Marina Site Based Management Plan

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Northeast Business Park Pty Ltd

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NORTHEAST BUSINESS PARK

MARINA SITE BASED MANAGEMENT PLAN

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1. INTRODUCTION

Northeast Business Park Pty Ltd (NEBP) proposes to develop a multi-use business park and marina concept as part of a planned riverside precinct on the Caboolture River.

Figure 1 illustrates the marina layout and Figure 2 provides a concept plan of the marina as of December 2025.

Marine industry including ship yard facilities is proposed as a complementary service to the marina including the storage of petroleum, marina operations, boat repairing and maintenance dredging within the marina basin.

This Marina Site Based Management Plan (Marina SBMP) relates to the operation of the environmentally relevant activities (ERAs) associated with the mixed use development proposal including ERA 11 'crude oil or petroleum product storing', ERA 19 'dredging' (i.e. maintenance dredging), and ERA 73 'marina or seaplane mooring'. The plan has been prepared as part of the Environmental Impact Statement (EIS) section 5.

Figure 3 presents the structure plan of the associated precincts relevant to this Marina SBMP.

The Queensland Coordinator General has declared the Northeast Business Park (NEBP) development a significant project which requires an 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 and environmental consultant, Cardno (Qld) Pty Ltd has been appointed to compile the EIS.

This 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 Northeast Business Park Pty Ltd (the Proponent) at its fuel wharf, sewerage pump out and marine facilities, including boat maintenance facilities, located adjacent to the environmentally sensitive areas; Moreton Bay Marine Park and Moreton Bay Ramsar Wetlands within the Caboolture River adjacent to the north-eastern boundary of the project area and the Deception Bay Fish Habitat Area along the project area frontage.

It is acknowledged by the Operator, Port Binnli Pty Ltd, 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 SBMP is to demonstrate the environmental commitment by the Proponent and Operator to carry out 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;

- ensures 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 authorities; and
- provides for continual improvement.

It is anticipated this marina SBMP will address information requirements by the Caboolture Shire 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.

This Marina SBMP has also been developed as an overarching framework providing for best practice environmental management for potential ERAs that may be undertaken as part of boat maintenance including abrasive blasting (ERA 23), metal surface coating (ERA 25) and motor vehicle workshop (ERA 28). Individual operators of these activities shall apply for the relevant approvals.

1.1 Definitions and Terminology

The term **Principal** refers to Northeast Business Park.

The term **Operator** refers a person or company employed to manage the Marina and its associated infrastructure for or on behalf of Northeast Business Park.

The term **Contractor** refers to any party or company performing works associated with operation of the Marina or associated infrastructure and includes all employees of the Contractor and sub-contractors.

The term **Consultant** refers to the civil and/or environmental engineering consultant employed by the Principal.

The term **Works** refers to all matters associated with the marina or associated infrastructure.

The term **EPA** refers to the Environmental Protection Agency.

The term **DPIF** refers to the Department of Primary Industries and Fisheries.

The term **Administering Authority** refers to EPA.

The term **SBMP** refers to this Site-Based Management Plan.

The term **Council** refers to Caboolture Shire Council.

The term **MSQ** refers to Maritime Safety Queensland.

1.2 Relevant Legislation

The primary legislation relevant to this SBMP is the *Environmental Protection Act 1994* (*EP Act*). The *EP Act* protects 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.

2. OPERATORS DETAILS

It is anticipated that the Northeast Business Park Marina will be operated by Port Binnli Pty Ltd or an entity created by the directors of Port Binnli.

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, including the proposed Shute Harbour Marina Development.

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.

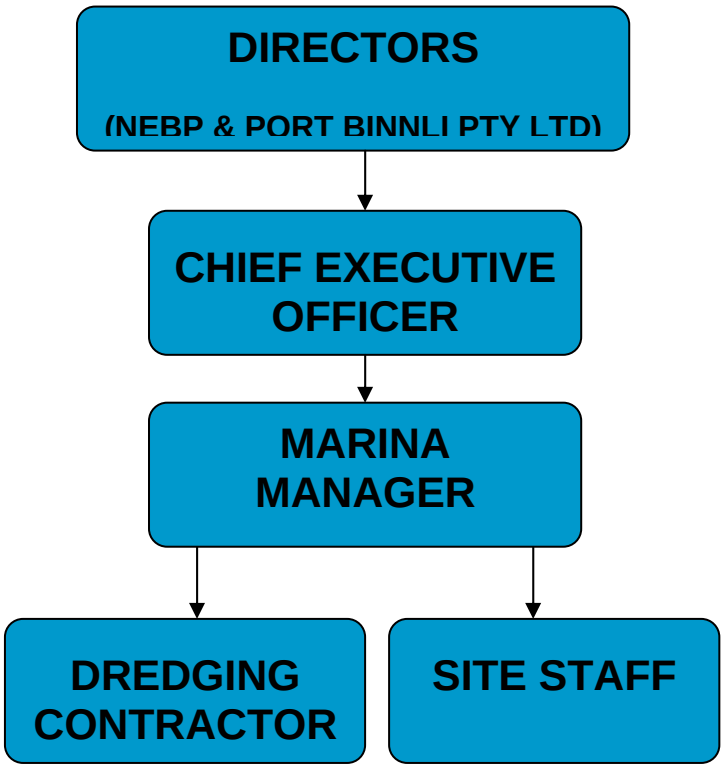
Since the Mackay Marina Village project began in 1998, almost 1,500 people have worked on site to construct the precinct. The project has generated over 600 jobs in the local Mackay area, excluding the 126 current permanent positions within the precinct.

The $150 million project was implemented with extensive consultation and working partnerships. In less than 10 years it has gone from unallocated port land to one of the most impressive facilities on the East Coast. The development has provided significant employment, community and tourism opportunities enhancing the community that supports it.

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 structure of Port Binnli Pty Ltd for marina operations is figured below.



The Marina Manager shall assume the responsibility for implementation of this Marina SBMP on behalf of the Directors. The Marina Manager shall ensure site operations and procedures comply with this Marina SBMP and the effectiveness of such operations and procedures are documented in a manner which evidences due diligence.

Where the Marina Manager becomes aware of a site or operational condition that does not comply with this Marina 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 Marina SBMP.

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.

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.

The Directors and representatives from Port Binnli shall be accountable for the actions of all staff responsible for the effectiveness of this Marina SBMP.

3. ACTIVITY DETAILS

Crude oil or petroleum product storing, dredging and marina operations (including boat maintenance) 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 EPA or local government. ERAs are required to be approved through development permits where conditions may apply. Operators of the ERAs are required to hold registration certificates issued pursuant to the *Environmental Protection Act 1994*.

The development description of each activity to which this Marina 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 5 00 000L.

Relevance – Diesel, unleaded and leaded petrol will be dispensed at the refuelling wharf located within the marina on land described as Lot 24 on Plan SP158298.

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 not more than 5 000t a year.

Relevance – Maintenance dredging (while infrequency) will be required to retain adequate depth within the marina for navigability however siltation within the marina from tidal exchange will be limited with the proposed lock structure.

ERA 69 – Boat maintaining or repairing facility – operating a commercial facility for maintaining or repairing any type of boat or inboard or outboard marine engine.

Relevance – Boat maintaining facilities are proposed as part of the marina services to provide essential complementary services. Boat maintenance shall be undertaken in the dedicated ship building precinct located on land described as Lot 10 on Plan RP902079.

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 - NEBP involves a marina development which provides for 911 wet berths and approximately 300-500 dry storage berths.

4. LOCATION DETAILS

Situated on the southern bank of the Caboolture River approximately 7.5km inland from the coastline via the River, adjacent to the Bruce Highway and 43km north of Brisbane CBD, the NEBP site encompasses 769 ha of property which includes the following seven land parcels ("the project area").

- Lot 2 on RP902075.
- Lot 10 on RP902079.
- Lot 24 on SP158298.
- Lot 7 on RP845326.
- Lot 15 on RP902073.
- Lot 12 on RP145197.
- Lot 17 on RP902072.

The NEBP project area is vacant privately owned land (freehold) that is bound:

- to the north by Caboolture River, with land on the opposite side of the river being primarily rural and used for forestry activity;
- to the west by the Bruce Highway, with land on the opposite side of Bruce Highway developed with residential and open space areas; and
- to the south and east by privately owned rural residential properties with lot sizes ranging from 1-20 ha, bushland, open grassland areas and limited agricultural and recreational land uses.

The project area is relatively flat ranging in elevation from 2.0m AHD at the northern boundary to a knoll at 16.5m AHD towards the southern area of the site. The project area has been classified as having various terrain units (geology, landforms and soils) that below 5m AHD may include acid sulfate soils.

Tidal levels of the Caboolture River, adjacent to the site are approximately 1.34m AHD for Highest Astronomical Tide (HAT) and 0.81m AHD for Mean High Water Springs (MHWS).

The NEBP project area is surrounded by areas of conservation significance as follows.

- The Deception Bay Declared Fish Habitat area, which extends along the entire length of the northern boundary, within the bounds of the Caboolture River. This area is protected by the *Fisheries Act 1995* due to the estuarine habitats that support commercial and recreational fisheries in close proximity to developing communities.
- The Habitat Protection Zone of the Moreton Bay Marine Park which is located within the Caboolture River and begins at the north-eastern boundary of the site then extends eastward along the Caboolture River. This area is protected by the *Marine Parks Act 2004* in order to:
  (a) conserve significant habitats, cultural heritage and amenity values of the marine park;
  (b) maintain the productivity and diversity of the ecological communities that occur within the marine park; and
  (c) provide for reasonable public use and enjoyment of the zone consistent with the conservation of the marine park.
- The Moreton Bay RAMSAR wetlands which traverse the same area within the Caboolture River as the Moreton Bay Marine Park. The Moreton Bay RAMSAR wetlands are protected pursuant to international conventions as they are one of

only three extensive intertidal areas of seagrass, mangroves and saltmarsh on the eastern coast of Australia that provide habitat for water birds.

- South East Queensland Wader Bird Sites are mapped approximately 500m to the east of the site. This area is protected via the JAMBA and CAMBA convention to protect habitats of Migratory Birds.

5. ENVIRONMENTAL POLICY

Northeast Business Park Pty Ltd and Port Binnli Pty Ltd are committed to:

- minimising environmental harm and environmental nuisance where practically possible;
- conducting the operation of its refuelling wharf, and sewage pump-out and marina 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 and water;
- monitoring and auditing the performance of the Marina SBMP;
- ensuring personnel and marina and hardstand staff are suitably informed and trained to implement the control measures for routine operations to minimise likelihood of environmental harm;
- achieving best practice environmental management in design and implementation of the Marina SBMP, 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 SBMP;
- minimising waste generation by use of cleaner operational techniques and reuse and recycling of wastes where practicable;
- 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;
- ensuring consistency between the SBMP and Commonwealth, State and Local Government environmental laws, standards, and agreements; and
- achieving compliance with all relevant Workplace Health and Safety Requirements.

6. ENVIRONMENTAL MANAGEMENT

This Marina SBMP has been prepared to enable the Operator to fulfil all statutory requirements, including the accreditation requirements of the MIAA 'Clean Marinas Australia Programme'.

Elements relating to issues of most concern are those identified by the Administering Authority and these have been addressed by this Marina SBMP through specific tasks and actions which are designed to be preventative and corrective in nature for the following activities.

- Crude oil or petroleum product storing.
- Maintenance dredging.
- Boat repairing.
- Marina operations.

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

- Air Quality.
- Noise Quality.
- Water Quality.
- Stormwater Management.
- Waste Management.
- Flora and Fauna Management.
- Acid Sulfate Soil Management.
- Dangerous and Hazardous Substances.
- Contaminated Land.
- Management of Prescribed Tidal Works.

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.
- **Tasks/Actions:** monitoring and 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.

A procedure for environmental emergencies, complaints, completion of Annual Returns, environmental training and continual improvement has also been included within this SBMP and are addressed in order to mitigate potential environmental harm.

6.1 Air Quality

RATIONALE

Air quality can be affected by the emission of gases, odours or particulates from the operation of various activities, particularly ship building and if incorrectly managed the emissions from equipment or refuelling procedures have a potential impact on air quality through the release of volatile organic compounds or other gases.

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.

TASKS / ACTIONS

The Marina Manager shall ensure that a speed limit is maintained within the marina and ship building precinct on unsealed areas.

Trafficable areas within the site shall be sealed or of gravel construction where practicable.

Trucks transporting materials that are subject to loss by wind suspension 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 and silt fences shall be provided as required to prevent loss of soil by wind and water suspension.

Air spraying associated with ship building and maintenance activities shall be undertaken in a covered area and within 1 metre from the receiving surface to prevent spray drift.

Measures that may be taken to minimise dust and particulate contaminants from abrasive blasting can include, but not limited to:

- scheduling of activities for times when they will have the least impact;
- minimising the area being blasted at any one time;
- blasting in a downward manner (where practicable);
- separating open abrasive blasting operations from adjoining land uses by the following distances:
    - wet abrasive blasting 50 metres;
    - dry abrasive blasting 200 metres;
- use of vacuum recovery systems to minimise dust emissions and health risks from particulates; and
- collecting and storing spent abrasive and resultant dusts and other materials from all surfaces as soon as practicable after completion of blasting.

Where practicable, blast media that is not likely to introduce environmental contaminants in sensitive locations is recommended as a product.

Where practicable all abrasive blasting activities should be conducted inside a blasting chamber or within tarpaulins to facilitate collection and appropriate disposal of all waste. Blasting chambers shall be designed in a manner that achieves effective minimisation of dust emissions and operated only when the chamber has:

- doors which are correctly sealed;
- air filtration systems that are operational;
- air filtration media correctly installed and in sound condition; and
- an audible or visual warning device in the filter arrangement to alert the operator if the air filter fails.

Where necessary to conduct abrasive blasting other than in a blasting chamber, the person carrying out the activity should:

- where the structure or item to be blasted is able to be reasonably relocated or transported to a blast yard, conduct the activity at a designated and protected blast yard;
- use screening or other means of containment in a manner that will collect dust and spent abrasives and any overspray from all surface-coating activities; and
- cease all outdoor blasting operations during windy conditions that may result in environmental nuisance.

Air spraying of chemicals with odours 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.

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 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 noise levels at nominated locations as required by regulatory authorities or approval conditions.
- Notify complainant of corrective actions when completed.

6.2 Noise Quality

RATIONALE

Marina operations and ship building involves the use of noise generating 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 disturbance at noise sensitive places.

OBJECTIVE / TARGET

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

The **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.

TASKS / ACTIONS

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.

Noise policy is to be displayed in the marina office or another prominent position and a copy is to be given to each customer.

Avoid dropping metal objects onto other metal.

In the event of a complaint investigate the option of acoustically rated noise barriers and enclosures around noisy equipment or along the noise transmission path. Any noise barriers are to be constructed and maintained according to relevant Australian Standards.

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 Section 8 of 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.

6.3 Water Quality

RATIONALE

The operation of a marina and associated ERAs may potentially impact on the waters of the marina and the Caboolture River feeding the Moreton Bay Marine Park. 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, collisions, accidents when transferring waste oil to storage facilities onshore and accidents when refuelling vessels, and releases of silt or sediment from dredging.

The Marina will act as a short term safeguard in the event that a spill may occur. The availability of readily deployable floating booms to prevent dilution of the spilled material will also be an important part of the solution. Only residents and mooring owners will have access to the marina berths, and they therefore have a vested interest in ensuring that spills are quickly and economically controlled. Suitable education of all boat owners is required to ensure that they are aware of the correct procedure in case of a spill.

Discharges of contaminants can cause impacts to flora and fauna.

OBJECTIVE / TARGET

The ERAs must be managed to minimise the risk of release of contaminants to waters.

Water quality of the marina must meet stated water quality objectives and not be detrimental to flora and fauna.

ERAs must be managed in a way that meets development approval conditions for water quality.

TASKS / ACTIONS

The Marina Water Quality Management Plan (attached as Appendix B) shall be implemented ongoing.

Vessel speed limits shall be applied to prevent unacceptable wake and propeller wash, especially in the vicinity of erosion sensitive banks.

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 and discharge from vessels will be prohibited.

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

An appropriate spill kit (including booms, pads and fire extinguishers), personal protective equipment and relevant operator instructions/emergency procedure guides for the management (and containment) of spills must be kept at the site. Site Staff must be trained in the use of the spill kit(s).

A spill contingency plan has been developed and must be implemented for fuel storage and dispensing areas (refer to Appendix B).

Any wash down area(s(shall be fitted with spring loaded on/off valves which require the operator to physically hold the hose to obtain water and shall remain off when not in use.

All waste water from any wash down area(s) must not be directed to stormwater or waters of the marina rather collected and treated using a train of effective devices.

Dry vacuuming of paved areas rather than hosing is to be implemented to avoid excessive water use and a potential liquid contaminant.

PERFORMANCE INDICATORS

No recorded incidents, specifically uncontrolled fuel and/or oil spills.

Monitoring indicates no exceedance of acceptable water quality criteria.

Water quality objectives to be achieved are presented below in Table 1 to protect against aquatic ecosystem values in the middle estuary of the Caboolture River.

Table 1 Water Quality Limits for Marina Operations

Parameter	Limit	Limit Type	Monitoring Frequency
Turbidity	< 8 NTU	Median	Monthly
Suspended Solids	20 mg/L	Median	Monthly
Chlorophyll a	< 4 μg/L	80th percentile	Monthly
Total Nitrogen	< 300 μg/L	80th percentile	Monthly
Total Phosphorous	< 25 μg/L	80th percentile	Monthly
Dissolved Oxygen (% saturation)	85-105	Median	Monthly (at three depths)
pH	7.0-8.4	Range	Monthly
Petroleum Hydrocarbons	Non visible	-	Monthly
Litter	Nil	-	Monthly

Performance indicators also include any unhealthy change in weed growth, nutrient loads, sedimentation, pests, fuel spills, thermal layering and the structural integrity of the banks as a result of wash from marine vessels.

MONITORING

Sampling must be undertaken representatively and at the frequency specified in Table 1. An annual inspection by the marina Operator and the Principal's representative should also take place noting any problems that need to be attended.

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

Routine inspections are required for the following:

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

RECORD KEEPING

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

For each incident the following information must be recorded:

- the time, date and duration of equipment malfunction where the failure of the equipment resulted in the release of contaminants likely to cause environmental harm;
- any uncontrolled 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.

REPORTING AND REVIEW

An emergency and/or incident must be notified to the MSQ and EPA by the registered Operator for a site by telephone or fax within 24 hours of becoming aware of the emergency or incident resulting in a release of contaminants not in accordance, or reasonably expected to be in accordance with the conditions of approval.

The notification of any incident 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.

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 water quality the following corrective actions are to be followed.

- Investigate details of non-compliance 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 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.

6.4 Stormwater Management

RATIONALE

Stormwater runoff if managed inappropriately has the capacity to cause contamination to the waters of Caboolture River.

Furthermore, fuel storages, waste facilities and operations from activities could cause contaminant release if facilities are not adequately designed and operated in the event of a rainfall if spills had not been adequately cleaned up.

Management of stormwater runoff from the site is necessary to ensure the receiving waters are not adversely affected as a result of the activities.

OBJECTIVE / TARGET

To ensure that contamination of stormwater runoff is prevented and that the waters of the marina are maintained at an acceptable standard to encourage colonisation of marine benthic organisms and flora.

TASKS / ACTIONS

Prevent activities likely to release contaminants occurring near stormwater drains.

Stormwater runoff at the proposed shipyard must be collected, with pollutants and solids filtered and separated. Clean stormwater shall only be discharged to sewer in accordance with a trade waste agreement. Pollutants and solids will be collected for recycling and/or disposal off site.

Stormwater drains shall be regularly inspected and maintained.

Appropriate signage shall be placed around stormwater drains to inform that contaminants are not to be released to waters. Signs are to provide a warning that stormwater drains release to coastal waters.

Waste on the site is to be stored in suitably designed and located waste containers.

Prevent contamination of waters or land from inappropriate handling of wastes.

Spills shall be cleaned up as quickly as practicable.

Bunds are to be provided for all above ground fuel storages, or similar materials (eg. paints) and are to be regularly inspected and maintained (refer to storage requirements for hazardous and dangerous substances).

Stormwater contained in bunds is to be monitored for contaminants, prior to release and any contaminated stormwater is to be disposed of in an authorised manner.

Wastes in stormwater from ship building, maintenance and cleaning activities, including corrosion and antifouling paints must not be released to waters. Ship building and maintenance activities to be undertaken in a concrete bund with a stormwater control system.

PERFORMANCE INDICATORS

Bunds and/or diversion drains are effective in preventing stormwater ingress in areas that are potentially contaminative.

Nil contaminant release to stormwater.

The EPA conditions shore-based industry and determines appropriate environmental standards for these discharges to protect environmental values. All business subject to EPA approval processes must comply with the schedule of conditions.

RECORD KEEPING

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

The Operator shall maintain a record of waste (i.e. contaminants) removed off site in accordance with complying with the above stormwater related tasks.

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 inappropriate discharge to stormwater 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.

6.5 Waste Management

RATIONALE

Waste management focus is on appropriate methods to avoid, reuse, recycle and dispose of waste materials generated from ERAs. The *Environmental Protection (Waste) Policy 1997* seeks to ensure that decisions involving waste management are made in the priority 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
- waste disposal

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

The activities of marina operations, ship building, petroleum product storage and maintenance dredging are all likely to produce wastes. The collection, storage and transport of waste will therefore require management to ensure that environmental harm is not caused.

Sewage or bilge waters generated on vessels, litter control and wastes that can be collected for recycling purposes are dealt with specifically within this section.

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.

TASKS / ACTIONS

The operation of the marina and associated precincts where ERAs are located shall be undertaken in accordance with the Waste Management Plan prepared as part of the EIS.

The operation of waste facilities at NEBP shall be in accordance with best practice guidelines for “Waste Reception Facilities at Ports, Martina and Boat Harbours in Australia and New Zealand”.

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 to 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.

Facilities for the washing of waste containers are to be provided on site.

Facilities for the segregation of wastes shall be provided to facilitate the reuse or recycling of waste materials.

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.

The operation of hardstands and use of antifoulant products must be in accordance with the Australian and New Zealand Environment and Conservation Council (ANZECC) *Code of Practice for Antifouling and In-water Hull Cleaning and Maintenance* (1997).

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.

Waste shall not be burnt or taken to a place that waste may be burnt.

A waste audit shall be conducted every 12 months to provide accurate information on the wastes produced and to determine options for waste minimisation, reuse or recycling.

Site-specific housekeeping rules shall be clearly displayed in the marina office and a copy shall be provided to each customer, as amended from time to time.

The Marina Manager shall ensure that all personnel are appropriately trained in the correct techniques for responsible waste disposal.

The Operator shall ensure that a proportion of Green Power is purchased from electricity suppliers for marina operation.

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.

Waste oil collection tank volumes to be measured each week and arrangement for collection made when 75% of volume is reached.

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 section 8 of this marina 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.

6.5.1 Vessel Sewage

RATIONALE

Sewage generated from the operation of vessels has the potential to foul waters should it be released. While legislation prohibits the release of sewage into waters of marinas or marine parks, 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 facilities, and the supply and operation of pump out facilities in a manner that will minimise the risk of sewage spillage into the waters.

TASKS / ACTIONS

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.

Display sewage pump-out policy in the marina office or other prominent position and a copy is to be given to each customer.

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.

6.5.2 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.

TASKS / ACTIONS

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 appropriate signage including near stormwater drains.

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

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 marine waters and waterways.

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

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 section 8 of this Marina 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.

6.5.3 Bilge Water

RATIONALE

Accumulated bilge water may contain oils and greases 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.

In addition, with over 200 species of exotic marine organisms known to have been introduced into Australian waters, the information of foreign marine organisms through ships ballast and hull fouling is a major concern.

OBJECTIVE / TARGET

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

Reduce the amount of oils in bilge waters.

TASKS / ACTIONS

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 marina waters.

MONITORING

Visual inspection of marina waters for oils/greases daily.

Water quality monitoring in accordance with this Marina SBMP.

Carry out baseline marine surveys for exotic organisms to detect presence of any pest species.

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.

6.5.4 Recycling 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 more preferable option than disposing 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.

TASKS / ACTIONS

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 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

There has been 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.

6.6 Flora and Fauna Management

RATIONALE

The marina is physically located adjacent to the Caboolture River and associated areas of wetland habitat that support a diverse assemblage of terrestrial and aquatic flora and fauna. The adjacent sectors of the Caboolture River form part of the Ramsar listed wetlands of Moreton Bay, the Moreton Bay Marine Park and the Deception Bay Declared Fish Habitat Area.

The marina site is located in an existing clearing and will be partially separated from the Caboolture River by a 100 metre wide riparian buffer and a lock system. The potential for significant direct physical impacts to native flora and fauna is limited. Whilst the marina will be utilised by native fish, crustaceans and birds, and may be colonised by some marine plants its overall value as habitat for native flora and fauna will be limited. Larger marine turtles and mammals are unlikely to enter the marina due to the lock structures and the site's relative remoteness from Moreton Bay.

Notwithstanding the above, operation of the marina has the potential to indirectly impact on protected areas and flora and fauna species via the inappropriate management of waste materials, the implementation of inadequate water quality controls and inappropriate storage and handling of hazardous substances.

OBJECTIVE / TARGET

To ensure the protection of native flora and fauna habitats of the Caboolture River and associated wetlands.

To ensure that algal blooms, fish kills and biting insects 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 the Caboolture River and associated wetlands.

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

The Operator shall monitor the marina for any indicators of poor ecological health (i.e. algae blooms, dead vegetation, fish kills).

If a major fish kill (or other significant indicators of poor ecological health 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 the Caboolture River.

The Operator shall report any observations of sick or injured native animals within the marina area and contact the Queensland Parks and Wildlife Service (QPWS) and/or the Department of Primary Industries and Fisheries (DPI&F) to receive advice concerning specific measures to be taken.

Artificial waterways 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.

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).

PERFORMANCE INDICATORS

No algae blooms or fish kills occur within the marina.

REPORTING AND REVIEW

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 Operator and Consultant (if required) in consultation with the Marina Manager.
- 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.

6.7 Acid Sulfate Soil Management

RATIONALE

Because the marina is at a low elevation, there is a risk of acid sulfate soils disturbance during maintenance dredging.

OBJECTIVE / TARGET

No releases of contaminants (acidic waters) to Caboolture River.

TASKS / ACTIONS

Treat all maintenance dredged spoil as suspected of being potential acid sulfate soils (PASS) and ensure that monitoring occurs to determine the status of the sediment.

When dredge spoil is known to be PASS, it should be treated in accordance with the ASSMP.

In the event that PASS conditions become present at any specific location, runoff controls shall be implemented, with neutralisation of acid generating material by the addition of lime.

PERFORMANCE INDICATORS

Maintenance of baseline acidity in receiving waters.

No mortality to fauna species at and adjacent to the dredge disposal site during the works.

All CARs are to be actioned within time frames agreed between the Principal and the Contractor.

MONITORING

Should dredged spoil be exposed to the air for greater than 12 hours then monitoring for acid generating potential shall be carried out.

Laboratory determination of Total Acidity (existing plus potential) shall be conducted on at least two samples per day.

Records shall be maintained of any fauna kills in adjacent waterways and any leachate staining.

Monthly reports shall be prepared by the Operator throughout the duration of the dredging works on the monitoring results and of all corrective action taken to meet performance criteria.

REPORTING AND REVIEW

The Contractor is to notify the Operator within 6 hours of any two rapid test results giving a “positive” indication or any laboratory result exceeding 0.03% oxidisable sulphur.

CORRECTIVE ACTION

If identified PASS is to be exposed to air at the disposal area then liming shall take place at the rates stated in the ASSMP.

6.8 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 fuels and stored dangerous and hazardous substances.

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

TASKS / ACTIONS

The type, quantity, Material Safety Data Sheet and storage location of all dangerous goods and/or hazardous substances 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.

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.

Signage at fuel points should direct 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.

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.

Only authorised and trained persons are to operate any equipment and all refuelling and tanker unloading operations are to be supervised.

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 oil booms, spill kits, and other containment equipment in clearly identified positions for ready deployment in the event of a land spill that could release to waters.

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.

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 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.

6.9 Contaminated Land

RATIONALE

Operation of the marina and shipyard facilities has the potential to generate land contaminated by hydrocarbons and others contaminants through their use and onsite storage which, if managed inappropriately, has the potential contaminate land which can pose an ecological and health threat.

OBJECTIVE / TARGET

To manage contamination whilst it remains onsite and control any potentially contaminative activities resulting from the proposed development in a manner that protects human health and the ecological values of the receiving environment.

To ensure any remedial activities conducted onsite are exercised in accordance with Commonwealth, State and Local laws and policies.

TASKS / ACTIONS

ERAs which are notifiable under sections 371 and 372 of the EP Act must be notified prior to the commencement of operations.

Works where activities are undertaken that have the potential to contaminate the ground shall be undertaken on a hardstand (without visible cracks) where practicable.

Machinery, vehicles and associated equipment must be cleaned so that minimal contaminated mud, soil or water is deposited on public or private roadways or adjacent areas. Detergents and cleaning products shall be environmentally acceptable (biodegradable) and used in a manner that minimises the quantity used.

Suspected contaminated land must be verified through sampling and disposed of offsite in accordance with a disposal permit issued by the EPA's Contaminated Land Unit.

Land that is potentially contaminated and is not disposed of off site shall be bunded to prevent stormwater ingress and overland flow of contaminated material to the stormwater drains and/or surface waters and/or groundwater.

Spillage kits with materials that will absorb or contain any spillage shall be readily available at all work sites and staff shall be trained in the deployment thereof.

Any contamination should be remediated as soon as practicable.

PERFORMANCE INDICATORS

For excavated material, a disposal permit from EPA has been obtained.

For material disposed off site, a tracking certificate is completed by the Operator and the Waste Removalist.

No runoff of potentially contaminated waters from areas where notifiable activities are undertaken occurs.

MONITORING

Regular monitoring of contaminant levels of soil exposed to potentially contaminating activities shall be undertaken to inform management and remedial works.

RECORD KEEPING

A record of any disposal permit and waste tracking certificate for contaminated land shall be maintained in a dedicated register by the Operator of the facility.

REPORTING AND REVIEW

The Operator shall report to the Administering Authority at the time of Annual Return on any results from soil sampling or at the time of a request.

CORRECTIVE ACTION

A suitably qualified and experienced person shall be engaged to conduct contamination investigations and remedial works if required.

6.10 Management of Prescribed Tidal Structures

RATIONALE

Maintenance of prescribed tidal structures within the marina and the lock adjoining the Caboolture River 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 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 the banks is maintained to prevent erosion and slumping or deterioration of any structures including metal corrosion, concrete cancer and spalling.

TASKS / ACTIONS

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

Maintenance works on existing lawful structures involving the removal, destruction or damage of marine plants shall be undertaken in accordance with the relevant DPIF 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 tributyltin based paints for the preservation of any wooden piers 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 the Caboolture River.

Maintenance work on prescribed tidal work must not adversely affect navigable access.

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 section 6.3 of this Marina 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

Nil

CORRECTIVE ACTION

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

7. ENVIRONMENTAL EMERGENCIES

Environmental Emergency Plans have been prepared by the future Operator for the marina including the following.

- Oil spills,
- Fire,
- Cyclones.

The Oil Spill Response Emergency Plan is contained within the Water Quality Management Plan appended to this document.

The Environmental Emergency Response Plans for a fire and cyclone are provided in Appendix C.

Environmental Emergency Response Plans shall be implemented by all staff in the relevant event who will be trained in their appropriate implementation.

8. COMPLAINTS

Should a complaint be received the following procedure must be followed.

1. Identification of the source(s) of the complaint.
2. Respond to the complainant outlining the procedure for corrective action (if required) and proposed timeframe for implementation of corrective actions.
3. Undertake relevant validation monitoring as required by regulatory authorities or development approval conditions.
4. Implementation of appropriate mitigation measures as determined by the Operator.
5. Notify complainant of corrective actions when completed.
6. The complaint must 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.

9. 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 Marina Manager 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.

Components of environmental training should be as follows.

- Legal Requirements.
- Due Diligence.
- Management and General Staff Responsibilities.
- Environmental Activities, Aspects and Impacts.
- SBMP.
- Documentation.
- Contractors.
- Emergency Response.
- Annual Review

Records of individual environmental training should be kept on site.

Marina management and staff, both permanent and casual, must be trained in all facets of marina operations, particularly those concerning emergency response procedures, safety, hazard prevention, fuel spillage, sewage and pollution, navigation, community amenity and marina user regulations.

10. CONTINUAL IMPROVEMENT

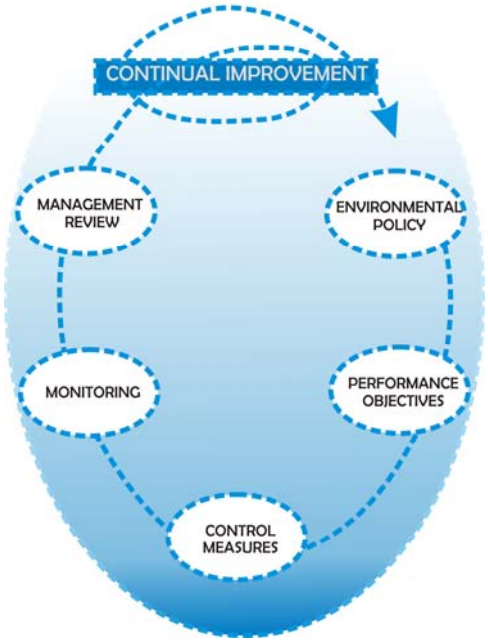
This Marina SBMP is a living document. As such, to ensure the environmental management at the site is continually improved, a review of this document by the Operator, in consultation with relevant agencies shall occur:

- to incorporate any relevant condition requirements issued subsequent development approval(s);
- following significant environmental incidents;
- at the completion of any commissioned environmental audits; and
- in the instance whereby the objectives of any element of this Marina SBMP are not being met.

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

- Suitability of the objectives.
- The extent to which the objectives have been met.
- Monitoring results.
- 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 the relevant development approval(s).



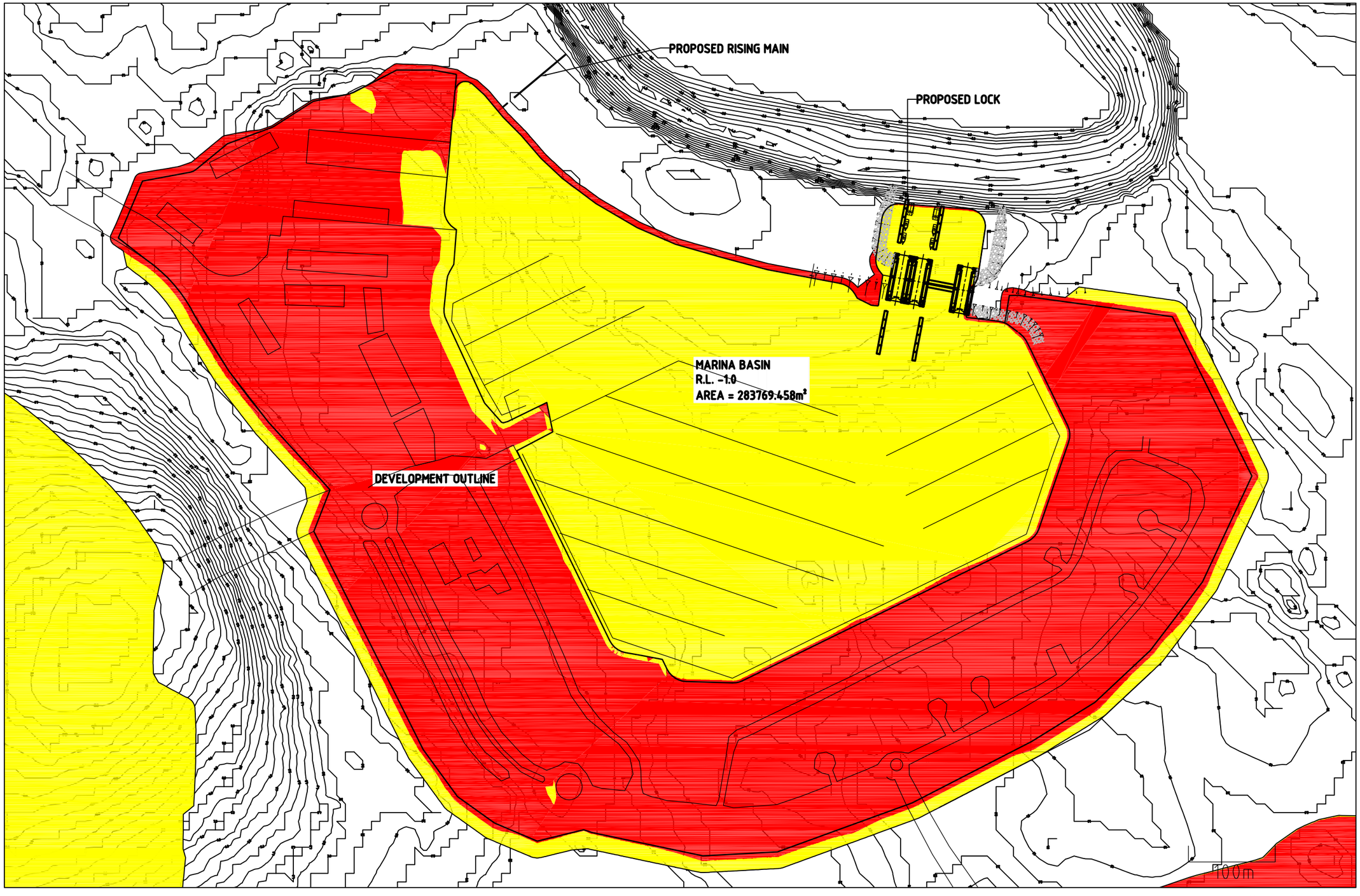
11. ANNUAL RETURN

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



LEGEND:

- CUT
- FILL
- SITE BOUNDARY

45 0 45 90 135 180 225m 1:4500

Scale 1:4500 (A3)

FIGURE 1
MARINA SECTION LAYOUT PLAN

Rev: Orig. Date: 19 November 2006

Project No.: 7800/40

Northeast Business Park Pty Ltd

CAD FILE: I:\7800-40\ACAD\Marina SBMP\Marina Section Layout Plan.dwg
XREF's: X-Design Cut Fill Hatches; X-Base; X-Road Outline; X-Design Contours

PRINT DATE: 19 November, 2007 - 4:32pm

Phase 4 Snapshot Dec 2025

Image sourced from V2l 2007

Rev: Orig. Date: 19 November 2007

Northeast Business Park Pty Ltd

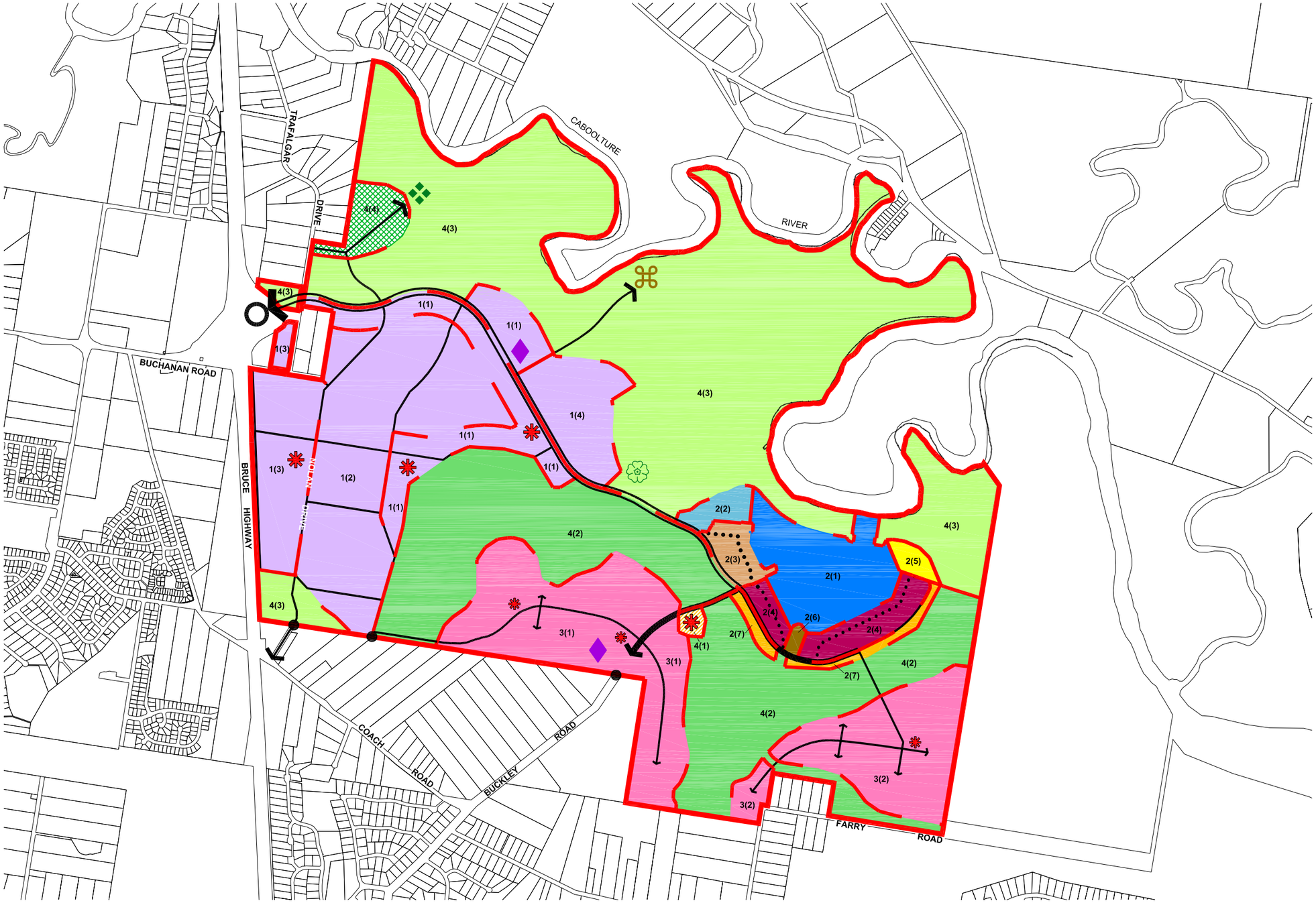
CAD FILE: I:\7800-40\ACAD\Marina SBMP\Figure 2 Marina Concept Plan.dwg
XREF's:

FIGURE 2
MARINA CONCEPT PLAN

Project No.: 7800/40

PRINT DATE: 19 November, 2007 - 4:47pm

Cardno



N

LEGEND
- STRUCTURE PLAN BOUNDARY
- PRECINCT BOUNDARY
- 1 MIBA PRECINCTS
- 1(1) MIBA ESPLANADE
- 1(2) MIBA CORE
- 1(3) MIBA HIGHWAY
- 1(4) MIBA MARINE INDUSTRY
- 2 MARINA PRECINCTS
- 2(1) MARINA BASIN
- 2(2) SHIPYARD
- 2(3) MARINA VILLAGE
- 2(4) MARINA RESIDENTIAL
- 2(5) HOTEL
- 2(6) MARINA PAVILION
- 2(7) GOLF RESIDENTIAL
- 3 RESIDENTIAL PRECINCTS
- 3(1) RESIDENTIAL WEST
- 3(2) RESIDENTIAL EAST
- 4 OPEN SPACE PRECINCTS
- 4(1) GOLF CLUB
- 4(2) GOLF COURSE
- 4(3) OPEN SPACE
- 4(4) COMMUNITY MULTI USE
- COMMUNITY NODE
- HERITAGE PARK
- SPORTING FIELDS
- EDUCATION & TRAINING
- ENVIRONMENT CENTRE
- ARTERIAL ROAD
- SUB ARTERIAL ROAD
- COLLECTOR ROAD
- ACCESS ROAD
- POSSIBLE FUTURE PUBLIC TRANSPORT ROUTE
- MAIN STREET
- LOAD LIMITED THRESHOLD

Plan sourced from PMM Brisbane Pty Ltd, Dwg name 20430STRUCTURE,
Plan Ref 20430-10G, 13 November 2007.

Rev: Orig. Date: 26 October 2007

Northeast Business Park Pty Ltd

CAD FILE: I:\7800-40\ACAD\Marina SBMP\Figure 3 - Structure Plan.dwg
XREF's: 20430Structure

200 0 200 400 600 800 1000m
1:20,000

Scale 1:20,000 (A3)

FIGURE 3
STRUCTURE PLAN

Project No.: 7800/40

PRINT DATE: 19 November, 2007 - 5:08pm

APPENDIX A

Corrective Action Request

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 Water Quality Management Plan

Cardno LawsonTreloar

Shaping the Future

NORTHEAST BUSINESS PARK

Marina Water Quality Management Plan

November 2007
Job No. 790033/03/R2

Northeast Business Park Pty Ltd

Cardno Lawson Treloar Pty Ltd

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Document Control

Version	Date	Author		Reviewer		Approved	
		Name	Initials	Name	Initials	Name	Initials
790033/03/R2	15/11/07	Ali Rabiei		Chris Catalano		Chris Catalano	

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1. INTRODUCTION AND PURPOSE OF THE REPORT

This report has been prepared by Cardno Lawson Treloar to provide a Marina Water Quality Management Plan for the proposed Northeast Business Park (NEBP) development, which is located on the Caboolture River approximately 8 km upstream from the River outlet to Deception Bay. The proponent for the development is Northeast Business Park Pty Ltd.

This report specifically discusses the management of the Marina Lake Waterbody and excludes other general Marina type activities involved with day to day management. This report has been completed to support a Material Change of Use (MCU) application to Caboolture Shire Council (CSC).

The proposed Marina is intended to be a major feature of this development not only for Marina activities but to provide a high visual amenity and passive recreational opportunities. The proposed development layout is presented on PMM Structure Plan Drawing 20430-10G (this is supplied in the Marina Site Base Management Plan). A copy of this drawing is included in reference section of this report.

This report is intended to be provided to the Marina Operator and will be a working document to be updated with specifications for all lock and turnover equipment specifications as they become available. At present this document is at a level of detail suitable to support a MCU application and will require refinement and expansion to support the subsequent detailed design stages of the project.

2. EXISTING SITE DETAILS

The Northeast Business Park is located adjacent to the Caboolture River estuary comprises the following lots and parcels:

- Lot 2 on RP902075
- Lot 10 on RP902079
- Lot 24 on SP158298
- Lot 7 on RP845326
- Lot 15 on RP902073
- Lot 12 on RP145197
- Lot 17 on RP902072

The site encompasses 769 ha of property and is bounded by the Caboolture River to the North, the Pacific Motorway to the west and rural development to the south and east.

The NEBP project area is relatively flat ranging in elevation from 3m AHD at the northern boundary to a knoll at 16.5m AHD towards the southern area of the site.

The Northeast Business Park site is within the Caboolture River Flood study (AWE 1994). AWE investigations indicate that the designated flood levels range from 7.88 m AHD at the upstream end of the site (Bruce Highway Bridge) down to 2.47 m AHD at the confluence of King John Creek and the Caboolture River. Parsons Brinckerhoff has also carried out a flood impact assessment entitled "*Caboolture River Mike21 Study Northeast Business Park*", October, 2007, which provides further information on the flooding characteristics of the site.

The Caboolture River is tidal at the site. Tidal details are presented in Table2-1 for the Caboolture River Mouth Tide gauge.

Table 2-1 Tidal Planes at Mouth Caboolture River (m AHD)

Mean High Water Springs	MHWS	0.81
Mean Low Water Springs	MLWS	-0.92
Mean Sea Level	MSL	-0.05
Highest Astronomical Tide	HAT	1.34
Lowest Astronomical Tide	LAT	-1.26

3. EXISTING RECEIVING WATER QUALITY

Caboolture River is monitored regularly by the Healthy Waterways Ecosystem Health Monitoring program (Moreton Bay Catchments sub-regional summary 2006 – Caboolture River).

The Healthy Waterways 2006 Report Card for the Caboolture River gave the estuarine region of the River a D+ for 2006 which is essentially "poor" in terms of ecological health. Specific comments provided on the Caboolture River are provided below:

- *Increase concentration of nutrients in the middle and upper reaches compared with 2005*
- *Turbidity generally low throughout*
- *Poor riparian cover and bank stability*
- *Some nutrient processing*

The grades also show a gradual decline in health over the period of assessment with the poor grading attributed to both natural and anthropogenic processes. It is generally considered that and this can be attributed at least in part to the discharge of treated effluent from the Caboolture Wastewater Treatment Plant.

Further detailed reporting on the receiving water quality has been provided by the Ecology Lab in their report, "NEBP – Aquatic Ecology: Description, Assessment & Management Draft" dated July 2007.

4. PROPOSED DEVELOPMENT

4.1 General Marina Information

The development proposal involves a 911 wet berths; 300 – 500 dry berths; and a business park concept that will integrate marina facilities, appropriate business, industry, commercial, residential heritage and recreational green space precincts. The NEBP will provide a place to live, to work and to play in a master planned riverside precinct. This proposal also involves dredging the Caboolture River from the estuary 6 km upstream to provide an adequate navigation depth for marina users.

4.2 Proposed Marina System

The proposed Marina waterbody on the subject site is intended to be a major feature of the NEBP development to improve visual amenity and to provide passive and active recreational opportunities. The marina is intended to be brackish, with salinities close to seawater in periods of low catchment runoff.

The proposed marina will be orientated approximately north-south and will have an area of approximately 28.2ha and a volume of approximately 804 000 m^3. The invert of the marina will be constructed to a level of -1 m AHD and will have a standing water level of RL 2.0 m AHD.

The marina will be separated from the Caboolture River by a Navigation Lock and tidal exchange system. The marina system is proposed to have a pumped exchange system that consists of a 1200 mm diameter intake pipe mounted to a jetty in the Caboolture River. The exchange system is designed to provide approximately 24 days turnover of the marina volume while maintaining the marina water level generally constant with a 31.2 m long outlet weir with a crest level of 2 m AHD located adjacent to the lock. The intake will be located at the opposite end of the marina to the outlet to minimise short circuiting and the turnover time is considered to provide the appropriate balance between flushing/residence time and maintaining the natural ecology of the marina. For a 12 hour per day operation the pump rate required will be 0.78 m^3/s.

The exchange system will have an emergency shutdown arrangement, which will ensure no exchange with Caboolture River in the extreme event of unacceptable conditions in the proposed marina or within the external Caboolture River environment. The shutoff mechanism will be via a switch to the intake pump allowing total isolation of the marina until remedial measures can be undertaken which may include clean up procedures and/or the incorporation of temporary mixers in the marina to maintain marina health until the turnover system is restored.

A basin is also proposed to be excavated down to -3.5 m AHD between the lock and the Caboolture River to provide an off-stream waiting area for lock use.

Drawings of the Marina and turnover system are provided in the reference section of this report.

The typical perimeter treatment for the constructed basin is as follows:

- A marina bank sloping at 1 vertical to 3 horizontal between the marina bed and 0.8mAHD;
- A vertical revetment wall between 0.8mAHD and 2.9mAHD; and
- A boardwalk located on top of the retaining wall at RL 2.9 m AHD.

The marina is not proposed to be utilised for water quality treatment. However, it provides considerable additional safeguards for the downstream receiving environment and will also provide final water quality polishing.

As the water quality in the Caboolture River can be high in nutrients and low in dissolved oxygen it is recommended that mixers be installed in the marina to be used in times of poor receiving water quality and to limit any persistence in stratification. Details of the marina turnover system, mixers and revetment walls are subject to detailed design.

4.3 Access for Marina Maintenance Purposes

The Marina will be accessed for maintenance purposes either by travel lift from the Shipyard or negative lift vessel launch facilities from the vessel dry stack.

5. MARINA WATER QUALITY MANAGEMENT

5.1 Site Stormwater Discharge

The overall site collection and treatment system, using best practice water sensitive urban design techniques, is the subject of a separate Stormwater Management Plan report by Parsons Brinckerhoff, which is under preparation to support the application for the developable areas precincts of the site.

Key elements of the proposed stormwater management system include:

- At the source controls
- Effective pre-treatment: Using a combination of vegetated swales and buffers, bio-retention systems, gross pollutant traps and extended detention, as appropriate to ensure that the designed water quality objectives are met prior to discharge to the Marinas or elsewhere external to the site.
- Diversion of the majority of stormwater run-off away from the proposed boat mooring facility where possible.

The Marina is not proposed to be utilised for stormwater quality treatment. It may receive some stormwater after passing through the treatment train system. It is intended to restrict the types of activities proposed in this area for any lots backing onto the Marina Basin. This will be governed by the marina operator in accordance with the Environmental Management Strategy for the site.

5.2 General Marina Basin Maintenance

The management requirements of the proposed Marina in terms of water quality should be relatively minor and will involve preventative measures such as strict compliance to environmentally safe practices and routine inspections. Particular elements that will require routine inspection to determine if any maintenance is required include:

- Stormwater outlet structures and any associated scour protection treatments including checking for sediment deposition;
- The general quality of the Marina Water which includes checks for visual signs of poor water quality such as oils and fuels and other surfactants, scum, algal growth, litter and any unhealthy flora or fauna.
- Revetment walls
- Marina Moorings, piles etc

Event based maintenance may also be required for:

- Clean-up after chemical or fuel spills;
- Clean up after major regional floods;

Further detail will be provided with subsequent operational works applications on each of these elements

In the event that this monitoring indicates unacceptable conditions, maintenance and further testing may be required.

Any testing of the Marina Water Quality should monitor the following:

- Colour of the water, which includes clarity, turbidity and light penetration. Median turbidity levels should be 8 NTU or less.
- Dissolved oxygen (DO), Salinity and Temperature levels at a minimum of 3 depths in the water column. DO values should be within the range of 80-105% saturation.
- Health, quantity and type of flora and fauna using the basin.
- Any surfactants such as fuel/oil spills
- Biting insects.
- Sediment deposition.
- Weeds.
- Litter.

Observational indicators, such as those detailed in Table 5-1, are a useful method of identifying a poorly functioning Marina system. The presence of observational indicators is in some instances evidence of failure of the system and a sign that stormwater management, and / or turnover monitoring procedures could be inadequate.

Appendix A contains general recommended maintenance practices.

Indicative amounts for maintenance and running costs for major components of the Marina under normal operating conditions are as Table 5-2. These are based on our experience from the Glades and Emerald Lakes Projects (including actual costs supplied by the Developers). Detailed costs have not been undertaken for the Marina and will be subject to final design.

Table 5-1 Marina Observational Maintenance Indicators

Indicator	Observational Signs
Algae	Presence of floating surface scum, unicellular algae (reducing water clarity), and layers of dead organic matter accumulating on the Marina bottom and increasing Marina sediment.
Weed Growth	Presence of floating and rooted plants.
Nutrient Load	Signs of excessive nutrient load include algal blooms and reduced Marina clarity. Monitoring may show depleted dissolved oxygen levels.
Sediment	External sources of silt combined with internal build up of excess organic matter causes excessive sedimentation.
Pests	Signs of biting insects larvae and excessive aquatic bird habitation will require maintenance to reduce health hazards.
Thermal Layering	Poor circulation results in the upper layers becoming warm whilst the bottom layers remain cold and deprived of oxygen.
Structural Integrity	Signs include bank erosion or bank slumping, deterioration of any structures including metal corrosion, concrete cancer and spalling.
Surfactants	Signs of petrochemical spills on the water surface. In this case vessel maintenance will be required or training on appropriate fuel handling.

Table 5-2 Indicative Maintenance Costs for Similar Types of Systems

Component	Detail	Maintenance and Running Cost over 5 years ($)	Replacement Cost ($)	Comment
Aquatic weed and Litter maintenance	Weed is generally more prevalent in freshwater lakes.	50,000	N/A	Assumes 2-3 hours per week as an average of general clean up maintenance.
GPT's	Allow for 5	25,000	N/A	Allow for 2 clean outs per year by pump truck. Size/Number to be finalised in SWMP.
External catchment Bio-retention system	Allow 5000 m^2	15,000	150,000 *2	Allows for mowing 24 times a year. Size/Number to be finalised in SWMP.
Swales with underlying bio-retention	Mowing and clean-up of 3000 m of swale	45,000	80,000 *2	Allow for mowing 24 times a year. Size/Number to be finalised in SWMP.
Water Quality Monitoring	Include sampling and lab testing	30,000	N/A	Once established and operational, 3 monthly monitoring is sufficient.
Marina clean-up after floods		20,000	N/A	Allow once every 5 years.
Emergency Fuel/Oil Spill Containment Kit/Device	Allow 1 kit for each Marina	-	To be determined	Type of kit/device to be determined by a specialist.

1* Units should last at least 10 years. This cost includes installation costs.
2* This cost allows for complete replacement of sand and subsoil piping, which should only be required every 10 to 15 years.

5.3 Marina Basin Sedimentation

Sediment sources to the Marina are expected from terrestrial runoff, inflow from the turnover system and lock operation and from flooding.

With regard to terrestrial runoff, the perched marina will be higher than the majority of the surrounding terrain. The filled development pad adjacent to the Marina will also generally drain away from the Marina hence any runoff to the Marina water body will be minor. It is also considered that with adequate sediment erosion control during construction of the development and best practice storm water treatment trains for any direct discharge, any suspended sediment concentrations in this runoff will also be negligible for the purposes of sedimentation estimates relative to other sources.

For flooding, turnover inflow and lock operation, suspended sediments from the Caboolture River will enter the marina and a portion of these sediments are expected to settle into the deep sections of the basin. Whilst further analysis will be required, based on typical loads entering the basin of 50 mg/l, a 24 day turnover, and making a conservative allowance for siltation due to any flooding and lock operation for an average year, siltation depths are estimated to be only up to 2 mm/yr using a wet density of 1600 kg/m^3. Based on the fact that the Marina has been over-excavated by 0.5 m to give 3 m depth, and with adequate

site controls, it is not expected that de-silting of the marina will be required for at least 250 years. Such de-silting will be the responsibility of the body corporate.

5.4 Fuel, Effluent, Hazardous Chemicals and Boat Maintenance

An important part of the maintenance of the Marina will be strict management of fuel, effluent, hazardous chemicals and restriction of boat maintenance activities.

The key items of the Environmental Management Plan (EMP) are listed below:

- the strict control of habitation in moored vessels (to be policed by the marina operator). Residents will be monitored for numbers of occupants, littering and maintenance of vessels.

- the prohibition of effluent discharge within the proposed facility;

- the prohibition of boat maintenance or washing within the facility with all boats required to utilise terrestrial facilities that do not discharge to the Marinas or the Caboolture River (again, to be a requirement of and policed by the marina operator);

- the provision of emergency Marina response and maintenance plans (as outlined in Appendix A to this report), to ensure that any chemical or fuel spill, algal outbreak, water quality or aquatic weed problem is contained within the site and appropriately dealt with.

- Fuel or hazardous chemical storage is to be appropriately managed and safeguarded. The refuelling station within the proposed facility will be to best practice standards to minimise any spilling or leakage into the waterway system;

The Marina will act as a short-term safeguard in the event that any spills may occur. The availability of a readily-deployable floating boom to prevent dilution of the spilled material will also be an important part of the solution. Suitable education of all boat owners as to the following of correct procedure will aid this process significantly.

The use of refuelling facilities will need to be tightly controlled so that the occurrence of spills is minimised. A covenant on all persons mooring boats in the marina will require them to maintain vessels in good working order at all times, and this can be enforced rigidly to ensure that such accidents are kept to an absolute minimum.

5.5 Fish Management

A detailed fish management plan will be undertaken by an aquatic biologist and submitted as part of later stages of the application process for this development.

Generally the turnover system should maintain an appropriate environment buffered to Caboolture River Water Quality Levels and with a strict control of boating type activities as discussed elsewhere in this document, there should be no real harm to fish and other aquatic fauna.

Key elements of this proposed management plan with regard to fish management therefore include:

- Strict procedures for boat operation and maintenance to minimise the risk of chemical spills, litter and other pollutants to the proposed Marina;

- Management techniques to be the responsibility of the marina operator for removal of any accidental spillages;

- Routine Marina inspections for flora/fauna health and poor water quality and corrective actions to be the responsibility of the marina operator.

- procedures for lock operation to minimise the risk of shark access to the proposed marina;

- routine marina observation and management techniques to be the responsibility of the body corporate for removal of any detected sharks via a wildlife professional.

6. CONCLUSION

This report outlines the management measures for the proposed Marina Basin to be incorporated as part of the Northeast Business Park Development adjacent to the Caboolture River. This report has been written to an appropriate level of detail for lodgement of a MCU application to Caboolture Shire Council.

The report identifies detailed reports completed by others or are to be completed prior to submission of subsequent operational works applications for the overall development project.

This Marina Water Quality Management Plan is intended to be refined and expanded as detailed design proceeds.

It can be concluded that once implemented, this plan will ensure that the potential for environmental harm will be minimised and that the level of risk to the marine environment will be very low.

7. REFERENCES

Cardno (Qld) Pty Ltd, October 2007, 'Site Based Management Plan'.

Ecology Lab Pty Ltd, July 2007 Draft Version 3, 'Proposed Re-Development of Land at Caboolture: Aquatic Ecology – Description of existing Environment, Preliminary Assessment of Impacts & Outline of Environmental Management'.

Parsons Brinckerhoff Australia Pty Ltd, October 2007 '*Caboolture River Mike21 Study Northeast Business Park'*.

Parsons Brinckerhoff Australia Pty Ltd, August 2007, 'Stormwater Management Plan'.

FIGURES

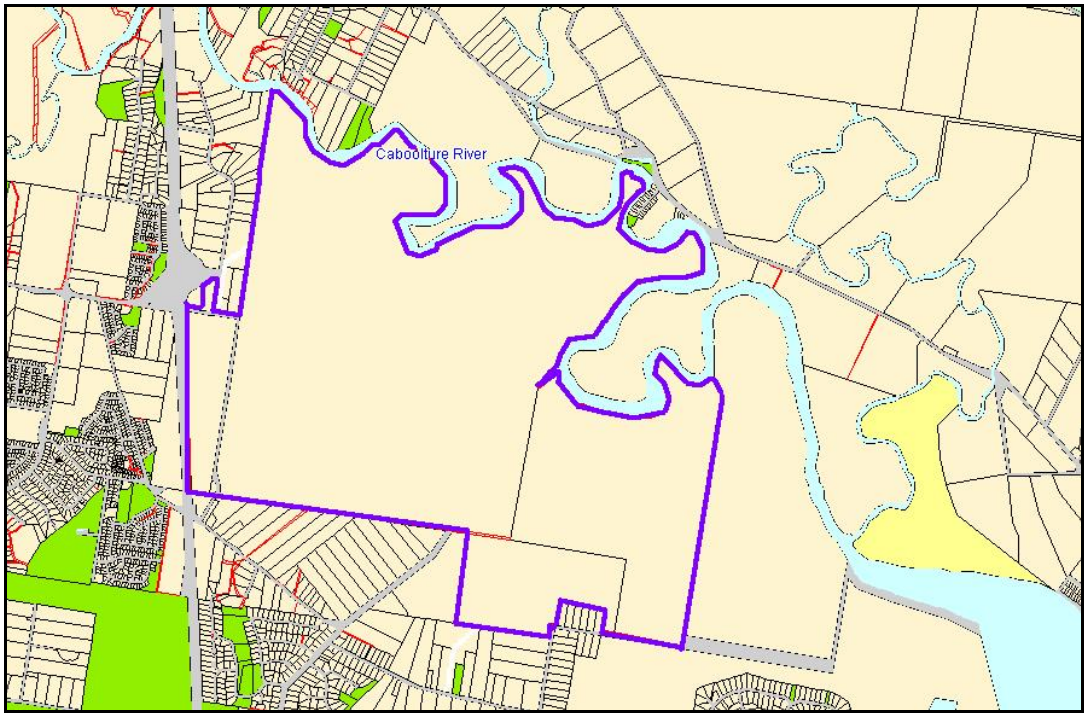
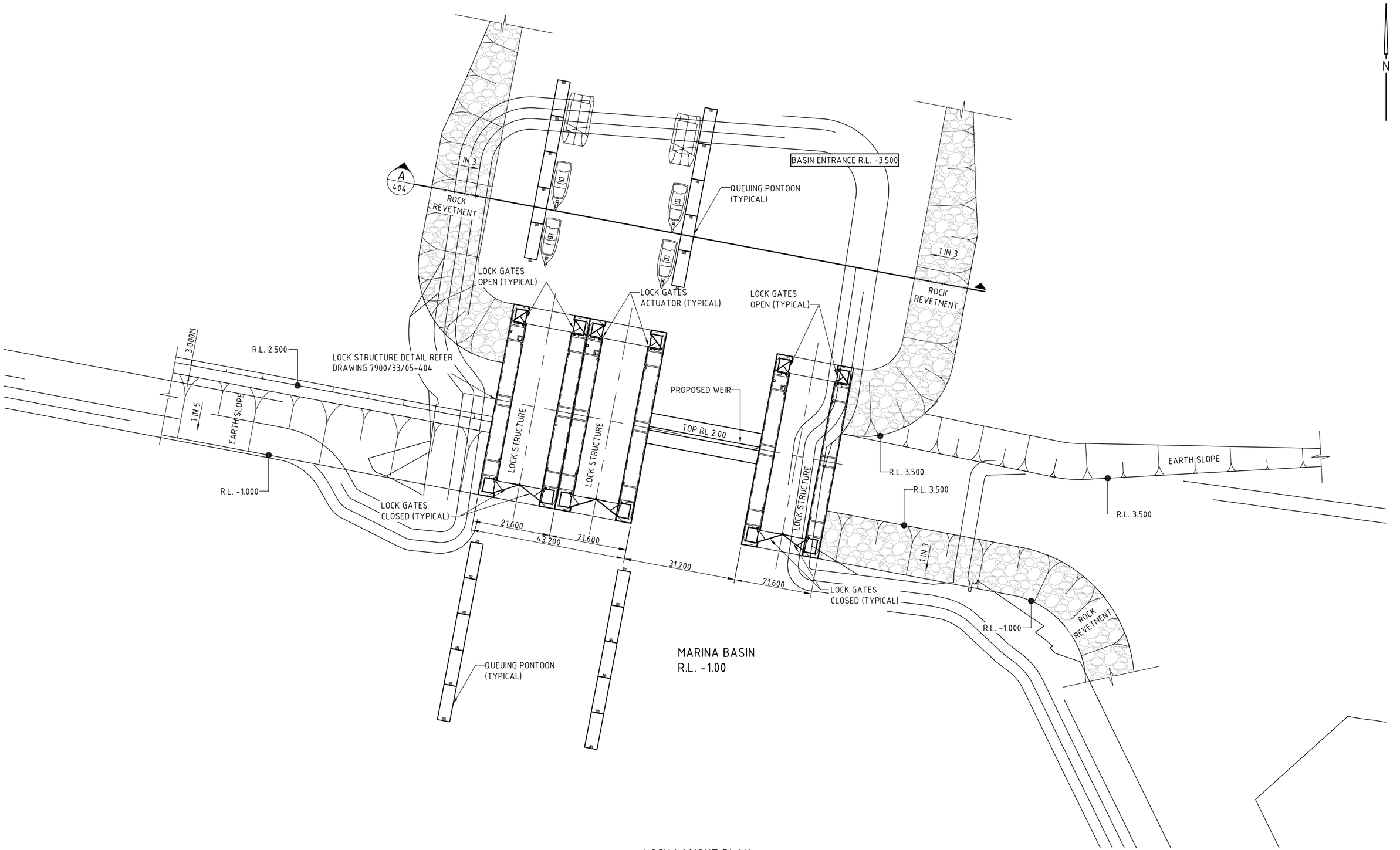


Figure 1 Locality Plan

REFERENCE DRAWINGS



LOCK LAYOUT PLAN
1:500

5 0 5 10 15 20 25m
SCALE BEFORE REDUCTION 1:500

DATE PLOTTED: 19 November, 2007 - 1:39pm

PRELIMINARY
Date..... 19 November, 2007 .....

Rv.	DATE	REVISIONS	REC.	APPR.
A	16.11.07	FOR EIS SUBMISSION		

DESIGNED:
DRAWN:
CHECKED:
RECOMMENDED: PROJ. MAN.
APPROVED: PROJ. DIR.

A1 DATUM: A.H.D.

CAD FILE: L:\7900-33\Sub05 Civil Design for EIS\Acad\79003305 - 403.dwg
XREF's: X-A1-BD-SHT, X-Design Contours

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NORTHEAST BUSINESS PARK

NORTHEAST BUSINESS PARK PTY LTD
NORTHEAST BUSINESS PARK, CABOOLTURE
MARINA PRECINCT
PROPOSED LOCK
LAYOUT PLAN

DATE: 09.2007
DRAWING No: 7900/33/05-403 Rv. A

APPENDIX A

Marina Maintenance Plans

Marina Basin Maintenance Plan

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 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 by the marina operator. The purpose of the inspection is to indicate when maintenance of the Marina is required.
1.2	Inspections will be for the following indicators: • Algae • Weed growth • Nutrient Load • Sediment • Pests • Fuel Spills • Litter • 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 by the marina operator and the owners representative. 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 including litter • 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 will generally involve manual removal.
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 the water in the Marina and receiving waters.
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 system, which does not detriment neighbouring human, flora and fauna health and the quality of the receiving waters.
3.4	Removal procedures include: • 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 Marina.
5	**Structure Management**
5.1	Check for signs of metal corrosion, concrete cancer and spalling. Obtain advise from an engineer for maintenance requirements.

APPENDIX B

Emergency Response Plans

EXTREME EVENT TRIGGERED MAINTENANCE PLANS

NBP-00001.1

Revision 1

Additional maintenance may be required if the Marina system 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 may have received sediment loads, debris and infestation of floating weeds. Debris and floating weeds should be removed manually. Chemical control could be considered if the existing aquatic flora around the Marina perimeter has been damaged and needs to be re-established.

Flooding may also put considerable strain on the banks and any structures in the Marina. 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. Possible causes of algal outbreaks include:

- pollution of waterways with nutrients;
- insufficient Marina turnover;
- prolonged warm, sunny and calm weather; and
- decomposition of organic matter in the Marina.

Algal blooms are unlikely in this Marina due to the saline environment and the exchange system with the Caboolture River. Should algal blooms occur they could most likely be due to a wider problem within the River rather than be directly caused by activities in or around the Marina.

The maintenance measures detailed below are specifically related to site specific measures that may assist in keeping control of algal blooms if they are site related. Algal control methods depend very much on the level of algal growth.

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 -: • 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: - increased Marina turnover; - 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 in the Marina. Water quality monitoring as well as the observational indicators, should provide warning signs long before fish kills are evident.

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 such chemicals within the development, the treatment train will provide some buffering before any substance will enter the Marina.

The proposed Marina volume will provide a significant buffer to any small amount of chemical spill.

MARINA OIL / FUEL SPILL RESPONSE PLAN

NBP-00002.1

Revision 1

ISSUED BY NORTHEAST BUSINESS PARK PTY LTD
THE OPERATOR OF NORTH HARBOUR MARINA
NOVEMBER 2007

<u>In the case of a fuel or oil spill Maritime Safety Queensland is the first to be notified that there has been a pollution incident in the marina.
If MSQ cannot be contacted then notify the Brisbane Port Authority.
Give details of location of spill and offending vessel if known.</u>

1) MARITIME SAFETY QUEENSLAND – (07) 3860 3500 *(Pinkenba)*
2) PORT AUTHORITY – (07) 3258 4888 (Port of Brisbane)
3) MARINA ADMINSTRATION – (07) TBA
4) FIRE BRIGADE – (07) 5499 3671
5) MARINA MANAGER – MOBILE NO. TBA (NORTH HARBOUR MARINA)
6) MANAGER – MOBILE NO. TBA (NORTH HARBOUR MARINA)

- Locate the source of the spill, record the names of offending vessels / people, or any comments made; Authorities may want to interview or prosecute.
- The spill must then be identified (oil, diesel, petrol, other)
- If spill can be contained with our equipment until the authorities arrive, do so, remember to charge out our equipment to offending vessel / people. The spill response equipment is located on each finger of the Fuel Dock in the locked cupboards, each contains the following spill recovery equipment: -
- Large Boom 6m x 18cm – (Charge $115.00 Each)
- 10 X Small Booms 2.4m x 10cm – (Charge $50.00 Each)
- Oil Absorbent Mats box of 50 – (Charge $2.50 Each)
- 1 X Bag of Absorbent material – ($50.00 per Bag)
- Obtain samples of the pollutant; authorities may have to test vessels to ascertain the offending vessel.
- Record all details of incident in counter log and fuel spill log.
- Re-order used material from **Company & tel no. TBA**

Fuel and/or other chemical spills will need to be treated immediately.

A typical time line of action for a fuel spill event should be as follows:

a) Fuel spill occurs

b) Boat owner notifies marina operator of spillage

c) Operator disables lock

d) Operator shuts down circulation pumping system (the pump will generally only be operational in low tariff times in any case which are not likely to be boat usage times).

e) Operator obtains Oil/Fuel Spill Response Plan, identifies spill and notifies appropriate local authority.

f) Operator deploys floating boom or other equipment around spilled material, as identified in the Response Plan.

g) Operator manually installs stop boards on weir if outflow is occurring

h) Operator assesses extent of spill, and arranges for removal of contaminated material. For small spills, this will probably involve operation of hand-held suction system held at the marina. For larger spills, commercial solutions may be required from external suppliers

i) Depending on the assessed contamination risk, the lock and/or pumping system may be returned to active duty

APPENDIX C

Fire and Cyclone Environmental Emergency Response Plans

NORTHEAST BUSINESS PARK	FIRE REPONSE PLAN NBP-00002 Revision 1

EMERGENCY - 000

FIRE – (07) 5499 3671
POLICE – (07) 5495 0444
AMBULANCE – 000
MARITIME SAFETY QUEENSLAND – (07) 3860 3500 ***(Pinkenba)***
PORT AUTHORITY – (07) 3258 4888 (*Port of Brisbane)*

In the event of a fire

- RAISE THE ALARM
  Call Emergency Services 000 – **Give Clear Concise Information**
- **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.

Manager – contact no TBA Marina Manager – contact no TBA

No Comments are to be made Unless Authorised

Date Revised:	07/07/07	Approved By:	BA

STAFF / OFFICE CYCLONE PROCEDURES

"NORTHEAST BUSINESS PARK MARINA" CABOOLTURE RIVER

INTRODUCTION
Research has shown that cyclones in the Australian region exhibit more erratic paths than cyclones in other parts of the world. A tropical cyclone can last for a few days or up to two or three weeks. Movement in any direction is possible, including sharp turns or even loops. Even if previous cyclones have not moved over your area, this is no guarantee that future cyclones will also miss you. **Never become complacent.**

PRE-SEASON PREPARATION - OCTOBER

Official cyclone season is November to May. Pre-season preparation is essential and will ensure that the effects of the cyclone are minimised as much as possible.

Check the Surrounds - Marina

The marina is to be audited by the Marina Manager and checked for the following:-
Vessels
Securing Lines are to be checked for adequate size, chaffing or wearing.
Any unsecured items on deck to be secured.
Marina
Cleats checked for integrity
Marina through bolts be checked for looseness
General marina inspection.
Hardstand
Annual hardstand clean up to be co-ordinated by Shipyard Manager.
Loose unused items to stored away.

Check the Surrounds – Boardwalk, Car parks & Surrounds

The boardwalk, car parks and surrounds are to be checked by North Harbour Marina ground staff and any loose material and debris is to be cleaned up.

Vehicles
All staff with vehicles to check to ensure that first aid kits are full and complete. Spare tyres are to be checked and vehicles refuelled if necessary.

First Aid Kits
All First Aid kits are to be checked by the First Aid Officer and filled if necessary. (Each Manager is to nominate a First Aid Officer for their work group)

GENERAL CYCLONE INFORMATION

Cyclone Watch - a cyclone or potential cyclone exists and there are strong indications that winds above gale force will affect coastal or island communities within 24 - 48 hours of issue. Watch messages are renewed every six hours.

Cyclone Warning - is issued as soon as gales or stronger winds are expected to affect coastal or island communities within 24 hours. Cyclone warnings are issued every three hours.

Flash Cyclone Warning - destructive winds are expected to directly affect coastal or island communities within 6-12 hours.

Cyclone Severity Categories

Category Average wind (km/h) - Typical effects

1 63-90 - Negligible house damage. Damage to some crops, trees, and caravans. Craft may drag moorings.

2 90-120 - Minor house damage. Significant damage to signs, trees, caravans. Small craft may break moorings.

3 120-160 - Some roof and structural damage. Some caravans destroyed. Power failure likely.

4 160-200 - Significant roofing loss and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failures.

5 over 200 - Extremely dangerous with widespread destruction.

MARINA PROCEDURES

PRE-CYCLONE

Cyclone Watch (cyclone centre is more than 24 hours away)

Marina & Hardstand

(a) Operations continue as normal. Make cyclone tracking charts and weather forecasts available for patrons on the front counter main office and pinned on notice board. (available from www.bom.gov.au)
(b) Staff are to dispose of any rubbish/accumulated junk around desks.
(c) Marina Staff will monitor the internet and radio for cyclone watch messages.
(d) Marina Manager to inspect sites for possible defects and to identify vessels, which need securing.
(e) Managers to contact each other to discuss conditions and inform the Chief Executive of prevailing conditions.

Cyclone Warning (cyclone centre is within 24 hours away)

MARINA

(a) Owners or Masters of all vessels are to be contacted and informed that a tropical cyclone is predicted to be in our vicinity within 24 hours. Owners or Masters will be advised to attend their vessels and ensure they are secure. Staff are to make available copies of the ***Cyclone Responsibilities***, ***Recommendations For Securing Vessels***.
(b) All marina trolleys and equipment are to be collected and secured.
(c) Marina staff to assist vessel owners where possible in securing their vessels.
(d) Marina staff to contact tenancies and advise them to make fast any outdoor furniture or fittings.
(e) Other staff members are to
    a. All loose items on desks are to be placed in drawers or filing cabinets.
    b. Do server backup tapes and place them in the safe.

HARDSTAND

a) Owners or Masters of all vessels are to be contacted and informed that a tropical cyclone is predicted to be in our vicinity within 24 hours. Owners or Masters will be advised to attend their vessels and ensure they are secure.
b) All vessels that do not have contactable owner / representative to be secured by shipyard staff.
c) All shipyard plant & equipment to be secured.
d) Hardstand staff to contact tenancies and advise them to make fast any outdoor loose items.

Cyclone Imminent (cyclone is within 12 hours away)

MARINA

(a) The Office is to shut down on instruction from the Manager. The doors are to be locked by office staff and the Chief Executive advised.
(b) The power to the fuel dock is to be shut down along with water for each pontoon. All power is to be shut down for the whole marina from main switch in electrical room behind the amenities.
(c) All electronic gates are to be opened on the computer and switched off manually from the electrical cupboard, on the gates main switch.
(d) All computers are to be logged off, switched off and unplugged from the wall. Monitors are to be disconnected from the base, and all cords are to be taped to the top of the base. The Operatives are to co-ordinate the removal of all PCs to the strongroom / safe all other electrical appliances are to be turned off.
(e) The server and firewall are to be logged off, switched off and unplugged from the wall and put into the strongroom / safe.
(f) Staff are to carry out checks of their area to ensure that no items have been left loose. Chairs are to be placed under desks, and any additional items (such as phones, faxes and printers) are to be placed in the secure areas with the PCs. All electrical equipment is to be unplugged and securely stowed.
(g) After all preparations are complete, all staff are to proceed home or to their nearest cyclone shelter. The Shipyard, Marina and General Managers will be the last to leave, ensuring that their area has been fully evacuated in conjunction with Emergency Services Instructions.

Hardstand

a) Shipyard staff to ensure paint/maintenance shed are shut and secured
b) All power to shipyard and tenancies is to be isolated
c) Shipyard office equipment to be backed up, unplugged and secured in marina safe room.
d) Shipyard Manager to have final inspection on shipyard to ensure vessel are properly secured and loose items have been secured
e) After all preparations are complete, all staff are to proceed home or to their nearest cyclone shelter. The Shipyard, Marina and General Managers will be the last to leave, ensuring that their area has been fully evacuated in conjunction with Emergency Services Instructions.

POST CYCLONE

(a) After the cyclone has passed, and it is advised safe to leave homes and shelters, the General Manager will contact both the Marina and Hardstand Managers and if possible arrange to together assess damage and strategise a plan of action in consultation with the Chief Executive Officer.

(b) Both Marina and Hardstand Managers are to completely audit the marina and hardstand and record and photograph damage.

(c) If possible, staff will be advised by phone/local radio station whether or not it is safe to return to work. Reasonable time is to be given for staff to attend to their homes and carry out such repairs as are necessary. It is likely that there will be substantial water damage from tidal surge, so staff should be advised to wear old clothes and suitable footwear, bring a thermos of drink and their lunch, and be prepared for cleaning up.

(d) Owners of damaged vessels are to be contacted and advised to attend their vessels.

(e) Project Management are to arrange for utility vehicles to be provided for the clean-up for trips to the dump.

(f) No electrical equipment is to be plugged in until electrical checks have been carried out and repairs done if required. The General Manager, Marina Manager and Hardstand Manager will organise electrical checking and re-starting of the network.

(G) TECHNICAL CONTRACTOR, IS TO CHECK BOTH NETWORK FILE SERVERS AND TAKE ANY NECESSARY ACTION.

Annex A

Season .....……

PRE-CYCLONE SEASON CHECKLIST

Action	Date Completed	Signature
1. **Vessel Mooring Lines Checked**		
2. **Marina Checked for Integrity**		
3. **First Aid Kits** *main office kit checked		
4. **Boardwalk & Surrounds Cleaned** * Coconut Palms Pruned		

All actions completed (date): _____/_____/_____

Annex A

Season .....……

PRE-CYCLONE SEASON CHECKLIST SHIPYARD

Action	Date Completed	Signature
1. Hardstand tie downs inspected and cleaned		
2. Cradles Checked for Integrity		
3. First Aid Kits *main office kit checked *Vehicle and work shop kit checked		
4. Hardstand cleaned and secured		

All actions completed (date): _____/_____/_____

Annex B

PRE-CYCLONE PROCEDURES CHECKLIST

Note - where an action item is noted, the action officer concerned is to report completion of action to the Marina Manager who will advise the CEO that all Pre cyclone procedures have been put in place.

	Action	Completed (tick)	Actioned By
	CYCLONE WATCH		
1.	Cyclone Advices & Tracking Maps Made Available		Counter Staff
2.	Staff to Clean Rubbish accumulated Junk Around Desks		Counter Staff
3.	Marina Adit to be Completed and any vessel owner's who need to be contacted phoned		Marina Manager
4.	Staff to Monitor Radio / internet for next cyclone watch messages		Counter Staff
	CYCLONE WARNING		
1.	All vessel Owner / masters contacted and informed to attend their vessels.		Marina Manager / Counter Staff
2.	Marina Trollies and equipment to be secured		Counter Staff
3.	Loose items secured		Counter Staff
4.	Assist Owners in securing vessels		Marina Manager
5.	Contact Marina Tenancies & advice to secure any outdoor furniture, fittings and equipment		Counter Staff
7.	Carry out computer back-up		Counter Staff
	CYCLONE IMMINENT		
1.	Office is Shut down and doors are locked		Manager & Counter Staff
2.	Power to Fuel Dock is shut down along with water for each Marina along with main power to be shut down		Marina Manager
3.	Electronic Gates are to be manually opened and cable tied open		Marina Manager
4.	All computers are to be logged off, switched off and unplugged from the wall. Monitors are to be disconnected from the base, and all cords are to be taped to the top of the base. The Operatives are to co-ordinate the removal of all PCs to the strongroom / safe all other electrical appliances are to be turned off		Counter Staff
5.	The server and firewall are to be logged off, switched off and unplugged from the wall and put into the strongroom / safe.		Marina Manager / IT Consultant
6.	Work area check (chairs under desks, all items stowed away)		Counter Staff
7.	All staff provided with lift home if required		Manager
8.	Staff to provide contact phone number and address. Lists to be given to Manager.		Counter Staff
10.	Final check/secure and evacuation.		Manager Marina Manager Shipyard Manager

Annex B

PRE-CYCLONE PROCEDURES CHECKLIST con't

	Action	Completed (tick)	Actioned By
POST CYCLONE			
1.	Assess damage - Photograph		Manager Marina Manager Shipyard Manager
2.	Make safe – secure marina – assess damage		Marina Manger Shipyard Staff
3.	Staff advised of re-opening time		Marina Manager
4.	Owners of damaged vessels contacted and advised to attend vessels		Counter Staff
5.	Utes provided for clean-up		Manager
6.	Electrical checks done		John Love electrical
7.	Servers re-connected		Technical Officer, IT
8.	Move back PCs		Counter Staff

Annex B

PRE-CYCLONE PROCEDURES CHECKLIST *SHIPYARD*

Action	Completed (tick)	Actioned By
CYCLONE WATCH		
1. Cyclone Advices & Tracking Maps Made Available		Counter Staff/marina
2. Staff to Clean Rubbish accumulated Junk Around Desks		Shipyard Manager
3. Hardstand audit to be Completed and any vessel owner's who need to be contacted phoned		Shipyard Manager
4. Staff to Monitor Radio / internet for next watch messages		Marina Staff
CYCLONE WARNING		
1. All vessel Owner / masters contacted and informed to attend their vessels.		Shipyard Manager
2. Shipyard equipment to be secured in either the paint shed / maintenance shed.		Shipyard Staff
3. Loose items on vessels to be secured		Shipyard Staff – vessel owners
4. Assist Owners in securing vessels		Shipyard staff
5. Contact Shipyard Tenancies & advice to secure fittings and equipment		Shipyard Manager
6. Carry out computer back-up and re-locate shipyard office equipment to marina safe		Shipyard Manager
CYCLONE IMMINENT		
1. Shipyard staff to ensure paint/maintenance shed are shut and secured		Shipyard staff
2. All power to shipyard and tenancies is to be isolated		Shipyard Staff
3. Shipyard Manager to have final inspection on shipyard to ensure vessel are properly secured and loose items have been secured.		Shipyard Manager
POST CYCLONE		
1. Assess damage - Photograph		Manager Marina Manager Shipyard Manager
2. Make safe – secure hardstand– assess damage		Shipyard Staff
3. Staff advised of re-opening time		Shipyard Manager
4. Owners of damaged vessels contacted and advised to attend vessels		Shipyard Manager

TROPICAL CYCLONES

"NORTHEAST BUSINESS PARK MARINA" CABOOLTURE RIVER

ISSUED BY NORTHEAST BUSINESS PARK PTY LTD
THE OPERATOR OF NORTH HARBOUR MARINA
NOVEMBER 2007

RESPONSIBILITY AND AUTHORITY

Masters and owners have an obligation under *Transport Operations Marine Safety Act 1994* (S40) at all times to take appropriate precautions for the safety of their vessels, passengers and crew and nothing done by Marina management or staff at any time will impact on or over-ride the absolute responsibility of Masters and owners in that regard.

In cyclonic or other extreme weather conditions, the Regional Harbour Master may give directions in relation to vessels in the Small Craft Haven.

Subject to any directions given by the Regional Harbour Master the movement of vessels in and out of the Small Craft Haven is self managed. Management and staff will not interfere with that status.

Neither Marina management nor staff are empowered to direct or instruct Masters or owners of vessels or their passengers and/or crew in such a way that the legal obligations which Masters and owners have to their passengers and/or crew are interfered with or compromised in any way. No such directions or instructions will be given.

If they leave their vessel, all persons must then immediately comply with any directions given by Emergency Services personnel in the area.

THE REGIONAL HARBOUR MASTER

Contact may be made with the Regional Harbour Master by:

(1) Telephone on **TBA**; or

(2) VHF Channels 16 and 13 call sign **VTS Caboolture TBA** ;

Listening watches may also be maintained by **Caboolture Air Sea Rescue (TBC)** on VHF **Channels 16, 21,67,6,11 HF Channels 2182 / 4125 and 2524 working channel (TBC)**

TO STAY OR LEAVE THE MARINA

When the design criteria for the Marina were being established, consideration was given to the likely range of weather conditions which might be experienced and the design work and later, construction was carried out so that the overall structures would withstand the expected loads while vessels are moored in the berths.

Notwithstanding the care which was taken in establishing design and construction criteria which were considered to be appropriate, no guarantee can be given that the structures are capable of maintaining their integrity in the complete range of cyclonic conditions which may occur in the Caboolture area.

Under the circumstances, vessels are accepted into the Marina and are permitted to remain only on the strict understanding that the Masters or owners in charge of each of them will make the decision to exit the Marina or remain when a tropical cyclone or other extreme weather conditions are forecast and Northeast Business Park Pty Ltd accepts absolutely no responsibility whatsoever for any consequence which results from such decision.

The Small Craft Haven is a place of shelter and cannot be guaranteed to be a place of safe haven.

TO STAY ON OR LEAVE THE VESSEL

While Marina management and staff will provide assistance to Masters and owners of vessels and people on vessels, including information in relation to weather forecasts and warnings they will provide no suggestions, recommendations or directions about whether persons should remain on board or leave vessels.

The decision to remain on board or leave vessels is entirely the responsibility of the Masters and owners or the persons themselves.

CYCLONE PREPARATIONS

"NORTHEAST BUSINESS PARK MARINA" CABOOLTURE RIVER

1. A TROPICAL CYCLONE WATCH MESSAGE IS ANNOUNCED.

A TROPICAL CYCLONE IS APPROACHING OUR AREA AND IS NOT FORCAST TO ARRIVE IN OUR VICINITY FOR ATLEAST 48 HOURS.

- Monitor the cyclone from weather forecasts
- Cyclone tracking charts & weather forecast will be available from the North Harbour Marina office showing the position and progress of the cyclone
- Wherever possible, owners or nominated contact person of all vessels will be contacted and made aware that a tropical cyclone is predicted to be in our area within 48 hours.

2. A TROPICAL CYCLONE WARNING IS GIVEN

THE TROPICAL CYCLONE IS PREDICTED TO THREATEN OUR LOCATION WITHIN 24 HOURS.

- Wherever possible, Owners or a nominated contact person will be advised to attend their vessel and ensure that they are secured.

3. THE TROPICAL CYCLONE IS ON A DIRECT COURSE

- The latest advice can be obtained from the telephone warning service on 1300 659 212
- Marina patrons and guests are required to follow any official advice given by any Emergency Services personnel.
- If instructed to evacuate by Emergency Services personnel, ensure utilities are turned off – power, gas, water.
- Wear strong clothing to protect against cuts from debris. Wear strong footwear (not thongs) for protection.

- Be ready to move to higher ground or shelter facilities as directed by Police and Emergency Services personnel. High winds and flooded roads may be hazards during movement. Advice will be given through local TV, radio and other media. Police and State Emergency Services will also give verbal warnings
- When the cyclone hits, keep calm & stay indoors.
- Stay away from windows
- Protect yourself with mattresses pillows and blankets.
- Stay indoors until officially advised that the cyclone has passed. Beware of the eye. After the cyclone, listen to the radio. Don't stay in the open & don't go sightseeing

RECOMMENDATIONS FOR SECURING VESSELS

1. Mooring lines are to be doubled with secondary lines to alternative cleats. Do not run the secondary lines to the same cleats, as cleat failure will release the vessel from safe mooring. The secondary lines should be secured slightly slack to ensure that they are only required to work if the primary line fails. **Do not secure lines to piles, as they will jam in the rollers**. Ensure lines are of an adequate size to secure the vessel.

2. In extreme conditions vessels have a tendency to ride up onto the pontoons. Please ensure that the vessel is positioned in a manner that if the primary lines fail, that there is **not enough** slack on the secondary lines to allow the vessel to move on to the main or adjacent finger.

3. Ropes and other synthetic fibres such as polyethylene, polypropylene and polyester are all susceptible to U.V. damage from sunlight. **All** will deteriorate in some way over 1 – 3 years and cannot usually be noticed until the rope is placed under stress. The deterioration occurs very rapidly after U.V. damage commences.

4. **Do not use chain to secure the vessel**. Chain has no ability to stretch and will damage your vessel or the marina. Anchors may be lowered but ensure that there is enough slack out to compensate for the rise and fall of the swells & tide. Do not anchor over or onto walkways or piles.

5. Check boat cleats for integrity, generally ropes are stronger than these. If there is any uncertainty, secure a line to one of the main structural members. e.g. Mast.

6. Reduce wind loading to a minimum. Remove clears, and all deck equipment i.e. lifebuoys, covers etc and store below. Remove all furled sails. If this cannot be done, double wrap them to prevent wind from opening them up.

7. Stow away all loose gear (buckets, fishing gear etc) below. Deflate & stow inflatable dinghies. Other dinghies should preferably be launched, cleaned out and secured on the inside of either the fuel pontoon, A marina or B marina. If left on the deck they should be cleaned out, bungs removed and securely lashed down, preferably overturned.

8. Ensure that all scuppers are clear and will stay clear

9. Shore power and water leads are to be disconnected.

10. Position spare fenders and lines

11. Confirm that all bilge pumps are working

12. Radio Communication should be checked on VHF channels 16 then 11.

IT IS THE OWNER'S RESPONSIBILITY TO ENSURE THAT THEIR VESSEL IS ADEQUATELY SECURED

MARINA STAFF WILL ASSIST WHEREVER POSSIBLE

IMPORTANT

YOUR SAFTY IS OF PARAMOUNT IMPORTANCE AT ALL TIMES.
IN THE EVENT OF A CYCLONE, FLYING DEBRIS CAN BE LETHAL.
PERSONS WHOM ARE LIVING ABOARD VESSELS IN THE MARINA MUST COMPLY WITH DIRECTIONS FROM EMERGENCY SERVICES PERSONEL IF DIRECTED.
BOATS CAN BE REPLACED LIVES CANNOT.