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SHUTE HARBOUR
MARINA

Marina Site Based Management Plan

31 July 2008
Job No. 7800/41

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Document Control

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SHUTE HARBOUR MARINA RESORT

MARINA SITE BASED MANAGEMENT PLAN

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EXECUTIVE SUMMARY

Shute Harbour Marina Development Pty Ltd (the Proponent) proposes to construct the Shute Harbour Marina Resort (SHMR); a marina complex incorporating residential, tourism and commercial land uses at Shute Harbour in North Queensland.

An Environmental Impact Statement (EIS) is required by the Queensland Coordinator General for the proposed SHMR and as such, will form a basis for the Local, State and Federal approval decision making process. Detailed technical studies and consultations with the community, as well as government agencies have been undertaken to ensure the SHMR is operated in a manner that achieves balanced environmental, social and economic benefits.

Therefore the purpose of this Marina Site Based Management Plan (Marina SBMP) is to demonstrate the environmental commitment by the Proponent to carry out their activities in accordance with a structured program that:

- sets the environmental objectives or standards to be achieved over time;
- identifies the potential environmental harm and extraordinary factors that may cause environmental harm resulting from routine operations and establishes and documents measures to avoid and/or manage this harm as far as practicable;
- ensure all persons carrying out the activity are aware of environmental risks, and are trained in the measures and contingency plans to deal with them;
- implements monitoring of environmental performance to ensure the effectiveness of the measures and contingency plans;
- assists the communication of environmental information throughout the organisation and to the administering authorities; and
- provides for continual improvement.

It is concluded that any environmental impacts associated with the operation of the SHMR can be adequately controlled by the implementation of the mitigation and management procedures described in this Marina SBMP.

1. INTRODUCTION

Shute Harbour Marina Development Pty Ltd (the Proponent) intends to develop a marina complex incorporating residential, tourism and commercial uses at Shute Harbour in North Queensland, on leasehold land described as Lot 2 on Plan SP117389 and adjacent seabed where a permit to occupy has been granted (the project area).

The proposed Shute Harbour Marina Resort (SHMR) includes:

- reclaiming tidal land for the purposes of constructing a commercial, tourism and managed resort accommodation precinct (including internal roads and infrastructure) and supplementary 3 storey car park;
- construction of a solid breakwater;
- dredging of the marina basin to - 5.2 metres AHD to accommodate a 669 berth marina;
- dredging of the access channel into the proposed marina; and
- operation of the marina complex.

Figure 1 provides an illustration of the development layout.

The commercial and tourism precinct will incorporate a four star tourism resort, retail, marina amenities, car park, and landscaped open space on reclaimed land in the north and north-eastern portion of the project area. The residential precinct consists of 117 lots on reclaimed land and an isthmus projecting into the harbour.

The marina will consist of floating pontoons supported by driven piles and will include a fuel dock and sewage pump-out facility.

Civil engineering works will occur over 2 years and will include the following steps, which will be managed under a construction environmental management plan:

- clearing of mangrove vegetation;
- construction of a stormwater diversion channel;
- reclaiming land using revetment walls;
- piling works;
- excavation and dredging of Marina Basin to a depth of RL - 5.2m using a both wet and dry dredging;
- marina fit out;
- infrastructure works including road works and services; and
- building works.

Ongoing maintenance dredging of the marina and access channel will be required approximately every 5-7 years. Spoil from maintenance dredging will be dewatered and dried on the landscaped open space area.

The Queensland Coordinator General has declared the SHMR a significant project which requires an Environmental Impact Statement (EIS) in accordance with Part 4 of the *State Development and Public Works Organisation Act 1971*. The Terms of Reference has been issued for the EIS. The EIS will form the basis of Local, State and Federal approvals for the project. In the event of a contradiction between management requirements stated by this SBMP and any management requirements of relevant Approvals, the requirements of the Approvals shall prevail and this SBMP shall be updated.

This Marina Site Based Management Plan (Marina SBMP) relates to the operation of the environmentally relevant activities (ERAs) associated with the development proposal identified in Section 1.2 below. This SBMP will be presented as part of the EIS.

The Marina SBMP has been developed to comply with legislative requirements including the **general environmental duty** that requires persons to take all reasonable and practicable measures to prevent or minimise environmental harm when carrying out activities to which this SBMP relates, and the recommendations of the Marina Industries Association of Australia (MIAA) 'Clean Marinas' accreditation programme.

Regardless of this legislation, pollution prevention is an important economic and environmental concern for the Proponent at its fuel wharf, sewerage pump out and marine facilities located within the Great Barrier Reef World Heritage Area, Great Barrier Reef Coast Marine Park and adjacent to the Great Barrier Reef Marine Park and Conway National Park.

It is acknowledged by the Operator, and its customers that a sound environmental policy will contribute to the competitive strength and benefit the customers, tenants, and employees by enhancing the overall wellbeing and economic health of the marina.

Therefore the purpose of this Marina SBMP is to demonstrate the environmental commitment by the Proponent to carry out their activities in accordance with a structured program that:

- sets the environmental objectives or standards to be achieved over time;
- identifies the potential environmental harm and extraordinary factors that may cause environmental harm resulting from routine operations and establishes and documents measures to avoid and/or manage this harm as far as practicable;
- ensure all persons carrying out the activity are aware of environmental risks, and are trained in the measures and contingency plans to deal with them;
- implements monitoring of environmental performance to ensure the effectiveness of the measures and contingency plans;
- assists the communication of environmental information throughout the organisation and to the administering authorities; and
- provides for continual improvement.

It is anticipated this marina SBMP will address information requirements by the Whitsunday Regional Council (Council) and the Environmental Protection Agency (EPA) in the development approval process.

This Marina SBMP is a dynamic document and will be continually reviewed with any relevant conditions imposed by the approval process and auditing system.

1.1 Operator Details

Shute Harbour Marina Resort will be operated by Shute Harbour Marina Development Pty Ltd or an entity created or chosen by Port Binnli Pty Ltd. Shute Harbour Marina Development Pty Ltd owns a 50% share of SHMR and has substantial experience in marina design, construction and operation.

Port Binnli Pty Ltd is an Australian Priority Company, Limited by Shares with ABN 99 062 169 751.

The Registered Office of Port Binnli Pty Ltd is 292 Water Street, Spring Hill, Queensland 4004.

Port Binnli Pty Ltd is a fully Queensland owned company incorporated in 1993 to develop a marina precinct at Raby Bay in Cleveland. The precinct was successfully completed in 1997/1998 and in the last 14 years Port Binnli has grown significantly and is now a multi-million dollar enterprise with multiple projects throughout Queensland.

Port Binnli designs, builds, owns and operates marina facilities, waterfront residential and commercial precincts. The company specialises in mixed-use precincts that bring socio-economic benefits to the local community.

Port Binnli is a company with vision. Property development and management lie at the heart of it's business. Succeeding with challenging and demanding environments has become a speciality.

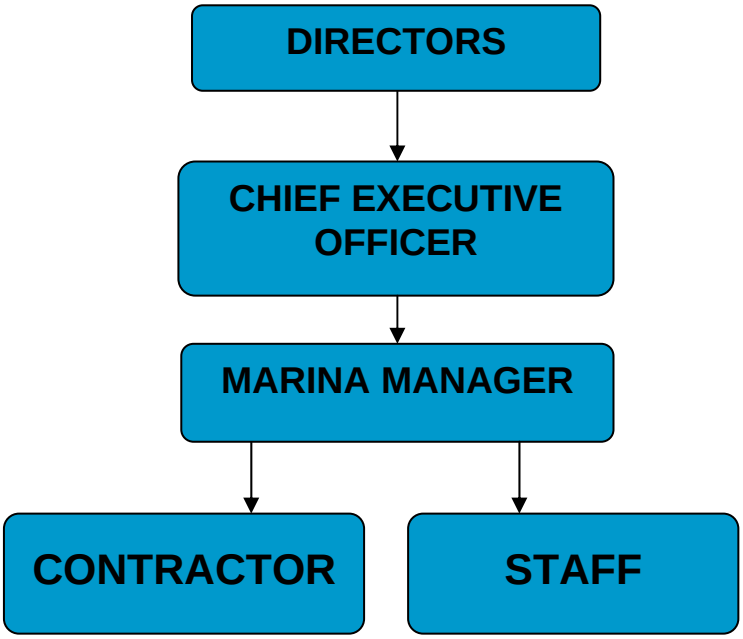
It's largest project in Queensland was the award-winning Mackay Marina Village. The Mackay Marina Village is a major marina, residential, community, recreation and tourism development located on the foreshore at Mackay in Queensland's North. The precinct features extensive public access and walkways throughout. The incorporation of parkland areas is an integral part of the development.

Since the Mackay Marina Village project began in 1998, almost 1,500 people have worked on site to construct the precinct. The project has generated over 600 jobs in the local Mackay area.

The Mackay Marina and Shipyard won the 2005 Australian Property Institute award for Environmental Excellence, is a finalist in the UDIA Queensland Environmental awards and won the 2006 Marina of The Year Award.

In short, Port Binnli has a proven track record in producing environmentally sustainable projects helping to raise regional and state profiles, both nationally and internationally. Port Binnli is dedicated to creating new opportunities, building for the future and helping to develop Queensland responsibly.

The organisation for the management of the Shute Harbour Marina Resort is figured below.



The Marina Manager shall ensure site operations and procedures comply with this SBMP and the effectiveness of such operations and procedures are documented in a manner which evidences due diligence.

The Chief Executive Officer (CEO) shall assist the Marina Manager in the implementation of this SBMP and in instructing all staff (and contractors) in complying with these requirements including providing the necessary funding.

The Marina Manager shall report directly to the CEO or equivalent, whom will be responsible for the continual environmental improvement of the Operator at this location.

1.2 Activity Details

Crude oil or petroleum product storing, dredging and marina operations are activities known as ERAs because they have the potential to cause environmental harm by releasing contaminants to the receiving environment. ERAs are prescribed in Schedule 1 of the *Environmental Protection Regulation 1998* and are administered by the Environmental Protection Agency or Local Government. ERAs are required to be approved through development permits where conditions may apply. Operators of the activities are required to hold registration certificates issued pursuant to the *Environmental Protection Act 1994*.

The development description of each activity to which this SBMP relates is provided herewith.

ERA 11(a) - Crude oil or petroleum product storing—storing crude oil or a petroleum product in tanks or containers having a combined total storage capacity of 10,000L or more but less than 500,000L.

Relevance – Diesel, unleaded and leaded petrol will be stored on site and dispensed at the refuelling wharf.

ERA 19(b) - Dredging material—dredging material from the bed of any waters (other than dredging by a port authority of material for which a royalty or similar charge is not payable) using plant or equipment having a design capacity of more than 5,000 tonnes but less than 100 000 tonnes per annum.

Relevance – Maintenance dredging at intervals of 5-7 years is required to retain adequate depth within the marina and access channel for navigatibility resulting in approximately 15,000 to 21,000m^3 of material.

ERA 73 Marina or seaplane mooring—operating a commercial marina or facility for mooring seaplanes, including any land-based buildings or works used in association with the marina or mooring for 100 or more berths or moorings.

Relevance- Shute Harbour Marina will contain 699 berths.

1.3 Relevant Legislation

The primary legislation relevant to this SBMP is the *Environmental Protection Act 1994 (EP Act)* and *Coastal Protection and Management Act 1995* (Coastal Act).

1.3.1.1 Environmental Protection Act 1994

The *EP Act p*rotects environmental values through development and implementation of environmental protection policies and regulates environmentally relevant activities which are prescribed in Schedule 1 of *Environmental Protection Regulation 1998* (EP Reg).

The *Environmental Protection (Water) Policy 1997* (EPP Water) ensures protection of environmental values from activities that may result in the release of contaminants to waterways or stormwater drains.

The *Environmental Protection (Air) Policy 1997* (EPP Air) ensures protection of ambient air quality and specifies indicators and air quality goals for control of the release of airborne contaminants.

The *Environmental Protection (Noise) Policy 1997* (EPP Noise) specifies an acoustic quality objective for protection of the well-being and amenity of individuals and the general community. Planning noise levels are also specified for development of beneficial assets.

The *Environmental Protection (Waste Management) Policy 2000* (EPP Waste) promotes the efficient use of non-renewable resources and the use of waste as a resource. Waste management practices are listed in a preferred order of adoption.

1.3.1.2 Coastal Protection and Management Act 1995

The Coastal Act provides for the protection, conservation, rehabilitation and management of the coast including its resources and biological diversity; has regard to the goal, core objectives and guiding principles of the national strategy for ecologically sustainable development in the use of the coastal zone; provides with other legislation a coordinated and integrated management and administrative framework for the ecologically sustainable development of the coastal zone; and encourages the enhancement of knowledge of coastal resources and the effect of human activities on the coastal zone.

The objectives of the Coastal Act are implemented at the regional level by the draft Mackay-Whitsunday Regional Coastal Management Plan (draft Regional Coastal Plan) in support of the coastal management outcomes in the *State Coastal Management Plan – Queensland's Coastal Policy 2001* (State Coastal Plan) which sets out the overall policy for coastal zone management. The draft Regional and State Coastal Plan have the effect of State Planning Policies.

2. SITE DESCRIPTION

The SHMR site is situated on the Whitsunday Regional Council coastline, on Queensland's central coast. The site is located 10km south-west of Airlie Beach, 35km north-east of the Bruce Highway and a 30 minute or 2 hour drive from the Proserpine and Mackay airport respectively.

The project area is zoned for public purpose use and is ideally situated for marina development. This is due to the marina's location is a naturally sheltered harbour and in proximity to the 74 islands of the Whitsundays.

The SHMR will be established on land within the coastal zone and the Great Barrier Reef World Heritage Area (GBRWHA) and encompasses 45.2 hectares of leased land and seabed. The property description the development is Lot 2 on SP117389, Mount Rooper, Whitsunday Shire.

The project area is bound by:

- Proserpine-Shute Harbour Road to the north, with land on the opposite side of the road forming the Conway National Park;
- an existing motel, residential dwelling and the Shute Harbour Quay Transit Terminal to the east;
- an existing house and marina salvage operation to the west; and
- the Great Barrier Reef Marine Park seaward of the landward boundary to the south.

The majority of the project area is submerged by tidal water that overflows a narrow wavecut platform, beach and seabed with Mean High Water Springs (MHWS) identified as 1.33m AHD. The seabed is sparsely vegetated with *Halophila ovalis* and *Halodule univeris* seagrass. Mangrove communities fringe the shoreline with patches of salt marsh occurring on rocky ground up to the Highest Astronomical Tide (HAT) level which is 2.35m AHD. Beyond this intertidal zone, the land is vacant and vegetated with remnant terrestrial vegetation. This part of the land rises in a gentle slope to Proserpine- Shute Harbour Road. Part of the SHMR site is currently used as a mooring location for recreational boats.

The site encompasses the conservation areas of State significance (natural resources) including:

- GBRWHA (an important coastal wetland); and
- Great Barrier Reed Coast Marine Park.

The site is adjacent to areas of State significance (natural resources) as follows.

- The Habitat Protection Zone of the Great Barrier Reef Marine Park. This area occurs seaward of the landward boundary of the coastline pursuant to the Queensland *Marine Parks (Great Barrier Reef Coast) Zoning Plan 2004* and below mean low water pursuant to the Commonwealth *GBRMP Act.* This area is protected in order to conserve and maintain significant habitats, cultural heritage and amenity values of the marine park whilst also providing for reasonable public use.
- The Conway National Park which is a protected area under the *Nature Conservation Act 1992* and is located to the north of the site. Areas are nominated as protected areas as they provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally compatible. (World Conservation Union (IUCN) 1994 definition).
- Significant coastal wetlands (i.e. important wetlands), remnant vegetation, mangroves, seagrass and coral reef communities and coastal dunes.

The site is also adjacent to areas of State significance (social and economic) with the Shute Harbour Transit Facility located approximately 250m east of the project area. Figure 2 provides an illustration of the receiving environment in relation to the development footprint.

3. POLICY

3.1 Environmental Policy

SHUTE HARBOUR
MARINA

ENVIRONMENTAL POLICY

Shute Harbour Marina Development Pty Ltd and Port Binnli Pty Ltd are committed to:

- *conducting the operation of its marina and marine facilities in a manner consistent with **environmentally sustainable development**;*
- *operating all its activities in compliance with any statutory requirements for protecting the environmental values of air, noise, water and waste;*
- *ensuring marina staff and contractors are suitably informed and trained to implement the control measures for routine operations and emergencies to minimise the likelihood of environmental harm;*
- *achieving best practice environmental management in design and operation of the marina, which complies with the requirements and recommendations of the MIAA 'Clean Marinas' accreditation programme;*
- *providing adequate human and financial resources to effectively implement the Marina Site Based Management Plan;*
- *monitoring and auditing the performance of the Marina Site Based Management Plan;*
- *ensuring the activities are conducted in the public interest and that other relevant marina users, patrons, visitors and the public are informed on all matters concerned with safety, health and environmental aspects;*
- *preserving the visual amenity of the site for all users, visitors and the public and local residents; and*
- *achieving compliance with all relevant Workplace Health and Safety Requirements.*

3.2 Workplace Health and Safety

Workplace Health and Safety, Training and Education are all inextricably linked in order to: Create a safe working environment for employees and customers/patrons.

Best work practices are used through staff training and education of customers/patrons of the Marina.

3.2.1.1 Policy Statement

The SHMR recognizes that "people are its best resource" and are essential for its continuing operation, environmental protection and reputation: therefore the Proponent has a strong commitment to Workplace Health and Safety, Training and Education.

3.2.1.2 Workplace Health & Safety

The SHMR understands and undertakes to fulfil it's obligations under the *Workplace Health and Safety Act 1995* and Regulations.

In particular, SHMR acknowledges its obligation to ensure:

- the Workplace Health and Safety of its workers at work;
- the Workplace Health and Safety of others is not affected by the way SHMR operates;
- the risk of disease and injury from SHMR site is minimized;
- the risk of disease or injury from any plant or substance is minimized through proper use;
- safe access is available to and from SHMR site;
- adequate and clearly defined sign-posting concerning safety issues is displayed; and
- staff use personal protection equipment at all times.

3.2.1.3 Risk Minimization

Regular staff meetings are to be held to document, identify and review work practices.

3.2.1.4 Monitoring and Reviewing

Any "near miss" accidents will be documented, reported and discussed in order to identify any requirements for changes in work practices

As required, the relevant government Authority and the WSC will be notified of:

- a work related injury;
- a work-related illness;
- a dangerous event; and
- an environmentally relevant event or accident.

Following any accident, SHMR will conduct a review to identify responsibility and introduce modifications to work practices aimed at preventing further recurrence of the same event.

4. NON COMPLIANCE

4.1 Corrective Action Requirements

Where the Operator becomes aware of a site or operational condition that does not comply with this SBMP, a Corrective Action Request (CAR) form is to be completed and reported to the Chief Executive Officer and kept in a dedicated register which shall demonstrate that appropriate corrective actions have been completed within a suitable timeframe.

An example CAR form provided in Appendix A of this SBMP.

Any CAR registered in accordance with this SBMP shall be provided to any statutory authority or other person, consensually or as lawfully required.

In some instances, further investigation or monitoring may be required to establish whether the Operator has failed to adequately implement the SBMP, or has failed to comply with relevant legislation, guidelines and statutes. In these instances, an independent party such as an Environmental Auditor shall carry out the investigation or monitoring.

In the event of a contradiction between management requirements stated by this SBMP and any management requirements of relevant Approvals, the requirements of the Approvals shall prevail.

The Operator shall notify relevant stakeholders of the non-compliance within 24 hours of receiving confirmation of the non-compliance (including validation monitoring).

The notification of any non-compliance with the conditions of the relevant development approval(s), must include, but not limited to the following information.

- The name of the holder of the development approval.
- The location of the emergency or incident.
- The number of the relevant development approval.
- The name and telephone number of the designated contact person.
- The time of the release.
- The time the operator became aware of the release.
- The suspected cause of the release.
- The environmental harm caused, threatened, or suspected to be caused by the release.
- Actions taken to prevent further any release and mitigate any environmental harm caused by the release.

4.2 Complaints

Should a complaint be received the procedures followed shall be as specified under the relevant element of the Management Plan.

The complaint shall be recorded in a dedicated Complaint and Enquiry Register. The register must be made available to the EPA upon request.

The complaint register must have recorded the following information:

- time, date and nature of complaint and/or enquiry;

- type of communication (telephone, letter, personal etc.);
- contact details including name, address and telephone number of complainant and/or enquirer;
- response and investigation undertaken as a result of the complaint and/or enquiry; and
- action taken in response to the complaint and/or enquiry and signature of person responsible.

5. ENVIRONMENTAL MANAGEMENT

This SBMP has been prepared to enable the Operator to fulfil statutory requirements.

Elements relating to issues of most concern are those identified by various regulating authorities have been addressed by this SBMP through specific tasks and actions which are designed to be preventative and corrective in nature for the following ERAs:

- Crude oil or petroleum product storing;
- Maintenance dredging; and
- Marina operations.

A Hazard and Risk Assessment has been undertaken for SHMR activities and documented as part of the EIS to protect Environmental Values.

Under the EP Act an Environmental Value is defines as:

> *a quality of physical characteristics of the environment that is conducive to ecological health or public amenity or safety;*
>
> *any other quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation*

The elements requiring mitigation and management strategies as part of this SBMP to reduce the risk criteria include the following.

- Air Quality.
- Noise Emission Control.
- General Amenity.
- Water Quality (including stormwater management and acid sulfate soils).
- Dredge Spoil Disposal.
- Waste Management.
- Dangerous and Hazardous Substances (handling and storage).
- Flora and Fauna Management.
- Prescribed Tidal Works.
- Cultural Heritage.

This SBMP includes the following key components for each element:

- **Rationale:** identification of the element to be managed and the environmental impact of activities associated with each element.
- **Objective / Target:** identification of the environmental objectives to be achieved in compliance with applicable legislation.
- **Implementation Strategy:** management measures to be implemented in order to achieve the stated objectives and to ensure impact mitigation.
- **Performance Indicators:** measurable indicators and standards set to assess the efficiency of management measures and determine compliance with the SBMP.
- **Monitoring:** monitoring requirements to measure compliance with the performance indicators and frequency of monitoring.

- **Reporting and Review:** the requirements for reporting of monitoring results and review of management measures where required.
- **Corrective Action:** measures to be undertaken should monitoring indicate non-compliance with performance indicators.

5.1 Air Quality

RATIONALE

Air quality can be affected by the emission of odours or particulates from the operation of activities. The dredge spoil disposal area is a potential source of dust emissions if incorrectly managed and emissions from equipment or refuelling procedures have a potential impact on air quality through the release of volatile organic compounds or other compounds and create odour.

OBJECTIVE / TARGET

Activities resulting in the introduction of excessive dust and fumes to the local atmosphere shall be minimised as far as practicable and shall comply with performance indicators.

IMPLEMENTATION STRATEGY

Trafficable areas within the site shall be sealed.

Trucks transporting materials that are subject to loss by wind suspension, specifically dry dredge spoil, shall be covered.

All vehicles and equipment shall be operated and maintained in accordance with the manufacturer's specifications.

Dust-suppression measures such as watering of exposed areas shall be implemented when a dust plume is visible and can potentially create environmental nuisance.

Windbreaks shall be provided as required to prevent loss of soil by wind.

No vessel maintenance (including abrasive blasting and/or metal surface coating) is to be undertaken on site.

Air spraying of chemicals with odours (for example, herbicides during landscape maintenance) shall be undertaken when wind direction is not directly towards existing and or proposed residential areas unless measures are implemented to prevent spray drift.

Refuelling shall occur in a defined area and fuel and oil storage areas shall be maintained and operated to minimise emissions to the atmosphere.

Spilt product shall be cleaned up using dry methods as quickly as practicable to prevent wind-blown materials.

PERFORMANCE INDICATORS

No dust and/or odour complaints received from adjoining operations, nearby sensitive places or from statutory authorities.

The works shall be carried out by such practicable means necessary to prevent the emission of dust/odour that constitutes an *"unreasonable release"* as defined by the *Environmental Protection (Air) Policy 1997*.

The carrying out of the activity shall comply with any air quality conditions contained within any relevant development approval.

Dust and particulate matter must not exceed the following levels when measured at any nuisance sensitive or commercial place:

a) Dust deposition of 120 milligrams per square metre per day, when monitored in accordance with Australian Standard AS 3580.10.1 of 2003 (or more recent editions); OR

b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM10) suspended in the atmosphere of 150 micrograms per cubic metre over a 24 hour averaging time, at a nuisance sensitive or commercial place downwind of the site, when monitored in accordance with:

- Australian Standard AS 3580.9.6 of 2003 (or more recent editions) 'Ambient air - Particulate matter - Determination of suspended particulate PM_{10} high-volume sampler with size-selective inlet -Gravimetric method'; or
- any alternative method of monitoring PM_{10} which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

MONITORING

At the request of the administering authority and in response to a complaint being lodged about the emission of dust, monitoring shall be undertaken in accordance with the conditions of approval for the activity.

When requested by the administering authority, dust and particulate monitoring shall be undertaken to investigate any complaint of environmental nuisance caused by dust and/or particulate matter, and the results notified within 14 days to the administering authority following completion of monitoring. Monitoring shall be carried out at a place(s) relevant to the potentially affected dust sensitive place and at upwind control sites and shall include:

a) for a complaint alleging dust nuisance, dust deposition; and

b) for a complaint alleging adverse health effects caused by dust, the concentration per cubic metre of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM10) suspended in the atmosphere over a 24hr averaging time.

RECORD KEEPING

The Operator shall maintain a record of all complaints received in relation to air quality.

The Operator shall maintain a record of any monitoring results undertaken including details of corrective actions and/or repairs undertaken.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

If a complaint relating to excessive air impurities is received from carrying out activities the following corrective actions are to be implemented.

- Identification of the dust/odour source(s).
- Response to complainant outlining procedure for corrective action and proposed timeframe for implementation of corrective actions.
- Implementation of appropriate mitigation measures as determined by the Operator within an agreed timeframe.
- Relevant validation monitoring of dust/particulate levels at nominated locations as required by regulatory authorities or approval conditions.
- Notify complainant of corrective actions when completed.

5.2 Noise Emission Control

RATIONALE

Conducting activities will involve the use of equipment that will produce noise. Maintenance dredging involves the use of noise generating equipment and operating a marina may involve the use of powered mechanical equipment as well as producing noise through normal traffic or vessel movements. Appropriate management measures are required to ensure that noise produced during these activities does not result in nuisance at noise sensitive places.

OBJECTIVE / TARGET

To control noise generated by activities and to minimise the impact of noise to ensure acceptable levels of noise amenity at the closest sensitive receptors to prevent nuisance complaints.

Noise amenity is described as the right of people to live free of intrusive noise and to:

- sleep undisturbed;
- converse and listen without undue interference from noise.

IMPLEMENTATION STRATEGY

All noise generating mobile and stationary plant and equipment, and processes shall be controlled to minimise noise emission.

All powered mechanical equipment shall be fitted with effective exhaust mufflers.

All vessel engines shall be turned off when not in use.

Maintenance dredging operations, when required, shall be limited to the times required by development approval conditions.

Contracts for marina berths, storage and mooring agreement contain conditions relating to restriction on causing noise nuisance from vessels located within the marina.

Well maintained signage shall be displayed that encourages boat drivers to avoid unnecessary idling of their motors.

PERFORMANCE INDICATORS

No noise complaints received.

The works shall be carried out by such practicable means necessary to prevent the emission of noise that constitutes *"unreasonable"* or *"intrusive"* noise as defined by the *Environmental Protection (Noise) Policy 1997*.

The carrying out of the activity shall comply with noise conditions in the relevant development approval.

MONITORING

At the request of administering authorities in response to a noise complaint, monitoring shall be undertaken as required by a condition of approval.

Noise monitoring shall be undertaken in accordance with the latest edition of the EPA's Noise Measurement Manual and the results notified within 14 days to the administering authority. Monitoring shall include:

- LA 10, adj, 15 mins
- LA 1, adj, 15 mins
- LA 90, adj, 15 mins
- the level and frequency of occurrence of impulsive or tonal noise;
- atmospheric conditions including wind speed and direction;

- effects due to extraneous factors such as traffic noise; and
- location, date and time of recording.

RECORD KEEPING

The Operator shall maintain a record of all complaints received in relation to noise emissions in accordance with this SBMP.

The Operator shall maintain a record of any monitoring results undertaken including details of corrective actions.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

If a complaint relating to excessive noise is received from carrying out activities the following corrective actions are to be implemented.

- Identification of the noise source(s).
- Response to complainant outlining procedure for corrective action and proposed timeframe for implementation of corrective actions.
- Implementation of appropriate mitigation measures as determined by the Operator.
- Relevant validation monitoring of noise levels at nominated locations as required by regulatory authorities and/or approval conditions or at a place representative of the emissions.
- Notify complainant of corrective actions when completed.

The Operator shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

5.3 General Amenity

RATIONALE

The marina is a public amenity. Health and safety precautions, as well as visual appearance of the marina are open to public complaint. Appropriate management of the general amenity are required to ensure public nuisance and complaints are minimised.

OBJECTIVE / TARGET

To ensure a clean, tidy and safe marina for the enjoyment of all patrons.

IMPLEMENTATION STRATEGY

Pedestrian paths shall be kept free of obstacles at all times.

Mechanical sweeping of roads and car parks shall be undertaken fortnightly.

Public amenities shall be cleaned each day and kept in good working order.

Health and safety and environmental awareness signage shall be appropriately located and maintained.

Appropriate housekeeping rules shall be specified in marina craft berthing, storage and mooring agreements.

PERFORMANCE INDICATORS

No repetition of complaints in relation to the general amenity of the marina.

MONITORING

The complaints and CAR register shall be monitored biannually to ensure the performance indicators are achieved.

RECORD KEEPING

The Operator shall maintain a record of all complaints received in relation to general amenity in accordance with this SBMP.

The Operator shall maintain a record of corrective actions.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR

CORRECTIVE ACTION

The following corrective actions are to be implemented immediately following complaints relating to general amenity.

- Identification of the cause(s) of the complaint.
- Response to complainant outlining procedure for corrective action and proposed timeframe for implementation of corrective actions.
- Implementation of appropriate mitigation measures as determined by the Operator.
- Notify complainant of corrective actions when completed.

The Operator shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

5.4 Water Quality

RATIONALE

The operation of a marina has the potential to impact on the receiving environment, namely the Great Barrier Reef World Heritage Area containing the Great Barrier Reef Marine Park, Great Barrier Reef Coast Marine Park and important wetlands, dunes and coastal ecosystems.

Impacts from the marina could include the release of contaminants through inappropriate or unauthorised activities, releases from inappropriate storage of wastes or waste disposal, unmanaged stormwater runoff, and releases/disturbance of silt or sediment from dredging.

Releases have the potential to be discharged to waters through accidental or emergency discharges from fuelling and sewage pump-out operations or damage to vessels.

OBJECTIVE / TARGET

Water discharges off the site should be of a quality which ensures there is no detriment to the downstream environment.

IMPLEMENTATION STRATEGY

Promote the 6 knot vessel speed limit within the marina to prevent unacceptable wake and propeller wash, especially in the vicinity of erosion sensitive shores such as reclaimed areas.

A no release policy from vessels within the marina will be applied and no activities such as hull cleaning, abrasive blasting, painting or underwater processes shall take place within the marina.

On site laundry and ablution facilities will be provided.

Waste reception facilities shall be provided and maintained, including sewage pump-out and solid waste disposal.

Booms, spill kits and containment systems will be kept on site for emergency use to contain spills.

Dry vacuuming of paved areas within the marina shall be enforced.

The marina shall be maintained in accordance with the maintenance plan attached as Appendix B to this SBMP.

In the event of an oil spill, the Emergency Action Plan for Shute Harbour Marina (refer to Section 6 of this SBMP) shall be implemented.

Appropriately maintained signage shall be displayed that promotes boat cleaning methods that will not release contaminants to coastal waters.

PERFORMANCE INDICATORS

Water quality within the marina complies with acceptable water quality objectives (WQOs) and monitored as frequently as specified in Table 1 at the locations listed in Table 3. WQOs have been derived for Shute Bay as determined in the stormwater management plan by Cardno Lawson Treloar (2008).

Table 1 Water Quality Objectives During Marina Operation

Parameter	Objective	Limit Type	Test	Sampling Frequency
Temperature	No limit	Na	In situ	Monthly *
pH	8.0 – 8.4	Median	In situ	Monthly *
Dissolved Oxygen	90 -100%	Median	In situ	Monthly *
Salinity	No limit		In situ	Monthly *
Secchi Disk Depth	> 1.5 m	Median	In situ	Monthly *
Turbidity	<6 NTU	Median	In situ	Monthly *
Total Petroleum Hydrocarbons	Non visible (<20µg/L)	Maximum	Laboratory	Monthly *
Total Nitrogen	< 0.2 mg/L	80th percentile	Laboratory	Monthly *
Total Phosphorus	< 0.02 mg/L	80th percentile	Laboratory	Monthly *
Suspended Solids	< 15 mg/L	Median	Laboratory	Monthly *
Total Aluminium	< 0.2 mg/L	Median	Laboratory	Monthly *
Total Iron	0.02 mg/L	Median	Laboratory	Monthly *
Copper	1.0 µg/L^{-1}	Median	Laboratory	Monthly*
Lead	1.0 µg/L^{-1}	Median	Laboratory	Monthly*
Faecal Coliforms	< 150 orgs/100mL	Median	Laboratory	Monthly *
Chlorophyl ‘a’	< 0.002 mg/L	80th percentile	Laboratory	Monthly *

* Monthly monitoring shall occur for up to 2 years following completion of construction works to be reduced to a quarterly monitoring program post 2 year operations.

Sediment quality shall be monitored for parameters and at the frequency specified in Table 2 to determine contamination trends over time. No limits apply.

Table 2 Sediment parameters proposed for assessment and frequency *

Parameter	Sampling Frequency
Aluminium	Annual
Chromium	Annual
Copper	Annual
Diuron	Annual
Lead	Annual
Mercury	Annual
Nickel	Annual
Zinc	Annual

MONITORING

Water quality monitoring for the performance indicators listed in Table 1 and 2 will involve monitoring at the locations tabulated below and as shown on Figure 3.

Table 3 Water Quality Monitoring Locations

Monitoring Location	Description of Monitoring Location
SH1	Shute Bay, west of the proposed development
SH2	Shute Bay, to the north of the proposed marina entrance
SH3	Shute Bay, west of the proposed marina entrance
SH4	Shute Bay, south west of the end of the western wing of the proposed development
SH5	Shute Bay, south of the proposed marina entrance
SH7	Within the unnamed tributary north of the western end of the Proserpine Shute Harbour Road upgrade.
SH8	Within the unnamed tributary north of Proserpine Shute Harbour Road.
SH9	Within the unnamed tributary north of the eastern end of the Proserpine Shute Harbour Road upgrade.
SH10	Within the unnamed tributary north of Proserpine Shute Harbour Road east of the site extent.

All water quality monitoring shall be conducted in accordance with the current EPA Water Quality Monitoring Manual.

Routine inspections are required for the following:

- revetment walls and moorings and piles;
- general water quality not including the parameters specified in Table 1 such as scum, algal growth, any additional unhealthy growth of flora and fauna and bank erosion.

RECORD KEEPING

The Operator shall maintain a record of any monitoring results undertaken and notes from visual inspections of the water quality.

Identification of an incident includes:

- water discharged from the site falls below the long term WQOs or above limit criteria;
- visual inspection identifying build up of sediment on and off the site, fish kills, algal bloom and/or litter;
- trigger levels exceeded; and
- poorly maintained or damaged control devices.

For each incident the following information must be recorded:

- any uncontrolled release of contaminants likely to cause environmental harm;
- the time, date and duration of any incident that resulted in the release of contaminants likely to cause environmental harm; and
- any emergency involving the release of contaminants likely to cause material or serious environmental harm requiring the use of fire fighting equipment.

The Operator shall make all records of monitoring results and incidents available for inspection by relevant authorities on request.

The complete marina maintenance plans shall be kept in a dedicated register.

REPORTING AND REVIEW

A Water Quality Report for all water quality monitoring results and assessments shall be submitted on request to the administering authority following a monitoring campaign. Trends on environmental performance shall be determined in order to ensure continual improvement in environmental management on site.

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Should non-compliance or an incident as defined in record keeping occur, the following corrective actions are to be implemented.

The source of any contaminant is to be located immediately and the following measures implemented.

1. Isolation of contaminant, if possible, until remedial measures are fully implemented.
2. Increase rate of inspections, maintenance and clean-outs as appropriate.
3. Remove any floating debris in waters.
4. Review of implementation strategy to ensure sufficiency and prevention of recurrence.
5. Validation Monitoring.
6. Document non-compliance and any corrective and/or preventative actions.

The Operator shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

5.4.1.1 Stormwater Management

RATIONALE

Stormwater runoff has the capacity to cause contamination to the waters of Shute Harbour. The placement of dredge spoil on reclaimed land has a potential to cause a release of contaminants if stormwater is allowed to flow uncontrolled over such areas.

Furthermore, fuel storages, waste facilities and operations from activities can cause contaminant release if facilities are not adequately designed and operated. Management of stormwater runoff from the site is necessary to ensure the receiving waters are not impacted as a result of the activities.

OBJECTIVE / TARGET

To ensure that activities prevent contamination of stormwater runoff and that the waters of the marina are maintained at an acceptable standard.

IMPLEMENTATION STRATEGY

Prevent activities likely to release contaminants occurring near stormwater drains.

The following treatment devices shall be maintained by regular inspections, cleaning and/or repairing and where applicable, watering of vegetation until plants are established and actively growing:

- gross pollutant traps;
- bio-retention systems; and
- swales.

Appropriate signage placed around stormwater drains to inform that contaminants are not to be released to waters. Signs are to provide a warning that stormwater drains, drain to the ocean.

All signage shall be maintained in good condition.

PERFORMANCE INDICATORS

Water quality releases from stormwater systems in accordance with Table 1 ‘Water Quality Objectives for Marina Operations’.

All stormwater treatment devices are functioning appropriately.

MONITORING

Reviews shall be carried out on a monthly basis to assess the implementation strategy. A checklist is to be completed which assesses the strategy against each of the devices above (attached as Appendix C).

Monitoring of all treatment devices for maintenance requirement shall be in accordance with the maintenance plans included in Appendix C.

RECORD KEEPING

The Operator shall maintain a record of maintenance undertaken including details of corrective actions.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Identification of an incident and/or failure culminating in corrective action includes:

- water discharged from the site falls below the long term WQOs of above the limiting criteria;
- visual inspection identifying build up of sediment on and off the site, fish kills, algal bloom and/or litter;
- trigger levels exceeded; and
- poorly maintained or damaged control devices.

Should non-compliance occur, the following corrective actions are to be implemented.

The source of contaminant is to be located immediately and the following measures implemented.

1. Isolation of contaminant, if possible, until remedial measures are fully implemented.
2. Increase rate of inspections, maintenance and clean-outs as appropriate.
3. Remove any floating debris in waters.
4. Review of implementation strategy to ensure sufficiency and prevention of recurrence.
5. Validation Monitoring.
6. Document non-compliance and any corrective and/or preventative actions.

The Operator shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

5.4.1.2 Coastal Siltation Monitoring

RATIONALE

Ongoing siltation within and adjacent to the marina is expected during marina operation. A coastal assessment by Cardno Lawson Treloar (2007) estimated siltation rates over a 10-year period as:

- 0.03 m / annum in the eastern end of the marina;
- 0.006 m / annum in the western end of the basin; and
- 0.02 m / annum in the access channel.

Dredging campaigns are required every 5 to 7 years and will extend over a 2 to 3 month period. Once de-watered, the dry silt would be removed from site. Approximately 15,000 – 21,000 m^3 of in-place settled sediment would be removed on each campaign from the marina basin.

OBJECTIVE / TARGET

To monitor and prevent the build-up of sediment within the basin that would prevent access to marine vessels.

IMPLEMENTATION STRATEGY

Install and maintain settlement boxes following marina construction in the following locations to accurately predict siltation rates and inform dredging campaigns.

- Eastern end of the marina.
- Central marina.
- Western end of the marina.
- Four other distributed marina locations.
- Four locations west of the western breakwater.
- Two locations in the access channel.

Dredging is undertaken as required to maintain safe navigable access to marine vessels.

PERFORMANCE INDICATORS

Siltation is accurately measured to allow planning of dredging at appropriate intervals and safe navigable access for marine vessels therefore maintained.

MONITORING

Annual diver measurement of siltation rates shall be carried out.

RECORD KEEPING

Build up of silt within settlement boxes shall be recorded in a dedicated spreadsheet.

REPORTING AND REVIEW

The Operator shall report siltation rates to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented.

- Identification of the cause of the non-compliance.
- Implementation of appropriate mitigation measures as determined by the Principal and Consultant in consultation with the Contractor.
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

If necessary dredging frequency could be varied to suit the nominated disposal strategy.

5.4.1.3 Maintenance Dredging

RATIONALE

Dredging within the marina basin involves excavation of sediment which has the potential to increase suspended sediment and turbidity levels in and around the dredge areas. Dredging activities are to be conducted in an appropriate manner in order to minimise and prevent adverse impacts on the current quality of the local aquatic environment.

Tailwater from the dredge spoil disposal area underlined with a bio filter has the potential to release sediment to the receiving environment if ponding occurs and/or the bio filter fails.

OBJECTIVE / TARGET

To ensure no degradation of the local aquatic environment during or as a result of maintenance dredging.

IMPLEMENTATON STRATEGY

Dredging works must be managed by the use of silt curtains and/or other appropriate mitigation devices to minimise turbidity plumes.

Maintenance and operation of all dredging equipment shall occur according to manufacturer's specifications to ensure no discharge of dredge spoil to the surrounding water environment and accidental release of contaminants.

A limit on the rate of the dredge pump shall be imposed to ensure that discharge is not excessive into the spoil disposal area which could increase the water velocity and in turn increase the potential for uncontrolled runoff.

Tailwater release points from the dredge spoil disposal area must be established and affixed with sediment control devices.

Maintenance dredging shall be scheduled between April and October.

During dredging of the access channel the Dredge Contractor shall ensure that all dredge equipment, including for example barges, anchor buoys and floats are clearly marked to be visible during the hours of daylight and night identified with omni-directional yellow flashing lights.

The Dredge Contractor shall ensure that a clear navigation channel is maintained at all times during the dredging operation.

The Dredge Contractor shall provide temporary navigation markers to guide vessels around the work area to provide safe navigation.

Any other navigational requirements of the Regional Harbour Master must be implemented.

A marine incident report must be completed in the event damage to boat and or another boat or danger of personal injury has occurred within the marina. More common incidents include collisions, groundings, capsize, fires and swamping. Refer to www.msq.qld.gov.au

PERFORMANCE INDICATORS

The dredging works shall ensure that surrounding waters comply with the quality characteristics in Table 4 below for the duration of the dredging works at the sampling locations and frequency presented in Table 5.

Contaminants other than settled/treated stormwater runoff waters must not be released from the dredge spoil disposal area(s) to waters.

Table 4 Water Quality Criteria for Maintenance Dredging

Parameter	Acceptable Criteria
Turbidity	Less than 10% above background
pH	8.0 – 8.4
Litter/gross pollutants	No anthropogenic (man-made) material greater than 50mm in dimension

MONITORING

Water quality monitoring shall be undertaken in accordance with the schedule provided in Table 5.

Table 5 Water Quality Monitoring Program Frequency for Maintenance Dredging

Location	Frequency	Type	Parameter
Background			
Mid-water column external to the marina breakwater at existing monitoring locations	Weekly on an outgoing tide	Field sampling	pH Turbidity
At Dredge			
50 m distance beyond the dredge area at mid water column	Daily on an outgoing tide	Field sampling	pH Turbidity

Water quality monitoring in the event of a visible sediment plume beyond the silt curtain or 50 m from dredge apparatus shall be undertaken in accordance with Table 6.

Table 6 Water Quality Monitoring in the event of a Sediment Plume

Location	Parameter	Limit	Frequency
Mid-water column between 50 and 100 metres up current of the dredge apparatus to establish background levels	Turbidity (*In situ*)	No Limit	Daily on an outgoing tide when a Sediment Plume is visible.
At a location representative of the Sediment Plume at mid water column	Turbidity (*In situ*)	Less than 10% above background levels	Daily on an outgoing tide when a Sediment Plume is visible.

All determinations of the quality of contaminants released must be:

a) made in accordance with methods prescribed in the latest edition of the Environment Protection Agency Water Quality Sampling Manual; and

b) carried out on samples that are representative.

Water quality monitoring shall be undertaken until completion of dredging works.

RECORD KEEPING

The Contractor shall maintain a record of any monitoring results undertaken including details of corrective actions and/or repairs undertaken.

Monthly reports shall be prepared by the Contractor and submitted to the Operator on the monitoring undertaken during works, including all corrective action taken to achieve environmental performance requirements.

Any copy of the Marine Incident Records is to be kept on site in a dedicated register.

REPORTING AND REVIEW

Results of monitoring shall be forwarded periodically to a suitably qualified environmental consultant to assess trends in water quality.

The Contractor shall report to the Principal upon the requirement to complete a CAR and the actions taken in respect of the CAR.

Queensland Marine Safety legislation requires all marine incidents to be reported to a shipping inspector within 48 hours.

CORRECTIVE ACTION

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented immediately.

- Identification of the cause of the non-compliance.
- Implementation of appropriate mitigation measures as determined by the Principal and Consultant in consultation with the Contractor.
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

5.4.1.4 Acid Sulfate Soils

RATIONALE

Maintenance dredging may unearth sediment that is potentially acidic although extensive geotechnical investigations have not yielded net acidic sampling results. To avoid detrimental impacts on the aquatic environment and its water quality, appropriate management practices must be employed to ensure that this does not occur during maintenance dredging.

OBJECTIVE / TARGET

No releases of contaminants (acidic waters) to Shute Harbour.

IMPLEMENTATION STRATEGY

Dredge spoil shall be managed in accordance with the approved Acid Sulfate Soils Management Plan.

PERFORMANCE INDICATORS

Compliance with the performance indicators detailed in the approved Acid Sulfate Soils Management Plan.

MONITORING

Monitoring shall be undertaken as detailed in the approved Acid Sulfate Soils Management Plan

REPORTING AND REVIEW

Monthly reports shall be prepared by the Operator throughout the duration of maintenance dredging works including all corrective action taken to maintain the performance requirement.

CORRECTIVE ACTION

Corrective Actions shall be undertaken in accordance with the approved Acid Sulfate Soils Management Plan.

5.5 Dredge Spoil Management

RATIONALE

A management procedure is required to ensure that dredged material is not released into the receiving environment. Dredging should not cause any degradation to the diversity of the dredged area and its neighbouring environment.

It is the Operators responsibility to ensure that dredging works are conducted in compliance with this SBMP.

OBJECTIVE / TARGET

To manage dredge spoil disposal activities in accordance with best practice environmental management.

IMPLEMENTATION STRATEGY

Spoil Area Preparation

Spoil will be dewatered using geobags and a bio filter structure permanently located within the isthmus parkland, on the western portion of the site.

Preparation of the spoil disposal area will involve removal of the turf and placement of geobags. The maintenance dredge spoil will be pumped into the geobags which sit above ground and dewater the spoil material quickly. The water will be filtered firstly by the geobags and then by the underlying sand beds prior to return to the bay.

The Dredging Contractor shall ensure that the construction of all bunding and sediment control structures at the spoil disposal area is complete prior to commencement of dredging activities.

The Dredging Contractor shall ensure the topsoil is stockpiled for relaying at completion of dredging work.

The Dredging Contractor shall ensure that native vegetation cleared shall be mulched for reuse on site or appropriately disposed of offsite prior to dredging works.

The Dredging Contractor shall ensure that declared weeds cleared from the dredge spoil disposal site are disposed of appropriately, i.e. in a licensed waste landfill.

Alternative uses for dredge spoil shall be investigated by the Operator and affixed to this SBMP to provide spoil disposal options.

During spoil placement the parkland must be closed to visitor access for safety reasons using adequate signage and temporary barriers.

All signage shall be maintained in good condition.

Loading and Unloading Activities

Loading and unloading of the dewatered dredged material shall be conducted to ensure that the following measures are implemented during the activities.

1. That there is no public access to the loading and unloading areas.
2. Dewatered spoil and any other solid pollutants that fall on to the loading area shall be removed via a method that does not use water – i.e. sweeping.
3. The loading area shall be inspected and swept clean daily.
4. No dredge spoil shall be stockpiled within the loading area.

The appropriate conduct of loading and unloading activities is the responsibility of the Dredging Contractor.

Transport of Old Dredge Spoil Material

Suitably covered trucks shall be used to transport the dredged material to ensure that there is no uncontrolled release of material onto public roads.

Cleaning and inspection of trucks shall be conducted before leaving the loading area to achieve the above.

Re-establishment

Revegetation, particularly grassing, of the parkland shall be undertaken as soon as practicable after completion of dredge disposal. Native species are encouraged that are tolerant of saline conditions.

PERFORMANCE INDICATORS

Compliance with all elements of this SBMP.

The Dredging Contractor shall ensure that the quality of treated waters discharged from dredge spoil disposal area does not cause a sediment plume.

REPORTING AND REVIEW

Reporting to the Principal upon requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Dredging works shall cease in the event of ponding or overland runoff from the dredge spoil disposal area.

5.6 Waste Management

RATIONALE

Waste management focus is on appropriate methods to avoid, reuse, recycle and dispose of waste materials generated from ERAs. The EPP (Waste) seeks to ensure that decisions involving waste management are made with consideration of the waste management hierarchy. The waste management hierarchy list the types of waste management practices in preferred order of adoption:

- waste avoidance;
- waste reuse;
- waste recycling;
- energy recovery from waste; and
- waste disposal.

Specific wastes such as clinical wastes, regulated wastes or quarantine wastes require specific handling and disposal and must be managed in accordance with legislation.

Storage and handling of all wastes are required to ensure that environmental harm is not caused through the release of contaminants to the environment.

The activities of marina, petroleum product storage and dredging are all likely to produce wastes requiring management to ensure that environmental harm is not caused through the collection, storage or transport of such wastes.

Specific wastes including sewage or bilge waters generated on vessels, litter and wastes that can be collected for recycling purposes are dealt with specifically within this SBMP.

OBJECTIVE / TARGET

To ensure procedures are implemented during operations to minimise environmental impacts and properly dispose of pollutants and waste materials arising from activities.

To employ waste avoidance and reduction strategies during operations to eliminate waste at the source by reviewing site procedures and purchase of materials.

To implement measures for evaluation of all waste stream elements and identification of wastes that can be reused or recycled.

To adopt implementation measures during operation of the development to minimise the volume of waste sent to landfill and to prevent wastes entering the stormwater drainage network.

IMPLEMENTATION STRATEGY

The operation of the marina shall be undertaken in accordance with the Waste Management Plan prepared as part of the EIS.

The Marina Manager shall maintain a regular waste removal schedule and document all waste removed for disposal.

The Marina Manager shall have due regard to the waste management hierarchy.

The Marina Manager shall provide appropriate methods for the collection and lawful disposal of any wastes produced at the site during operations including:

- location of waste receptacles in designated areas suitable for collection by waste disposal vehicles;
- all waste to be collected and disposed of by appropriately licensed contractors at appropriate intervals;

- storage of solid waste in suitable refuse containers to prevent contamination of stormwater, and access by vermin and birds;
- waste containers located in convenient locations to encourage use; and
- facilities for the reception of wastes shall include provision for a range of materials likely to be produced, and are well labelled and sign posted.

Implement a strict “no discharge in marina” policy and inspection program.

Hull and propeller cleaning is not allowed in marina waters to prevent the possible release of contaminants or introduced marina pests.

In-water cleaning or scrubbing of hulls painted with biocide-containing antifouling paints for the purpose of delaying dockings or attempting to rejuvenate depleted antifouling coatings must not be undertaken. Any boat maintenance and repairs must be undertaken in such a way that debris and waste is kept to a controlled minimum and is collected and disposed of in an environmentally responsible manner.

PERFORMANCE INDICATORS

Waste stored correctly and in accordance with legislation and approval requirements.

Nil incidents or complaints recorded regarding waste collection services.

MONITORING

Waste collection areas shall be inspected each day to ensure wastes stored appropriately.

RECORD KEEPING

The Operator is required to keep copies of all waste tracking documents relating to regulated wastes removed from the site. Waste tracking documents shall include the volume of material removed, and final destination of waste.

The Operator shall maintain a record of all complaints received in relation to releases of waste or inappropriate management of waste in accordance with this SBMP.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

In the event of a non-compliance relating to waste management the following corrective actions are to be followed.

- Investigate details of non-compliance (and/or incident).
- Implementation of appropriate mitigation measures as determined in consultation with relevant experts (where required) and within the agreed timeframe noted on the CAR.
- Sign off and recording of the CAR.

5.6.1.1 Litter Control

RATIONALE

Litter can be generated from numerous land and water based sources both on and off the development site. Litter is aesthetically displeasing, provides a risk to marine fauna and can provide a risk to navigation.

OBJECTIVE / TARGET

Minimise litter generated.

Prevent the release of litter into waters which is an offence under the EPP Water.

IMPLEMENTATION STRATEGY

Prepare a long term litter reduction strategy.

Provide appropriately designed and located litter bins that will prevent access to birds or other animals and will not otherwise allow wind to dislodge litter.

Provide appropriately located and maintained signage to direct patrons to litter bins.

Ensure frequent removal of litter receptacles and material impacting on in/outlet structures.

Provide appropriately located and maintained signage that advises animal waste products (i.e. dog faeces and fish waste) must be disposed of off appropriately off site.

Provide regular surveillance and cleaning of public areas.

Install gross pollutant traps, bunds and other controls to prevent litter, from on shore areas from reaching coastal waters.

Provide a program of regular maintenance of gross pollutant traps and devices to ensure maximum efficiency.

The operator must not bring, allow or accumulate materials on marina land that detracts from the visual amenity of the land, and/or commits a nuisance. Examples include:

- discarded or disused machinery or machinery parts;
- broken-down or severely rusted vehicles;
- discarded bottles, containers or packaging;
- refuse or scrap material.

PERFORMANCE INDICATORS

Nil litter observed in the marina waters.

MONITORING

Visual inspection of marina waters to be completed each day.

Weekly inspection of gross pollutant traps/litter traps and maintain when required.

RECORD KEEPING

The Operator shall maintain a record of all complaints received in relation to litter in accordance with this SBMP.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

In the event of a non-compliance relating to litter the following steps are to be followed.

- Investigate details of non-compliance.
- Implementation of appropriate corrective action and mitigation measures as determined through the CAR process.
- Sign off and recording of the CAR.

5.6.1.2 Vessel Sewage

RATIONALE

Sewage generated from the operation of vessels has the potential to foul waters should it be released. Legislation prohibits the release of sewage into waters of marinas or marine parks, and facilities are required to be supplied and operated in a manner that prevents such release.

OBJECTIVE / TARGET

Minimise vessel sewage generation by the provision of and encouragement to use on site washroom/toilet facilities, and the supply and operation of pump out facilities in a manner that will minimise the risk of sewage spillage into the waters.

IMPLEMENTATION STRATEGY

The operation of waste facilities at Shute Harbour Marina shall be in accordance with best practice guidelines for *Waste Reception Facilities at Ports, Marina and Boat Harbours in Australia and New Zealand*.

Provide pump out facilities for the reception of sewage.

Ensure maintenance of the pump out facilities.

Contracts for marina berths, storage and mooring agreement shall contain conditions relating to nil release policy from vessels into waters of the marina. Ensure that the Agreement is formally completed, explained to the customer and a customer copy is issued.

Provide for land-based toilet and shower facilities to encourage patrons not to use on-board facilities.

Keep on site washroom and toilet facilities clean to encourage usage.

Prohibit the use of onboard toilets and showers, unless the wastewater is kept in a holding tank and disposed of appropriately.

PERFORMANCE INDICATORS

Nil spillage or unauthorised discharge of sewage into marina waters.

RECORD KEEPING

The Operator shall maintain a record of all incidents in relation to any sewage spillage.

The Operator shall maintain a record of any monitoring results undertaken including details of corrective actions.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

In the event of a non-compliance relating to sewage from vessels the following corrective actions are to be followed.

- Investigate details of the incident and/or complaint.
- Response to complainant, if relevant, outlining procedure for corrective action and proposed timeframe for implementation of corrective actions.

- Implementation of appropriate mitigation measures as determined in consultation with relevant experts (where required) and within the agreed timeframe noted on the CAR.
- Notify complainant, if relevant, of corrective actions when completed.

5.6.1.3 Bilge Water

RATIONALE

Accumulated bilge water may contain oils and greases, invasive organisms or other contaminants that have the potential to contaminate waters of the marina. As a result, prevention of the release of bilge water from vessels contained within the marina is necessary.

OBJECTIVE / TARGET

Prevent any release of bilge water to waters of the marina.

Reduce the amount of oils in bilge waters.

IMPLEMENTATION STRATEGY

Contracts for marina berths, storage and mooring agreement contain conditions relating to nil bilge water release policy from vessels.

Encourage the use of oil absorbing materials in bilge areas of vessels with inboard engines.

Marina patrons are to be directed to facilities for the proper disposal of bilge waters.

PERFORMANCE INDICATORS

Nil release of bilge waters to coastal waters within the marina lease area.

MONITORING

Visual inspection of marina waters for oils/greases daily.

Water quality monitoring in accordance with this SBMP.

RECORD KEEPING

The Operator shall maintain a record of all monitoring results and incidents in relation to the discharge of bilge water.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

In the event of a non-compliance relating to the discharge of bilge water the following corrective actions are to be followed.

- Investigate details of non-compliance (and/or incident).
- Response to complainant, if relevant, outlining procedure for corrective action and proposed timeframe for implementation of corrective actions.
- Implementation of appropriate mitigation measures as determined through the CAR process and within the agreed timeframe noted on the CAR.
- Notify complainant, if relevant, of corrective actions when completed.

5.6.1.4 Recycling of Waste Materials

RATIONALE

The waste management hierarchy provided under the *EPP Waste* is considered for the operation of activities. Recycling of waste is considered as a preferable option to disposal of wastes. Recycling of waste materials can also provide economic benefits and reduces pressure on resources required for the production of such materials.

OBJECTIVE / TARGET

Where waste produced cannot be reused efforts will be made to recycle such waste materials.

IMPLEMENTATION STRATEGY

Provide an investigation of materials that may be recycled following any waste audits. Where feasible, the provision of segregated bins or containers should be provided in easily accessible locations for materials to be recycled. Items that should be considered for recycling include paper, aluminium and other metals, glass and plastics.

Provide facilities for the collection and storage of waste oil. Adequate signs must be provided for the operation of a facility to ensure that collection and storage do not cause spillage, or disposal of incompatible materials.

PERFORMANCE INDICATORS

Suitable segregation and storage of recyclable wastes.

RECORD KEEPING

The Operator shall maintain a record of all complaints received in relation to inadequate disposal of materials that are feasible to recycle.

The Operator shall maintain a record of any investigations undertaken including details of corrective actions.

The Operator shall make all records available for inspection by relevant authorities on request.

CORRECTIVE ACTION

In the event of a non-compliance relating to the inappropriate disposal of recyclable materials the following corrective actions are to be followed.

- Investigate details of complaint/non-compliance/incident.
- Response to complainant, if relevant, outlining procedure for corrective action and proposed timeframe for implementation of corrective actions.
- Implementation of appropriate mitigation measures as determined.
- Notify complainant, if relevant, of corrective actions when completed.

The Operator shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

5.7 Flora and Fauna Management

RATIONALE

The marina is physically located within the Great Barrier Reef World Heritage Area and adjacent to areas of state significance (natural resources) as mapped under the draft Regional Coastal Management Plan (EPA 2006).

Operations of a marina has the potential to impact on protected areas and flora and fauna species from contaminants fouling waters, anchor destruction and boat strikes. Some of these areas have significant conservation value and must not be adversely affected by marina operations.

Whilst the marina will be utilised by native fish, crustaceans and birds, and may be colonised by some species its overall value as habitat for native flora and fauna will be limited. Larger marine turtles and mammals will be able to enter the marina via the access channel.

OBJECTIVE / TARGET

To ensure the protection of native flora and fauna habitats of Shute Bay and adjacent areas of conservation significance.

To ensure that algal blooms and fish kills are controlled within the marina precinct.

TASKS / ACTIONS

The Operator shall provide training and education of all staff and contractors to inform of the values of Shute Bay and associated areas of conservation significance.

The Operator shall ensure that all appropriate waste management, water quality and materials storage/handling controls are implemented in accordance with this SBMP.

The Operator shall monitor the marina for any indicators of poor ecological health (i.e. algae blooms, dead vegetation fish kills) in accordance with Element 5.4 of this SBMP.

If a major fish kill (or other significant indicators of poor ecological health for example, algal blooms) occurs within the marina, the marina basin is to be closed until the cause(s) of the fish kill is identified and measures are implemented to treat the cause and to protect impacts to adjacent sectors of Shute Bay.

The Operator shall report any observations of sick or injured native animals within the marina area and contact the Queensland Parks and Wildlife Service on 4946 7022 and/or , EPA Incident Hotline on 1300 130 372 and/or the Department of Primary Industries and Fisheries to receive advice concerning specific measures to be taken.

The marina shall be maintained in accordance with the requirements of the aquatic ecosystems technical reports to ensure pest control and to maintain function and visual aesthetics.

The Operator shall ensure tide charts and information educating boat users of boating impacts on endangered species are posted in an appropriate and visible location

Initiatives under the Regional Boating Traffic Management Plan being developed by the Queensland Government shall be considered and implemented within the marina where feasible.

Tickler chains or the most recently approved technology to deter wildlife incidents shall be employed on dredge equipment.

Publications by the Great Barrier Reef Marine Park Authority relating to vessel use in the Great Barrier Reef Marine Park shall be distributed with berthing application places and available in the site office.

During maintenance dredging, the Contactor shall monitor for marine turtles, dugong, whales or dolphins each half hour, by observation using binoculars. Dredging shall be suspended if turtles, dugongs, whales or dolphins are observed within 200m of dredge head. Dredging shall only re-commence when fauna have left the 200m zone.

Boat strikes on marine vertebrates shall be avoided through speed limits and use of "Vessel Transit Lanes".

The Operator shall destroy declared pests on the land, or minimise the risk of an outbreak of declared pests on the land, prevent or minimise seeding or reproduction, and reduce the density or extent of infestation by declared pests.

MONITORING

Daily monitoring of the marina will be undertaken to identify any indicator of poor ecological health of the marina (i.e. algae blooms, dead vegetation, fish kills).

An ecological monitoring program shall be undertaken yearly of the distribution and health of seagrasses and macroalgae in the SHMR site and directly adjacent to tidal structures.

Monitoring shall be based on the acquisition of pre-construction base-line data following by seasonal re-surveys. Indicators likely to be employed include: distribution mapping and community description, seagrass depth distribution, and physiological indicators.

PERFORMANCE INDICATORS

Retained vegetation within the site is maintained in a healthy condition.

Adjacent significant ecological communities are protected by appropriate environmental controls such as bunding and managed mooring.

Fish kills, boat strikes and algal blooms are minimised within the marina.

REPORTING AND REVIEW

Ecological monitoring results shall be reported on request to the administering authority.

The Marina Manager shall report to the General Manager upon the requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented.

- Identification of the cause of the non-compliance.
- Implementation of appropriate mitigation measures as determined by the Principal and Consultant in consultation with the Contractor.
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

5.8 Dangerous and Hazardous Substances

RATIONALE

The refuelling facility will provide storage of diesel and fuel products classified as Dangerous Goods under the *Australian Code for the Transport of Dangerous Goods Code by Road and Rail*. Storage and handling of such materials provides an increased risk that requires specific handling to ensure that environmental harm is not caused.

Waste oil and other materials utilised through operation of the marina or by marina customers also require specific handling to ensure compliance with the relevant legislation and to ensure that no environmental harm will result through the handling of such materials.

OBJECTIVE / TARGET

Reduce the risk of environmental harm or incidence caused through the storage and use of hazardous substances.

Comply with the legislative requirements and relevant Australian Standards for the handling of dangerous goods and hazardous materials.

IMPLEMENTATION STRATEGY

The type, quantity, Material Safety Data Sheet and storage location of all dangerous goods and/or hazardous substances, along with an emergency contacts register must be kept in a dedicated register.

Ensure only minimal quantities of hazardous substances are stored on site and ensure any such materials are transported and/or held in containers that are impervious to the stored material. All containers shall be labelled appropriately.

Ensure dangerous and hazardous substances, including fertilisers and pesticides are used in accordance with the manufacturers instructions.

Installation of equipment in accordance with marine fuelling standards contained in AS1940-2004 *Storage and Handling of Flammable and Combustible Materials* which includes requirements for all dispensers fitted with automatic shut-off nozzles and provision of fire protection devices and signs.

Well maintained signage at fuel points that directs customers to:

- stop engines during refuelling;
- no smoking or naked flames at fuel point, and
- ventilate boat interior and engine compartment before restarting.

Filling of tanks should be undertaken with equipment fitted with overfill protection devices, i.e. automatic shutoff

Promote the use of fuel air separators an air vents or tank stems of inboard fuel tanks.

Clearly indicate positions of safety fuel cocks at points of storage and dispensing.

Petroleum product storage and dispensing equipment shall be inspected regularly and stock inventory completed weekly to identify discrepancies (eg. unobserved loss).

There shall be no storage of flammable materials in close proximity to fuel storage or dispensing areas.

Material used to clean spills shall be disposed in appropriate containers.

Dangerous and Hazardous substances shall only be disposed of by a licensed contractor and in accordance with relevant statutory requirements.

Only authorised and trained persons are to operate any equipment and all refuelling and tanker unloading operations are to be supervised by a trained marina staff member.

Bunds around tanks or packages (drums) shall be regularly maintained in a clean condition free of contaminants. Following any rain events the bunds shall be inspected. Accumulated stormwater contained in bunds to be checked for oils and grease prior to release. Contaminated stormwater will be considered a waste to be contained and collected for removal to an approved waste disposal site by a regulated waste transporter.

The marina is to maintain absorbent booms, pads, oil booms, spill kits, fire extinguishers and other containment equipment in clearly identified and unobstructed positions for ready deployment in the event of a spill.

The protocol outlined in the oil spill response plan contained in Appendix D shall be employed in the event of an oil spill.

PERFORMANCE INDICATORS

Dangerous and hazardous substances are handled and stored in accordance with the relevant Australian Standard.

No spills as a result of inappropriate handling and storage of dangerous and/or hazardous substances.

MONITORING

Equipment for fuel dispensing to be inspected daily.

Hazard audits undertaken annually.

RECORD KEEPING

Records to be maintained of inventories and investigations and results into any discrepancies identified.

The Operator shall maintain a record of all complaints received in relation to dangerous goods or hazardous substances.

The Operator shall maintain a record of any monitoring results undertaken including details of corrective actions.

The Operator shall make all records available for inspection by relevant authorities on request.

REPORTING AND REVIEW

The Operator shall report to the administering authority at the time of Annual Return the requirements to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

In the event of a non-compliance relating to dangerous or hazardous goods handling and storage the following corrective actions are to be followed.

- Investigate details of the cause of the non-compliance, incident, or complaint.
- Response to complainant, if relevant, outlining procedure for corrective action and proposed timeframe for implementation of corrective actions.
- Implementation of appropriate mitigation measures as determined through the CAR process and within the agreed timeframe noted on the CAR.

An Oil Response Plan and Fire Response Plan are attached as Appendix C of the CEMP and shall be followed in the event if an oil spill or fire.

In the event that accidental release of material (with the exception of oil) occurs at the site, the following actions shall be implemented.

- Appropriately trained Staff shall take steps to contain the released material. This shall include the use of accidental spill kits located adjacent to stored materials.

- The Marina Manager shall be notified to make an initial assessment of the severity of the accidental release and the nature of the material.
- The Marina Manager shall notify the relevant administering authority(ies) (for example, Environmental Protection Agency, Maritime Safety Queensland, Whitsunday Shire Council), the Principal and the Superintendent of any accidental release of material.
- The Marina Manager shall take steps in consultation with the relevant administering authority(ies) to treat, remove or otherwise manage the released material.
- Appropriately qualified personnel shall make an assessment of the area to confirm the success of the remediation works and whether additional works are required.
- Appropriately qualified personnel shall assess the work procedures or cause of the failure and implement any changes deemed to be appropriate to prevent reoccurrence of a similar incident in the future.
- Following completion of remedial actions the Marina Manager shall provide an incident report or CAR to the Principal detailing the nature of the incident and the corrective actions implemented.

5.9 Prescribed Tidal Structures

RATIONALE

Maintenance of prescribed tidal structures associated with the marina will be required as part of the ongoing operation of the marina and to ensure its safe and continued use. Potential contaminants from maintenance activities has the potential to release to waters and reduce water quality within the marina thereby affecting ecological communities contained within and adjacent to by reducing water quality and impact on the visual amenity of the environment.

Examples of maintenance work for prescribed tidal works include replacing a structural element and/or replacing displaced rock material in a rock wall.

OBJECTIVE / TARGET

To avoid the release of potential contaminants during maintenance of tidal structures.

To ensure maintenance activities do not affect the character and amenity of the surrounding area.

To ensure that the structural integrity of structures is maintained to prevent erosion and slumping or deterioration of any structures including metal corrosion, concrete cancer and spalling.

IMPLEMENTATION STRATEGY

Maintenance works where permitted under relevant coastal approvals shall comply with relevant conditions of approval.

A suitably qualified and experienced person shall be engaged to undertake maintenance works on prescribed tidal works.

Maintenance works on existing lawful structures involving the removal, destruction or damage of marine plants shall not occur in the absence of Department of Primary Industries and Fisheries approval unless it shall be undertaken in accordance with the relevant Code for Self-Assessable Development.

A sign must be erected or otherwise placed in position for maintenance of prescribed tidal works, other than a sign erected or placed for safety reasons or under an Act, that is:

(a) compatible with the character and amenity of the work's immediate surroundings and the locality within which the work is located; and

(b) not a dominant feature of the work, unless the dominance is for safety reasons.

Where abrasive blasting or surface coating activities of fixed items (for example, jetties, piers and other maritime structures and equipment) are to be carried out over water, on land below the highest astronomical tide or on land subject to 1:10 year flood regime, the requirements and procedures outlined in the following documents published by the EPA (and available online on www.epa.qld.gov.au) must be adhered to:

a) *Over-water abrasive blasting in marine and other aquatic environments*; (guideline) and

b) *Over-water abrasive blasting – environmental risk assessment* (information sheet).

The use of tributyl-tin based paints for any purpose is prohibited.

Maintenance works must not significantly change the design and construction of the prescribed tidal work.

The materials used in maintenance of tidal works shall be consistent with the original design and be designed for having a long life in marine environments, having regard to their ability to resist the following:

(a) attack by marine organisms;

(b) corrosion;

(c) deterioration resulting from abrasion or immersion in seawater.

Maintenance of prescribed tidal work must not prevent permanent public access to Shute Bay.

Maintenance work on prescribed tidal work must not adversely affect navigable access of the adjacent maritime infrastructure, namely the boat ramp.

Maintenance of prescribed tidal work must not adversely affect the structural integrity of any existing revetment or another existing maritime structure.

PERFORMANCE INDICATORS

Marina structural integrity is maintained and water quality objectives are met as specified in Element 5.4 of this SBMP.

MONITORING

Monitoring of structural integrity of prescribed tidal works shall be undertaken on a regular basis to inform the maintenance schedule and prevent an unsafe work and play environment.

RECORD KEEPING

A record of maintenance works on existing lawful works is required to be kept in a dedicated register.

REPORTING AND REVIEW

Details on any maintenance works shall be detailed in the annual return.

CORRECTIVE ACTION

In the event of a non-compliance relating to prescribed tidal structures, the following corrective actions are to be followed.

- Investigate details of the cause of the non-compliance, incident, or complaint.
- Response to complainant, if relevant, outlining procedure for corrective action and proposed timeframe for implementation of corrective actions.
- Implementation of appropriate mitigation measures as determined through the CAR process and within the agreed timeframe noted on the CAR.

5.10 Cultural Heritage Management

RATIONALE

A comprehensive Cultural Heritage Management Plan (CHMP) has been agreed by Shute Harbour Marina Development Pty Ltd and the Traditional Owner respondent parties. The CHMP has been registered and approved by the Department of Natural Resources and Water. No indications of non-indigenous cultural heritage sites have been found during investigations. While the site is not expected to yield any cultural artefacts, as a precaution the activities will be managed in such a way that disturbance is prevented or kept to a minimum as per the engineered drawings submitted for approval. Sites of cultural heritage significance will be managed in line with duty of care guidelines established by the *Aboriginal Cultural Heritage Act 2003*.

The CHMP is presented as an Appendix to the EIS.

OBJECTIVE / TARGET

No destruction or damage of significant archaeological sites, or objects of cultural value to occur at any time during the works.

To carry out appropriate tasks and actions throughout the duration of the works which comply with the stated objectives.

TASKS / ACTIONS

All operations will be consistent with the regional CHMP.

PERFORMANCE INDICATORS

No destruction or damage of significant archaeological sites, or objects of cultural value, are to occur during works.

REPORTING AND REVIEW

In the event of an archaeological or historic site, item or place being discovered, the find shall be immediately reported to the Principal and DNRW Cultural Heritage Co-ordination Unit.

The Contractor shall report to the Principal upon the requirement to complete a CAR and the actions taken in respect of the CAR.

CORRECTIVE ACTION

Corrective action will be determined within the legal requirements of the *Aboriginal Cultural Heritage Act 2003* and in consultation with the DNRW Cultural Heritage Co-ordination Unit and relevant local traditional owner parties.

Should there be non-compliance with the stated performance indicator the following corrective actions are to be implemented.

- Identification of the cause of the non-compliance.
- Implementation of appropriate mitigation measures as determined by the Principal and Consultant in consultation with the Contractor.
- Relevant validation monitoring to confirm that the nominated corrective actions have been effective.

The Contractor shall implement the corrective action(s) as required within the agreed time frame noted on the CAR.

6. ENVIRONMENTAL EMERGENCIES

Environmental Emergency Plans have been prepared for the marina for the following emergencies and/or incidents:

- oil spills;
- fire; and
- cyclones.

The Oil Spill Response Emergency Plan is attached as Appendix D of this SBMP.

The Fire Response Emergency Plan is attached as Appendix E of this SBMP.

The Cyclone Evacuation Plan has been prepared as a separate document and attached to the EIS.

Environmental Emergency Response Plans shall be implemented by all staff in the relevant event who will be trained in their appropriate implementation (refer to section 7 of this SBMP).

Environmental Emergency Response Plans shall be kept on site and prominently displayed.

The following emergency response numbers shall be displayed in appropriate positions and contacted as appropriate in an emergency:

EMERGENCY - 000

FIRE – (07) 49466442

POLICE – (07) 49488888

AMBULANCE – 131233

EPA (wildlife or pollution incidents) - 1300 130 372
EPA Mackay Office - 49447800

MARITIME SAFETY QUEENSLAND – (07) 4946 2200
(AH 4956 3489)

WHITSUNDAY SHIRE COUNCIL - 4945 0200

WHITSUNDAY COUNTER DISASTER CENTRE (CYCLONE RELATED) - 4945 0290

DIVERS ALERT NETWORK (DIVING EMERGENCIES)- 1-800-088-200

7. ENVIRONMENTAL TRAINING

Under section 493 of the EP Act the corporation is liable for breaches of the EP Act unless due diligence has been exercised. One way that an organisation conducting an ERA can demonstrate due diligence is by training staff in related environmental matters.

The Operator shall provide site induction and training for attendance by all employees to inform on general responsibilities, site-specific values such as ecological values and features to be preserved, environmental management requirements, contractual obligations and penalties.

Environmental training must be undertaken at the time of an employee induction and when changes to plant and equipment, or procedures and practices occur.

7.1 Policy Statement

Training is a vital part of any SBMP. Relevant staff will be trained in the purpose and operation of the SBMP and associated equipment to foster an awareness of environmental and workplace health and safety issues, minimize environmental impacts and inform all relevant individuals of their responsibilities and duties under the relevant legislation.

7.2 Training Topics

Environmental Awareness and Responsibility

- Awareness of SHMR commitment to environmental management and its Environmental Policy.
- Instruction on SHMR's SBMP**.**
- Briefing on SHMR's environmental management objectives and targets and updating of these objectives and targets as the SBMP is implemented and evolves.
- Responsibilities, particularly environmental duty (of care) under the EP Act and other legal requirements.
- A general responsibility to encourage others to adopt better environmentally friendly practices.
- Organisational structure and responsibilities and the role this plays in the effective management of environmental issues.
- The need for all staff (and customers/patrons) to be environmentally aware, provide feedback and suggest new ideas.
- Awareness of SHMR Marina User Regulations.
- General awareness of environmental impacts and the pollution potential of products being used.

Personal Safety

- General Safety Procedures (use of Equipment).
- Location of First Aid Kits.
- Persons to Contact with First Aid Training.
- Storage of Hazardous Materials, their impacts and safe use.
- Use of power tools and hazardous substances.

Risk Minimisation

- Knowledge of control procedures for day-to-day operational activities that can be followed to minimise environmental impacts.
- Locations of Electrical, Plumbing and Storage Tank arrangements to facilitate rapid repairs and unnecessary accidental damage.
- Correct use of the Pump Out facility (when fitted) to prevent accidental discharge.
- Correct usage of the Refuelling Facility to minimise spillages.
- Correct techniques for containing and mopping up spills.

Reporting and Documentation

- Identifying / Detecting, Reporting and Monitoring Potential Hazards.
- Systems of Documentation.

Emergencies

- Location of Stormwater Drains to manage sudden rainfall events or spillages.
- Location of current lists of emergency phone numbers.
- Location of details of Emergency Response Procedures.
- Fire fighting Procedures and Roles.
- Emergency Response Procedures.

Performance Indicators and Timeframes

- Compliance confirmed but training will be on-going.
- Training Records.

8. EDUCATION

SHMR accepts that education of staff, customers/patrons and the general public involved with the operations of SHMR is critical in maintaining a safe, environmentally friendly and economically profitable business that has a good 'public profile'.

Signs

Copies of SHMR Environmental Policy will be displayed at sites around the grounds to ensure continuing awareness and commitment to environmental responsibility.

Drainage pit labelling will be employed to inform the public that drainage is not treated and those materials that enter SHMR drainage system ultimately will discharge to Shute Harbour.

Warning signs will be installed which display the following:

DRAINS TO HARBOUR

NO DUMPING

Clean water and a clean environment are essential to

GOOD BOATING

Signs will be installed to indicate that swimming is prohibited in the marina and in the vicinity of the SHMR.

Newsletters regarding relevant boating and specific environmental issues will be sent to customers/patrons of the marina and will be also made available to staff.

A public education program will be ongoing which includes:

- the marina's no-discharge regulations;
- promotion of the use of SHMR's pump out stations;
- environmentally friendly boat cleaning practices;
- storm water run-off contamination;
- liquid material management; and
- hazardous substances and dangerous goods handling.

Environmental Warning

Any employee, tenant, customer, or any outside contractor violating SHMR SBMP, may be asked to pay for the clean up, and/or have his/her privileges to use the SHMR terminated.

A notice to this effect will be handed to all individuals using SHMR facilities.

Performance Indicators and Timeframes

Compliance should be quickly achieved but education will be ongoing.

Further work will be required with regard to the education and training of contractors who visit SHMR site.

9. CONTINUAL IMPROVEMENT

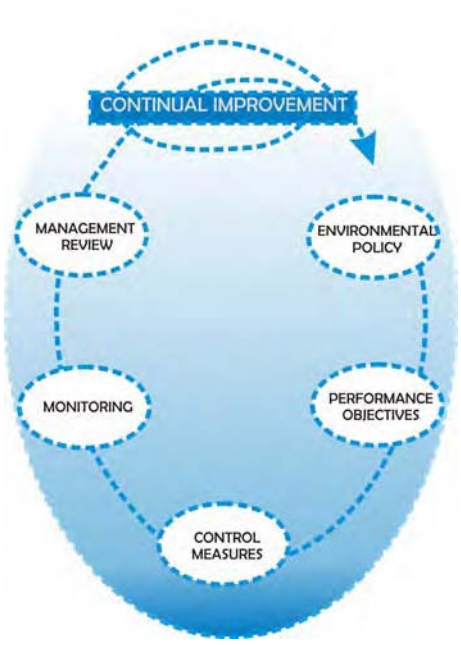
This Marina SBMP is a dynamic document. As such, to ensure the environmental management at the project area is continually improved, a review of this document by the Operator, in consultation with relevant agencies shall occur. This will incorporate any relevant condition requirements issued in subsequent development approval(s) and will occur:

- following significant environmental incidents;
- at the completion of environmental audits; and
- in the instance whereby the objectives of any element of this SBMP are not being met.

The suitability, adequacy and effectiveness of this SBMP shall be audited annually following a continual improvement procedure illustrated below. The review should consider the following matters.

- Suitability of the objectives.
- The extent to which the objectives have been met.
- Monitoring results.
- Audit findings.
- Technical reviews.
- Changes to organisational structure, plant and equipment, or procedures and practices.

The Marina SBMP shall not be implemented or amended in a way that contravenes any condition of a relevant development approval(s). In the event that tasks/performance indicators/monitoring and/or corrective actions contradict development approval conditions, this SBMP shall be amended to ensure activities are undertaken in accordance with conditions of the relevant development approval, which take precedence.



10. ANNUAL RETURN

An Annual Return is required to be submitted prior to the anniversary date stated on the relevant Registration Certificate for carrying out ERAs approved by a development permit.

Where non-compliances with development approval conditions have been identified through internal review or external auditing, a report must be prepared. This report must be submitted with the Annual Return detailing the level of environmental harm associated with the non-compliances and actions taken to correct and prevent harm from reoccurring or potentially occurring.

A copy of the Annual Return and evidence of payment of annual return fees must be held on site.

FIGURES

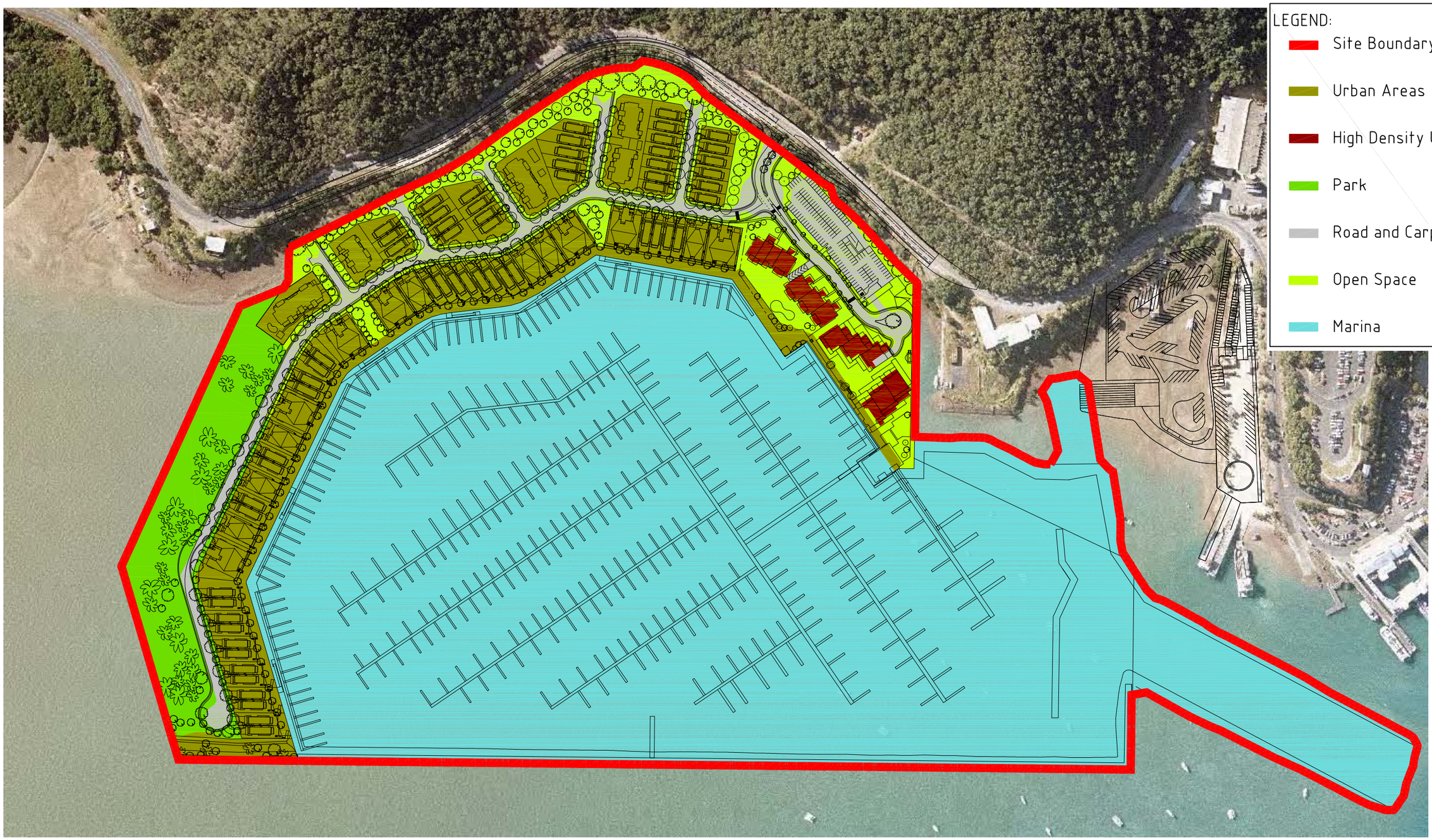


Image sourced from STUDIO TEKTON, Shute Harbour Marina - Master Plan
Drawing No. 0605 SK01

Scale 1:3500 (A3)

FIGURE 1
DEVELOPMENT LAYOUT

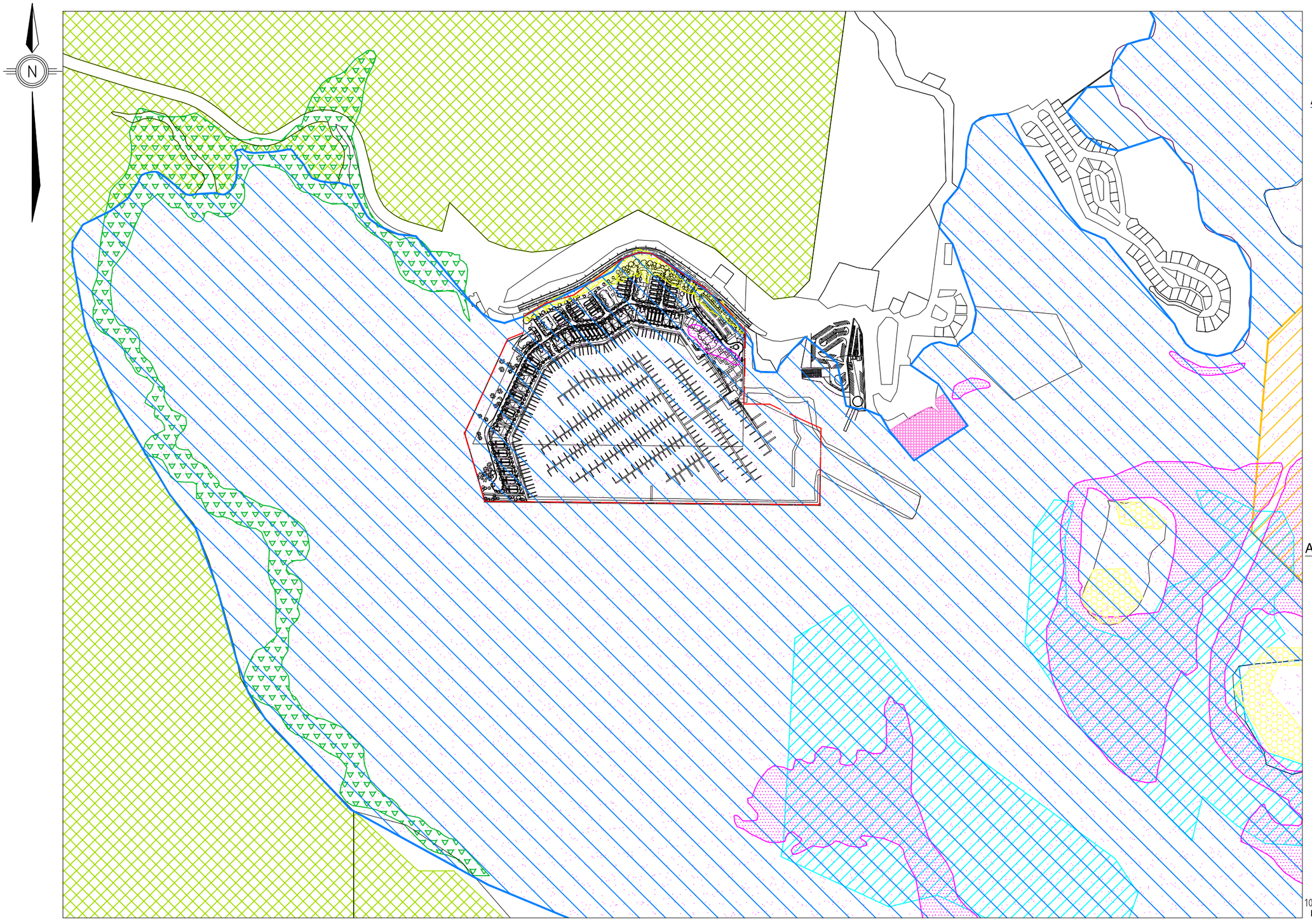
Rev: v.2 Date: 17 July 2008

Project No.: 7800/41

Shute Harbour Marina Development Pty Ltd

CAD FILE: I:\7800-41\ACAD\Marina SBMP\Figure 1 - Development Layout_v3.dwg
XREF's: Master Plan July 2008

PRINT DATE: 17 July, 2008 - 4:21pm



Natural resources information sourced from *Areas of state significance (natural resources)* Map No. 5, Environmental Protection Agency Coastal Planning.

Social and economic information sourced from *Areas of state significance (social and economic)* Map No. 2, Environmental Protection Agency Coastal Planning.

Scale 1:10,000 (A3)

FIGURE 2
ENVIRONMENTALLY SENSITIVE AREAS

Rev: v.2 Date: 17 July 2008

Project No.: 7800/41

Shute Harbour Marina Development Pty Ltd

CAD FILE: I:\7800-41\ACAD\Marina SBMP\Figure 2 - Environmentally sensitve areas.dwg
XREF's: dcdb without aerial; Master Plan July 2008

PRINT DATE: 21 October, 2008 - 9:41am

Cardno

KEY:

1 MARINA
2 RESIDENTIAL TOURISM
3 RESORT TOURISM
4 MIXED USE
- RESORT/TOURISM
- CHARTER BOAT BASE, CHANDLERY
- COMMERCIAL
- RESTAURANT
- MARINA OFFICE
- MARINA AMENITIES

5 MARINA ESPLANADE & PARKS
6 CARPARK (UP TO THREE LEVELS)
7 FUEL DOCK & PUMP OUT FACILITY
8 BREAKWATER
9 PARK/FUTURE MAINTENANCE DREDGING SPOIL AREA

LEGEND:
- Site Boundary
- Urban Areas
- High Density Urban
- Park
- Road and Carpark
- Open Space
- Marina
- SH2 Proposed Water Quality Monitoring Location

Drawing sourced from Cardno Lawson Treloar.
Stormwater Quality Management Strategy (R2).
Figure 4 - Surface Water Quality Monitoring Locations. Project No. LJ8779

40 0 40 80 120 160 200m
1:4000

Scale 1:4000 (A3)

FIGURE 3
WATER QUALITY MONITORING LOCATIONS

Rev: v.2 Date: 17 July 2008

Project No.: 7800/41

Shute Harbour Marina Development Pty Ltd

CAD FILE: I:\7800-41\ACAD\Marina SBMP\Figure 3 - Water Quality Monitoring Locations_v4.dwg
XREF's: Master Plan July 2008

PRINT DATE: 17 July, 2008 - 4:22pm

APPENDIX A

Example Corrective Action Request Form

CORRECTIVE ACTION REQUEST

Report No.

Date:

DETAILS OF NON-CONFORMANCE: Inspected by:
DETAILS OF PROPOSED ACTION Passed to Operator (as applicable):y/n Date: Reply required by:
CONSULTANT/ OPERATOR ADVICE (as required): Date action required by (if applicable): Signed (by Operator or Operator's representative): Date:
AUTHORITY TO PROCEED Sign: Date:
ACTION CARRIED OUT Sign: Date:
ELEMENT RE-INSPECTED BY Sign: Date:
COPY ISSUED TO OPERATOR Date: Sign:

APPENDIX B

Marina Maintenance Plan

MARINA MAINTENANCE PLAN

MARINA

SCHEDULE OF SITE VISITS													
Purpose of Visit	**Frequency**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Routine inspection	12/year	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Annual inspection	1/year				✓								

Two possible mechanisms that may trigger a maintenance requirement are, in some cases, interrelated. These are:

- A change in the physical characteristics. (That is significant variance in the water level and change in the area, depth or bed profile of the marina).

- A change in the physiochemical and/or biological characteristics of the marina waters to outside the recommended water quality standards as outlined in the SWMP.

For the marina the maintenance indicators can be split into water quality parameter indicators, measured by monitoring equipment, and observational indicators assessed by site inspections.

The water quality parameter indicators are specifically related to the required water quality for the health of the marina waters and for regulation of the discharge off the site. The SWMP has detailed monitoring requirements with the performance criteria.

INSPECTION	
1.	**Routine Inspection**
1.1	Routine inspection should be carried out on a regular monthly basis. The purpose of the inspection is to indicate when maintenance of the marina is required.
1.2	Inspections will be undertaken for the following indicators: • Algae • Weed growth • Nutrient Load • Sediment • Pests • Thermal Layering • Structural Integrity
1.3	Complete appropriate **Maintenance Form**. Routine maintenance should be scheduled when the performance indicators above shown a need for maintenance.
2.	**Annual Inspection**
2.1	Once a year, the condition of the marina should be closely inspected. Any damage or problems should be noted on the Maintenance Form for action.

MAINTENANCE	
1.	**General**
1.1	Maintenance of the marina involves: • Removal of material impacting on inlet/outlet structures • Maintenance of floodways, including sediment and cut grass removal/disposal • Monitoring and removal of floating and rooted exotic weed • Collection of any litter • Removal of any pests
2.	**Weed Management**
2.1	If weeds have been observed, these weeds should be removed from the marina. Weeding generally involves manual removal of perennial species.
2.2	The aim is to remove the weed including the roots when the weeds are less than 3 months old, otherwise weeds infestation rapidly occurs and is difficult to control.
2.3	Herbicides should be avoided as they would contaminate receiving waters of the Coral Sea.
2.4	The weeds should be disposed offsite at appropriate waste management facility.
2.5	Replant appropriate plant species, where necessary, in areas that have been extensively weeded.
3	**Pest Management**
3.1	If pests have been observed during routine inspection, these should be removed from the marina.
3.2	The aim is to ensure a healthy marina area, which does not detriment neighbouring human health and the Coral Sea receiving waters.
3.4	Removal procedures include: • Use of insect and fish predators • Reduce areas of breeding grounds • Increase DO levels • Seek professional advice • Ensure method is acceptable to local health authority
4.	**Litter Management**
4.1	Remove and dispose of litter that may be visible around the lake.
5	**Structure Management**
5.1	Check for signs of metal corrosion, concrete cancer and spalling. Obtain advice from an engineer for maintenance requirements.

Extreme Event Triggered Maintenance

Additional maintenance may be required if the marina area is subject to very extreme conditions outside normal operations or if, based on observational indicators and monitoring, the marina conditions are found to be outside acceptable standards. In summary, these events include:

- Flood events;
- Algae blooms;
- Fish kills; and
- Illegal dumping of waste.

Specific Event Triggered Maintenance issues are discussed below.

(a) Flood Inundation

In the event of flood inundation, the marina area may have received sediment loads, debris and infestation of floating weeds. Debris and floating weeds should be removed manually.

Flooding may also put considerable strain on the banks of the marina, particularly at the inlet structures. Areas that may have been damaged by erosion and scour should be corrected.

(b) Algal Blooms

Algae are an important aquatic plant in the ecological environment. Algae, of course, occur naturally; however several factors can exacerbate their numbers causing harm to other plant and animal life. Algal blooms are unlikely as the marina is not a fully enclosed system as the marina area remains open to the Coral Sea. Normal tidal changes are likely to reduce risk of algal blooms occuring. Possible causes of algal outbreaks include:

- Pollution of waterways with nutrients;
- Prolonged warm, sunny and calm weather; and
- Decomposition of organic matter in the marina.

Algal control methods depend very much on the level of algal growth. Maintenance measures are detailed below.

Trigger Level 1: Potentially Toxic Blue Green Cell Count approaches 2000 cells/mL
• Prevention is far better than treatment after the bloom has occurred. Hence at this level turnover mixing could be increased until numbers are brought back to lower levels. • Fertiliser activity should be limited. • Maintain regular monitoring
Trigger Level 2: Potentially Toxic Blue Green Cell Count exceeds 2000 cells/mL
• Fertiliser activity and sprinkling must be limited where possible in the vicinity of the site of concern. • Monitoring frequency to be increased at the affected site to once a week. • Harvest and land dispose of any dead fish.
Trigger Level 3: Potentially Toxic Blue Green Cell Count exceeds 15000 cells/mL
• All fertiliser activity and sprinkling must be stopped for all areas draining to the marina. • Warning signs to be posted around the marina, warning people to stay clear and to not drink or make contact with the water. • All neighbouring residents to be notified. • Monitoring frequency to be increased to weekly. • Follow the Queensland Governments '*Queensland Harmful Algal Bloom Operational Procedures*'. • Contingency measures are to be considered, including: - vertical mixing, through compressed air or mechanical mixing devices; - harvesting and land disposal of algae and dead fish; and - allowing the bloom to run its course.

(c) Fish Kills

Fish kills should not occur within the marina. Water quality monitoring as well as the observational indicators, should provide warning signs long before fish kills are evident. Also the marina is not a closed system, as such tidal effects from the Coral Sea should flush the marina area regularily.

Possible causes for fish kills are similar to the possible causes for algal outbreaks as detailed above. The requirements as for algae bloom trigger levels 2 & 3 should be enforced, (depending on the severity of water pollution) until the source of water pollution is identified and water quality restored.

In the event of fish kills, an environmental consultant should be contacted and water quality testing commenced immediately to identify the cause. Water samples should be taken carefully to ensure skin does not come in contact with the marina water.

(d) Illegal Dumping of Waste

The current proposed development proposes a treatment train arrangement that will trap the herbicide and pesticide use from a typical urban development.

In the unlikely event that there is a major spill of chemicals within the development, the treatment train will provide some buffering before any substance will enter the marina.

In the event of an oil spill please refer to the Oil Spill Action Plan.

APPENDIX C

Maintenance Checklist and Plan Details

VEGETATED SWALE WITH UNDERLYING BIO-RETENTION SYSTEM

SWALE BIO-RETENTION MAINTENANCE CHECKLIST		
Asset I.D.		
Inspection Frequency:	1 to 6 monthly	Date of Visit:
Location:		
Description:		
Site Visit by:		

INSPECTION ITEMS	Y	N	ACTION REQUIRED (DETAILS)
Sediment accumulation at inflow points?			
Litter within swale?			
Erosion at inlet or other key structures (eg crossovers)?			
Traffic damage present?			
Evidence of dumping (eg building waste)?			
Vegetation condition satisfactory (density, weeds etc)?			
Replanting required?			
Mowing required?			
Clogging of drainage points (sediment or debris)?			
Evidence of ponding?			
Set down from kerb still present?			
Damage/vandalism to structures present?			
Surface clogging visible?			
Drainage system inspected?			
Remulching of trees and shrubs required?			
Soil additives or amendments required?			
Pruning and/ or removal of dead or diseased vegetation required?			
Resetting of system required?			
COMMENTS			

Source: WSUD Technical Design Guidelines for South East Queensland – Version 1 June 2006 (Moreton Bay Waterways and Catchments Partnership)

SWALE BIO-RETENTION MAINTENANCE PLAN DETAILS

SCHEDULE OF SITE VISITS													
Purpose of Visit	**Frequency**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Routine inspection	12/year	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Annual inspection	1/year				✓								
Routine maintenance	2/year				✓						✓		
Routine clean out of sediment	1 / 2 years				✓								

The above schedule is a guideline only. Routine clean out and maintenance should be scheduled based on the outcome of routine inspection.

INSPECTION	
1.	**Routine Inspection**
1.1	Routine inspection should be carried out on a regular monthly basis. The purpose of the inspection is to indicate when maintenance of the Bio retention system is required.
1.2	Inspections should consider erosion at the inlet or other key structures, clogging of the sand filter (may be seen due to evidence of ponding), accumulation of sediments at inflow points, litter within the basin, the existence of traffic damage and the condition of vegetation.
1.3	Complete appropriate Maintenance Form. Maintenance is required if clogging of the sand filter is excessive, if litter has accumulated within the basin, if any damage or vandalism to the structure is present or if the vegetation has grown too dense or has weeds.
2.	**Annual Inspection**
2.1	Once a year, the condition of the bio retention system should be closely inspected. Any damage or problems should be noted on the Maintenance Form for action.

ROUTINE MAINTENANCE	
1.	**Purpose**
1.1	Routine maintenance of the bio retention system involves weed control and the collection of any litter, removal of dead or diseased vegetation, and mulch replacement.
2.	**Weed Management**
2.1	If weeds have been observed during routine inspection, these weeds should be removed from the bio retention system. Weeding generally involves manual removal of perennial species.
2.2	The aim is to remove the weed including the roots when the weeds are less than 3 months old, otherwise weeds infestation rapidly occurs and is difficult to control.
2.3	Herbicides should not be used as they would contaminate the water in the creek.
2.4	The weeds should be disposed offsite at an appropriate waste management facility.
2.5	Replant appropriate plant species, where necessary, in areas that have been extensively weeded.

3.	**Litter Management**
3.1	Remove and dispose of litter that may be visible within and around the bio retention system.

4.	**Dead or Diseased Vegetation**
4.1	Remove or dispose of any dead or diseased vegetation within system
5.	**Mulch Replacement**
5.1	Mulch replacement is recommended when erosion is evident or the system looks unattractive.

CLEANOUT OF SEDIMENT	
1.	**Setup and Prepare Site for Cleanout**
1.1	Notify adjacent residents of cleanout at least three days prior to date of cleanout.
1.2	Setup equipment onsite.
2.	**Cleanout of Sediment**
2.1	The preferred method of cleanout of the bio retention system is replacing the clogged medium.
2.2	Position the equipment on the side of the system to allow easy access into the bio retention system and transfer of material into adjacent tipper truck. The truck should be positioned so that water from the truck body drains into the bio retention system.
2.3	Drain waste in the truck thoroughly before proceeding to the disposal point.

VEGETATED SWALE

SCHEDULE OF SITE VISITS													
Purpose of Visit	**Frequency**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Routine inspection	12/year	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Annual inspection	1/year				✓								
Routine maintenance	12/year	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The above schedule is a guideline only. Routine maintenance should be scheduled based on the outcome of routine inspection.

INSPECTION	
1.	**Routine Inspection**
1.1	Routine inspection should be carried out on a regular monthly basis. The purpose of the inspection is to indicate when mowing/maintenance of the swale is required, if any erosion or scouring has occurred and to identify any build up of sediments or litter.
1.2	The length of grass in the swale should be assessed.
1.3	Complete appropriate Maintenance Form. Routine mowing/maintenance should be scheduled when the height of vegetation in the swale is excessive.
2.	**Annual Inspection**
2.1	Once a year, the condition of the swale should be closely inspected. Any damage or problems should be noted on the Maintenance Form for action.

ROUTINE MAINTENANCE	
1.	**Purpose**
1.1	Routine maintenance of the swale involves weed control, the collection of any litter, and the mowing of excessive vegetation.
2.	**Weed Management**
2.1	If weeds have been observed during routine inspection, these weeds should be removed from the swale. Weeding generally involves manual removal of perennial species.
2.2	The aim is to remove the weed including the roots when the weeds are less than 3 months old, otherwise weeds infestation rapidly occurs and is difficult to control.
2.3	Herbicides should not be used as they would contaminate the water in the discharging to the Broadwater.
2.4	The weeds should be disposed offsite at an appropriate waste management facility.
2.5	Replant appropriate plant species, where necessary, in areas that have been extensively weeded.
3.	**Litter Management**
3.1	Remove and dispose of litter that may be visible around the swale.
4.	***Mowing***
4.1	Mow excessive vegetation and dispose of mulch at any appropriate waste management facility.

MAINTENANCE CHECKLIST AND PLAN DETAILS

BIO-RETENTION BASIN

BIO-RETENTION BASIN MAINTENANCE CHECKLIST

Asset I.D.		
Inspection Frequency:	1 to 6 monthly	Date of Visit:
Location:		
Description:		
Site Visit by:		

INSPECTION ITEMS	Y	N	ACTION REQUIRED (DETAILS)
Sediment accumulation at inflow points?			
Litter within swale?			
Erosion at inlet or other key structures?			
Traffic damage present?			
Evidence of dumping (eg building waste)?			
Vegetation condition satisfactory (density, weeds etc)?			
Watering of vegetation required?			
Replanting required?			
Mowing/slashing required?			
Clogging of drainage points (sediment or debris)?			
Evidence of ponding?			
Damage/vandalism to structures present?			
Surface clogging visible?			
Drainage system inspected?			
Resetting of system required?			
COMMENTS			

Source: WSUD Technical Design Guidelines for South East Queensland – Version 1 June 2006 (Moreton Bay Waterways and Catchments Partnership)

BIO RETENTION BASIN

SCHEDULE OF SITE VISITS													
Purpose of Visit	**Frequency**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Routine inspection	12/year	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Annual inspection	1/year				✓								
Routine maintenance	2/year				✓						✓		
Routine clean out of sediment	1 / 2 years				✓								

The above schedule is a guideline only. Routine clean out and maintenance should be scheduled based on the outcome of routine inspection.

INSPECTION	
1.	**Routine Inspection**
1.1	Routine inspection should be carried out on a regular monthly basis. The purpose of the inspection is to indicate when maintenance of the Bio retention system is required.
1.2	Inspections should consider erosion, condition of vegetation, ponded water.
1.3	Complete appropriate Maintenance Form.
2.	**Annual Inspection**
2.1	Once a year, the condition of the bio retention system should be closely inspected. Any damage or problems should be noted on the Maintenance Form for action.

ROUTINE MAINTENANCE	
1.	**Purpose**
1.1	Routine maintenance of the bio retention system involves weed control and the collection of any litter, removal of dead or diseased vegetation, and mulch replacement.
2.	**Weed Management**
2.1	If weeds have been observed during routine inspection, these weeds should be removed from the bio retention system. Weeding generally involves manual removal of perennial species.
2.2	The aim is to remove the weed including the roots when the weeds are less than 3 months old, otherwise weeds infestation rapidly occurs and is difficult to control.
2.3	Herbicides should not be used as they would contaminate the water in the lake.
2.4	The weeds should be disposed offsite at appropriate waste management facility.
2.5	Replant appropriate plant species, where necessary, in areas that have been extensively weeded.
3.	**Litter Management**
3.1	Remove and dispose of litter that may be visible around the bio retention system.
4.	**Dead or Diseased Vegetation**
4.1	Remove or dispose of any dead or diseased vegetation within system
5.	**Mulch Replacement**
5.1	Mulch replacement is recommended when erosion is evident or system looks unattractive.

CLEANOUT OF SEDIMENT

1.	**Setup and Prepare Site for Cleanout**
1.1	Notify adjacent residents of cleanout at least three days prior to date of cleanout.
1.2	Setup equipment onsite.
2.	**Cleanout of Sediment**
2.1	The preferred method of cleanout of the bio retention system is replacing the clogged medium.
2.2	Position the equipment on the side of the system to allow easy access into the bio retention system and transfer of material into adjacent tipper truck. The truck should be positioned so that water from the truck body drains into the bio retention system.
2.3	Drain waste in the truck thoroughly before proceeding to the disposal point.

MAINTENANCE CHECKLIST AND PLAN DETAILS

VEGETATED SWALE

VEGETATED SWALE MAINTENANCE CHECKLIST

Asset I.D.		
Inspection Frequency:	1 to 6 monthly	Date of Visit:
Location:		
Description:		
Site Visit by:		

INSPECTION ITEMS	Y	N	ACTION REQUIRED (DETAILS)
Sediment accumulation at inflow points?			
Litter within swale?			
Erosion at inlet or other key structures (eg crossovers)?			
Traffic damage present?			
Evidence of dumping (eg building waste)?			
Vegetation condition satisfactory (density, weeds etc)?			
Replanting required?			
Mowing required?			
Sediment accumulation at outlets?			
Clogging of drainage points (sediment or debris)?			
Evidence of ponding?			
Soil additives or amendments required?			
Pruning and/ or removal of dead or diseased vegetation required?			
COMMENTS			

Source: WSUD Technical Design Guidelines for South East Queensland – Version 1 June 2006 (Moreton Bay Waterways and Catchments Partnership)

MAINTENANCE PLAN DETAILS

VEGETATED SWALE

SCHEDULE OF SITE VISITS													
Purpose of Visit	**Frequency**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Routine inspection	12/year	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Annual inspection	1/year				✓								
Routine maintenance	12/year	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The above schedule is a guideline only. Routine maintenance should be scheduled based on the outcome of routine inspection.

INSPECTION	
1.	**Routine Inspection**
1.1	Routine inspection should be carried out on a regular monthly basis. The purpose of the inspection is to indicate when mowing/maintenance of the swale is required.
1.2	The length of grass in the swale should be assessed.
1.3	Complete appropriate Maintenance Form. Routine mowing/maintenance should be scheduled when the height of vegetation in the swale is excessive.
2.	**Annual Inspection**
2.1	Once a year, the condition of the swale should be closely inspected. Any damage or problems should be noted on the Maintenance Form for action.

ROUTINE MAINTENANCE	
1.	**Purpose**
1.1	Routine maintenance of the swale involves weed control the collection of any litter, and mowing of excessive vegetation.
2.	**Weed Management**
2.1	If weeds have been observed during routine inspection, these weeds should be removed from the swale. Weeding generally involves manual removal of perennial species.
2.2	The aim is to remove the weed including the roots when the weeds are less than 3 months old, otherwise weeds infestation rapidly occurs and is difficult to control.
2.3	Herbicides should not be used as they would contaminate the water in the lake.
2.4	The weeds should be disposed offsite at appropriate waste management facility.
2.5	Replant appropriate plant species, where necessary, in areas that have been extensively weeded.
3.	**Litter Management**
3.1	Remove and dispose of litter that may be visible around the swale/buffer.
4.	**Mowing**
4.1	Mow excessive vegetation and dispose of mulch at any appropriate waste management facility.

APPENDIX D

Draft Oil Spill Response Plan

SHUTE HARBOUR
MARINA

DRAFT OIL SPILL EMERGENCY ACTION PLAN FOR SHUTE HARBOUR MARINA

APPLICATION OF OIL SPILL EMERGENCY ACTION PLAN

This Oil Spill Emergency Action Plan applies to the Shute Harbour.

In the case of an oil spill involving a vessel which berths at or otherwise uses the Shute Harbour marina facility the responsibility for initial emergency action in the event of an oil spill shall lie with the Marina Manager.

In all other cases responsibility for initial emergency action in the event of an oil spill shall lie with the individual principally involved with the oil spill.

Equipment required for managing oil spills shall be stored at the marina.

Prior to the marina becoming operational Whitsunday Shire Council shall assume the responsibilities ascribed to the marina management by this Draft Oil Spill Emergency Action Plan and equipment required for managing oil spills shall be stored by Whitsunday Shire Council and/or Maritime Safety Queensland.

DEFINITION OF A SPILL OR SLICK

A small spill is broadly defined as less than 1 litre. A medium spill is 2-5 litres. Anything over 5 litres is serious and must be reported immediately to (in order of priority):

1. Whitsunday Shire Council
2. Maritime Safety Queensland
3. Environmental Protection Agency.

Small spills and drips can be dispersed using chemical dispersant, but it is preferable to utilise oil absorbent cloth, where possible.

In the event of a medium or serious oil spill being sighted at the Marina, the following action must be adhered to:

ACTION

- The Marina Manager or after hours Marina Security Manager, in the event of the non-availability of relevant administering authorities (this does not remove the requirement to report an incident on EPA's hotline on 1300 130 372), must be informed immediately to organise a response team.
- The spill must be contained by surrounding its perimeter with the **OIL SPILL BOOM**. If spillage occurs from a vessel, surround the entire area with the floating boom and deploy oil absorbent pads onto the slick.
- If spillage is within a berth area, contain the spill with the **OIL SPILL BOOM** and deploy oil absorbent pads onto the slick.
- Ensure **FIRE EXTINGUISHERS** are close at hand.
- Isolate the source of the oil/fuel leak. If a fuel line is leaking at the fuel wharf, shut down the valves on the supply lines and turn off electrical supply to the pumps. If fuel is leaking from a boat bilge, turn off the electrical bilge pump, isolate the batteries, open all hatches for venting off fumes.
- Keep any persons not involved with the containment operation well clear of the area. Under no circumstances allow any person to smoke or start engines of any vessels in the area.

DRAFT OIL SPILL EMERGENCY ACTION PLAN FOR SHUTE HARBOUR MARINA

- In the event of an oil spill for which the marina management is responsible for initial emergency action the Marina Manager/After Hours Security Manager will coordinate the operation and deploy all staff as deemed necessary and will keep the marina Managing Director updated with events. In the event of an oil spill for which the marina management is not responsible for initial emergency action Whitsunday Shire Council/Maritime Safety Queensland will coordinate the operation and deploy all staff as deemed necessary.
- In an event of an oil spill for which the marina management is responsible for initial emergency action the Managing Director or his appointee will make any decisions regarding notification of the appropriate authorities in the event of a large spill, ie Whitsunday Shire Council, EPA and Maritime Safety Queensland. In the event of an oil spill for which the marina management is not responsible for initial emergency action Whitsunday Shire Council Environmental Protection Department will make such decisions.
- In the event of an oil spill for which the marina management is responsible for initial emergency action a full detailed report must be provided to the Managing Director within 24 hours.

FIRST AID PROCEDURES

In the event of a person being affected by the oil or fuel spill, the following first aid procedures can be referred to as a guide.

SYMPTOMS AND SIGNS

- Person may complain of a headache.
- Check may feel tight and person may find it difficult to breath.
- There may be facial swelling and redness (especially around the eyes).
- Pulse will be rapid.
- Person may feel nauseated and may be vomiting.
- In severe cases, person may lose consciousness or go into shock.

TREATMENT

Remove person from the area, restore fresh air and adequate breathing. Call the emergency service immediately. Loosen all tight clothing from around the neck and maintain open airway. If breathing becomes difficult, place the person in the recovery position. If they lose consciousness, employ resuscitation procedures if necessary. Be prepared to treat the person for shock. Arrange urgent removal to hospital.

APPENDIX E

Fire Response Plan

SHUTE HARBOUR
MARINA

FIRE REPONSE PLAN

EMERGENCY - 000

FIRE – (07) 49466442
POLICE – (07) 49488888
AMBULANCE – 131233
MARITIME SAFETY QUEENSLAND – (07) 4946 2200 (AH 4956 3489)

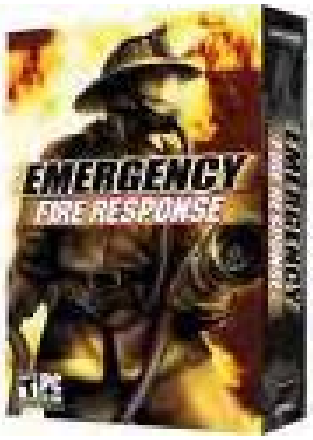
In the event of a fire:

- **RAISE THE ALARM**

  Call Emergency Services 000 **– Give Clear Concise Information including:**

  - **YOUR NAME**
  - **LOCATION OF FIRE – MARINA ADDRESS & POSITION OF FIRE** (eg. Berth Number)
  - **TYPE OF FIRE**
  - **DETAILS OF INJURIES**

- **NOTIFY AMBULANCE (IF NECESSARY)**



REMEMBER – PERSONEL SAFTY IS OF PARAMOUNT IMPORTANCE

DO NOT TAKE RISKS

- Rescue any life & ensure safety
- Unlock all marina gates
- Evacuate Immediate Area
- Shut Off all Utilities – DO NOT SHUT OFF WATER
- Protect the exposures – Remove or protect other boats, buildings, equipment etc.
- Fight the fire if possible & safe – Do Not Take Risks
- Environmental Considerations – minimise or contain environmental damage
- Pertinent personnel must be contacted as soon as possible.

MARINA MANAGER CONTACT TO BE ADVISED