

PORT OF AIRLIE MARINA DEVELOPMENT

Executive Summary

Introduction

This Supplementary EIS has been prepared to provide an assessment of the environmental, social and economic effects of a proposed development in Boathaven Bay, Airlie Beach. The development currently proposed follows on from several earlier proposals for a development at this site and has been designed to provide a vibrant and high quality development that complements and augments existing features of Airlie Beach while minimising adverse effects on the environment.

The proponent is Whitsunday Sailing Club in a joint venture with Windward AB Pty Ltd.

The Port of Airlie proposal has a number of benefits for the local and regional community. The project will contribute to the local, regional and state economy and generate direct and indirect employment as well as providing a facility that serves both local residents and tourists through provision of retail, accommodation, open space, transport and marine facilities.

Environmental impacts associated with the project relate largely to loss of seagrass, mangrove and intertidal mud flat habitat. During construction, there will be some noise impacts on nearby properties. Views from properties along Shute Harbour Road adjacent to the site will be altered by the development. Negative impacts on coastal processes and flows in the bay, generation of acid sulphate soils, water quality, air quality, traffic and transportation and the local real estate and retail markets are not expected as a result of the project. Environmental management, mitigation and compensation measures are proposed to minimise adverse impacts and compensate for loss of habitat.

Project Description

The Port of Airlie project site is located in Boathaven Bay at the eastern end of the tourist commercial and retail precinct of Airlie Beach. The project site lies within a 130ha Permit to Occupy (No.206577) over the seabed below the high water mark, issued by the then Queensland Department of Lands on 4 January 1996.

The proposed Port of Airlie integrates boating, marine and tourism facilities with a mix of residential and commercial developments. The main components of the development include:

- ❑ 240 berth marina;
- ❑ Passenger ferry terminal for inter-island ferries and tourist charters;
- ❑ Maritime Training Academy;
- ❑ Public boat ramp with 45 cars/trailer parks;
- ❑ Public transportation interchange tourist buses, local buses, taxis and pedestrians;
- ❑ A pedestrian village square linking the harbour to the existing commercial and tourist precinct of Airlie Beach;
- ❑ Public open space including landscaped parklands, a beach, harbour promenades and boardwalks around the marina foreshore;
- ❑ A footpath/cycleway linked with the existing town centre

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- ❑ 4,400m² of marina retail and commercial space;
- ❑ A 170-bed apartment hotel;
- ❑ Approximately 300-350 serviced tourist apartments and residential apartments;
- ❑ 16 villas and 7 detached residences;
- ❑ A 3ha reclaimed area for disposal of spoil from the entrance channel dredging and soft surface mud from the excavation of the marina basin. This area is intended for future use; and
- ❑ A 1.5ha area for disposal of dredged spoil for maintenance dredging operations.

The marina basin will have an area of approximately 12ha with a minimum water depth of 3.5m at Lowest Astronomical Tide (LAT). The height of land areas and buildings is based on the 1 in 100 year and 1 in 250 year storm surge levels, respectively.

The project will be developed on land entirely reclaimed from the intertidal zone below the high water mark. The land and marina basin will be entirely enclosed with sheet piles during construction such that all earthworks take place under dry conditions. Soft surface sediments will be placed in a spoil disposal area and deeper sediments will be used for land reclamation. Water from the site will be treated to remove suspended solids and discharged to Boathaven Bay. It is expected that most fill material and sand for the beach will be obtained on-site. Some rock and fill will need to be transported in to the site.

Following completion of construction, sheet pile surrounding land areas will be left in place and the marina basin opened to the sea. Services, landscaping, public facilities and other site features will be installed immediately after reclamation is complete and then buildings and other facilities on freehold land will be completed over a 5-year period.

The access channel will be dredged using a cutter suction dredge. Dredge spoil and tailwater will be placed in the spoil disposal area and water treated to remove suspended solids prior to discharge to Boathaven Bay. Maintenance dredging is expected to take place every 10 to 15 years and a dedicated maintenance dredge spoil area will be retained.

The proposal is expected to provide 800 person years of employment during construction and about 300 full time equivalent jobs during operation.

Justification and Alternatives

The proposed Port of Airlie development is intended to meet demonstrated demand for marina berths, boat repair maintenance facilities and passenger handling facilities as well land for residential and commercial development.

The final location of the development corresponds to a recommendation made in the Marina Demand Study commissioned by Whitsunday Region Interdepartmental Committee, Department of State Development and Department of Tourism, Racing and Fair Trading (2001) after consideration of seven alternative sites. This study also identified that demand for mainland marina berths in the Whitsunday Area (Bowen to Mackay) is quite high and there is currently a shortage of berths. In addition, Whitsunday Sailing Club has received 880 inquiries for berths at the marina.

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In addition to considering alternative sites, alternative site layout, access, spoil disposal options and master planning options were considered. The Port of Airlie development presented in this EIS is an outcome of these considerations and is intended to maximise social and economic benefits while minimising and managing environmental impacts.

The “no project” option would preclude a number of advantages of the Port of Airlie, including:

- ❑ Significant economic stimulation and generation of direct and indirect employment;
- ❑ High quality tourist, residential, commercial and public open space that would lift the standard of development in Airlie Beach and provide a new focus for activities
- ❑ New, state of the art passenger facilities for boat and long distance bus passengers
- ❑ Provision of a controlled environment for boat repair activities and also facilities for sewage pump out of vessels; and
- ❑ A maritime training academy.

Legislation and Planning Issues

The proposal requires environmental impact assessment under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* as well as the provisions of the Queensland *State Development and Public Works Organisation Act 1971*. This Supplementary EIS is prepared to satisfy provisions of both acts.

This Supplementary EIS will be made available for public comments and comments are expected to be received from State and Commonwealth government agencies as well as community groups and individuals. The proponent will then be required to address issues raised in these comments. Following completion of this process, the Coordinator-General (COG) of the Department of State Development issues a report approving or rejecting the proposal. If the proposal is approved, the COG’s report will contain a range of conditions which will be applied to the project.

Once the land has been created, it will be included in the planning scheme with appropriate zoning to control subsequent development of the land in accordance with the master plan.

A range of other approvals will be required for the project including:

- ❑ Environmental Authority for Environmentally Relevant Activities (ERAs)
- ❑ Permit to work on tidal waters (s236 of *Transport Infrastructure Act 1994*)
- ❑ Approval to reclaim land below high water mark (s91 *Harbours Act 1955*)
- ❑ Marine Plant Protection Permit (s51 *Fisheries Act 1994*)
- ❑ Dredging Permit (*Marine Land Dredging By-laws 1987*)
- ❑ Works in Erosion Prone Areas (*Beach Protection Act 1968*)
- ❑ Permit to Interfere with sand, gravel, stone, clay or earth on unoccupied Crown Land (s 47 *Beach Protection Act 1968*)

- ❑ Approval from Council for subdividing reclaimed land (s45 *Beach Protection Act 1968*)
- ❑ Approval from Council regarding the regulation and use of:
 - harbours for small vessels, in or over tidal waters; and

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- jetties, headwaters and swamps in or over tidal waters

The conditions set out in the COG's report become the conditions of these permits and approvals. Deeds of agreement will be negotiated with various agencies with respect to provision of infrastructure.

The Port of Airlie site is identified in the Whitsunday Shire Council Strategic Plan as a site for a Mainland Urban Tourist Facility. The proposal was assessed against the Strategic Plan and Planning Scheme as well as the Whitsunday Hinterland and Mackay Regional Plan, the Whitsunday Tourism Strategy, Vision Airlie Strategy and Draft Whitsunday Retail Strategy. Provided that environmental management controls documented in this Supplementary EIS are adhered to, the proposal is consistent with the intent of each of these plans and strategies.

Coastal Processes

Boathaven Bay is a shallow, narrow bay fronting onto the broader, more open waters of Pioneer Bay. Campbells Creek flows into the bay and much of the bay is exposed at low tide. Sediments within the bay are very fine silts and muds. Prevailing winds are from the south east, however storm winds tend to be northerly.

Predicted 100 year storm surge levels for Airlie Beach are 2.6m above AHD while significant wave heights (1 in 100 year occurrence) in Boathaven Bay are calculated to be 2.75m high. The orientation of the breakwater beach was determined so that maximum dissipation of waves would occur without causing loss of sand from the beach. Armour Rock will be used to protect headlands from erosion and damage. The Port of Airlie will need to be incorporated into the Whitsunday Shire Counter Disaster Plan to ensure appropriate planning and response to severe storm events.

Siltation rates in the bay were estimated to be around 3mm per year, with an additional 1mm during a cyclone event. The implication of this is that maintenance dredging of the marina and access channel will be required to take place no less than every 10-15 years.

The development will result in some changes in water flows in Boathaven Bay as tidal flows "bend" in and out of the east facing marina mouth before flowing out of the north facing opening to the bay. However, this effect is expected to be localised and overall, flows and sediment transportation within Boathaven Bay and Pioneer Bay are not expected to be affected by the Port of Airlie.

Soils and Sediments

Geology and soils of Boathaven Bay consist of:

- ❑ Holocene silts and clays ranging in depth from about 2.0m near the shore, up to 7.5m further out from the shore;
- ❑ a relatively shallow layer of Pleistocene material underlies the Holocene deposits; and
- ❑ underlying residual soils and weathered rock.

Sediments of the bay contain small amounts of tributyl tin at some locations, but are otherwise not considered contaminated.

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The potential to uncover acid sulphate soils always exists when conducting excavations in coastal areas. Limited testing of sediments undertaken to date indicates a low occurrence of acid sulphate soils and also indicates that high proportions of calcium carbonate exist within the sediments which would act to neutralise acidic sediments. More detailed testing for acid sulphate soils in accordance with QASSIT requirements must be undertaken prior to commencement of construction. Any acid sulphate soils identified must be managed in accordance with an Acid Sulphate Soil Management Plan, a draft of which is included with this Supplementary EIS.

Water Quality

The existing water quality in Boathaven Bay is good and is generally within the range to be expected for a coastal bay with a moderate level of development in the catchment. The sediments in Boathaven Bay have low levels of heavy metals although slightly elevated levels were present in Campbell Creek. Nutrient levels have not been determined.

Potential impacts from the development relate primarily to sediment and erosion processes, which can increase turbidity and suspended solids levels in Boathaven Bay. The potential for high suspended solids loads and turbidity to occur in the receiving waters of Boathaven Bay will be minimised during marina construction through the implementation of dry basin construction techniques, best practice dredging using a cutter suction dredge, a bunded dredge spoil area, sedimentation basins and a low flow channel system to allow settlement of sediments prior to discharge. Water will discharge via dissipators to the mangrove fringe which is to be retained between Shute Harbour Road and the development. This will provide further filtering of the waters.

Capital dredging of the approximately 1km-long navigation channel will occur over about two months. The turbidity plume from the capital dredging is predicted to be limited in extent, with the plume travelling northward and westward and not extending to Mandalay Point or eastern parts of Boathaven Bay. Impact from liberation of metals in the sediments is not expected to be significant because metal concentrations are low.

Water quality in the operating marina is not expected to be impacted significantly. Management strategies will be employed to minimise the potential for fuel spills near the supervised refuelling berths and sewage and sullage pumpout facilities will be provided to that these contaminants are not deposited into the marina waters or Boathaven Bay. Significant tidal flushing of the marina is predicted to occur, so good water quality is expected to be maintained in the marina.

Flora and Fauna

Boathaven Bay and the wetlands associated with Campbell Creek contain several mangrove community types. The mangrove communities in the proposed marina development area that would need to be removed include fringed mixed species open to closed dominated by *Rhizophora stylosa*. Patches of saltmarsh vegetation occur along the landward edge of the mangroves. Mangrove species recorded from Boathaven Bay are typical of, and common within the Whitsunday region.

No plant species of conservation significance occurs within the proposed marina development area. Similarly, no significant regional ecosystems or endangered

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ecological communities occur in the marina development area. There are no Ramsar wetlands or Nationally Important Wetlands within the potential impact area of the marina.

Bird species in the area are diverse, comprising a mixture of terrestrial bird species and wader birds. One threatened bird species, the Eastern Curlew (*Numenius madagascariensis*), has been recorded from the intertidal and zone and mangroves. It is possible that the Beach Stone-thick knee (*Esacus neglectus*), may also occur nearby. Several significant migratory bird species have been recorded from the Boathaven Bay area, however these are not restricted to the Boathaven Bay area or the Whitsunday region.

Three land-based mammal species have been recorded from in the vicinity of the proposed marina development area. None of these is threatened species. Comprehensive surveys for the threatened Water mouse (*Xeromys myoides*) did not result in capture. Evaluation of the habitat in the vicinity of the marina leads to the conclusion that it is not suitable habitat for the water mouse and that it is unlikely to occur there.

A wide variety of fish species occur in the Whitsunday region. As with other bays, Boathaven Bay provides habitat for fish and is locally believed to be a nursery area for fish.

The soft sediments of Boathaven Bay are expected to provide habitat for a diverse range of benthic macrofauna similar to that found in other bays in the region. Patches of coral occur within Boathaven Bay, specifically near the Whitsunday Sailing Club and at Mandalay Point.

A number of significant turtle species including the Green turtle, Loggerhead turtle, Flatback turtle, Leathery turtle and Hawksbill turtle have been recorded from Boathaven Bay or could occur in it. Many of these are protected under State and Commonwealth legislation because of their threatened species status or migratory nature. Dugong, Saltwater crocodiles and several dolphin species have also been noted through anecdotal sightings in the area.

Construction impacts largely relate to the clearing of mangrove and intertidal habitats, which may locally reduce the availability of resting and foraging opportunities for birds, reduce feeding opportunities for some turtles and Dugong and reduce fish habitats.

Development of the Port of Airlie will result in the direct loss of:

- ❑ Approximately 1.2 ha of fringing mangrove forest comprising approximately 2% of the remaining mangroves in Boathaven Bay would be lost, or less than 0.1% of the mangroves in the Whitsunday region.
- ❑ approximately 8 ha of intertidal and shallow subtidal seagrass meadows, comprising 40% of the seagrasses in Boathaven Bay, 15% of the seagrasses in Pioneer Bay and less than 1% of the seagrasses in the Whitsunday region.
- ❑ approximately 8 ha of unvegetated soft sediment intertidal and shallow subtidal lands, comprising less than 0.1% of this habitat in the region.

Direct impacts on marine flora and fauna relate primarily to habitat loss.

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Of the bird species recorded from the site impact of the loss of mangrove and intertidal area land and vegetation is likely to be greatest on several migratory wader bird species (e.g. Bar-tailed godwit, Whimbrel, Eastern curlew, Little curlew), which have a preference for this type of habitat. The loss is localised however, and not expected to be significant as these birds are not restricted to the area and are able to utilise other intertidal areas in the Whitsunday region and along the Queensland coast.

The loss of seagrass is expected to locally reduce feeding opportunities for green turtles and Dugong, which prefer the locally common *Halodule* and *Halophila* seagrass species. Seagrass meadows and mangroves also provide important nursery habitat for a range of commercially important finfish and crustacean species. Mitigatory and compensatory measures will be undertaken to result in a “no nett loss” of these important marine habitats.

Indirect construction impacts to marine flora and fauna may be through increase sedimentation and turbidity levels, potential changes to the hydrodynamics of Boathaven Bay, nutrient release through substrate disturbance, spills of hydrocarbons and other contaminants and increase in noise and light levels. The proposed construction techniques, environmental management and mitigation strategies will be implemented to minimise the potential and extent of many of these potential impacts.

Similarly, management plans are proposed that will minimise the potential for impacts due to the operation of the marina development. Strategies are proposed to reduce potential impacts from boat strikes on turtles and Dugong near the marina and hydrocarbon contamination from fuel spills and the impact of artificial lighting on turtles and wader birds. Operation of the marina provides opportunities to improve the environment through removing impacts associated with swing moorings and uncontrolled casual boat maintenance and repairs.

Potential impacts on the World Heritage Values of the Great Barrier Reef World Heritage Area are not expected to be significant, apart from the loss of 8.5 ha of intertidal mudflat, 8 ha of seagrass meadows and 1.2 ha of mangroves. This may have an minor impact on a regional scale, particularly regarding seagrasses and associated fauna but is unlikely to affect biodiversity or species viability in the region.

Air Quality and Noise

The climate of Airlie Beach is tropical, with a wet season extending from December to March, during which time cyclonic risk is also higher. Ambient air quality in the vicinity of the project is expected to be very good due to the lack of any significant sources of air pollution in the area.

Impacts on air quality from the development are expected to be extremely localised and relate to dust, vehicle emissions and volatile hydrocarbon emissions. None of these is likely to have any impact on humans or other species in the area.

Background noise in the vicinity of the project is dominated by traffic on Shute Harbour Road. Construction noise is likely to result in increases in noise levels in the area surrounding the project site. In particular, receivers located within 400m of pile driving activities will be disturbed for up to 5 months, although the level of disturbance will vary with the location within the site at which pile driving is taking

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place. The key mitigation measures for this disturbance are to conduct pile driving during daytime hours only and avoid work on weekends.

Other construction activities may result in lesser increases in background noise over the 9-month construction period. Regular maintenance of construction vehicles and equipment will minimise noise emissions and work hours will also be restricted.

During operation, works being carried out at the marina facilities area may also cause low levels of noise disturbance due to the use of power tools such as grinders. Some shielding will be provided by buildings and noisy activities will be restricted to normal working hours. In future, if Stage 2 of the proposed marina is approved, this facility and the adjacent boat ramp will be relocated.

Vibration effects are not expected to be significant.

Waste Management

Most wastes generated during construction are able to be reused on site or at other locations. Small volumes of vegetation waste, packaging, sewage and food wastes will require disposal to the Whitsunday Shire Council landfill while waste oil can be recycled.

During operation, most wastes generated will be typical residential wastes and can also be disposed of to the Whitsunday Shire Council landfill. Small amounts of oily waste, inert wastes, metals and paint scrapings will be generated from the marina facilities area. Waste oil and metal scraps can be recycled and the remainder of these wastes can be disposed of to the Whitsunday Shire Council landfill.

The Whitsunday Shire Council landfill has adequate capacity and is licenced to accept wastes requiring disposal during construction and operation. Domestic waste recycling programs in Whitsunday Shire will allow recycling of some wastes during operation.

A dedicated maintenance dredge spoil area will be preserved in the spoil disposal area for ongoing maintenance dredging spoil. Ultimately, this and spoil generated during construction will be utilised for land reclamation at the site or as fill in other locations.

Traffic and Transport

The main access to the Port of Airlie will be via a new intersection on Shute Harbour Road, midway between Hermitage Drive and Coconut Grove, with an ancillary access to the marina and breakwater via Coconut Grove. Several alternatives were considered, however this option allowed the safest and most efficient traffic conditions on external and internal road networks and is preferred by Whitsunday Shire Council.

Traffic modelling was undertaken to evaluate the effect of the proposal on the external road network. The main impacts were that the need to upgrade Shute Harbour Road from 2 lanes to 4 lanes would be brought forward by one to two years to accommodate increased traffic volumes generated by the development and a roundabout would also be needed at the intersection of Shute Harbour Road and Coconut Grove. With this upgrade however, the road network can continue to function without unacceptable delays or safety risks to drivers.

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Pedestrians, cyclists and people with disabilities are expected to want to access the site by crossing Coconut Grove into the village square and via Shute Harbour Road to the transport interchange area. Pedestrian crossings with traffic signals are likely to be required once Shute Harbour Road is widened, otherwise, staged pedestrian crossings will be provided with central safety islands or incorporated into roundabouts.

Infrastructure and Facilities

The Port of Airlie development will not impact on any existing boating infrastructure with the exception of some moorings that will have to be removed or relocated. The ferry terminal, marina, marina facilities area and boat ramp provided at Port of Airlie will augment existing boating facilities in the area.

Whitsunday Shire Council will supply water to the Port of Airlie and will remove wastewater to the Cannonvale Sewage Treatment Plant for treatment and discharge. The proponent will contribute headworks charges to allow any necessary upgrades in the system and this will assist Whitsunday Shire Council in financing the required upgrade of the Cannonvale Sewage Treatment Plant.

Electricity and telecommunications services can be provided to the site without compromising existing users of these services.

Social and Consultation

The Port of Airlie will result in an estimated population increase of around 500 people, around 40% of which will be permanent residents, over a 5-year period. It will also increase the housing stock by 6% over 5 years. During construction, there might also be up to 120 external workers at any one time. Housing for construction workers will be arranged by contractors by placing construction workers within the Whitsunday Shire community.

The Port of Airlie is also expected to provide up to 300 full time equivalent jobs once it is fully developed. Any influx in employees as well as residential population will be staged over 5 years and housing supply and community services will be able to adapt to the increase gradually. The increase is not excessive given Airlie Beach's current annual population growth rate of over 2%.

Social well being may increase as a result of the project due to increased employment opportunities, increased spending in the local economy, vocational education opportunities at the maritime academy, open space and provision of high quality housing and commercial facilities.

Overall, the response to the project from the community has been extremely positive, with most people consulted valuing the economic and social benefits of the project. Some concerns have been raised in relation to environmental impacts, impacts on views and the appropriateness of medium rise buildings (up to 6 stories) on the foreshore. In response to issues raised during consultation, an original proposal for a 10 storey tower was modified to 6 stories.

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Economic

The project involves a construction cost of \$125 million and will produce annual revenues of \$50 million, once operational. Contributions to the State, regional and local economies are expected as follows:

- ❑ At the State level, \$230 million during the construction phase and \$125 million per annum during the operational phase. Indirect employment of 1,800 person years during the construction phase and 750 full-time equivalent employees operationally;
- ❑ At the regional level, \$170 million during the construction phase and \$100 million per annum during the operational phase. Indirect employment of 1,350 person years during the construction phase and 600 full-time equivalent employees during the operational phase; and
- ❑ At the local level \$140 million during the construction phase and \$90 million per annum during the operational phase. Indirect employment of 1,100 person years during construction and 530 full-time equivalent employees operationally.

The project is not expected to have any adverse economic effects on real estate markets or tourism, commercial and business enterprises or fisheries.

Visual

The Port of Airlie has been designed to provide an extension to the town of Airlie Beach, providing a visual connection with the main street as well as a landmark harbour village precinct. Design criteria for buildings on the site will require compatibility with the tropical coastal location and will aim to create a sense of lightness and naturalness as well as a vibrant, festive atmosphere.

Properties which currently have views across Boathaven Bay to Mandalay Point will view the Port of Airlie in the foreground, however views to Mandalay Point and the water will not be completely interrupted. Building design will incorporate the need to have pleasing aspects when viewed from Shute Harbour Road and landscaping will be used to enhance aspects across the site. The backdrop of the Conway Ranges dwarfs the site when viewed from the ocean.

The building heights and building composition specified in the master plan reflect the current scenery of the area, particularly the steep hills of the Conway Range as well as the concept of creating a harbour-focused atmosphere.

During construction, viewers will see exposed dirt and building activities. Retention of mangroves along some sections of Shute Harbour Road and early landscaping will minimise impacts of the construction site.

ESD and Cumulative Impacts

The proposal is compatible with the principles, elements and objectives of the National Strategy for Ecologically Sustainable Development. The proposal is also not expected to detract from the values for which the Great Barrier Reef World Heritage Area was prescribed, provided that the mitigation measures outlined in the EIS are implemented.

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While the project results in a direct loss of marine and intertidal habitat, it is not expected to result in any adverse effects on biodiversity in the area or on viability of individual species. Large areas of pristine examples of the habitats affected by the Port of Airlie are preserved within the Great Barrier Reef Marine Park and inaccessible areas of the mainland coast.

The project will result in many positive economic and social benefits and its location has been selected so as to maximise these benefits while minimising environmental loss and damage.

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