ENVIRONMENTAL GUIDELINES FOR
BOAT MAINTAINING AND REPAIR
ENVIRONMENTALLY RELEVANT ACTIVITY 49

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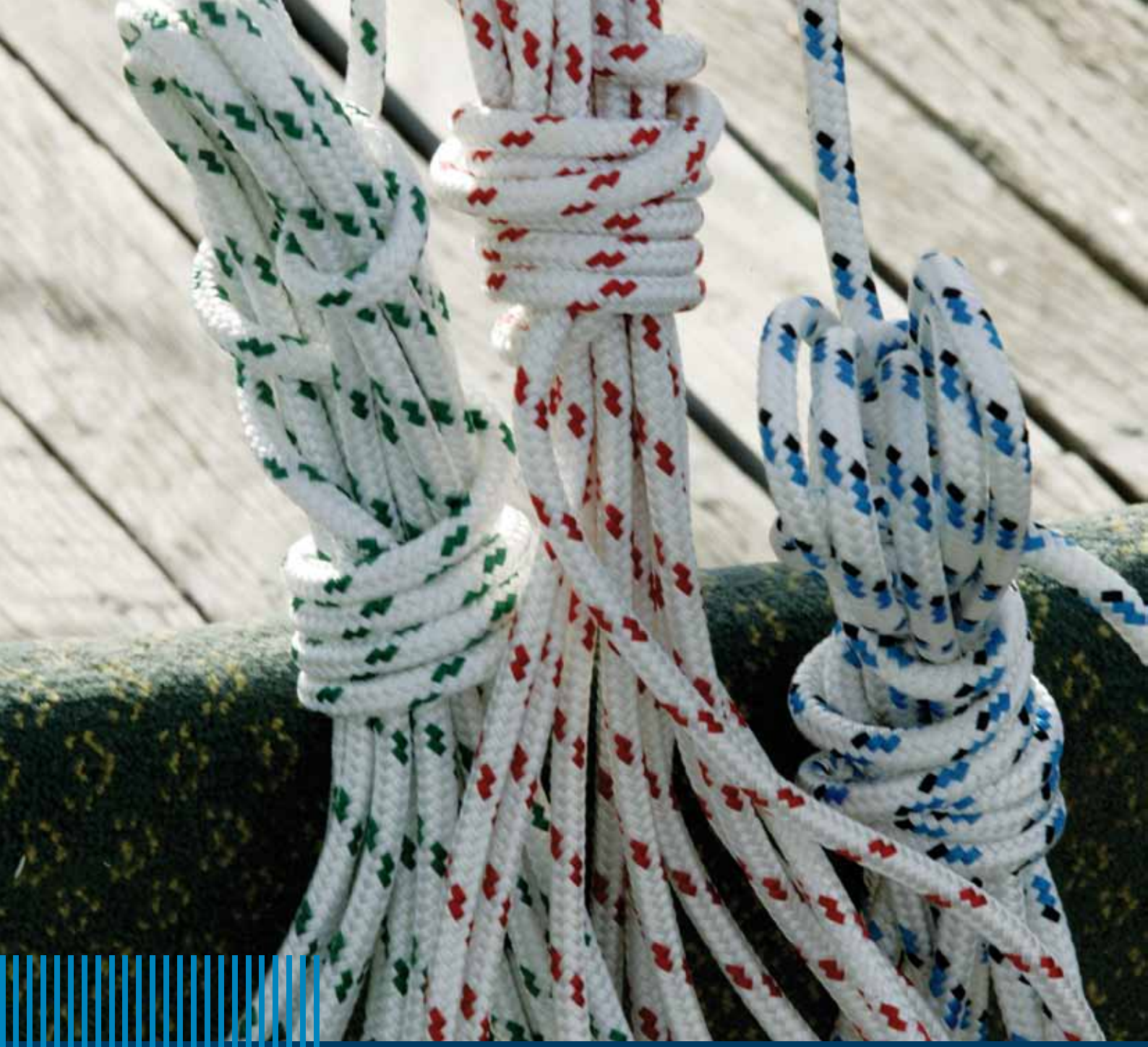

ACKNOWLEDGEMENTS

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- Marine Queensland
- Gold Coast City Council
- Department of Environment and Climate Change NSW.

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Please note.

CONTENTS

ABBREVIATIONS

DERM Department of Environment and Resource Management

MSDS Material Safety Data Sheet/s

WH&S Workplace Health and Safety

VOCs Volatile Organic Compounds

PRIORITY ACTIONS FOR MARINAS, BOAT MAINTENANCE AND REPAIR

1. MARINAS AND JETTIES

- Bund and cover fuel and chemical storage facilities.
- Regularly inspect and maintain fuel tanks, bowsers, nozzles and hoses to ensure they are not leaking.
- Ensure your first flush catchment system is of sufficient capacity and is regularly maintained.
- Prevent boat owners from discharging bilge water in the marina.
- Provide sewage disposal facilities and toilet facilities for your customers and encourage their use.
- Encourage boat owners to avoid polluting waters when washing their boats.

2. HARDSTAND AREAS

- Ensure all hardstands and work areas are graded, bunded and fitted with catch drains to collect waste water, debris and chemical spills.
- Carry out all work above catch drains.
- Keep work areas clean at all times. Ensure the area is cleaned before leaving the site.
- Ensure sumps and pits are clean and pumps are operating on their float switches.

3. BUILDINGS AND SITE MANAGEMENT

- Obtain all necessary approvals and licences and comply with their conditions.
- Ensure car parks and gardens are free from litter.
- Ensure drains and collection pits are clear of debris.
- Place spill clean-up kits at likely spill locations and train all staff in their use.
- Erect signage to remind clients of your commitment to reduce noise and protect the environment.

4. WORKSHOPS

- Connect cutting and sanding machines to dust extractors – collect dust close to source.
- Keep workshop floors clean of spillages and waste.
- Ensure all staff are properly trained in the correct handling of hazardous materials.
- Carry out outboard motor tests in tanks in a bunded and covered area
- Carry out all spray-painting inside an enclosure of a suitable design and appropriately maintained to prevent the emission of particulates.

5. HAZARDOUS MATERIALS AND WASTE STORAGE

- Store hazardous materials, including fuel, oils, batteries and chemicals, in appropriately segregated, bunded and covered areas.
- Ensure all containers have lids on and are in good condition.
- Ensure your wastes (solid and liquid) are sent to facilities that can lawfully take them.
- Develop an emergency response procedure for chemical spills and train all staff on how to prevent and manage spills.
- Regularly check the integrity of underground storage tanks.

6. NOISE

- Don't carry out noisy work at night, the early morning, Sundays or Public Holidays.
- Carry out sanding, grinding and other noisy activities inside a building or an area where noise can be reduced as much as possible.
- Fit silencers to air compressors or enclose in a sound proof enclosure.
- Ask your customers to keep noise to a minimum, especially at night and in the early hours of the morning.
- Schedule deliveries and waste collection for day time hours.

OVERVIEW AND OPPORTUNITIES

This guide is part of a series prepared by Brisbane City Council that provides information to help businesses improve their compliance and environmental performance.

Similar guides for other business sectors are available through Brisbane City Council's Contact Centre on (07) 3403 8888 and from Brisbane City Council's website at www.brisbane.qld.gov.au

THE INDUSTRY

The boating and marina industry covers a wide range of operations. The industry has the potential to impact on the environment because of its waterfront location, activities, raw materials and chemicals used and the waste generated. In addition, the industry depends on clean waterways so people can enjoy their boating and fishing.

This guide applies to owners and operators of:

- boat maintenance and repair facilities
- marine industry parks.

WHAT IS THE PURPOSE OF THIS GUIDE?

This guide is designed to help marinas, boat maintenance and repair operators to:

- understand the environmental risks and responsibilities associated with the boating industry
- act to improve the environmental management of their operations
- take advantage of the business benefits that result from improved environmental practices
- comply with their responsibilities under the Environmental Protection Act.

This guide provides information for owners, managers and staff. It will also be useful to environmental officers who audit these facilities. The guide will provide the reader with an understanding of regulatory requirements under environment protection laws.

WHAT ARE THE KEY ISSUES?

The following are key environmental issues for marinas, boat maintenance and repair facilities.

- Water pollution caused by allowing any material other than rainwater to enter waterways.
- Air pollution and land contamination caused by releasing:
  - volatile organic compounds (VOCs) into the environment from solvent or paint use
  - dust, including particles that could contain organic compounds, metals and metal complexes, as a result of sanding and blasting.
- Handling and disposing of dangerous goods, such as solvents, fuel and paint wastes.
- Waste management, including re-use, recycling and disposal.
- Noise unreasonably impacting on the surrounding community.
- Water use.
- Greenhouse gas emissions from energy use.
- Design, installation and operation of underground petroleum storage systems.

The 'Useful tools' section (pp 46 – 62) contains templates to help you develop your own environmental management tools, such as checklists and an action plan. For example, the 'Self-assessment checklist' has examples of questions that an officer from your local council or the DERM could ask when visiting your premises. You can use this self-assessment tool to evaluate your environmental performance and identify areas for improvement.

Workplace Health and Safety (WH&S)

Many of the issues in this guide are also relevant to WH&S. In fact, many businesses with good WH&S procedures are also excellent performers with respect to the environment. This publication does not address WH&S issues in detail so it's important to contact the Division of WH&S for more information.

ENVIRONMENTAL MANAGEMENT – RISKS AND OPPORTUNITIES

For marinas, boat maintenance and repairs, improving environmental performance is about managing risk and taking advantage of opportunities that will boost efficiency and profits.

A good starting point is to identify and prevent risks to your business from poor environmental management. High levels of dust from abrasive blasting or surface coating operations for example, could pose the risk of:

- environmental prosecutions and fines
- damage to company reputation
- harmful effects on the health, safety and productivity of staff and neighbours.

A chemical spill or other pollution could also harm the local marine and land environment, which belongs to all members of the local community and impacts on their quality of life.

Improving environmental management also provides opportunities to make a business more profitable and viable in the long term. Even small changes can save money. For example, many marinas and boatsheds have cut electricity costs by installing or cleaning skylights and regularly fixing leaks in air compressors. Some of these simple actions are described in more detail in 'Information Sheet 2 Resource Efficiency'.

The benefits of a high standard of environmental management go beyond 'housekeeping' and efficiency. Benefits also arise from:

- an enhanced reputation as a company that is well managed and a valuable long-term business partner
- a 'supplier of choice', particularly to corporate and government clients who are starting to consider environmental performance of suppliers and products as part of their green procurement policies
- improved employee satisfaction, retention and productivity.

Companies with a good environmental record are more likely to win the 'battle for talent' in attracting and retaining staff. As well, employees are generally happier and more productive in a workplace that is clean, healthy and environmentally responsible.

For further information visit **www.brisbane.qld.gov.au**

Successful marina and boat maintenance and repair operators are coming to understand that good environmental practice is a business opportunity. These opportunities are maximised when management of environmental issues is integrated with other business planning to become part of continuous improvement. Better results are also likely when staff at all levels are involved in identifying and delivering environmental projects.

FURTHER INFORMATION

- Brisbane City Council – phone (07) 3403 8888 or **www.brisbane.qld.gov.au**
- Marine Queensland – phone (07) 3899 3333 or **www.marineqld.com.au**
- Australian Greenhouse Office – phone (02) 6274 1888 or **www.greenhouse.gov.au**

INFORMATION SHEET 1

ENVIRONMENTAL COMPLIANCE – MEETING YOUR LEGAL RESPONSIBILITIES

Queensland has a number of laws to help protect the environment.

The Environmental Protection Act 1994 is the main piece of Queensland environmental legislation covering water, land, air and noise pollution and waste management.

In some cases, breaking environmental law carries serious penalties. If you end up in court, the prosecutor does not have to prove that you intended to cause the damage or pollution. Even negligence can result in prosecution and penalties.

Everyone involved in your business (including owners, managers, supervisors, operators, contractors and subcontractors) needs to be aware of the environmental laws that apply to your operations. Individuals are required to minimise the risk of an environmental incident by implementing precautionary and control measures.

By gaining awareness of environmental laws, and how your business has the potential to affect the environment, you will be in a better position to manage risk in your business.

Managers and directors can be prosecuted for offences committed by their company, unless they can demonstrate that they exercised all due diligence to prevent the contravention of the Environmental Protection Act or that they could not influence the conduct of their company in relation to the contravention.

They cannot use lack of knowledge about the contravention as a defence.

A comprehensive approach to addressing regulatory requirements includes:

- developing a plan that incorporates environmental management
- undertaking staff training and supervision
- completing a self-assessment or independent audit.

These ideas are discussed in this guide.



WATER POLLUTION

Under the Environmental Protection Act, it is illegal to pollute, cause or permit pollution of waters. Under the Act, 'water pollution' includes releasing a contaminant, including litter, sediment, fuel, oil, grease, wash water, debris, detergent and paint into waters, or placing such material where it is likely to be washed or blown into waters or the stormwater system, or to percolate into groundwater.

Individuals guilty of causing environmental harm under Section 437 of the Environmental Protection Act have been fined $60,000 to $70,000. Companies guilty of the same offence have been fined up to $250,000.

On-the-spot fines of $600 or more are commonly issued where contaminants have been released to waters (gutters, stormwater drains, waterways) or have the potential to be released to waters. These penalties have recently been increased up to $2000.

You should take all practicable steps to make sure that unforeseen events, such as spills or leaks, do not result in polluted water entering the stormwater system or groundwater. This means keeping chemicals in a bunded and covered storage area that is properly maintained, having adequately stocked spill kits on hand and making sure staff know how to use them. Under no circumstances should you hose a chemical spill down the drain.

AIR POLLUTION

Air pollution means releasing any contaminants into the air, including odours, volatile organic compounds (VOCs), smoke, dust, gases, and fumes and solid particles of any kind.

Under the Environmental Protection Act, businesses must maintain and operate equipment and deal with materials in a proper and efficient manner to prevent air pollution at all times.

Under the Environmental Protection Act, marinas or boat maintenance and repair yards approved by council or DERM must control the emission of any odour nuisance from the premises.

LAND POLLUTION

Under the Environmental Protection Act it is an offence to contaminate land. Additionally, the Act makes it an offence to wilfully or negligently cause any substance to leak, spill or otherwise escape in a manner that harms, or is likely to harm, the environment.

HAZARDOUS MATERIALS AND WASTE

When handling hazardous materials and waste, remember that it is an offence to cause any substance to leak, spill or otherwise escape in a manner that harms, or is likely to harm, the environment.

Make sure you're aware of the legal requirements before using, storing, transporting and disposing of hazardous materials (e.g. dangerous goods and chemicals). The laws relating to chemical storage vary depending on the amount that you are storing. For more information contact Brisbane City Council.

The movement of most hazardous waste must be tracked during its transport to a facility for treatment, recycling or disposal. Waste can be tracked 'online'. For more information contact the DERM Hotline on 1300 130 372.

The most effective way of dealing with hazardous materials is to:

- avoid them by replacing them with less toxic materials
- implement work practices that minimise their use.

Above left: Preventing debris entering water is a constant challenge for the industry
Above right: Slipway with waste water catch drain

NOISE

By law, you must not allow noise from your premises to be emitted that causes an unlawful environmental nuisance.

Unlawful environmental nuisance includes noise that unreasonably interferes with the ability of a person to sleep, relax, study or communicate.

Council can issue fines and direction notices requiring you to stop or reduce noise from your premises that can cause an unreasonable impact on neighbours because of its level, duration, character, quality or the time at which it is made. For example at night or on a Sunday will generally cause a greater impact on residents than noise during a weekday. Certain noises are more annoying than others, for example the sound of hammering, alarms, reversing beepers and the high screech of grinding steel are particularly annoying.

WASTE

Under the Environmental Protection Act, there are heavy penalties for unlawful disposal of waste. The owners of waste (as well as the transporters and receivers) have a responsibility to ensure their waste is managed, transported and disposed of appropriately.

The Environmental Protection (Waste) Policy 2000 and regulations encourage the most efficient use of resources to reduce environmental harm and provide an ongoing reduction in waste generation.

The following hierarchy for managing waste is recommended.

1. Avoid unnecessary resource consumption.
2. Recover resources (including re-using, reprocessing and recycling) and recover energy.
3. As a last resort, dispose of the material safely and lawfully.

Are you required to report your emissions to air, land and water ?

Your facility may be required to report to the National Pollutant Inventory (NPI) if there is an industry handbook published that reflects the activities on your site (e.g. Shipbuilding, Repair and Maintenance, Maritime Operations, Fuel and Organic Liquid Storage) or if you trip any of the other reporting thresholds (such as using 10 tonnes or more of any of the NPI-listed substances).

The National Pollutant Inventory (NPI) is an internet database that displays information about the annual emissions from industrial facilities and diffuse sources of 90 different chemical substances.

For more information, visit the NPI website at www.npi.gov.au or phone the DERM Hotline on 1300 130 372.

WHO ENFORCES ENVIRONMENTAL LAW?

Environmental laws are policed by either the DERM or the local council.

The DERM or Councils regulate activities listed in Schedule 2 of the Environmental Protection Act (Environmentally Relevant Activities or ERAs). The DERM regulates large companies and industries that have the potential to seriously affect the environment or have a State-wide impact. Other environmentally relevant activities, also listed in schedule 2, are devolved to local councils to administer. See 'Do you need a Development Approval for an ERA?' on page 10.

The Environmental Protection Act gives the appropriate regulatory authority the power to enter and inspect premises and issue clean-up or direction notices and on-the-spot fines. The administering authority can also prosecute a business for non-compliance with environmental laws.

You must report incidents that harm the environment

If a pollution incident occurs and it causes or threatens material harm to the environment, by law you must tell council – as soon as you know about the incident.

This 'duty to notify pollution incidents' extends to employers, the person carrying out the activity, employees, occupiers, contractors and agents.

For more information call Brisbane City Council on (07) 3403 8888 or visit www.brisbane.qld.gov.au

You must report land contamination

You must notify the DERM of any land contamination that poses a significant risk to human health or the environment. This 'duty to notify contamination' falls on the owner of the property and on the person whose activities have caused the contamination.

For more information call the DERM Hotline on 1300 130 372 or refer to www.epa.qld.gov.au

What are the penalties for environmental offences?

The most serious offences are wilful breaches of the law that harm or are likely to harm the environment. These carry penalties of up to $500,000 for an individual or five years imprisonment.

Less serious breaches can result in an on-the-spot fine (penalty infringement notice) with a penalty of up to $2000.

ENVIRONMENT PROTECTION NOTICES

Clean-up and Cost Recovery

A clean-up notice or cost recovery notice can be issued by the DERM when a pollution incident has occurred, or is occurring, and where there is potential for serious or material environmental harm.

Clean-up notices may direct an occupier of premises, or the polluter, to take clean-up action.

Direction notices

Direction notices can be issued by council where a pollution incident has occurred, but there is less likelihood of serious or material environmental harm.

Direction notices require that actions specified in the notice are carried out. Notices can include directions, such as installing bunding within one month around a chemical storage area.

Penalty Infringement Notices (PINs)

PINs (or on-the-spot fines) may be issued for a range of offences under the Environmental Protection Act. The most common offences for which infringement notices are issued involve release of contaminants, such as oil, paint, pesticides or herbicides to stormwater drains, creeks and other waters. The infringement penalty for this offence is up to $2000. It is also an offence to release soil or sediment to stormwater drains, creeks or other waters or to release stormwater which causes sediment build up. The penalty for this offence is up to $2000.

ENVIRONMENTAL APPROVALS AND REGISTRATION

Do you need a Development Approval for an Environmentally Relevant Activity (ERA)?

Maintaining boat and repair businesses need a development approval for an ERA and also need to hold an environmental registration if they:

- operate on a commercial basis to carry out boat maintenance or repairs on hulls, superstructure or mechanical components of boats or seaplanes
- clean or maintain hulls at a boat maintenance or repair facility at another place.

Find out if you need a development approval and environmental registration by contacting Brisbane City Council on (07) 3403 8888 or visiting www.brisbane.qld.gov.au

Businesses that do not require an environmental approval or registration still need to comply with environmental laws, including the General Environmental Duty (GED) under the Environmental Protection Act 1994.

Trade waste permit

You must obtain a trade waste permit from your water authority (Brisbane Water) before discharging any trade waste to the sewer. The permit establishes the discharge conditions for the wastewater.

Dangerous goods

Dangerous goods include flammable, toxic or corrosive substances, such as solvents, which should be stored in containers displaying the relevant diamond-shaped label.

If you store significant quantities of flammable and combustible liquids you may require a Dangerous Goods licence from council.

To find out if you require a licence, contact Brisbane City Council phone (07) 3403 8888 or visit www.brisbane.qld.gov.au

FURTHER INFORMATION

- DERM Hotline - phone 1300 130 372 or **www.epa.qld.gov.au**
- Brisbane City Council – phone 3403 8888 or **www.brisbane.qld.gov.au**
- Environmental Laws – *Text of Queensland Laws online* – **www.legislation.qld.gov.au**

INFORMATION SHEET 2

RESOURCE EFFICIENCY

Good managers understand that an efficient business is a profitable business.

Efficiency in running a business includes reducing the use of resources (raw materials, water and energy) and lowering the volume and toxicity of waste and other emissions. This efficiency is often referred to as 'LEAN manufacturing', 'cleaner production' or 'resource efficiency'. It involves finding ways to reduce costs and environmental impacts along the entire production or service delivery process, from the supply of raw materials to operations and distribution.

Identifying and implementing resource efficiency measures is 'easy' for managers who know their business and are prepared to have a close, systematic look at inefficiencies.

It is an opportunity to profit from:

- reducing the use of energy, water and raw materials
- avoiding waste and re-using and recycling materials
- minimising waste volumes and reducing waste toxicity to lower the cost of treatment and disposal
- implementing process changes to increase production and reduce spoilage
- reducing the use of hazardous and dangerous materials to minimise dangerous goods storage and environmental and WH&S liability risks
- providing a safe, clean and pleasant work environment that leads to increased staff productivity.

WHERE DO I START?

Plan and organise

Dozens of success stories prove that a team approach to resource efficiency is best. With management support, establish an environment team that includes staff from different areas of the business. Appoint a 'champion' or team leader and consider inviting suppliers or customers to join the team on occasions. Ideally, the environmental champion will have the full support of management and other staff.

From the outset, identify how you will integrate resource efficiency into business planning and staff responsibilities.

Above: Avoid loss of raw materials and reduce VOC emissions by keeping lids on chemical containers and fitting taps

Assess and measure

The environment team needs to assess the processes, material flows and costs within the business, and identify any internal barriers that prevent the implementation of more efficient practices.

The team should start by collecting baseline data on resource use and waste – what gets measured gets considered! The team should also complete an initial business and process assessment, which could include brainstorming sessions, a facility 'walk-through' or a more formal audit. It's also wise to involve an outside person with technical expertise who can provide a 'fresh pair of eyes' and ideas from other companies.

The initial assessment and data will provide you with a benchmark against which to measure ongoing improvement.

Identify opportunities and implement priority actions

Your assessment of resource use will almost certainly identify immediate opportunities for cost savings. These should be implemented as quickly as possible. These 'small wins' help to maintain the team's enthusiasm. Other ideas might need further research and assessment and take longer to implement.

The team should record ideas and options and prepare a simple action plan outlining opportunities, issues requiring further investigation, priorities, timeframes and staff responsibility for actions. As a starting point, the team could use the environmental action plan template in the 'Useful tools' section of this guide and adapt it to suit your business.

Document results and evaluate success

Record financial investment in resource efficiency projects and the time taken to recover these costs – known as the 'payback' period. Set up simple spreadsheets or other tools to document project results in terms of their financial, environmental and other outcomes. Take the time to note 'qualitative' results, such as staff enthusiasm, improved working relationships with suppliers and comments from customers. These records help to justify further resource efficiency projects.

Reward and revisit

The work of the environment team should be acknowledged and the team should be encouraged to continue to look for new ideas. Consider 'refreshing' the group by alternating leaders and inviting new team members. Remember – efficiency is a continuous process and the resource efficiency plan should be regularly revisited.

What if my business is too small for a environment team?

Simply follow this suggested process on your own or with one or two workmates.

Above left: Costs savings can be achieved by installing skylights and roof insulation and by using energy-efficient lighting
Above right: Trigger nozzles save water

RESOURCE EFFICIENCY OPPORTUNITIES FOR MARINAS, BOAT MAINTENANCE AND REPAIR BUSINESSES

Cost-effective resource efficiency opportunities can be found in several areas.

Managing waste

- Make sure vessel facilities include waste bins for domestic waste, hazardous substances, fish waste, waste oil, oily mixture, scrap metal and facilities for wastewater (including bilge water).
- Segregate waste for recycling. Mixing wastes may make them unsuitable for re-use or recycling (e.g. don't mix waste oil and solvents).
- Encourage staff to use metal or steel recycling bins for off cuts and waste scrap.
- Return empty drums to suppliers.

Saving energy

- Check the efficiency of electrical equipment and machinery regularly – this could reduce your energy consumption.
- Check your compressed air system for leaks and fix them. They make compressors run unnecessarily and result in higher electricity use.
- Operate air compressors with variable speed drives at minimal pressure to reduce air leaks and energy use. Turn off air compressors on non-working days and during breaks.
- Switch off lighting when it's not required and install energy-efficient lighting on marina walkways and areas that need permanent lighting. Install skylights and use natural lighting where possible. Keep skylights and lights clean.
- Increase the thermostat setting on your air conditioner by 1°C to 2°C in warm weather, and decrease it slightly in cool weather.
- Check the efficiency of the workshop dust extraction system and clean filter bags regularly.
- Improve building insulation and enclose and ventilate heat-generating equipment.
- Use high-efficiency electric motors and install electricity usage meters to measure the amount of electricity used in different parts of the business.
- Ask your electricity supplier about using power factor correction equipment. This will regulate the power received in your premises and could result in substantial cost savings.
- Regularly check fuel tanks for leaks to avoid fuel loss.

Saving water

- Fit a rainwater tank and use rainwater to clean boats, irrigate your gardens and supply toilets.
- Check taps, toilets and showers for leaks and drips, and repair them promptly. Ensure all taps are turned off when not in use.
- Fit water minimising controls where possible (e.g. spray nozzles on hoses, AAA-rated low-flow taps or tap aerators, water-efficient showerheads that save energy by reducing hot water use, low-flush toilets and sensors for urinal flushing).
- Keep water-supply equipment well-maintained and check it periodically for leaks. Make sure staff are encouraged to report leaks and repair them promptly.
- Use water meter data to identify leaks.

Reducing hazardous materials and waste

- Reduce use of hazardous materials. Conduct an inventory of all the chemicals you use and assess if you can stop using some of them.
- Consider using less toxic chemicals (e.g. water-based paints, water-based or biodegradable strippers, cleaners or degreasers).
- Switch to long-lasting, low-toxicity, antifouling paint.
- Recommend antifouling paints to your customers that are effective but contain the minimum amount of toxin.
- Stay informed about antifouling products, like Teflon, silicone, polyurethane, and wax that have limited negative impacts. Pass on the information to your customers.

- Organise your chemical storage area so that older chemicals are readily accessible and used before they become 'out of date'.
- Keep lids on the containers of solvents and solvent-based chemicals and fit taps to reduce evaporation and unnecessary loss of product.
- Segregate recyclable liquids for collection by a licensed waste contractor.

Working with suppliers and customers

- Encourage suppliers to provide materials in bulk, collect empty containers and take back their packaging for re-use or recycling.
- Ask your chemical suppliers for less toxic alternative products.
- Promote the benefits of being an environmentally responsible marina to your staff, suppliers and customers. This could enhance your reputation and you could gain extra publicity.
- Provide recycling bins that are easily accessible.

Technology upgrades

- Fit all hoses with a trigger nozzle – they can reduce water use by 30% to 50%.
- Use sensor-activated lighting in buildings and areas where permanent lighting is not required.

DON'T FORGET THE FEEDBACK

Don't forget to regularly communicate resource-saving successes to your staff, customers and suppliers.

FURTHER INFORMATION

- Marine Queensland – (07) 3899 3333 or **www.marineqld.com.au**
- Clean Marinas Program – **www.bia.org.au**
- DERM Hotline – 1300 130 372 or **www.epa.qld.gov.au**
- **Ideas for saving water and energy**
  Your local council or Brisbane City Council – phone (07) 3403 8888

INFORMATION SHEET 3

MANAGING WATER QUALITY

As most people in the boating industry are well aware, pollution of waterways is bad for tourism and for boating. The boating and marina industry has a vested interest in maintaining and improving the quality of our waterways by ensuring that its activities, and those of its customers, do not contaminate the environment.

PROTECTING WATERWAYS

Most activities carried out by marinas, boat maintaining and repair businesses are adjacent to waterways and have the potential to pollute waters. Every activity must therefore be carried out in a way that protects the environment.

Polluting stormwater or waterways, whether intentional or not, is a serious offence and can lead to fines and legal proceedings. For more information, refer to 'Information sheet 1 Environmental compliance'.

The drain is just for rain!

Stormwater is rainwater that flows directly across outside surfaces into stormwater drains or directly into waterways. Stormwater should not contain any pollution from your business activities. If pollutants such as antifouling, lead-based paint, solvents, oil, dust or other substances are allowed to enter the stormwater system or waterways, they can cause serious damage to the environment and pose a health hazard for humans.

Above: Hardstand area fitted with an effective catch drain

The following measures will help you reduce the chance of polluting waterways.

- Make sure staff know that chemicals, including paint, solvents or other toxic substances, must not be poured on the ground, into stormwater drains or waterways.
- Allocate responsibility to staff and customers for keeping outdoor surfaces free of debris.
- Install a first flush system for hardstand areas.
- Bund liquids storage areas.
- Discharge waste water to sewer under conditions of a Trade Waste Permit.

Your legal responsibilities – for holders of development approvals for ERAs and registered operators:

PERFORMANCE STANDARD	ACCEPTABLE SOLUTIONS
P3.1 Prevent the release or the risk of release, either directly or indirectly, of contaminants or contaminated water from your premises to the ground, groundwater or waters (including coastal waters) except for: • uncontaminated overland stormwater flow • uncontaminated stormwater to the stormwater system • contaminants released to sewer – in accordance with a trade waste approval granted under the *Water Supply (Safety and Reliability) Act 2008*. • contaminants permitted to be released as stated in a development approval, Transitional Environmental Program (TEP), or Environmental Protection Order (EPO).	**A3.1.1** You must comply with the ANZECC Code of Practice for Antifouling and In-water Hull Cleaning and Maintenance (1997). **A3.1.2** You must comply with the International Convention on the Control of Harmful Anti-fouling Systems on Ships 2001. You must have stopped the application, storage and acquisition of organotin antifouling products after 1 January 2008. **A3.1.3** All hardstands and buildings where boat maintenance and repairs are carried out must: • have grounds or flooring made from material impervious to liquid (e.g. concrete) where work will not lead to release of contaminants to water or land • be bunded or graded at the perimeter to prevent surface stormwater from flowing to the slipway, hardstand or into the building • have litter filters fitted to all stormwater drains. All hardstands must be graded to a collection pit that: • collects all solid and liquid wastes • is above the highest astronomical tide (H.A.T) • is connected to a first flush* system capable of collecting and storing the first 20mm of surface runoff during rain • is connected to a system that: o treats and stores waste water on-site for re-use o recycles waste water for another use (e.g. irrigation, dust suppression) o treats and disposes waste water to sewers o collects waste water in a holding tank for removal by a licensed regulated waste transporter o treats and disposes waste water to land or a waterway. The above standard or equivalent must be achieved by 31 August 2010.

*First flush – The term used for the first 20mm of rain that falls on the operational work areas of your site. It is recommended that you catch and treat this water to avoid water pollution.

Calculate the size of the tank required to hold your first flush by multiplying 20mm by the square metre area of your operational catchment areas. Your catchment and treatment system must be large enough to hold or treat this quantity. If you are using a filtration system the plant must be switched on at all times so that in the event of a storm, float switches will activate the system and start the plant. For more information on first flush systems, check the New South Wales Department of Environment and Climate Change (DECC) web site.

Can dust pollute stormwater?

Yes. Dust and sediment accumulation can pollute stormwater. This can occur when dust is swept, hosed or left to be washed by rain into gutters or the stormwater system. Dust in the water can starve fish, frogs and other aquatic life of oxygen (oxygen is depleted because the dust increases the carbon load on the water), as well as potentially carrying oils and metals into the environment.

WHAT SHOULD YOU DO TO PREVENT WATER POLLUTION?

Ensure that antifouling paint and marine incrustation scraped or blasted from hulls, as well as other pollutants that could contain toxic substances and increase nutrient levels, are not allowed to enter waterways.

- Do not work over tidal areas.
- Regularly clean and maintain work areas.
- Cover work areas or, if possible, move work into the workshop.
- For information on fuel dispensing refer to 'Information sheet 5 Hazardous materials and liquid waste' on page 29.

SWEEP AND COLLECT PAINT CHIPS (DON'T HOSE) IMMEDIATELY AFTER SCRAPING OR SANDING.

Above left: Water treatment and filtration equipment that recycles wash down water

Above right: Wastewater catch drain. The drain collects and then directs waste liquids, paints and solids to a collection pit/ silt trap. The collected wastewater is pumped through a filter to a holding tank for reuse or disposal to the sewer.

Vessel maintenance on hardstand work areas

Prevent water pollution from vessel maintenance on hardstands by following these guidelines.

- Make sure all waste is captured and cannot enter the waterway.
- See if the way antifouling build-up is removed from boat hulls can be improved. New technologies, such as fully contained grit blasting or chemical stripping, can help contain residues. For details, look in the Yellow Pages under 'Paint Removal' or contact Marine Queensland.
- Large-scale antifouling removal or sanding should be done in an enclosed shed or workshop and on hard stand. If this is not possible, construct an enclosure (tent) with tarpaulins to capture the dust generated.
- Follow a regular maintenance program to check whether measures designed to minimise water pollution are working effectively or could be improved.
- When carrying out shipwright repairs to the structure of vessels, ensure that dust from sanding timber, fibreglass or paint is collected and not released into the atmosphere.
- Use appropriate machinery and work practices to control dust, such as sanders fitted with dust bags or an extraction system. Moveable screens and shields can also help. During high winds, some tasks might need to be rescheduled to prevent the risk of pollution.
- Glues, resins and paints should be used with care. Avoid spills by using a proper containment system and drop sheets under your work area. Follow the correct procedures for their disposal (refer to 'Information sheet 5 Hazardous materials and liquid waste').
- When servicing outboard motors or stern drives, make sure all work is carried out above catch drains. When draining oil from gearboxes, use a container that can be sealed once full and place it in a larger plastic box to contain spills.
- When using roller trays on the hardstand, place the tray inside a plastic container or fish box. This makes a full roller tray easier to carry around a work site, acts as a bund to contain spills and provides a flat support surface when putting the tray on a narrow plank or cradle.
- Make sure waste bins are conveniently located around the hardstand. Use small 'wheelie bins' on hardstands as they are easy to move around the site and their lids keep rain out and contain rubbish in windy conditions.

Above: Large-scale antifouling removal and sanding done in an enclosed shed. Tarpaulin is used to contain droppings and spilled materials.

- Mix paints and solvents away from the water and prevent them dripping into the water.
- Avoid mixing paint or cleaning brushes on open floats or other structures over the water.

VESSEL MAINTENANCE ON MARINAS AND WORK BERTHS

In-water mechanical repairs

- When servicing larger vessels in water, take care when moving fluids and parts to and from the boat. Seal all fluids in secure containers. Transport dirty oil filters in buckets with a sealed lid.
- Place spare parts, oil filters, etc. in drip trays.
- Oil filters cannot be disposed of in normal waste bins (i.e. sent to landfill). If properly drained, metal filters can be sent to scrap metal recyclers.

Outboard motors and trailer boats

Do not clean or repair engines or parts in outdoor areas where they could contaminate the ground, the foreshore or the water.

All outboard motor test tanks should be in a covered and bunded area so they cannot overflow and discharge oily water during rain. See 'Information sheet 5 Hazardous materials and liquid waste' for further information on bunding.

Cleaning boats and motors

Prevent pollutants discharging into the water when cleaning boats and motors.

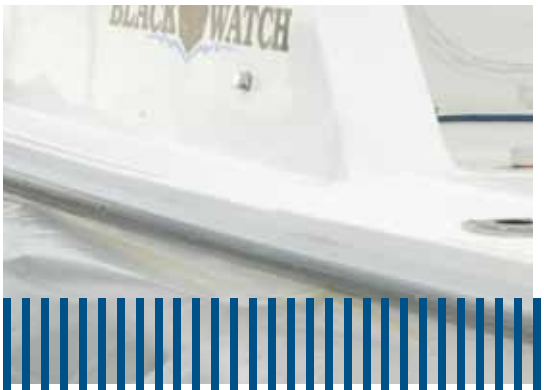
- Where possible, rinse boat decks with water only. This may mean more frequent rinsing to avoid dirt and grime build-up.
- Use detergents with a low phosphate content. Stop sudsy water from washing off the deck by using a broom or mop and collecting the wash water in a bucket. Empty wash water onto a landscaped area or into your wastewater system.
- Wipe off as much oil, fuel and dirt as possible from a motor before rinsing it.
- Wash or rinse outboard motors in a work area where run-off drains to a pit and wastewater is properly treated, re-used or disposed of to a trade waste system.
- Prohibit in-water bottom cleaning, hull scraping or any underwater process that could remove antifouling paint from the boat hull. It is impossible to contain debris that ends up in the water.
- When working on boats in the water, fix masking (plastic sheeting) from under your work area to the wharf or pontoon to catch dust, shavings, paint and other drips.
- Always have a waste bin on site while carrying out repairs. Wood shavings, paint flakes or masking materials can easily blow into the waterway if they're not contained.
- Keep a vacuum cleaner on site to clean dust and shavings at regular intervals.
- When working on a timber wharf, always place a drop sheet or old carpet under your tools and materials so nothing can fall between the planks and into the waterway.
- Place spare parts in a drip tray.

WORKSHOP REPAIRS

When dismantling engines in the workshop, make sure work is carried out in an area where any residual oil and coolant that escapes from the engine does not drain on soil or into the waterway. A metal workbench with a small lip works well. Drill a small hole in the middle or at the lowest point and place a bucket under it to catch any fluid.

You should also:

- place oil absorbent pillows under each engine
- routinely clean and repaint engines so it is easy to spot and fix oil leaks before oil-laden bilge water is pumped into waterways
- clean and wipe down the engine bay and dispose of oily water in a liquid waste tank or the oil-water separator when the engine service is complete
- bund the workshop
- keep a spill kit nearby.



TRADE WASTEWATER

Trade waste is any liquid, and any substances contained in it, produced by an industrial or commercial activity at business premises. Trade wastewater from marinas, boatsheds and slipways may contain pollutants such as sediment, particles and chemicals, which must not enter the stormwater system or waterways. Trade wastewater includes blast water, but doesn't include wastewater from toilets, bathrooms or non-commercial kitchens or laundries.

There are several options for dealing with wastewater captured from your slipway, hardstand and other work areas.

- Contact your local water authority about wastewater pre-treatment and setting up a trade waste agreement which allows you to discharge wastewater into the sewerage system.
- Collect run-off in a storage tank and arrange for a licensed waste contractor to remove it for treatment off-site.
- Invest in appropriate filtration equipment and hold wastewater in a storage tank for re-use in the water blaster.

Discharging to the sewer – legal requirements

You must have a trade waste permit from your local water authority to discharge trade wastewater to the sewer.

Your agreement or permit will set out the discharge conditions for trade waste. Most water authorities require businesses to treat trade waste before discharging it to the sewer. As a guide, the minimum treatment often required for discharge to the sewer is a Coalescing (corrugated) Plate Interceptor (CPI). A CPI directs wastewater to a tank in which the solids and liquids separate. If they meet the requirements set by the local water authority

Your local water authority has trade waste officers who can help you fill out an application form for your trade wastewater permit.

Above left: Boat being repaired with masking from the hull to the wharf
Above right: Debris and dust must not enter water

MANAGING SEWAGE FROM VESSELS

The discharge of untreated sewage from vessels is prohibited in all Queensland waters and there are also 'no discharge zones' for treated sewage.

- Council approval conditions for boat repair facilities require treatment and safe disposal of sewage, either using a pump out-facility (stationary or mobile), toilet or on-site treatment facility.
- Provide sewage disposal facilities for your customers.
- Include toilets and their associated systems in the annual service you offer customers. This can increase your business and will protect the environment.

BILGE WATER

Discourage boat owners from discharging contaminated bilge water into the waterway. Promote the use of oil-absorbent products on all vessels (e.g. there are many products available for dealing with discharge from the bilge, such as absorbent pillows that retain oil but not water). These can be purchased from most ship chandlers.

Avoid automatic pumps activating and discharging oily water by removing bilge water before slipping a vessel.

EDUCATING YOUR CUSTOMERS

Keep your customers informed about the environmental improvements you make to your business. Let them know what is expected of them as customers of an environmentally aware business. Give them a copy of your company's Environmental Policy and provide simple step-by-step procedures on using facilities.

Take the time to show new customers around your marina and show them how you have set up recycling and waste systems. Ask them to pass this information on to their families and guests. Encourage customers to be environmentally responsible by disposing of liquid and solid wastes in designated areas. Clearly label waste containers and locate them in convenient areas to encourage use.

KEEPING COSTS DOWN

The following ideas could help reduce your running costs.

- Install a rainwater tank. Clean stormwater is also a valuable resource – capture it where possible and use it for watering grounds or connect it to toilet blocks.
- Find out if your wastewater can be treated for re-use.

Above: Promote the use of sewage pump-out and facilities

- Save money by conserving water. Check taps and toilets for leaks and drips. Replace washers where required. Install AAA-rated low-flow taps or tap aerators, dual flush toilets and water-efficient showerheads.
- Investigate the cost-benefit of recycling thinners and cleaning fluids.

WHAT THE LAW SAYS

Environmental laws require that you do not pollute waters or the land. In practice this means that operators of marinas and boatyards should:

- keep oils and hazardous chemicals in bunded and covered storage areas
- ensure that any chemical spill or leak is contained and doesn't enter waterways, stormwater drains or soak into the soil
- maintain all plant and equipment in a proper and efficient manner
- ensure that dust and other debris do not enter waterways or stormwater drains
- ensure liquid waste is sent to a facility that can lawfully accept it
- never hose chemical spills down the drain.

Any spills or pollution incidents that cause material harm to the environment must be reported to the appropriate regulatory authority – either the DERM Hotline on 1300 130 372 or Brisbane City Council on (07) 3403 8888.

FURTHER INFORMATION

- DERM Hotline - phone 1300 130 372 or **www.epa.qld.gov.au**
- Maritime Safety Queensland – phone (07) 3860 3500 or **www.msq.gov.au/Home/Environment/Sewage** for information on marine sewage management
- Australian Government Department of the Environment and Water Resources – **www.deh.gov.au** for *Code of Practice for Antifouling and In-water Hull Cleaning and Maintenance (ANZECC)*
- Brisbane City Council – phone (07) 3403 8888 or **www.brisbane.qld.gov.au** for information on trade waste permits and water saving ideas.

INFORMATION SHEET 4

MANAGING AIR QUALITY

Dust, fumes and smoke generated by boat maintenance and marina activities can cause air pollution and should be an ongoing management issue.

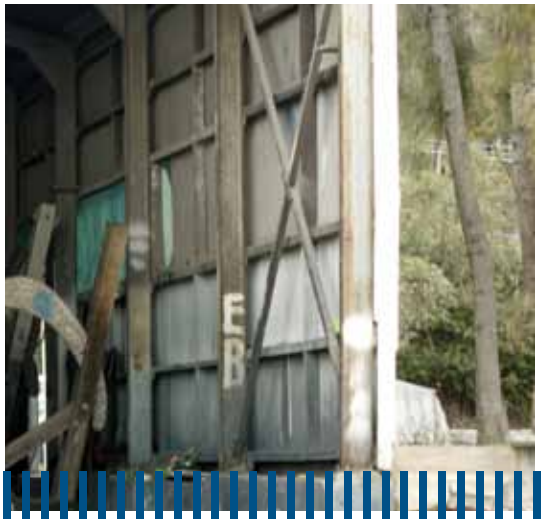
MANAGING DUST

Removing antifouling build-up from boat hulls is one of the more environmentally challenging tasks performed by boat yards.

Reduce dust when removing antifouling and paint by taking the following precautions.

- Fit sanding machines with a dust bag or extraction system. Collect dust as close to the source as possible.
- Ensure that no dust leaves your boundary. Because dust is difficult to control, especially on windy days, this really means that no dust should leave your building. An efficient extraction system and effective housekeeping will address this.
- For antifouling removal or sanding on a larger scale, place the boat in an enclosed shed or workshop. If this is not possible, construct an enclosure (tent) with tarpaulins to capture the dust you are generating. It is common practice to connect a mobile dust extraction system to these enclosures to extract and capture the dust. After completing the work, vacuum up any remaining dust before removing the enclosure.
- Sandblasting is not recommended for removal of antifouling paint. If sandblasting is necessary, see information on 'Abrasive Blasting' below.
- Always use a suitable dust mask when sanding. Check with Queensland WH&S concerning workplace health and safety requirements.
- Regularly sweep or vacuum work areas.

Above: Antifouling removal. This method of antifouling removal uses a chemical sprayed on the surface to soften the coating. It can then be scraped off and caught on a plastic drop-sheet.



Removing antifouling and paint

Antifouling paints are toxic to marine life and can be absorbed by edible fish and shellfish.

The toxicants in antifouling paint can be passed up the food chain from mussels and worms to fish, birds and humans. The toxins in antifouling paints enter the environment through spillage, sanding, sand blasting or scraping. Antifouling paint chips and dust left on the ground or driveway can be transported into the water by stormwater runoff.

Experienced contractors with mobile units can come to your site and perform antifouling removal and gel coat stripping for osmosis repairs.

Abrasive blasting

If abrasive blasting is required, all wastes generated (e.g. blast agent and paint debris) should be contained and collected. Abrasive blasting can be conducted in commercially built booths, blasting yards or inside temporary enclosures erected on site. Manage dust and particles resulting from abrasive blasting, by ensuring you take the following precautions.

- Ensure the booth or enclosure is properly sealed.
- Use a filtration system that is capable of dealing with the amount of particulates and dust produced
- Carry out the work on a hardstand
- Regularly maintain the filtration system and blasting equipment (blast hoses and nozzles) to avoid excessive production of particulates and dust.
- Sweep or vacuum the spent abrasive material and place it in a bin with a closed lid.

New technologies

In recent years new technologies have emerged and better methods are available to the industry. These new systems are clean, contained and environmentally safe (e.g. antifouling removal can be done with a stripper contained within a plastic film).

For details of these services, look in the Yellow Pages under 'Paint removal Services and/or Supplies' .

USE DUST-COLLECTING SANDERS WHEN SANDING ANTIFOULING PAINT.

Above left: Antifouling removal or sanding is best conducted in a shed or workshop
Above right: Machinery fitted with a dust extraction and collection system

Your legal responsibilities – for holders of development approvals for ERAs and registered operators:

PERFORMANCE STANDARD		ACCEPTABLE SOLUTIONS	
P4.1	Prevent the release of particulate matter or contaminants, including dust, smoke, fumes and aerosols likely to cause environmental harm beyond the boundaries of your premises.	**A4.1.1**	As the Registered Operator, you must comply with ANZECC Codes of Practice for Antifouling and In-Water Hull Cleaning and Maintenance.
		A4.1.2	Spray Painting All spray painting, including applying varnishes and lacquers must be carried out: • on a hardstand or inside a building • in a completely enclosed structure using suitable materials, such as plastic sheeting (clear or heat shrink), or tarpaulins and shade cloth (95% shade, UV stable, small mesh size) with a ventilation and filtration system (see following picture), unless the painting involves spotting, touching up or other minor work • on a surface impervious to water (e.g. concrete) and must extend under the entire vessel work area. The work area must be cleaned of all rubbish, etc. after each spray-painting job using dry methods (e.g. sweeping, vacuuming).
P4.2	Prevent odour being detected beyond the boundaries of your premises and prevent the risk of odour being detected beyond the boundaries of your premises.	See **A4.1.1** and **A4.1.2** above	

MANAGING AIR EMISSIONS

Applying paint

Reduce air emissions by restricting outside painting and respraying to minor repair and detailing work and only when weather conditions do not promote the release of pollutants to the air. Consider wind direction and velocity and ambient air temperature.

Consider changing your work practices when applying paint. In order of preference, apply paint by using:

- rollers or brushes
- airless spray guns
- high-volume low-pressure spray guns that reduce the amount of overspray, paint use and release of volatile organic compounds (VOCs) and odours.

Spray painting

If vessel spray painting is required, spraying should be conducted:

- inside designated structures with ventilation and filter systems
- at designated shore-side areas or zones away from open water, with temporary structures or plastic sheeting provided to minimise overspray
- away from the water.

If an emergency repair on a vessel is required, use protective sheeting and ensure that it is removed with care to prevent loss of accumulated waste material into the water.

Consider your location and neighbours. For example, don't spray if it is windy or on weekends.

Fibreglassing

The processes involved in fibreglassing, whether using epoxy, polyester, or vinylester resins for small or big jobs, can release harmful emissions and odour. Ensure you take the following precautions.

- Fibreglassing spray lay-up should be carried out in a booth or enclosure fitted with appropriate environmental controls. Where this is not practical, odours and other emissions must be controlled by other means, including the use of buffer zones to avoid impact on neighbours.
- Store drums, brushes, containers of resin and other chemicals used for fibreglassing in a bunded and covered storage area.
- Place fibreglass mat off cuts that cannot be used in production or the repair job in sealed plastic bags before disposal.
- Implement dust control measures.
- Take special care when decanting resin. The storage containers should be sealed immediately.

Liquid Petroleum Gas (LPG) and petrol

Petrol sales

Marinas that sell petrol could require vapour recovery systems, although diesel does not require vapour recovery.

REFRIGERANT GASES – DO YOU NEED A LICENCE?

Marinas

Marinas and boat sheds that install, service or decommission vessel air conditioners or refrigerators that use ozone-depleting or synthetic greenhouse gas refrigerants must hold a national Refrigerant Trading Authorisation. They must conform to requirements and standards detailed in the Commonwealth Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995. Technicians must hold a national Refrigerant Handling Licence. You can apply for an authorisation or licence through the Australian Refrigeration Council at www.arctick.org or by phoning 1300 884 483.

Further information on the national system is available at www.environment.gov.au

Above: Airless spray guns, high-volume low-pressure spray guns and rollers minimise air emissions

KEEPING COSTS DOWN

The following ideas could help reduce your running costs.

- Check that containers of solvent and paint are stored with their lids closed to avoid evaporation and loss of materials.
- Use spray equipment with high transfer efficiency. Paint guns used in spray booths should be either High Volume Low Pressure (HVLP) or High Efficiency Low Pressure (HELP). HVLP guns can reduce overspray by 25% to 50%.
- Electrostatic spraying also requires less pressure, produces little overspray and uses relatively little paint, but the system needs to be properly earthed.

WHAT THE LAW SAYS

It is an offence to release contaminants to air so as to cause environmental harm or nuisance, unless permitted by a condition of your development approval or an approved Code of Practice.

In practice, this means you need to take the following steps.

- Conduct spray-painting under cover or in conditions that are not likely to result in paint drifting.
- Make sure lids are kept on chemical containers so vapour cannot escape unnecessarily.
- Never use evaporation as a method of disposing of solvents.
- Control dust by setting up an effective dust collection and extraction system. Ensure that no dust leaves your premises.
- Ensure odours generated by your operations are not detectable beyond your boundary. If odours are affecting any person outside the boundary of your premises, then you may be issued with a notice requiring you to carry out work to prevent the odour or be open to other regulatory action.
- Open air burning and incineration of wastes is illegal in the Brisbane City Council area.

Above: Antifouling removal using a dust collecting sander

FURTHER INFORMATION

- Brisbane City Council – phone (07) 3403 8888 or **www.brisbane.qld.gov.au** for Yellow Pages - Look under 'Environmental and/or Pollution Control Consultants', 'Air Filters', 'Air Pollution Monitoring Equipment':
- Marine Queensland – phone **(07) 3899 3333**

INFORMATION SHEET 5

HAZARDOUS MATERIALS AND LIQUID WASTE

Spill prevention and appropriate storage of chemicals will benefit your staff, customers and the environment.

STORING AND USING CHEMICALS

The most common chemicals used by boat maintenance & repair businesses or facilities are thinners, turps, solvents, resins, acetone, acids, antifoul, fuel and oil.

Fire hazard prevention and WH&S are important considerations that affect how you store, use and dispose of chemicals. You need to comply with the WH&S requirements relating to chemical hazards in the workplace. WH&S Queensland publishes a range of useful guides about this.

Chemicals present a risk, not only to health and safety, but also to the environment. Chemical spills that reach stormwater drains can pollute local creeks, rivers and waterways. Fires involving chemicals can spread toxic fumes and polluted runoff.

Reduce risks to the environment by taking the following steps.

- Store all chemicals and liquid waste awaiting collection for off-site treatment in bunded and covered areas (see information on bunding – page 30). Seal the drums, store them upright and have them removed as soon as possible.
- Store each type of chemical in a separate container, with non-compatible chemicals or materials well away from each other. Inspect storage containers regularly and replace them if they are rusted, damaged or likely to leak. Allow yourself easy access.
- Clearly label each container with the name of the chemical it contains. Keep an up-to date register of all chemicals on site, including Material Safety Data Sheets for each chemical (see page 30).
- If you use or store flammable or combustible liquids, you must comply with the *Dangerous Goods Safety Management Act 2001*.
- Where chemicals are in constant use, place drip trays where leakage is likely to occur. Regular equipment maintenance and careful handling will help prevent leaks and spills.

Above: Storing chemicals in a bunded and covered area will contain spills

- Make sure all staff know about the potential hazards of the chemicals on site.

Note. In this guide 'hazardous waste' refers to materials classified as "a hazardous contaminant" under the *Environmental Protection Act 1994*.

Labels on chemicals

Make sure staff read the labels on all the chemical products they use. Labels on chemical products help to identify the product, its ingredients and its hazards or dangers. Labels also contain important health and safety information.

Material Safety Data Sheets (MSDS)

An MSDS is an information sheet about the safe handling, storage, transport and disposal of a material. It is just as important as any tool or piece of equipment in your business. The information on the MSDS can save lives in an emergency and you should ensure you have completed the following steps.

- Check you receive an MSDS for every hazardous substance you buy or use. If you don't have one for a material, ask your supplier.
- Make sure all relevant MSDS are readily accessible and check they are up-to-date.
- Make sure all staff have read the labels on all the chemical products they use. Labels on chemical products help to identify the product, its ingredients and the hazards or dangers of the product. Labels also contain important health and safety information. WH&S Queensland also has some useful publications on managing chemical hazards in the workplace. Go to www.deir.qld.gov.au/workplace

PREVENTING AND CONTAINING SPILLS

Chemical spills can pollute waterways, contaminate soil and make your business open to prosecution and clean-up costs.

Reduce the risk of spills by:

- minimising the movement of chemicals or other liquids
- fitting taps to chemical containers so hand pouring is not required
- using a funnel if you have to pour by hand
- keep a spill kit handy

Bunding

Chemicals should be stored in a bunded area to prevent spills reaching drains, waterways or soaking into the ground. Bunding is secondary containment of stored materials.

The main type of bunding for bulk liquids is a solid concrete or brick wall made of any impervious material (i.e. that liquids can't penetrate). Bunding must be appropriate for the type of liquid contained, as some chemicals can permeate concrete and brick. Prefabricated chemical storage units can be purchased for smaller chemical storage needs or bunding can be constructed in situ. The volume of the bund should be large enough to hold the contents of the largest container plus 25% of the total storage volume.

Outdoor bunded areas should be roofed to prevent rain entering them and washing pollutants out or rusting metal drums.

A bund should be regularly maintained, checked for cracks and leaks and appropriately operated. Any drain valves must be locked in the shut position.

Tributyltin oxide (TBT) anti-fouling paints are no longer registered in Australia and their use is now illegal. For more information, go to the Australian Pesticides and Veterinary Medicines Authority (APVMA) web site at www.apvma.gov.au

The following containment practices are recommended.

- Store oils and potentially hazardous liquids on plastic pallets or trays and in a bunded and covered area isolated from stormwater run-off. Make sure spill response materials are on hand at all times.
- If the walls and workshop floor are well sealed, an impervious hump can be installed at all doors of the workshop. Oils and chemicals can be stored anywhere inside a workshop that is fully bunded in this way.
- Any spilt or leaked liquids collected in the bunded area should be pumped or drained out as quickly as possible.
- The liquids should be collected by a licensed waste contractor.
- If you drain the bund, don't forget to reset the drain tap.

STORE ALL HAZARDOUS LIQUIDS, SUCH AS PAINTS AND SOLVENTS, IN A PROPERLY MAINTAINED AND OPERATED BUNDED AREA WITH A ROOF THAT EXCLUDES RAIN.

Dealing with spills

Clear signs outlining spill clean-up procedures and emergency contact numbers should be prominently displayed on your site.

All chemical and other spills should be cleaned up immediately – no matter how small. Spill kits should be appropriate for the operation and materials stored on-site. They should include booms to contain liquid, material to block drains and material to absorb spills, broom, shovel, personal protective equipment such as a face mask, chemically resistant boots, gloves and a simple respirator.

If a spill occurs that causes or threatens 'material' harm to the environment, you must tell the DERM or Council immediately.

Under no circumstances should you hose a chemical spill down a drain or into the water.

The general response to spills

1 Eliminate the source of the spill immediately if it is safe to do so.

2 Use the materials in the spill kit to contain the spill and control its flow. If necessary, stop the spill from entering waterways by using a boom, or block the stormwater drain inlets.

3 After referring to the relevant MSDS, clean up the spill promptly. It is important to clean up all spills quickly – even small ones – as they can easily flow, or be washed into waterways or stormwater drains.

4 Contact Council to report spills (07) 3403 8888. For major spills, call the Queensland Fire and Rescue Service on 000.

5 Store all waste generated from spill clean up in a sealed vessel (limiting emission of odorous or volatile compounds) and in a bunded and covered area.

6 Contact a waste contractor who is licensed to dispose of the absorbents used in the spill clean-up.

7 Review incident and develop a plan and procedures to prevent incident from recurring.

Make sure all staff are aware of emergency telephone numbers to call in the case of a spill. A template of emergency contacts is included in the 'Useful Tools' section of this guide.

Prepare and practice a spill clean-up plan. Staff should know what to do, where to find emergency equipment and how to use it.

Above left: A bunded and covered fuel bowser
Above right: Spill kits should be located where they are readily accessible, such as on the wharf

SOLVENTS

Solvents used in strippers and cleaning products evaporate into the atmosphere and contribute to photochemical smog and contaminate land and water. Solvents tend to be highly volatile and flammable.

How to reduce risks to the environment

- Store solvents away from heat, naked flames, direct sunlight, oil.
- Avoid unnecessary evaporation and loss of solvents by storing them in a sealed container with a tap (to avoid the need to pour). Keep containers closed when they are not in use.
- Use water-based or biodegradable strippers, cleaners or degreasers wherever possible. When handling solvents, always wear the protective equipment recommended on the MSDS, such as gloves, protective eyewear and respiratory gear. Keep the storage area well-ventilated.

DISPENSING FUEL

Please refer to the Brisbane City Council's Guidelines for Marina Refuelling Facilities.

AVOIDING LAND CONTAMINATION

You must not allow any material, including hazardous substances or other chemicals, to soak into the ground (i.e. the ground should never be used as a means of disposing of unwanted substances). Chemicals can accumulate within the soil and may eventually seep into and degrade waterways or groundwater. They can also affect people who come into direct contact with contaminated soil.

Leaking underground petroleum storage systems (including the tanks and pipework) are a significant potential source of soil and groundwater contamination. They often remain undetected until expensive clean-up operations are required. Install leak prevention measures and devices with all underground storage tanks to avoid costly loss of fuel and site decontamination.

See Brisbane City Council's Guidelines for Marina Refuelling Facilities for details.

Pre-acquisition contaminated site audits are commonly undertaken on industrial land before it is purchased. They are likely to detect any contamination that is present, which will significantly reduce the value of the land, as clean-up costs are often substantial. When soil and groundwater contamination is identified, special procedures need to be implemented to manage and remove the contamination.

Contact your local council or the DERM if your land has areas where chemicals have soaked into the soil.

Above left: Waste oil on a mobile bund
Above right: Used batteries awaiting collection in a covered and bunded store

MANAGING HAZARDOUS WASTES

Storing hazardous liquid waste requires extra care. It should be stored in a bunded, covered and secure area so that any spillage cannot enter stormwater drains or gutters (see page 30 for information on bunding).

If you are a generator of hazardous waste, you are responsible for ensuring that it is transported to a facility that is licensed to receive or treat that type of waste. Your waste contractor should be able to provide advice on these issues.

When sending hazardous waste for treatment or disposal, make sure:

- the transporter is appropriately licensed.
- the waste is being sent to a facility that can lawfully take it
- you keep all collection receipts.

The movement of most hazardous waste must be tracked during its transport to a facility for treatment, recycling or disposal. Wastes can be tracked on line.

For information about 'on line' waste tracking contact the DERM Hot line on 1300 130 372.

Dealing with common types of hazardous and liquid wastes

Boat maintaining and repair facilities can generate large quantities of hazardous and liquid wastes that are likely to have special storage, handling, transport and disposal requirements.

Meet the requirements of the *Environmental Protection Act 1994* and waste regulations by taking the following steps.

- Store used engine oils in a bunded tank for collection by a licensed contractor.
- Store used solvent from the workshop in a sealed drum, until collected, re-used or recycled. The drum should be stored in a bunded, covered area. Under no circumstances should evaporation be used to dispose of spent solvents.
- Filter and re-use slipway or hardstand wash down water, or collect and store it for disposal by a waste contractor.
- Provide sewage disposal facilities to your customers so they can dispose of sewage from their boats.
- Provide a covered and bunded area for the collection of batteries.

Contact Brisbane Water to find out if any of your liquid wastes are suitable for disposal to the sewer under a trade waste agreement (see 'Information sheet 3 Managing water quality'). Liquid wastes that cannot be re-used or recycled should be segregated by type. This will help your waste contractor recycle liquid waste. Mixed waste is more difficult to handle and is usually more costly to treat.

KEEPING COSTS DOWN

The following ideas could help to reduce your running costs.

- Mix only enough paint necessary for a job.
- Save excess or unused antifouling paint for future uses.
- Cut your waste bill by checking with your chemical supplier to see if empty containers can be returned.
- Use the 'first in first out' procedure for chemical supplies. Date the chemicals you buy and use them in the order in which they arrive. This will conserve their quality and minimise waste from out-of-date chemicals.
- Collect used thinners and solvents in a suitable container and re-use them, or arrange for a liquid waste contractor to collect them from your site for recycling. Save money by purchasing recycled solvents for the general clean-up of spray equipment.
- If you use a lot of solvents, consider installing a solvent recycling unit on site.
- Avoid loss of fuel, by ensuring fuel pipes are adequately protected against accidental damage and are fitted with automatic shut-off equipment.

WHAT THE LAW SAYS

Environmental laws require that marina and boatyard operators do not pollute waters or the land.

In practice, this means you should:

- ensure pollutants from your operations and leaks or spills of chemicals are contained and cannot enter the sea, waterways and the stormwater system
- store oils and chemicals in properly maintained bunds
- report spills or leaks that cause or threaten material harm to the environment to either the DERM Pollution Hotline or Brisbane City Council.
- ensure liquid waste is sent to a facility that can lawfully take it.

FURTHER INFORMATION

- DERM Hotline – phone 1300 130 372 or **www.epa.qld.gov.au**
- Hazardous materials (Hazmat) register of suppliers who provide resources, equipment, products and advice to minimise the environmental effects of hazardous materials incidents
- Brisbane City Council – **(07) 3403 8888**, for information on storing dangerous goods
- Standards Australia – phone 131 242 or **www.standards.org.au** for AS 1940–2004 The storage and handling of flammable and combustible liquids
- Yellow Pages – **www.yellowpages.com.au** Look under 'Chemical Spill Equipment', 'Waste Reduction and Disposal Services' and 'Environmental and Pollution Consultants'.
- Queensland Fire and Rescue Service on **www.fire.qld.gov.au**
- Fire Protection Association of Australia **www.fpaa.com.au**

Above: Hazardous waste awaiting collection

INFORMATION SHEET 6

SOLID WASTE AND RESOURCE RECOVERY

Waste disposal can be expensive, so businesses able to reduce the volume of waste sent to landfill enjoy considerable cost benefits.

Refer to 'Information sheet 5 Hazardous materials and liquid waste' for information about managing liquid wastes.

MANAGING WASTES

The best way to manage waste is to minimise the quantities of waste generated initially.

Your legal responsibilities for holders of development approvals for an era and registered operators:

PERFORMANCE STANDARD		ACCEPTABLE SOLUTIONS	
P6.1	Prevent release of contaminants by unauthorised disposal of wastes.	**A6.1**	You must comply with ANZECC Best Practice Guidelines for Waste Reception facilities at Ports, Marinas and Boat Harbours.

Above: Storing chemicals in a bunded and covered area will contain spills

AVOIDING WASTE

Waste is best avoided in the first place. Consider these strategies to reduce waste in your workplace:

• Investigate how you can reduce the amount of raw materials you use.

• Avoid spoilage of raw materials (e.g. weigh up the savings from buying in bulk against the costs of spoilage). Would 'just-in-time' purchasing yield similar savings? Could storage of raw materials be improved?

• Use chemicals on a first-in-first-out basis to reduce their chance of becoming out-of-date.

• Reduce waste disposal costs by purchasing products with less packaging.

• Service equipment regularly to reduce spoilage from equipment malfunction.

The best ideas for reducing use of materials will come from the people who know your business better than anyone else – you and your staff. Encourage your staff to think about this and put forward their suggestions.

KEEP RE-USING MATERIAL

When avoiding waste is not possible, consider re-using waste in your business.

- Re-use roller trays on your hardstand. Use plastic trays and have one for each antifouling colour used. When you get a build-up of dried paint in the tray, flex the tray to break the bond between the paint and tray, remove the dry paint and startover again.
- Re-use paint brushes. Keep one for each colour. If you store the brush in a tin of water, the paint on the brush will not harden and the same brush can be re-used time after time.

RECYCLING WASTE

There are companies who will supply recycling bins for glass, paper, plastic and aluminium and collect them without charging you. Your customers will be in the habit of recycling at home so encourage them to do the same on the marina.

- Marinas with public access should consider providing waste and recycling bins with lids to avoid contamination of waterways. Place recycling bins where they are easily accessible – on the way to the car park, where people get off their vessels, next to the general waste bin or close to places where people eat.
- Label litter bins to avoid contamination and ensure that bins are emptied regularly.
- Encourage staff to recycle metals by placing any money generated into a staff amenity fund and asking them what they would like it spent on.
- Send a newsletter to your customers telling them about your company's commitment to the environment and asking them to help by using the recycling bins. Investigate local recycling opportunities:
- Assess all wastes generated in your business, including paper, cardboard, toner cartridges, glass, plastic bottles and drink cans.
- Contact Brisbane City Council about recycling services.
- Talk to your waste contractor about your wastes – perhaps they have a cheaper rate that could apply to some of your wastes.
- Establish a return system for used containers.
- Talk to your suppliers about options for collecting and re-using pallets.
- Look in the Yellow Pages under 'Recycling' or 'Waste Reduction and Disposal' - www.yellowpages.com.au

DISPOSING OF WASTE

Keep costs down by considering waste disposal as a last resort.

- Material that you put in your waste bin will generally go to landfill. Place only dry, solid, inert wastes in industrial waste bins. Do not put liquid or hazardous waste in such bins.
- Collect all solid wastes that cannot be re-used or recycled and dispose of them appropriately. These wastes may include scrapings of marine growth, rags that can't be cleaned, empty containers that cannot be re-used, brushes and blasting material.

- Collect used abrasive blasting material and paint chips (particularly if they contain poisonous antifouling or lead-based paints) by sweeping or vacuuming, and re-use the abrasive material where possible.
- Solid wastes such as filters, spent abrasive material, containers and rags contaminated with chemicals – such as antifouling and paint – are generally classified as hazardous or 'regulated' waste (see Appendix 2). They must be transported to a facility that is licensed to receive or treat that type of waste. For more information, contact the DERM Hot Line on 1300 130 372.
- Never burn wastes – not even timber wastes – on site, unless you are expressly permitted to do so by your Environmental Approval. The burning of some forms of chemically treated timber is prohibited by regulation.

STORING WASTE

It is important to make sure waste storage areas do not pollute the environment by:

- storing waste under cover to prevent rain running through the waste and polluting the soil and waterways
- making sure wind can't blow unsecured waste around, causing litter or potential water pollution.
- storing waste or the hardstand only
- ensuring that wastes cannot be washed into drains.

KEEPING COSTS DOWN

The following ideas may help reduce your running costs.

- Conduct a waste audit to identify where you can save on waste disposal costs.
- Recycle old zinc anodes and other metal that scrap metal merchants will buy from you.
- Review work practices with your staff. Is it possible to create less waste and save on the cost of raw materials?

REVIEW WORK PRACTICES WITH YOUR STAFF – IS IT POSSIBLE TO USE LESS RAW MATERIALS?

Above: Glass recycling containers should be conveniently located for customers, but not be too close to the water

WHAT THE LAW SAYS

Under the Environmental Protection Act, penalties apply for unlawful disposal of waste. Both the person who dumps the waste and the person who owned the waste may be liable – so it's important you make sure your waste is managed, transported and disposed of appropriately.

These other legal considerations also apply.

- Do not bury wastes or pour liquid wastes onto the ground.
- Wastes awaiting removal should be stored so that they cannot blow onto the foreshore and wash into waterways.
- Hazardous wastes have special storage, transport and disposal requirements. You have to use a licensed waste transporter. See 'Information sheet 5 Hazardous materials and liquid waste'.

FURTHER INFORMATION

- DERM Hotline - phone 1300 130 372 or **www.epa.qld.gov.au**
- Yellow Pages – **www.yellowpages.com.au** Look under 'Waste Reduction and Disposal Services' and 'Recycling services'

Above: Glass recycling containers should be conveniently located for customers, but not be too close to the water

INFORMATION SHEET 7

MANAGING NOISE

The following are typical noise issues for neighbours.

- Noise in the evening, night or early morning
- Noisy activities – such as vehicle and boat movements, sanding, grit blasting, shouting, public address or telephone systems, filling and emptying waste bins (especially if early in the morning), reversing beepers, alarms, grinding and cutting steel.
- Noisy machines located outside buildings and close to neighbours, such as air conditioners, air compressors, extraction systems and fans.
- Rattling or ringing that can sometimes be generated from exhaust stack vibrations.
- Noise made by your customers – such as idling and engine revving.

NOISE GENERALLY BECOMES 'POLLUTION' WHEN SOMEONE FINDS THE NOISE OFFENSIVE.

IMPROVING NOISE MANAGEMENT

You can take steps to improve noise management.

- Consider your neighbours. Don't undertake noisy activities outside of normal day time business hours, on Sundays or on Public Holidays. Remember that background noise levels are generally lower during the evening and night, which causes the noise of your operation to become more intrusive to neighbours at these times.
- If there is a reason to work outside your normal work hours, call your immediate neighbours and let them know when it will happen and how long the job will take. If neighbours know what is happening, and know that you have considered them, they are less likely to make a complaint.
- If a particular job or machine generates noise, consider whether you are carrying out this activity in the right location and using all practical means to reduce the noise. Select the quietest equipment possible and operate indoors as much as possible.

Above: Maintain equipment to reduce noise and minimise electricity/fuel use

- If it is essential to perform a work task outside:
    - Work only during daytime hours
    - Locate the work as far as possible from neighbours
    - Utilise fences, buildings, sheds and other barriers to shield the noise from neighbours.
- Make contact with your neighbours – build a working relationship so that any concerns about your operations that arise can be addressed straight away. Note that, agreement from neighbours does not mean that you can operate outside of your approval conditions.
- Turn off engines wherever possible. Do not leave engines idling and revving unnecessarily.
- Avoid using extension telephone bells and public address systems.
- Limit vehicle movement, especially deliveries and heavy vehicles, to daytime work hours.
- Minimise the volume of radios used by staff. Locate the radio close to your work area but as far as possible from neighbours.
- Carry out sanding and grinding activities in an area where noise can be minimised i.e. behind a barrier or enclosure, but check occupational health and safety requirements first.
- Only use air compressors fitted with inlet and exhaust silencers or locate them inside sound proof enclosures.
- When operating indoors, locate noisy equipment away from openings such as doors and windows. Keep doors and windows closed whenever practical, if you are located near residences.
- When purchasing new equipment, select the lowest noise option available. Compare sound power ratings of the equipment to guide your choice.
- Provide fact sheets to all customers outlining their responsibility to keep noise to a minimum.
- Erect a sign on the land end of the marina that will discourage excessive noise i.e. 'Consider our neighbours – please leave quietly'.
- Take a regular walk around your premises and the neighbouring area to monitor noise from your business activities, especially hums or rattles from activities and machinery on the outside of your building.

KEEPING COSTS DOWN

Equipment that is making more noise than usual could be running inefficiently and using excess electricity or fuel. Make sure your equipment is regularly serviced. You will benefit from safer, quieter and more efficient performance, and reduced energy costs.

WHAT THE LAW SAYS

The Environmental Protection Act provides regulatory authorities with powers to require that offensive noise be ceased.

If someone can hear your business activities and they have reasonable grounds to be annoyed by this, then you may be creating offensive noise and could be issued with a notice or direction to cease making offensive noise. It is an offence to continue the noise in breach of the notice or direction.

You may be committing an offence if noise is emitted from your premises due to your failure to maintain or operate equipment efficiently, or to deal with materials in a proper and efficient manner.

Your local council is responsible for dealing with noise complaints about your premises (unless you hold an Environmental Approval from the DERM).

Check your environmental approval or development approval for conditions relating to noise and hours of operation.

If necessary, council officers can work with you and your neighbours to help resolve noise issues. However, council or DERM officers can also issue notices and directions to reduce noise from your premises.

Your legal responsibilities – holders of development approval for an era and registered operators:

PERFORMANCE CRITERIA		ACCEPTABLE SOLUTIONS	
P7.1	Prevent noise from causing unlawful environmental nuisance to occupiers of residential premises, (i.e. unreasonably interfering with the ability of people to sleep, relax, study and communicate).	**A7.1**	• All sources of noise are located a minimum of 50m from the nearest existing or likely future noise sensitive location. All operations are located indoors. Operating hours limited to between 7am-7pm.
		A7.2	• All noise sources are located a minimum of 150m from the nearest existing or likely future noise sensitive location. Operations involving grinding, hammering, planning, sanding, sand blasting, air compressors and staple guns, and trucks and forklifts are performed indoors. Operating hours limited to between 7am-7pm.
		A7.3	• All noise sources are located a minimum of 500m from the nearest existing or likely future noise sensitive location. Operating hours limited to between 7am-7pm.
		A7.4	• The business is operated in accordance with the site specific noise conditions of your development approval. *Note: noise conditions of a development approval are determined on a site specific basis following the methodology of Council's Noise Impact Assessment Planning Scheme Policy.*

FURTHER INFORMATION

- Brisbane City Council – (07) 3403 8888 or **www.brisbane.qld.gov.au**
- Yellow Pages – **www.yellowpages.com.au**
  Look under 'Noise Control', 'Noise Control Equipment', 'Noise Insulation' and 'Acoustic Materials and/or Services'.

INFORMATION SHEET 8

BRINGING IT ALL TOGETHER – PLANNING

This information sheet is about the use of good planning to help you minimise risk and achieve best practice.

There are many steps along the path to best practice. Here are some suggestions.

- Make a commitment to yourself and your staff to consider the environmental impact of your business in your day-to-day decision-making. This can apply to simple things, such as the selection of lights, fitting sanding machines with dust bags or providing tarpaulins to capture debris from serviced vessels.
- Commit yourself to increasing your environmental awareness. Reading this guide and providing staff with time to read it can help in this process.
- Create an environment team or committee to identify environmental issues and propose solutions, or identify someone as a 'champion' who can foster the adoption of good environmental practices.
- Make contact with your local council and industry association to tell them what you are doing. They might have some advice or know of programs that could help you.
- Make contact with your neighbours. Build a working relationship so that any concerns about your operations that might arise in the future can be readily addressed.

DOCUMENTING YOUR PROGRESS

There are several advantages to planning and documenting measures to improve the environmental performance of your business.

- Directors and managers may have a defence in the event of an environmental pollution offence committed by their company if they can demonstrate 'due diligence' to prevent the offence.
- Taking active steps to prevent pollution occurring means it is less likely that you will commit an environmental offence and may reduce your culpability if an offence does occur. If an environmental incident occurs on your site, providing documentation that shows that you have been acting responsibly and actively trying to avoid such incidents could reduce your culpability.

- Customers might prefer businesses that are able to demonstrate their environmental credentials.
- Planning and reviewing allows you to be systematic in improving your environmental performance and documenting your cost savings.

Types of documents you can keep

If you are already considering environmental issues on your site, regularly checking and maintaining your equipment to minimise pollution, and planning improvements, then why not document it?

Helpful documents include:

- an environmental policy
- an environmental action plan
- records of staff training, staff inductions, waste disposal receipts and maintenance and inspection schedules.
- register of complaints.

An environmental policy could be as simple as a one-paragraph or one-page statement that articulates your commitment to complying with environmental laws and implementing best practice wherever possible.

An environmental action plan sets out environmental risks and opportunities and what is being done to address them. It doesn't have to be a large document and could be part of your WH&S documentation.

The important thing is that somewhere you have a document that:

- contains actions for environmental improvement (both ongoing and planned)
- indicates who is responsible for carrying out each action
- indicates when (by what date or how often) these actions will be carried out
- contains quantified reduction targets (in volume, weight or costs) for resource efficiency savings and other environmental impacts.

It's a good idea to review and change your environmental action plan regularly. A sample action plan is included in the 'Useful tools' section of this guide.

Examples of daily and weekly checklists are also included in the 'Useful tools' section. You can adapt these to suit your business and incorporate WH&S issues as well.

PERFORMANCE STANDARDS		ACCEPTABLE SOLUTIONS	
P8.1	No alterations to your premises are to be made that vary significantly from your approved plan without prior approval.	**A8.1**	The Environmentally Relevant Activity (ERA) is to be carried out in accordance with the approved plan.
P8.2	As the registered operator of the ERA, you must keep a copy of your Development Approval and your Registration Certificate on site AND ensure it is available to all your employees engaged in the activity and to an authorised officer upon request.	**A8.2**	Retain all records and documents required by this approval for a period of not less than three years, or as required by the relevant legislation, and make the records and documents available for examination by an authorised person immediately upon request.
P8.3	As the registered operator, you must keep all records and documents required to be kept by a condition of your approval at the premises.		

Your legal requirements – holders of a development approval for an era, and registered operators:

PERFORMANCE STANDARDS	ACCEPTABLE SOLUTIONS
☑ **P8.4** [Optional Best Practice Condition] As the registered operator, you must develop and implement an Environmental Management System (EMS) that addresses the management of the environmental risks and impacts of the activities under this approval.	☑ **A8.4.1** Development of an Environmental Management System (e.g. ISO14001 or similar) which includes: • hazard and risk assessment • environmental policy • an environmental plan • pollution prevention measures • pollution prevention procedures • staff training • contractor and boat owner awareness • emergency response • auditing, reporting and review.
	☑ **A8.4 2** Attainment of Australian Clean Marina Level 2 accreditation.
☑ **P8.5** The registered operator must ensure that activities at the premises conform to the EMS.	☑ **A8.5.1** Conformance with an Environmental Management System (e.g. ISO14001 or similar)
	☑ **A8.5 2** Attainment of Australian Clean Marina Level 3: Clean Marina.

DEVELOPING OR RE-DEVELOPING A NEW SITE

If you are re-locating or starting up a business at a new site, you have a good opportunity to factor better environmental management into the design of your new workplace.

Ask your architect for ideas on reducing the environmental impact of your facilities andreducing costs. This might include the following.

- Using recycled timber (or Forestry Stewardship Council certified timber) and recycled content products.
- Selecting alternatives to solvent based paints where appropriate for the application – they release lower amounts of harmful VOCs.
- Energy-efficiency ideas, such as building orientation, wall and ceiling insulation, efficient heating, cooling, hot water, lighting and equipment to reduce energy consumption.

- Water conservation methods, such as including a rainwater tank or planting gardens with low water usage.
- Waste management plans might be required as part of the planning process. Many local councils have incorporated the Waste Not Development Control Plan into their local environmental plan.

Councils will also have requirements and conditions that will need to be satisfied as part of the development application process.

FURTHER INFORMATION

- Brisbane City Council – phone (07) 3403 8888 or **www.brisbane.qld.gov.au**
- Cleaner production case studies Yellow Pages – **www.yellowpages.com.au**
- Look under 'Environmental and/or Pollution Control Consultants'. Queensland DERM has a free 'ecoBiz' tool that can help in identifying cost savings **www.epa.qld.gov.au**
- Standards Australia – phone 131 242 or **www.standards.org.au** for AS 3962-2001Guidelines for design of marinas

USEFUL TOOLS
SELF ASSESSMENT CHECKLIST

This checklist can help you evaluate your environmental performance and identify areas for improvement.

You can use this as a starting point and refine it to suit your business. It's strongly recommended that you complete some form of environmental self-assessment for your business on a regular basis.

This checklist is comprehensive and could take over an hour to complete.

Date of assessment:

Company name:

Property address:

Person conducting assessment:

Area/building being assessed:

What types of activities are carried out in this area or building?

Is a site plan available? ☐ Yes ☐ No ☐ N/A ☐ Don't know

If yes, please attach a copy of the site plan.

Actions needed:

* questions that you have answered with a 'No', 'Don't know' or 'Yes*' (with an asterisk). These are areas where you need to undertake further research, make improvements, or take immediate follow-up action.

The following questions are designed to help you determine whether your business could be harming the environment, breaking the law or be vulnerable to prosecution and fines under environmental legislation.

Once you have completed this checklist, take a look at the questions that you consider require further investigation or action.

Use these questions to develop an environmental action plan. A sample 'Environmental action plan' is included in the 'Useful tools' section of this guide.

REGULATORY ISSUES

Are you aware of the environmental laws and regulations relating to your operations? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you comply with the conditions of your development approval? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you hold an Environmental Protection Registration Certificate? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

ENVIRONMENTAL MANAGEMENT

Are daily or weekly checks carried out to make sure correct procedures are being followed to protect the environment? (Refer to the sample daily and weekly checklists in the 'Useful tools' section of this guide.) ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you have an environmental policy? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you have an environmental action plan? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

If so, does the environmental action plan have objectives, targets, responsibilities and budgets (where applicable)? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you have an emergency response plan (including a spill management plan and emergency response plan)? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Have all staff been trained in environmental responsibility (such as minimising VOCs emissions, avoiding spills, minimising waste, etc.)	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				
Do you have formal reporting requirements in place for recording accidents and spills that harm or may harm the environment (i.e. an incident report form)?	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				
Do you have a procedure in place to deal with complaints from the public, regulatory authorities or staff regarding environmental issues?	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				
Are your staff aware of your commitment to improving the environment?	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				
Are your customers aware of your commitment to improving the environment?	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				

WATER QUALITY MANAGEMENT

Do you know where the stormwater drains are located on and surrounding your premises?	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				
Is stormwater run-off from your site always kept free of pollutants, such as litter, dust and oil?	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				
Do you have structures – such as a first flush, collection traps, silt traps and bunded storage area – or procedures in place to prevent stormwater and waterways pollution?	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				
Are stormwater drains, the foreshore and waterways protected from accidental spills?	☐ Yes	☐ No	☐ N/A	☐ Don't know
Actions needed:				

* questions that you have answered with a 'No', 'Don't know' or 'Yes*' (with an asterisk). These are areas where you need to undertake further research, make improvements, or take immediate follow-up action.

Do you have measures in place to prevent dust and solid wastes from washing or blowing into stormwater, the foreshore and waterways?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Are staff aware that it is illegal to sweep or hose dust, oil or any waste into stormwater drains and waterways?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Is the fuel dispensing area covered by a roof and bunded?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

WASTEWATER MANAGEMENT

Are antifouling materials, paints, oils, cleaning liquids or other chemicals discharged to the sewer?	☐ Yes*	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you have a trade waste agreement or permit?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Is wastewater treated before it goes to the sewer?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Is your first flush system regularly maintained?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

SOIL AND GROUNDWATER MANAGEMENT

Are there underground storage tanks on this site or were they on the site previously?	☐ Yes*	☐ No	☐ N/A	☐ Don't know

Actions needed:

Are your fuel tanks doubled lined?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you monitor the quantity of fuel received and dispensed to check fuel tank leakage?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you pressure test underground fuel pipes for leaks?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Is there any evidence (e.g. visual stains, odours, affected vegetation) of ground contamination?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Is there any evidence (e.g. visual stains, odours, affected vegetation) of ground contamination?	☐ Yes*	☐ No	☐ N/A	☐ Don't know

Actions needed:

AIR QUALITY MANAGEMENT

Have all potential sources of air emissions and odours (e.g. dust from sanding and odours from spraying) been reviewed?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Have you received complaints about dust, fumes or odours from staff or neighbours?	☐ Yes*	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you use dust collection equipment to contain dust from sanding and grinding?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you train staff to keep outdoor work areas clean to prevent dust from blowing into waterways or onto other premises?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

If you do spray painting, is it always carried out indoors in well-ventilated areas?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

If you do spray painting outdoors, do you have controls in place to prevent spray drift?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

If you do spray painting, do you use low-pressure/high-volume or airless spray equipment?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

* questions that you have answered with a 'No', 'Don't know' or 'Yes*' (with an asterisk). These are areas where you need to undertake further research, make improvements, or take immediate follow-up action.

Are lids kept on chemical containers when not in use? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Are solvents, antifouling and paints stored and applied using methods that minimise air emissions and odours? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

HAZARDOUS MATERIALS AND DANGEROUS GOODS MANAGEMENT

Does the hazardous materials storage area comply with dangerous goods regulations and appropriate Australian Standards? For example, is the area bunded, covered and fireproofed and are non-compatible materials separated? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Have you notified Brisbane City Council of the dangerous goods stored and handled on the premises? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you keep an up-to-date register of all of the chemicals stored at the site? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Are the contents of containers identified and labelled? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you keep copies of all relevant Material Safety Data Sheets (MSDS)? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do staff know where to find Material Safety Data Sheets (MSDS) on site? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do staff know how to prevent, contain and clean up spills? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Are spill kits available? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do the spill kits contain the correct materials to deal with spills from all of the hazardous materials and dangerous goods kept on site? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Are spill kits regularly checked and refilled? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

HAZARDOUS AND SOLID WASTE MANAGEMENT

Has a waste review been carried out? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Complete the following to obtain baseline information on your wastes.

Landfill waste	kg/month disposal cost $	per month
Hazardous waste	kg/month disposal cost $	per month
Liquid waste	L/month disposal cost $	per month

Do you dispose of liquids into the general waste bins? ☐ Yes* ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you generate, handle, store, treat, process or reprocess any organotin wastes, including tributyltin wastes? ☐ Yes* ☐ No ☐ N/A ☐ Don't know

Actions needed:

Is all your hazardous waste (e.g. waste solvents, oil, cleaning chemicals, batteries, antifouling and lead paint contaminated debris, etc.) collected by a licensed waste contractor and taken to an appropriate waste facility? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Contractor name:

Waste facility name:

Actions needed:

Does your disposal of hazardous wastes comply with your licence requirements? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

* questions that you have answered with a 'No', 'Don't know' or 'Yes*' (with an asterisk). These are areas where you need to undertake further research, make improvements, or take immediate follow-up action.

Do you store all your hazardous waste awaiting collection in appropriate containers and in a bunded and covered area to avoid contamination of the environment?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you keep your solid waste bins with the lid on and stored in a covered area to prevent the wind blowing waste away?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you separate different types of waste so they can easily be re-used, recycled or returned to the supplier?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you encourage your suppliers to take back packaging wastes, such as crates and plastic drums?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Have you talked to your waste company about recycling options?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Actions needed:

Do you re-use or recycle paper, cardboard or glass?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Contractor's name:

Actions needed:

Do you re-use or recycle metal, such as aluminium, copper and steel?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Contractor's name:

Actions needed:

Do you re-use or recycle solvents?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Contractor's name:

Actions needed:

Do you re-use or recycle wood, such as pallets and boxes?	☐ Yes	☐ No	☐ N/A	☐ Don't know

Contractor's name:

Actions needed:

Do you re-use or recycle wood, such as pallets and boxes? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Contractor's name:

Actions needed:

Do you re-use or recycle plastic drums and containers? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Contractor's name:

Actions needed:

NOISE MANAGEMENT

Are there noise limits contained in your development approval that apply to your operation? Are you satisfying your noise limits? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Are you aware of the effects of your noise on your neighbours? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Are noise complaints followed up? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you regularly check and maintain noisy equipment, such as compressors? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Are any pieces of equipment, motors or fans left running after business hours? ☐ Yes* ☐ No ☐ N/A ☐ Don't know

Actions needed:

* questions that you have answered with a 'No', 'Don't know' or 'Yes*' (with an asterisk). These are areas where you need to undertake further research, make improvements, or take immediate follow-up action.

RESOURCE EFFICIENCY

Complete the following to obtain baseline information on your utility use.

Cost of electricity	$	per month
Cost of water	$	per month
Cost of waste	$	per month
Other	$	per month
Total	$	per month

Do you have a team or 'champion' looking at on-going efficiency improvements? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you monitor electricity, water use and waste disposal? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you have procedures and targets in place for saving water and energy? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you use energy-efficient motors? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you use water-saving devices, such as fitting trigger nozzles on hoses? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you have a preventive maintenance program to make sure all machines are operating efficiently? For example, are air compressors regularly checked for leaks? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Have you installed insulation to avoid heating or cooling energy loss (e.g. insulation of roof, wall, piping, etc.)? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Do you use water-based strippers, cleaners and degreasers wherever possible? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

Have you investigated alternatives to the hazardous materials or dangerous goods you use? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

FOLLOW-UP

Do you have a system in place to follow up any concerns or actions that need to be addressed following this self-assessment? ☐ Yes ☐ No ☐ N/A ☐ Don't know

Actions needed:

When you have completed this self-assessment checklist, go back over it and highlight the questions that you have answered with a 'No', 'Don't know' or 'Yes*' (with an asterisk).

These are areas where you need to undertake further research, make improvements, or take immediate follow-up action.

It's recommended that you:

- refer to any of the relevant information sheets within the guide to find more information
- develop an environmental action plan
- get started on an environmental improvement program that will be good for your business, your staff and your clients.

It's a good idea to keep completed self-assessment checklists for your own records.

NOTES

ENVIRONMENTAL ACTION PLAN

MARINAS AND BOAT MAINTENANCE

Sample only – expand and adapt this to your situation.

ENVIRONMENTAL ISSUE/AREA	ACTION OR MEASURE	WHO IS RESPONSIBLE?	WHEN?
1. COMPLIANCE			
	Ensure copies of licences and approvals are easily accessible.	Manager	Continual
	Develop daily and weekly checklists.	Manager	January
	Train staff to carry out daily and weekly checks on environmental compliance.	Manager	Continual
	Store all chemicals, oils and batteries in a bunded and covered area.	Manager	May
	Train staff and contractors and subcontractors on their environmental responsibilities while at work. This will include spill prevention, what to do in case of a spill and how to use a spill kit.	Manager	March
2. WATER AND AIR QUALITY MANAGEMENT			
Workshops	Check all dust collection equipment is operational and dust bags are emptied.	Workshop Foreman	Weekly
	Check all equipment and machinery is operating correctly and not causing excessive noise.	Workshop Foreman	Weekly
	Ensure oils fuel or chemicals are stored in a bunded area or placed on spill trays when in use.	Workshop Foreman	Weekly
	Check content of spill clean-up kits.	Workshop Foreman	Monthly
Hardstand	Check work area is clean and tidy.	Hardstand Foreman	Daily
	Ensure all paints and solvents are retuned to the store after use.	Hardstand Foreman	Daily
	Develop a maintenance schedule for the slipway and hardstand area.	Manager Hardstand Foreman	January
	Check wastewater collection and treatment system is operating within specifications.	Boatyard Foreman	Weekly
	Ensure no overspray escapes from site.	Boatyard Foreman	Daily
	Implement a bunding system or equipment to capture any spills.	Manager Hardstand Foreman	January

ENVIRONMENTAL ISSUE/AREA	ACTION OR MEASURE	WHO IS RESPONSIBLE?	WHEN?
2. WATER AND AIR QUALITY MANAGEMENT			
Marina	Check all boats are secure and are not pumping dirty bilge water into the bay.	Manager	Daily
	Ensure all hoses are turned off and taps are not dripping.	Manager	Daily
	Ensure all rubbish has been removed from the marina and placed into appropriate bins	Manager	Daily
	Ensure fuel hoses are secure and are not leaking, drip trays are empty and emergency shut-offs are operational.	Manager	Daily
	Setup a leak detection and monitoring system for fuel underground fuel tanks.	Manager	July
	Install a groundwater monitoring system.	Manager	December
3. SOLID AND LIQUID WASTE MANAGEMENT			
Common to all areas	Ensure recycling bins are clearly identified.	Manager	January
	Make sure waste collection points are clean and all bins have secure lids fitted.	Manager	Daily
	Develop a system for recycling solvents.	Workshop Foreman	February
	Develop a system for recycling brushes.	Workshop Foreman	February
	Carry out a monthly audit on all areas to ensure systems and plans are being followed.	Manager	Monthly
	Carry out a waste audit to find out how much waste is being generated and identify cost saving opportunities.	Manager	March
	Review results of the waste audit and work out how waste can be eliminated, minimised, separated, re-used or recycled.	Manager (with designated staff)	May
	Set quantified waste reduction targets (in volume, weight or costs).	Manager (with designated staff)	June
	Make sure waste transporters are provided with information on the nature of the hazardous waste you are disposing of. Make sure waste goes to an appropriate and legal waste processing facility, and that waste tracking information is kept in the office.	Workshop Foreman	February
4. HAZARDOUS MATERIALS			
Common to all areas	Store all chemicals, oils and batteries in a bunded and covered area.	Manager	May
	Improve bunding so that it is sufficient to hold the volume of the largest container plus 10%. Ensure both floor and bund are completely impermeable.	Manager (with designated staff)	May
	Train staff to place chemicals they are using in a larger container (bund).	Marina Manager	May

ENVIRONMENTAL ISSUE/AREA	ACTION OR MEASURE	WHO IS RESPONSIBLE?	WHEN?
4. HAZARDOUS MATERIALS			
	Provide training to all staff on: • the use of solvents and acids. • maintenance of bunded hazardous goods storage areas.	Workshop Foreman	Annually and in new staff induction.
	Ensure MSDS are current and easily accessible to all staff.	Workshop Foreman	Annually
	Place spill clean-up kits in store and work areas, inspect regularly and keep stocked.	Workshop Foreman	Monthly
	Ensure all solvents (including recycled) are kept in sealed containers, clearly labelled and placed in designated areas.	Workshop Foreman	Weekly
5. RESOURCE EFFICIENCY			
Reduce resource use.	Join Marine Queensland and take advantage of the information on resource efficiency developed for your industry.	Manager	January
	Investigate ways you can reduce waste from your business.	Manager and all staff	March
	Educate your clients about recycling wastes and show them the system you have in place to achieve this.	Manager	January
	Ensure the compressed air system is working efficiently and has no leaks. Fit trigger nozzles to all hoses on the site.	Manager Workshop Foreman Manager	March
	Recycle water from your wash down	Manager	January
	Investigate options for reducing energy and water use.	Manager	March
	Fit low-energy lighting to common areas. Fit motion sensors to lights in areas that do not need to be permanently lit.	Workshop Foreman	March
	Keep current with new technologies. Investigate options for more efficient machinery.	Manager (with designated staff)	Quarterly
	Set quantified reduction targets for resource efficiency savings (e.g. raw materials, energy and water).	Manager (with all staff involved)	June

DAILY AND WEEKLY CHECKLISTS

Sample only – expand and adapt these checklists to your situation.

DAILY CHECKLIST	TICK
All stormwater drains are clear from debris.	
Car park and gardens are clean and free of rubbish.	
Slipway is clean and all drains and catchment pits are free of debris.	
All boats are securely moored and bilges are not discharging into the bay.	
Taps are turned off and are not leaking.	
All paints and materials are returned to the secure storeroom before close of business.	
All glues, resins, oils etc. are returned to the relevant safe storage area after use.	
Water around fuel bowsers is clean (no hydrocarbons are visible)	
Checks carried out by Signed: Date:	

WEEKLY CHECKLIST	TICK
Daily checklists have all been completed and problems addressed.	
Workshop machinery is operating correctly and within specifications.	
All bunds are clean and intact.	
Paint and hazardous material stores are clean and tidy.	
Emergency spill kits are intact and re-stocked.	
Compressed air system is free of leaks.	
Water hoses and connections are not leaking.	
All gas cylinders have been checked for leaks.	
Fuel storage tanks have been checked for leaks and integrity.	
Noise from business activities has been checked by doing a walk around the premises and the neighbouring area.	
Lighting time switches are set correctly.	
Checks carried out by Signed: Date:	

USEFUL CONTACTS

Sample only – expand and adapt this list for your business.

ORGANISATION	PHONE NO.
Emergency services - Ambulance, Fire, Police	000
Brisbane City Council	(07) 3403 8888
DERM hotline	1300 130 372
WH&S Queensland Info Line	1300 369 915
Poisons Information Centre	131 126
Local water authority and trade waste contact	
Waste solvent recycler	
Waste disposal contractor	
General recyclers	

APPENDIX 1

DEFINITIONS

bund

An impervious embankment or wall of brick, stone, concrete, or other approved material that forms the perimeter, or part of the perimeter, of a compound (e.g. a bund may be used to contain spills from a fuel tank).

coastal waters

As defined in the *Transport Operations (Marine Pollution) Act 1995*, "waters that are subject to the ebb and flow of the tide."

compliance

Conducting your activities according to the requirements of your environmental approval.

environmental harm

An adverse effect (whether temporary or permanent, and of whatever magnitude, duration or frequency) on an environmental value and includes environmental nuisance, *Environmental Protection Act 1994*.

Transitional Environmental Program (TEP)

A specific program that, when approved, achieves compliance with the *Environmental Protection Act 1994* for the matters dealt with by the program by:

- reducing environmental harm
- detailing the transition to an environmental standard.

environmental nuisance

Any unreasonable interference or likely interference with an environmental value that is caused by noise, dust, odour, light, an unhealthy, offensive or unsightly condition because of contamination, or another way prescribed by regulation, *Environmental Protection Act 1994*.

environmental value

A quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or another quality of the environmental identified and declared to be of environmental value under an environmental protection policy or regulation, *Environmental Protection Act 1994*. Can this be simplified?

general environmental duty

A person must not carry out an activity that causes, or is likely to cause, environmental harm, unless the person takes all reasonable and practicable measures to prevent or minimise the harm.

Material Safety Data Sheets (MSDS)

Information sheets on products that manufacturers are required to provide. They outline the composition, applications and precautions that need to be taken in using such products.

Regulated Liquid Wastes

Wastes that have been identified as unsafe for sewer disposal due to their chemical nature (e.g. flammable). These wastes are outlines in Schedule 7 of the Environmental Protection Regulation 2008.
Regulated liquid wastes include:

- acids and acid solutions
- dyes
- organic solvents
- electroplating effluent
- caustic solutions
- pesticides
- vehicle wash down waters.

Regulated Solid Wastes

Wastes that have been identified as unsafe for landfill disposal. These wastes are outlined in Schedule 7 of the Environmental Protection Regulation 1998.

Regulated solid wastes include:

- arsenic
- asbestos
- batteries
- biocides
- grease interceptor trap effluent and residues
- paint sludges
- resins.

stormwater

Rainfall that runs off hard surfaces, such as roofs, roads and car parks, or off ground that has become saturated. Stormwater flows untreated to local creeks and eventually to the Brisbane River and Moreton Bay. Do you want to make this Brisbane-specific?

trade waste

Liquid wastes from any business, industry, trade or manufacturing process approved for sewer disposal, other than domestic sewage

unreasonable Noise

A noise causing unlawful environmental harm because of:

- its characteristics
- its intrusiveness
- the time at which it is made
- where it can be heard
- other noises ordinarily present at the place where it can be heard.

A noise not declared to be reasonable in and Environmental Protection Policy.

VOCs (Volatile Organic Compounds)

Evaporated organic solvents (e.g. hydrocarbons or alcohols or unburnt liquid fuels) that are known (or suspected) to have environmental or health effects. Examples of VOCs include solvents, thinners, acrylic lacquers and fuels.

Note. If there are terms used in the guide which you do not understand, please contact Brisbane City Council on 3403 8888 and we will include them within the definitions.

water

Includes all Queensland waters defined in the *Environmental Protection (Water) Policy 1997* and "coastal waters" defined in the *Transport Operation (Marine Pollution) Act 1995*.

APPENDIX 2

SCHEDULE 7 – REGULATED WASTE

acidic solutions and acids in solid form

animal effluent and residues, including abattoir effluent and poultry and fish processing wastes

antimony and antimony compounds

arsenic and arsenic compounds

asbestos

barium compounds, other than barium sulfate

basic (alkaline) solutions and bases (alkalis) in solid form

beryllium and beryllium compounds

boron compounds

cadmium and cadmium compounds

chemical waste arising from research and development or teaching activity, including new or unidentified material and material whose effects on human health or the environment are not known

chlorates

chromium compounds (hexavalent and trivalent)

clinical and related waste

containers contaminated with a regulated waste

copper compounds

cyanides (inorganic)

cyanides (organic)

encapsulated, chemically-fixed, solidified or polymerised wastes

ethers

filter cake

fly ash

food processing waste

grease trap waste

halogenated organic solvents

highly odorous organic chemicals, including mercaptans and acrylates

inorganic fluorine compounds, other than calcium fluoride

inorganic sulfides

isocyanate compounds

lead and lead compounds including lead-acid batteries

material containing polychlorinated biphenyls (PCBs), polychlorinated napthalenes (PCNs), polychlorinated terphenyls (PCTs) or polybrominated biphenyls (PBBs)

mercury and mercury compounds

metal carbonyls

mineral oils

nickel compounds

non-toxic salts including, for example, saline effluent

hydrocarbons and water mixtures or emulsions, including oil and water mixtures or emulsions

organic phosphorous compounds

organic solvents, other than halogenated solvents, including, for example, ethanol

organohalogen compounds, other than another substance stated in this schedule

oxidising agents

perchlorates

pesticides, including organchlorine

pharmaceuticals, drugs and medicine

phenols and phenol compounds, including chlorophenols

phosphorus compounds, other than mineral phosphates

polychlorinated dibenzo-furan (any congener)

polychlorinated dibenzo-p-dioxin (any congener)

reactive chemicals

reducing agents

residues from industrial waste treatment or disposal operations

selenium and selenium compounds

sewage sludge and residues, including nightsoil and septic tank sludge

sludge and residues from water treatment plants

surface active agents (surfactants) containing principally organic constituents, whether or not also containing metals and other inorganic materials

tallow

tannery wastes, including leather dust, ash, sludges and flours

tarry residues arising from refining, distillation or any pyrolytic treatment

tellurium and tellurium compounds

thallium and thallium compounds

triethylamine catalysts for setting foundry sands

tyres

vanadium compounds

vegetable oils

waste containing peroxides other than hydrogen peroxide

waste from a heat treatment or tempering operation that uses cyanide

waste from surface treatment of metals or plastics

waste from the manufacture, formulation or use of the following–

- biocides or phytopharmaceuticals
- inks, dyes, pigments, paints, lacquers or varnish
- organic solvents
- photographic chemicals or processing materials
- resins, latex, plasticisers, glues or other adhesives
- wood-preserving chemicals

waste from the manufacture or preparation of pharmaceutical products

waste of an explosive nature, other than an explosive within the meaning of the *Explosives Act 1999*

wool scouring wastes

zinc compounds

APPENDIX 3

ON-SITE TREATMENT AND RE-USE OF WASTEWATER OR STORMWATER

The operator should consult with Brisbane City Council Trade Waste section regarding:

- any system for the collection, treatment and re-use of wastewater (e.g. washdown waters) or stormwater that may be contaminated, as these systems must be approved by Council to ensure the method and level of treatment is adequate and safe
- testing and monitoring treated waters to demonstrate the effectiveness of the system before Council approval.

Consider:

- volumes to be treated
- handling and storage
- key contaminants
- types of treatment
- disposal of wastes (e.g. sludge)
- safety and hygiene
- testing and frequency.

APPENDIX 4

GUIDELINES FOR A TRANSITIONAL ENVIRONMENTAL PROGRAM (TEP)

Introduction

The *Environmental Protection Act 1994* (EP Act) was developed to protect Queensland's environment while allowing for sustainable development.

Brisbane City Council licenses marinas and boat maintenance operations under the EP Act. As the EP Act encourages continual improvement of industrial activities, there might be instances where some activities may not be able to comply immediately with their licence conditions.

For those activities that cannot comply immediately with their approval conditions, the EP Act allows for the development of a TEP. A TEP is an 'action plan', which is negotiated between the approval or registration holder and the administering authority, for example the local council. This action plan outlines how the approval or registration holder intends to achieve compliance with their approval conditions, and the time frame in which compliance is to be achieved.

While the TEP offers the approval holder some degree of short-term protection against fines or prosecution for non-compliance with licence conditions, the TEP is a contract between the approval holder and the administering authority, ie the council, and heavy penalties apply for non-compliance with the TEP.

These guidelines have been developed to assist operators in the preparation of a draft Transitional Environmental Program in accordance with the EP Act. The draft TEP must then be submitted to Council, for review and approval.

Components of a TEP

A TEP is a specific program that can assist approval holders reduce environmental harm. It also details how the approval holder intends to achieve compliance with their approval conditions over a period of time.

These guidelines have been developed to assist approval holders comply with their approval conditions. While these guidelines provide a step-by-step process for developing a draft TEP, each activity is different, and registration holders are expected to develop site-specific management actions.

The main elements that must be included in a TEP include:

1. a statement on which activities or approval conditions are to be addressed under the TEP
2. a statement of the objectives to be achieved and maintained under the TEP
3. a statement on how the objectives are to be achieved and the proposed timetable for achieving the objectives
4. a schedule of milestones and performance indicators at intervals of not longer than 6 months
5. a schedule of monitoring and reporting compliance with the TEP.

Submission of a TEP

Any operator can voluntarily submit a draft TEP at any time, provided the appropriate fee is paid at the time of the submission. Voluntary submission of a TEP can occur when an operator has identified a work process that does not comply with licence conditions, or is concerned that the activity may not comply with new standards or regulations.

Council can require the submission of a TEP where an inspection has identified a non-compliance issue. The time frame for submission of a draft TEP may depend on the severity of the non-compliance, or the risk of environmental harm from the non-compliance.

All draft TEP's must be submitted in a form approved by Brisbane City Council, together with the appropriate fee.

Please check boxes below.

	1. Identify which activities do not comply with your approval conditions.
	2. Develop a statement of environmental objectives to be achieved and maintained under the TEP.
	3. Detail how the environmental objectives are to be achieved and a timetable for achievement of each of the objectives.
	4. Detail appropriate milestones and performance indicators at intervals of not more than 6 months.
	5. Detail appropriate monitoring and reporting of compliance with the TEP.

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visit www.brisbane.qld.gov.au
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