Mission Beach Safe Boating Infrastructure Project Presentation – Mission Beach – 29 November 2013

To improve the safety of boating conditions within Boat Bay

Introduction, The Hon. Andrew Cripps MP, Member for Hinchinbrook and Minister for Natural Resources and Mines

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Major projects Office DSDIP
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Aurecon Project Team
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- Kim Walker, Environmental Planner
Agenda

- Multi Criteria Analysis (MCA)
- Components investigated
- Design solutions
- Environmental and planning process
- Questions
Multi Criteria Analysis (MCA)

Purpose
- Objective comparison of alternative solutions

Guiding principles:
- Separation of commercial and recreational facilities
- Improve tranquillity conditions
- Improve operational window at the jetty
- Minimise environmental impacts
- Safety enhancement of existing facilities
- Berthing facilities only, no moorings, no cyclone shelter
- Within available funding budget
- 5 ranking criteria
  - Impact
  - Effectiveness
  - Social values
  - Planning process
  - Economics
Design components

Clump Point Jetty (1/2)
Design components

Clump Point Jetty (2/2)
Design components

Clump Point Boat Ramp (1/3)
Design components

Clump Point Boat Ramp (2/3)
Design components

Clump Point Boat Ramp (3/3)
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Multi Criteria Analysis

Methodology

- Selection of design components (20 in total)
- Ranking and scoring along 5 themes
  - Environmental impacts
  - Effectiveness
  - Social value
  - Government process
  - Economics
- Grouping of design ‘options’ (19 options)
- Stakeholder workshop

Results

- Key messages
  - Dredging in marine park is undesirable
  - Reclamation may trigger change to marine park boundaries
  - Components with larger footprint rank poorly
  - Components which utilise existing facilities rank positively
  - Minimising lifecycle costs ranks positively

report link

Clump Point Boat Ramp

**Design objective**

*To upgrade existing facilities by enhancing safety and tranquility conditions, and provide access for commercial operators when conditions at the jetty are unsafe.*

**Elements**

- Third boat ramp lane and approach reclamation
- Pontoon and gangway upgrade
- Breakwater and seawall upgrades
- Flushing/drainage system
- Car parking (x2)

**Design development**

- Pontoon geometry
- Traffic safety/compliance
- 200 year cyclonic loading and 50 year design life on civil works
- 20 year design life for ramp, pontoon
Typical cross sections

Breakwater crown - overtopping control

Reclamation edge – runoff and overtopping drain
Improved drainage
Car park extensions

“D” to “C” DTMR category
- Increase peak capacity from 15 CTU to 45 CTU

Car park 1 – 15 CTU
- Reclaimed
- Edge overtopping catch drain

Car park 2 – 15 CTU + overflow
- Road reserve
- Turning area TBC
Clump Point Jetty

**Design objective**

*To improve the operational window for commercial operators, whilst minimising potential impacts on the marine environment and coastal processes*

**Elements**

- Disabled access
- ‘Overtopping’ breakwater
  - Improve substantially operational wave climate at the jetty head
  - Minimise visual impact
  - Mitigate beach impact

**Design development**

- Geotechnical investigations
- 3D Physical testing, including movable bed
- Marine surveys
- Numerical modelling
Jetty Disabled Access Ramp - concept design

4.63m LAT

ramp

Landing

Landing/boarding
Overtopping breakwater

Standard breakwater rendering

Overtopping breakwater rendering

Close up

Close up

Pontoon
Environment and cultural heritage

**Protected areas**
- Great Barrier Reef Marine Park, National and World Heritage Area
- Cultural heritage sites and artefacts

**Ecology**
- Remnant vegetation
- Marine flora/fauna
- Threatened species and habitat (e.g. Cassowary)

**Studies**
- Baseline marine survey
- Terrestrial ecology survey

**Design mitigation**
- Overtopping breakwater designed to mitigate shoreline impacts (e.g. tombolo, sediment build-up)
- Physical modelling and geophysical testing
Approvals process

EPBC Referral – Boat Ramp

Controlled Action Decision

Marine Park Permit

Decision

SPA Applications
- Tidal Works/Prescribed Tidal Works
- Marine Plants
- Vegetation Clearing

Decision

NC Act
- Clearing Permit

Decision

Controlled Action Decision

Construction
Project milestones

Final design
- Boat Ramp – Late December 2013
- Jetty – February 2014

Approvals Applications
- EPBC Referral to Department of Environment – mid December 2013
- Marine Park Permit application – GBRMPA – March 2014
- Development Approvals application – Cassowary Coast Regional Council – April 2014

Envisaged construction
- Commencement after Easter 2014
- Complete - December 2014