

Management of Assets & Protecting Marine Life : Finding the Balance



Belinda Atkins
Manager Environment and Services



Background

- Marine structures/assets, including Balmoral Baths and Clifton Gardens Jetty, seawalls, and beaches.
- Asset Management Program – condition inspections
- Environmental Protection – Intertidal / Marine Biodiversity
- Community safety and access
- Community Perceptions / Expectations



Finding the Balance

Cost VS Public Safety/Access
VS Environment

- Which takes priority?
- How is it decided?
- How will the outcomes be achieved?

The challenge is in finding the balance between economic/social and environmental factors.



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What Has Been Done

Beach Cleaning Contract	2004 - 2005
Chinamans Beach Monitoring Program	
Seawall Works / Redesign	2003 & 2009/10
Habitat and salt marsh	
Environmental Criteria for works on marine structures	2008 - 2009
Environmental Impact Assessment Manual	
Creek Restoration Works	2010
Habitat – Biodiversity outcome	2008 - 2013
Jetty Refurbishment – Balmoral & Clifton Gardens	
Replacement of Shark Nets	



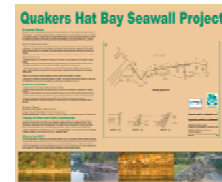
Chinamans Beach – Contract Management

- Chinamans Beach Monitoring Program - Hand raking of Chinamans Beach → Contract Conditions



Seawall Works

- Quakers Hat Bay / Pearl Bay Seawalls – redesigned in a boulder field design in collaboration with CRC on Ecological Impacts of Coastal Cities
- Improve condition of the wall, prevent erosion
- Provide Habitat for Intertidal organisms
- Introduced Salt Marsh species
- Method = reduced costs



Seawall Design - Habitat

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Environmental Criteria Assessment

- 2008 – Environmental criteria built into works on marine structures
 - EMP required
 - No anchoring on sea grass beds
 - Inspect vessels/equipment for *Caulerpa taxifolia*
 - Relocate organisms from marine structures as required
 - Specific method for shark net removal /maintenance
 - Preference for use of non-hazardous chemicals
 - Measures in place to minimise risk of pollution incident, turbidity.
- 2009 – Environmental Impact Assessment Manual completed

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Creek Restoration

- Rock armoring of creek lines
- Formalising storm water flows
- Reducing erosion – bank stabilisation
- Improving bushland – reducing weeds / nutrients
- Biodiversity improvements – frog ponds, creek planting

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Jetty Refurbishment

- Balmoral Baths work resulted in over 20 pile replacements, over 1000m2 of decking replacement and painting and upgrading of the hand railing
- Clifton Gardens required handrail repair, a complete rebuild of the jetty head and over 20 pile replacements
- Both nets have been repaired and replaced over time
- Protocols employed during construction to reduce marine impact on the net

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Marine Life on and within the Jetty/Baths Structure


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Marine Life on and within the Jetty/Baths Structure

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Methodology

- Background research - best practice
- Consultation with Relevant Stakeholders/Experts
- Commissioning of a Biodiversity Survey
- Environmental Impact Assessment
- Adoption of sustainable methods/criteria
- Contractors required to provide an Environmental Management Plan
- Regular site visits prior – during - after works
- Ongoing Monitoring & Education Program





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Outcomes

- Improved condition of Assets
- Accessibility and public safety retained and improved
- Refurbishment in keeping with heritage features
- Stringent environmental controls minimised impacts of works on the marine environment
- In some cases - reduced costs
- Outcomes achieved through collaboration
- Improved environmental protection and enhanced biodiversity outcomes



