at a maximum of two hours either side of low tide. The surveys for roosting shorebirds were conducted as close to the time of high tide as practicable and at a maximum of two hours either side of high tide. The surveys were not undertaken during periods of high rainfall or strong winds or when activities that cause disturbance to the birds were taking place.

Toondah Harbour PDA – Ecological studies in support of works area determination (November 2014)

Surveys of habitats and associated flora and fauna were conducted from 5 to 6 November 2014 by frc environmental. Habitats were assessed visually and differences in habitat were marked using a handheld GPS. The GPS waypoints were also compared to recent aerial imagery and then mapped. Marine plant communities were classified according to the dominant species present and the relevant understorey or sub-dominant species present.

The marine plant communities were also qualitatively assessed for their relative value to aquatic ecology and fisheries. The availability of physical habitat for fauna, the amount of disturbance, the ponding of water and the relative proximity of each point to permanent water at low tide (to assess the likely frequency of tidal inundation) were also assessed.

Toondah Harbour and Weinam Creek Priority Development Area migratory shorebird survey results (July 2015)

BAAM has prepared this technical memorandum for Palaris on behalf of Walker for the purpose of providing a summary of the results of three summer season and one winter migratory shorebird surveys of the Toondah Harbour and Weinam Creek Priority Development Areas undertaken between January and June 2015.

The study approach combined a desktop review with field surveys of shorebirds utilising shoreline and intertidal habitats during each of the low tide and high tide phases of the tide cycle.

The desktop review combined an examination of aerial imagery for the area and a review of available information on shorebird use of the vicinity of the Toondah Harbour and Weinam Creek PDA areas, principally an earlier survey undertaken by BAAM October-November 2014 (BAAM 2014), to identify appropriate habitat areas to focus the field survey on.

The field surveys were undertaken by Dr Penn Lloyd (Principal Ecologist) between December 2014 and June 2015. The surveys for foraging shorebirds were conducted in accordance with the survey guidelines outlined in the Commonwealth's EPBC Act *Policy Statement 3.21: Significant Impact Guidelines for 36 Migratory Shorebird Species* (DEWHA 2009).


8.3 Attachments


| | | ✓ attached | Title of attachment(s) |
|---------------------|--|---------------|--|
| You must attach | figures, maps or aerial photographs showing the project locality (section 1) | ✓ | Attachment A: Regional Context (figure) |
| | GIS file delineating the boundary of the referral area (section 1) | ✓ | Attachment B: Local Context (figure) Attachment C: Land tenure (figure) Attachment D: MNES – Listed threatened species and ecological communities (figure) Attachment E: Listed migratory species (figure) Attachment F: Stormwater Drainage Plan (drawing) Attachment H: GIS files – Referral Area |
| | figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3) | ✓ | Attachments A - F |
| If relevant, attach | copies of any state or local government approvals and consent conditions (section 2.5) | N/A | |
| | copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6) | N/A | |
| | copies of any flora and fauna investigations and surveys (section 3) | ✓ | Attachment G1 - Expert advice in ecology (marine and terrestrial) and coastal processes for input to the preparation of a structure plan and development scheme for Toondah Harbour and Weinam Creek Priority Development Areas (frc environmental and BAAM Ecological Consultants, December 2013) Attachment G2 - Migratory Shorebird Assessment – Toondah Harbour and Weinam Creek Priority Development Areas (BAAM Ecological Consultants). Attachment G3 - Toondah Harbour PDA – Ecological studies in support of works area determination (frc environmental, November 2014) Attachment G4 - Toondah |

| | | |
|---|---|---|
| | | Harbour and Weinam Creek Priority Development Area migratory shorebird survey results (BAAM Ecological Consultants) |
| technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4) | ✓ | As above |
| report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3) | | |

9 Contacts, signatures and declarations

| | | |
|------------|---|--|
| | Project title: | Toondah Harbour Redevelopment Project |
| 9.1 | Person proposing to take action | |
| | 1. Name and Title: | Peter Saba General Manager – Queensland Developments |
| | 2. Organisation (if applicable): | Walker Group Holdings Pty Ltd |
| | 3. EPBC Referral Number (if known): | |
| | 4: ACN / ABN (if applicable): | 81 001 215 069 |
| | 5. Postal address | GPO Box 652 Brisbane QLD 4000 |
| | 6. Telephone: | 07 3007 7400 |
| | 7. Email: | peter.saba@walkercorp.com.au |
| | 8. Name of designated proponent (if not the same person at item 1 above and if applicable): | |
| | 9. ACN/ABN of designated proponent (if not the same person named at item 1 above): | |
| | I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am: | <input type="checkbox"/> an individual; OR <input type="checkbox"/> a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the <i>Income Tax Assessment Act 1997</i>); OR <input checked="" type="checkbox"/> not applicable. |
| | If you are small business entity you must provide the Date/Income Year that you became a small business entity: | |
| | I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on | <input checked="" type="checkbox"/> not applicable. |

| | | |
|--|---|--|
| | which the waiver is sought and the reasons why it should be made: | |
| | Declaration | I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence. I agree to be the proponent for this action. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity. |
| | Signature |  Date 24/11/15 |

| | | | |
|--|---------------------------|--|-----------------------|
| 9.2 Person preparing the referral information (if different from 8.1) | | | |
| | Name | Mark Barnett | |
| | Title | Senior Consultant | |
| | Organisation | AECOM Australia Pty Ltd | |
| | ACN / ABN (if applicable) | 20 093 846 925 | |
| | Postal address | PO Box 1307, Fortitude valley QLD 4006 | |
| | Telephone | 07 3553 2000 | |
| | Email | Mark.Barnett@aecom.com | |
| | Declaration | I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence. | |
| | Signature |  | Date 23 November 2015 |

REFERRAL CHECKLIST

HAVE YOU:

- ✓ Completed all required sections of the referral form?
- ✓ Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- ✓ Provided a map showing the location and approximate boundaries of the project area?
- ✓ Provided a map/plan showing the location of the action in relation to any matters of NES?
- ✓ Provided a digital file (preferably ArcGIS shapefile, refer to guidelines at [Attachment A](#)) delineating the boundaries of the referral area?
- ✓ Provided complete contact details and signed the form?
- ✓ Provided copies of any documents referenced in the referral form?
- ✓ Ensured that all attachments are less than three megabytes (3mb)?
- ✓ Sent the referral to the Department (electronic and hard copy preferred)?