

# Pollution Solutions

MARINA OPERATORS &  
BOAT MAINTAINERS &  
REPAIRERS

JULY 2000



Operator's Environmental Guide for Environmentally Relevant Activities 69 & 73

- 69 Boat Maintaining or Repairing
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# EXPLANATORY NOTES FOR OPERATOR'S ENVIRONMENTAL GUIDE (OEG)

## Purpose of the OEG

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The *Environmental Protection Act 1994* states '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 (the "general environmental duty")'. This clause applies to all persons in Queensland.

Under the *Environmental Protection Act 1994 and Integrated Planning Act 1997* Local Government licenses and approves businesses that have the potential to cause environmental harm – Environmentally Relevant Activities (ERAs). Boat maintaining and repairing, and marina/seaplane mooring are level 1 (licence) and level 2 (approval) ERAs listed in the *Environmental Protection Regulation 1998*.

All ERAs must have a development permit and/or an environmental authority (licence or approval) which lists the conditions of operation to prevent pollution. However, setting these conditions is only part of the story. Businesses should know how to meet these conditions (compliance) and to go beyond (best practice).

This Operator's Environmental Guide (OEG) – *Pollution Solutions for Marina Operators and Boat Maintainers and Repairers* – has been developed to assist operators to achieve their general environmental duty as above. That is, to achieve compliance with the *Environmental Protection Act 1994* and progress towards best practice environmental management.

The OEG was developed jointly by the Brisbane City Council and representatives of the relevant industries.

## Limitations of the OEG

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Council has written this OEG as a guide only. It does not form part of the licence or approval conditions. Complying with this document does not necessarily exempt the operator from prosecution or ensure compliance with the *Environmental Protection Act 1994, Regulation and Policies* (Air, Water, Noise and Interim Waste).

Approvals or licences may contain conditions which vary from the requirements in the OEG. These are often included because of site specific requirements or because of the nature of the activity. Whether your operational performance meets the conditions of your development permit and/or environmental authority (licence or approval) will be the main determinant of compliance.

The control measures in the OEG are recommendations only. **It remains the responsibility of each operator and employee of the business to satisfy the general environmental duty applicable to that business.** The operator should carefully consider the information in this OEG and put in place measures that may help to achieve this objective.

This OEG represents accepted industry practice at the time of issue and is therefore subject to change. Please note the date recorded on the front.



## How to use the OEG

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This OEG is based on three central concepts. These are explained below and each operational process is defined according to these concepts.

### Environmental Outcomes

are the outcomes, or goals, Council considers it is important to achieve if the environment is to be protected. **The Environmental Outcomes are highlighted in bold text.** You should try to satisfy the general environmental duty. The environmental outcomes in the OEG, however, do not ensure that this duty is achieved and should be considered in conjunction with your development permit and/or approval/licence conditions.

### Compliance

means the control measures that Council recommends as the minimum required to meet the environmental objective for maritime industries.

In some cases, a number of compliance control measures may be listed for one process. In these cases, you are advised to aim for the control measure or combination of control measures that is most likely to achieve the environmental outcome for that process.

Alternatively, you may be able to meet an environmental outcome in a manner that is not listed in this OEG. It is recommended that in these instances the alternatives be discussed with a Council Officer prior to implementation.

Although this guide lists some solutions, Council encourages operators to develop alternative ideas or innovations that are consistent with the environmental outcomes and other relevant requirements.



### Best practice

means the control measures that are considered to be above the minimum requirements. They are not compulsory. Best practice incorporates concepts such as cleaner production, waste minimisation, recycling and reuse. Use of best practice control measures may help to improve industry standards and progress towards best practice in the industry. Best practice measures are marked with a  in the text.

In some cases, a business may be required to use a best practice control measure, rather than compliance, if an authorised officer believes that it is necessary to achieve an environmental outcome.

The best practice options listed are not fully inclusive; they only indicate what options may be available. Other best practice options not listed in this OEG may be used.

Importantly, this OEG takes into account changing industry standards, technology improvements, and scientific knowledge and community expectations.



# ENVIRONMENTAL DUTY

## Develop environmental commitment and sound environmental performance

- Develop a commitment to being good neighbours and to preventing or minimising pollution.
- Ensure all staff are aware of the development permit and/or approval/licence conditions and the relevant methods and procedures contained in this OEG.



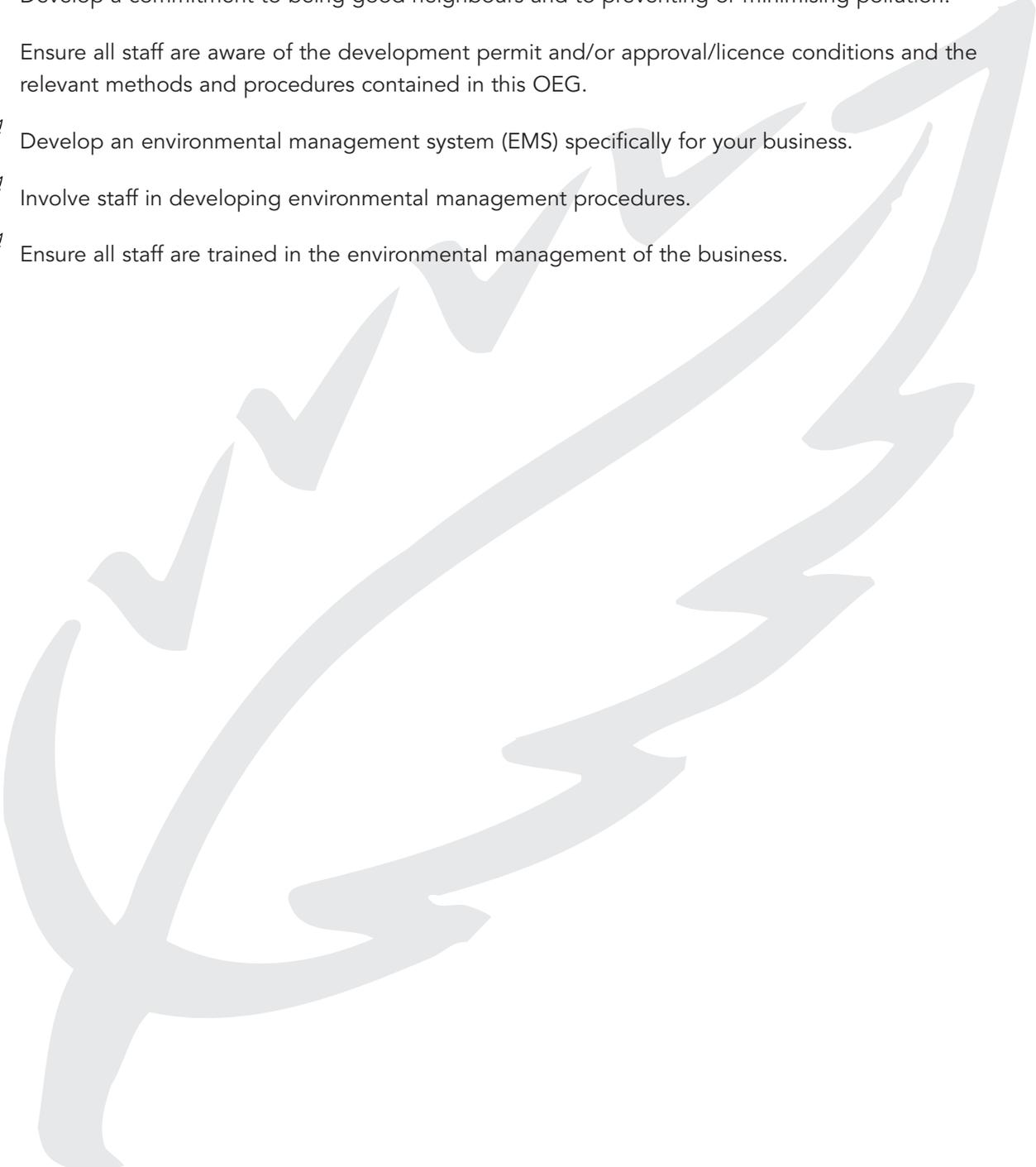
Develop an environmental management system (EMS) specifically for your business.



Involve staff in developing environmental management procedures.



Ensure all staff are trained in the environmental management of the business.



# ENVIRONMENTAL MANAGEMENT

## Implement environmental policies and practices

- The object of the *Environmental Protection Act 1994* is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development).

## Environmental Management Program (EMP)

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### Achieve compliance for non-conforming activities

- Operators who are currently unable to comply with the requirements of approval/licence conditions and the OEG may be required to submit an EMP for approval.
- An EMP is a binding agreement between your business and Council that sets out the areas where your business needs to improve to achieve compliance, and the time frame to achieve them. This allows you to operate your business although you may not fully comply, as long as Council has a firm arrangement with you to rectify problem areas in a mutually agreed time.

## Environmental Management System (EMS)

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### Maintain compliance with licence conditions and implement best practices



Develop an EMS to ensure environmental performance and compliance with approval/licence conditions and the OEG. An EMS provides a systematic method for meeting environmental outcomes, licence conditions and the ways or procedures for meeting and exceeding compliance. It allows for:

- better practices
- monitoring of, and reporting on, performance
- training of staff
- keeping of relevant records
- complaint response
- emergency and incident response.



## Plan to protect your environment and reduce your business risks



An EMS addresses noise, air quality, waste and any other relevant environmental issues associated with processes that could reasonably pose a significant risk to the environment, if not appropriately controlled, monitored and/or managed.

- For low risk activities, the EMS should be kept concise with control measures, checklists and records (e.g. development permit, waste disposal) maintained.
- In higher risk activities, licence conditions and procedures generally require more detail in an EMS. In some cases, preparation by an environmental consultant is recommended.
- The basic objectives are to increase business performance and reduce environmental risks through good management practices. Key components in the EMS include:
  - monitoring and reporting
  - records
  - training of employees
  - complaint response
  - emergency and incident responses.



# VESSEL RELATED PROCESSES AND MANAGEMENT

## Vessel Maintenance Areas

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### Protect water and soil quality and aquatic ecosystems

- Provide slipways and hardstand areas with facilities to collect and direct waste liquids and solids to a collection pit (e.g. bunding).
- Fit the slipway with a diversion valve to minimise tidal and stormwater contamination.
-  Extend the slipways above the high tide limit to form a hardstand area.
-  Ensure all work on vessels is carried out under cover and on the hardstand area.

## Vessel Surface Cleaning

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Hull scrubbing in the water, or onshore adjacent to the water, can result in water and/or sediment quality problems.

### Protect the aquatic ecosystem and reduce hazardous chemical emissions

-  Minimise the use and prevent the release of potentially harmful cleaners and anti-fouling paints to marina and surface waters.
- **Always** carry out vessel cleaning of any type (with or without detergents) in an area that is bunded or graded to a collection pit.
- **Never** do hull scrubbing in the water. Under certain circumstances (e.g. soft brush scrubbing of a racing yacht to remove only minor build up of slim and dirt) this may be acceptable.
- Never discharge wastewater (containing contaminants such as detergents, disinfectants and debris) from cleaning of vessel hulls and decks to the marine environment.
- Direct wastewater from vessel washdown to the sewerage system under the conditions of a Trade Waste Permit, or collect for recycling or disposal by a licensed waste removalist.

## Vessel Maintenance and Repairs

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### Protect human health and aquatic ecosystems

-  Both boat maintainers and repairers, and marina and seaplane mooring operators, should refer to the following section – *Boat Maintaining and Repair Processes and Management* – for details for acceptable practices for vessel maintenance.



# BOAT MAINTAINING AND REPAIR PROCESSES AND MANAGEMENT

*Note: Refer also to the ANZECC Code of Practice for Anti-fouling and In-water Hull Cleaning and Maintenance.*

## Removal of Antifouling Paint

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Conventional anti-foul coatings rely on toxic chemicals, such as copper and tributyltin, to protect vessel hulls from marine organisms. Chemicals such as these can be harmful to marine life, such as dugongs, sea turtles and sea grass in Moreton Bay.

### Protect water quality, aquatic ecosystems and soil quality



Use mechanical scraping or sanding, rather than water blasting, to remove paint and marine invertebrates (e.g. barnacles).

- Fit sanding equipment with dust extraction and collection systems.
- **Never** let contaminants from paint removal and sanding operations (e.g. paint debris, paint sludge, dust and particles) contaminate the aquatic ecosystem or surrounding areas.
- Regularly collect wastes from paint removal activities and dispose of via a licensed waste removalist.



Conduct paint removal activities above the tidal zone.

## Abrasive Blasting

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### Protect aquatic ecosystems and land and reduce hazardous emissions

- Never conduct blasting on the slipway or hardstand area unless all wastes generated (e.g. blast agent and paint debris) are contained and collected.
- Conduct all abrasive blasting operations in one of the following:
  - an abrasive blasting chamber
  - an enclosure of polythene sheet or similar material to confine waste material and dust
  - other methods approved by Council that prevent contamination of the surrounding areas.
- Never let abrasive blast material debris enter stormwater or waterways.
- **Never use** copper or zinc slag outside of a blast chamber and do not let it contaminate land or water.
- Collect spent abrasives and paint debris and:
  - dispose of via a licensed waste removalist
  -  process for reuse and recycling.
- Never store spent abrasives and paint debris in a manner where they could contaminate groundwater, stormwater or the marine environment.
- Refer to the Operator's Environmental Guide – *Pollution Solutions for Abrasive Blasters* for details of acceptable practice for abrasive blasting operations.



## Fibreglassing

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### Protect the aquatic ecosystem and reduce hazardous chemical emissions

- Conduct all laying-up of moulds or work in a booth, shed or building. Keep the doors closed during any lay-up and ventilate mechanically.
- Always conduct spray lay-up within an approved booth.
- Some operations produce large volumes of dust and particulate emissions. These must be mechanically ventilated and discharged through appropriate filtration equipment.
- Refer to the Operator's Environmental Guide – *Pollution Solutions for Fibreglass Product and Plastic Manufacturers* for details of acceptable practices for fibreglassing operations.

## Surface Coating

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### Protect air quality and minimise volatile and particulate emissions

- Surface coating operations by spraying must either be:
  - carried out in an approved spray booth designed, constructed and operated in accordance with AS/NZ 4114.1 and 4114.2 (refer to Appendix 1)
  - other methods approved by Council.
- Never spray items outside of an approved booth unless the shape, size or weight restricts such operations. In these cases, spraying must be carried out in an enclosed area (e.g. boat shed or similar construction with a roof) and approved by Council. The operator must demonstrate that outside surface coating operations do not cause environmental nuisance or harm.

### Ensure proper disposal of waste material

- Collect accumulated sludge from any wet scrubber systems for recycling, or dispose using a licensed waste removalist.

### Protect soil and water quality and the aquatic ecosystem

- Never mix or prepare antifouling paints on sites subject to tidal influence.



Use brushes and rollers to apply paint where practical.

- Antifouling paints containing tributyltin:
  - **must never** be used on vessels less than 25 metres in length
  - where it has been coated onto vessels over 25 metres in length, the leaching rate of tributyltin must not be greater than 5 micrograms per square centimetre per day (<math>5\mu\text{g}/\text{cm}^2/\text{day}</math>).



Consider using alternative anti-fouling paints. Recent technology relies on the coating's physical properties instead of toxicity to prevent fouling.



## **Minimise volatile organic compound (VOC) emissions and reduce material and booth maintenance costs**

- Use efficient spray painting equipment (transfer efficiency > 65%) such as high volume low pressure (HVLV) and airless electrostatic spray guns. Their use will substantially reduce solvent (VOC) emissions, paint use and operating costs.
- Refer to the latest Operator's Environmental Guide – *Pollution Solutions for Metal Finishing and Engineers* for details of acceptable practice for commercial spray painting and coating operations.

## **Surface Coating Equipment Cleaning**

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### **Minimise volatile emissions**

- Clean spraying equipment with a gun wash station or similar.
- Volatile liquids (solvents):
  - must be kept cool and stored in a covered container to prevent evaporation into the environment
  -  should be pumped instead of poured.
  -  Substitute cleaning solvents to reduce volatile emissions. Substitutes can include higher boiling point solvents or aqueous solvents.

### **Ensure proper disposal of contaminated solvents**

- Store all contaminated and spent solvents used for cleaning equipment in sealed drums for:
  - disposal by a licensed waste removalist
  -  recycling via a reputable solvent recycler
  -  onsite recycling and reuse.

## **Engine and Power Plant Service**

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### **Protect humans and the environment from hazardous emissions**

- Refer to relevant sections of the Operator's Environmental Guide – *Pollution Solutions for Motor Services Industries* for details of acceptable practice for engine and power plant servicing.



# MARINA OR SEAPLANE MOORING PROCESSES AND MANAGEMENT

## Waste Reception Facilities

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### Protect water, soil and air quality

- Provide appropriate waste reception facilities for the disposal of sewage, oil, domestic and industrial solid waste (garbage), and noxious or harmful substances from vessels using the harbour or marina.
- Where a commercial shipping service (e.g. ferry or tourist service) operates in waters where there are no waste reception facilities, the operator must arrange for the collection of any sewage, oil, garbage, and noxious or harmful substances from the service's vessels.
- Provide restroom facilities (or reasonable access to existing public toilets) at the marina or seaplane mooring.



Design restroom facilities for ease of access. Display signs to encourage the boating public to use them.

### Recycle and reduce waste disposal costs



Provide clearly labelled recycling facilities for glass containers and aluminium cans.

## Disposal of Sewage and Sullage Wastes

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### Protect water quality and aquatic ecosystems by reducing the release of untreated sewage

- Never allow persons aboard moored vessels to use on-board toilet facilities unless the vessel is fitted with holding tanks or other approved sanitary waste system, and a pumpout facility.
- Provide pumpout facilities for boat holding tank wastes to reduce the release of sewage to surface waters. Pumpout services may be fixed-point or portable systems.
- Pump sewage waste from moored vessels:
  - to a public sewer system, under the conditions of a Trade Waste Permit, or
  - an onshore holding tank for disposal by a licensed waste removalist.
- Design the pumpout facility to collect all spillages and cleaning wastes. These must be disposed to sewer under the conditions of a Trade Waste Permit or by a licensed waste removalist.
- Keep written records of all wastes collected by a licensed waste removalist.
- Provide drip trays, which drain back to holding tanks (or sewer), under the pumpout hoses when they are hanging or in storage awaiting use.
- Install dry break couplings on all hoses between any unloading craft and the pumpout facility. This will avoid the loss of any hose drainings.
- Provide a visible alarm/gauge to alert operators when the holding tank is about 90% full.



- Marina/mooring operators are to maintain sewage pumpout facilities in operational condition and encourage their use. Actions include:
  - develop regular inspection schedules of pumpout facilities
  - regular maintenance and servicing of pumpout facilities
  - ✦ mandate in leasing agreements the use of pumpout facilities (specify penalties for failure to comply)
  - ✦ conduct an education campaign for users of the marina/mooring outlining environmental objectives, available facilities and their use.

## Disposal of Bilge Water

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### Protect water quality, aquatic ecosystems and soil quality

- **Never** pump bilge water into a waterway or onto soil if it contains:
  - high concentrations of hydrocarbons (as specified in the *Transport Operations (Marine Pollution) Regulations*) or
  - other waste, such as sanitary, detergent and food scrap.
- Collect contaminated bilge water and discharge to sewer under the conditions of a Trade Waste Permit or dispose of by a licensed waste removalist.

### Reduce the amount of fuel and oil from boat bilges

- ✦ Marina/mooring operators should promote the use of oil-absorbing materials in the bilge areas of all boats with inboard engines. Pillow/pads that absorb oils and petroleum-based products (up to twelve times their weight) and not water are available.
- ✦ Any oil-absorbing materials should be examined at least once a year, replaced as necessary and disposed of in accordance with the disposal facilities for oil wastes.
- ✦ Where you have oil-absorbing materials available, advertise them or include the installation costs in yearly mooring fees.

### Protect water quality and ensure proper disposal of sewerable material

- Direct wastewater from washdown and equipment cleansing, and other activities to the sewerage system under the conditions of a Trade Waste Permit, or collect for recycling or disposal by a licensed waste removalist.
- **Never** discharge waste to aquatic ecosystems, stormwater systems, or land.



## Dredging and Excavation Works

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### Protect the environment and comply with relevant legislation

- Any dredging or excavations may require an approval or permit under the:
  - *Harbours Act 1955*
  - *Environmental Protection Act 1994* (contact Queensland Environmental Protection Agency)
  - *Fisheries Act 1994* (contact the Department of Primary Industries).

## Treatment of Piers

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### Protect the aquatic ecosystem

- **The use of tributyltin based paints for the preservation of wooden piers is prohibited.**
- Any treatment of marine borers in existing wooden piers must not pollute waters and sediments through spillage of chemicals (e.g. use drip trays).
-  Construct new piers or replacement pylons with concrete.
- For new wooden piers or replacement wooden pylons in intertidal zones, pre-treat them prior to installation or encased in epoxy resin material.

## Public Education

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### Protect aquatic ecosystems and prevent improper disposal of polluting material

-  Use interpretive and instructional signs at marinas and seaplane moorings to direct the public to restroom facilities and the use of pumpout facilities.
-  Encourage recycling by providing clearly labelled bins in easily accessible areas. Publicise the marina's recycling initiatives, such as through newsletters.



# STORAGE OF POTENTIAL CONTAMINANTS

Minimise accidental spills and prevent contamination of soil, stormwater, ground-water and/or air



- Store chemicals and other materials that may contaminate soil, stormwater, groundwater and/or air in a manner that prevents or minimises the impact of any accidental spills or releases. This means:
  - potential liquid contaminants stored in a secure, covered area away from through traffic. Such contaminants may include disinfectants, fuels, oils, detergents, poisons, cleaning solvents, alkaline or acidic solutions;
  - storage areas provided in an impervious bunded area or compound to contain any leakage or spillage. The capacity of the compound shall be at least the capacity of the largest tank or package in the compound (Bunding may not be required where the storage is inside a workshop or similar area and the operator can demonstrate that any spills will not escape the area and contaminate stormwater or surrounding ground.); and
  - where dangerous goods (as defined by the ADG Code) are stored in quantities in excess of minor storage (Refer to Note below), the capacity of the compound shall comply with the requirements of the relevant legislation, Australian Standard and/or Code of Practice.  
Relevant Australian Standards may include:
    - AS 1940 *The storage and handling of flammable and combustible liquids*
    - AS 2022 *Anhydrous ammonia – storage and handling anhydrous ammonia*
    - AS 2714 *The storage and handling of hazardous chemicals - Class 5.2 substances (organic peroxides)*
    - AS 3780 *The storage and handling of corrosive substances*
    - AS 3833 *The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers*
    - AS 4081 *The storage, handling and transport of liquid and liquefied polyfunctional isocyanates*
    - AS 4326 *The storage and handling of oxidising agents*
    - AS 4452 *The storage and handling of toxic substances*

*Note Storage of materials in excess of minor storage quantities may require approval, licensing and full compliance with the above standards. Contact the Council or the relevant dangerous goods administering authority for further information.*

- Storage must be:
  - away from any heating or ignition sources
  - provided with adequate natural or mechanical ventilation relevant to the nature of the substance and its use.



### Reduce volatile emissions

- Store volatile liquids (e.g. solvents, thinners) in closed containers that are kept closed when not in use. This will avoid unnecessary exposure of volatile liquids.
- Keep Material Safety Data Sheets (MSDS) for all hazardous substances used or stored on site. In case of an emergency an MSDS is the most effective means of assessing risk

*CAUTION! Some classes of materials may react dangerously if mixed or stored together. Incompatible materials must be segregated to minimise the possibility of any reaction. Read and follow all directions on labels. Refer to the material's Material Safety Data Sheet (MSDS) or contact the manufacturer for further information.*

### Respond promptly to spills and leaks

- Keep clean-up equipment, absorbent materials, and any materials for neutralising or decontaminating spills on the premises. Staff are to be adequately trained in the use of these materials.
- Immediately take action to clean-up spills or leaks. Reuse the spilt chemical if it is not contaminated. Otherwise collect the spill in an appropriate container and package for transport for either recycling or disposal by a licensed waste operator.
- Keep a supply of absorbent material in a readily accessible place to spread over and absorb any flammable liquid spills. Bag residues before putting in the industrial bin.
- Avoid the use of sawdust or other readily combustible absorbents to clean up flammable liquid spills.

*Note: Oily and greasy rags and oil-soaked sawdust can spontaneously combust if stored in a confined space.*

### Minimise chemical risks

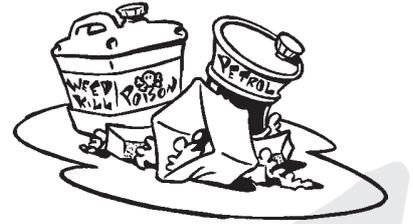
- Fit containers of chemicals (e.g. solvents) with taps to enable pumping instead of pouring.
  - Position trays under chemical container taps to catch any spillage or drips. Ensure the tray's material is compatible with the chemical.
- Batteries must be stored undercover and in a spill tray. Return batteries unsuitable for reuse to a reputable battery recycler.



# WASTE MANAGEMENT

## Reduce waste of material resources and landfill space

- Minimise all wastes produced by site activities.



## Recycle and reduce waste disposal costs



Disposal of wastes should be viewed as the **last** option in environmental management strategies. The life of material resources may be extended by recovery, reuse and recycling.



Implement a waste recycling (reuse) system for non-hazardous solid wastes using separate containers for individual waste streams (refer to Solid Wastes section).

- Clearly label waste containers and locate them in convenient areas to encourage use. Mixing wastes may make them unsuitable for reuse or recycling.

## Protect soil, stormwater and groundwater quality

- Store solid wastes undercover so contaminants cannot be washed to stormwater by rain.
- Never dispose of waste on site.



Use wet/dry vacuum cleaners with dust filters for general cleaning of floors instead of sweeping and hosing with water.

## Prevent landfill hazards

- Material put into industrial bins will generally go to landfill. Do not dispose of gas cylinders, asbestos-containing materials or synthetic-mineral fibres into an industrial bin; instead a licensed waste removalist should dispose of these wastes.
- Only put solid inert waste in industrial bins.

## Protect air quality

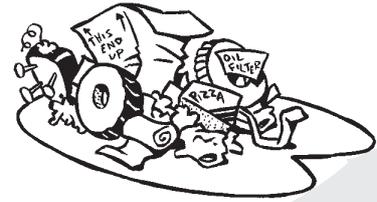
- Incinerating waste on site is prohibited.



# SOLID WASTES

## Hazardous Wastes (regulated)

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### Prevent contamination of landfill, soil and water

- Regulated wastes are those that have been identified as unsafe for municipal or refuse landfill disposal. These wastes are listed in Schedule 7 of the *Environmental Protection Regulation 1998* (refer to Appendix 3) and must be disposed through a licensed waste removalist.
- Keep proof of proper disposal of hazardous wastes to present to Council officers. Proof includes:
  - hazardous waste disposal facility docketts
  - waste manifest documents
  - licensed waste transport receipts.

## Non-hazardous Wastes

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### Conserve material resources, landfill space and reduce waste disposal costs



The following solid wastes are recyclable. They should be collected in separate containers for disposal at a waste recycling and reprocessing facility:

- clean cardboard and paper
  - aluminium cans, drink bottles
  - plastics
  - steel drums, drained steel cans
  - metal parts
  - rags (can be laundered and reused)
  - batteries.
- Carry out as much recycling as possible. Return empty drums to the supplier or pass them to a recycling merchant where practical.
  - Encourage the use of metal/steel recycling bins for offcuts and waste scraps.

### Ensure appropriate disposal of non-recyclable solid wastes

- Always dispose of non-recyclable solid waste at a licensed general waste disposal facility (e.g. local government service or approved waste removalist).

### Prevent contamination of landfill and groundwater with hazardous wastes

- Empty all containers or vessels containing oils, paints, solvents, thinners and other chemicals or potential contaminants before disposing via the industrial bins.

### Prevent air contamination by harmful dusts

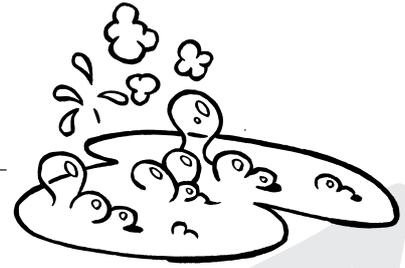
- Bag floor sweepings and other dusty wastes before disposing via the industrial bins.
- Only transport general solid waste in your own vehicle or by a licensed waste transporter.



# LIQUID WASTES

## Non-sewerable Wastes (regulated)

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### Prevent contamination of landfill, soil and water

- Non-sewerable (regulated) wastes are those that have been identified as unsafe for sewer disposal. These wastes are outlined in Schedule 7 of the *Environmental Protection Regulation 1998* (refer to Appendix 3) and must be disposed of by a licensed waste removalist.
- Never discharge contaminants such as paint sludge, volatile solvents and hydrocarbons to the sewerage system.
- Keep proof of proper disposal of non-sewerable wastes for presentation to Council officers upon request. Proof includes:
  - hazardous waste disposal facility dockets
  - waste manifest dockets
  - licensed waste transport receipts.



Separate out recyclable liquid wastes for collection by a licensed waste removalist. Recyclable liquid wastes include solvents, thinners, and waste oil.

## Sewerable Wastes

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### Ensure compliance with licence conditions (Trade Waste Permit)

- Obtain a Trade Waste Permit from the Council prior to discharge of any trade waste to the sewer. The Permit establishes the discharge conditions for the waste.
- Water-miscible solutions are generally accepted under a Trade Waste Permit. This may include **dilute** organic wastes.
- Washdown waters must either be directed to the sewerage system under the conditions of the Trade Waste Permit, or collected for recycling or disposal by a licensed waste removalist.

### Prevent contamination of landfill, soil and water

- As a guideline the minimum treatment required for discharge to sewer is an oil/silt interceptor trap.



On-site treatment and reuse of wastewater (e.g. washdown waters) can be used to replace or reduce disposal of wastewater to sewer. The systems of treatment and nature of reuse must not cause pollution or be hazardous to persons (refer to Appendix 4).



# STORMWATER MANAGEMENT

## Prevent contamination of soil, stormwater and local watercourses

*Stormwater flows untreated to creeks or waterbody.*

- Prevent stormwater from entering or leaving work areas where it may become contaminated with grease, oils, chemicals, particulates or solvents.
  - Cover and bund such areas where necessary to avoid the incursion of stormwater and prevent hazardous and trade wastes from contaminating the surrounding soil and stormwater system.
- Prevent wastewater containing contaminants (such as detergents used for cleaning areas) from contaminating stormwater or ground. Do not hose workshop floor, vehicles or machinery parts on to the surrounding soil or the stormwater drains.
- Store wastes undercover so that contaminants cannot be washed to stormwater by rain.
- **Boat maintainers and repairers** may be required to develop and implement a *Stormwater Quality Management Plan*. The final plan will depend on the type of activities conducted on the site, the nature of the site, the EMS and any other relevant issues. Contact the Council for advice.



## Avoid sewerage system overload

- Do not direct stormwater to the sewerage system. It is an offence under the *Sewerage and Water Supply Act 1949*.
- Contain any contaminated stormwater (e.g. holding tank) and:
  - dispose of by a licensed waste removalist
  -  treat on-site to an appropriate standard for discharge
  -  treat on-site for recycling or reuse (refer to Appendix 4).

**CAUTION!:** *Contaminating stormwater and other Queensland waters may result in an 'on the spot' fine or prosecution under the Environmental Protection Act 1994.*

*The Environmental Protection (Water) Policy 1997 prohibits the discharge of 'certain things' into a roadside gutter, stormwater or a water, or to a place where it could be reasonably expected to move or to be washed into a roadside gutter, stormwater or a water. Discharges to stormwater must comply with the Environmental Protection (Water) Policy 1997.*



# AIRBORNE WASTES



## Stack Emissions

### Maintain and protect local and regional air quality, soil and waters

- Emissions from this activity (e.g. dusts, solvents or odours) must comply with those outlined in the *Environmental Protection (Air) Policy 1997* or those prescribed by the Council.
- Specifications for the emissions stack and spray booth requirements are listed in Appendix 1.
- Fit emissions stack with an effective rain protection device that does not impede the discharge of exhaust gases from the stack.
- Use air-dispersion modelling to determine:
  -  buffer distances between the activity and sensitive land
  -  optimum stack height and exit velocity.

### Maintain air pollution control equipment

-  Examine and review the need for enhanced emission controls annually and if you receive complaints about performance.
- Regularly maintain any emission control equipment such as cyclones, baghouse filters or afterburners as per manufacturers' instructions.
- Immediately replace or repair any emission control equipment that is blocked, frayed, leaking or not functioning within specifications. Spare bags and filters must be kept on-site.

### Ensure emissions are below prescribed Air Quality Limits

- Undertake regular monitoring, recording and reporting of air emissions to ensure compliance with the stack emission standards and ambient standards set in the *Environmental Protection (Air) Policy 1997*.
- Install monitoring ports in all stacks and other air emissions discharge points. Refer *AS 4323.1 (1995) – Stationary Source Emissions: Method 1: Selection of Sampling Positions*.
- Keep a register of all recorded emissions and air quality indicator levels measured and have available for Council inspection.



## Dust Control

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### Maintain and protect local and regional air quality, soil and waters

- Control dust generation so that particles do not move off-site. Dusts may contain hazardous materials and contaminate air, soil and waters.
- Immediately clean up material spilt on traffic areas before vehicle movement can move it.
- Regularly collect and place in a sealed bag any floor sweepings, dust, powder waste or absorbent clean up materials, before disposing in a covered waste bin.
-  Use wet/dry vacuum cleaners with dust filters for general cleaning of the work area floor instead of sweeping and hosing with water.
- Specify speed limits on exposed road surfaces (<40km/hr). Regularly water unsealed roads (clean water @1-2L/m<sup>2</sup>) to prevent nuisance from traffic movement.
-  Erect barriers to discourage traffic movement on unsealed areas.
-  Seal, turf, or cover exposed sites with a dust suppressant. Suppressants include compacted road base or aggregate. or organic dust-binding agents.
- Do not use waste oil or other contaminant on dirt roads as a dust suppressant or weed killer. This may lead to the site being notifiable under the Environmental Protection Act 1994.

## Odour/Volatile Emissions

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### Reduce odour and volatile emissions to prevent environmental nuisance

- Maintain adequate ventilation and hygiene to reduce the generation of odour.
- Control any exhaust emissions from vehicles to prevent nuisance or objectionable odours / fumes off-site.
-  Maintain good housekeeping and cleaning practices.
-  Use mechanical ventilation systems and activated carbon filters or scrubbers to prevent the release of any uncontrolled and objectionable odours from buildings or rooms.
- Volatile liquids (solvents)
  - must be kept cool and stored in a covered container to prevent evaporation into the environment
  -  should be pumped instead of poured.
-  Avoid use of volatile and odorous solvents, cleaning chemicals or sprays.



# NOISE MANAGEMENT



## Prevent nuisance and unreasonable noise

- The activity must not cause an 'unreasonable noise' as defined in the *Environmental Protection (Noise) Policy 1997*.
- Use the layout of the buildings and the natural topography as noise barriers where possible. Cost-effective landscaping improvements (e.g. fencing, mounds, and plants) can be implemented to reduce noise emissions and therefore noise complaints.
- It is best to avoid using extension telephone bells and public address systems but if they are considered necessary keep them at the lowest possible audible level. Ensure that music does not cause an annoyance to the neighbours.
- Ensure that silencers fitted to air compressors, pumps, fans and blowers and other noisy machinery are effective.
- Enclose or acoustically screen noisy equipment not complying with *Environmental Protection (Noise) Policy 1997* to muffle noise. Locate equipment or operations away from noise sensitive land uses.
- Reduce structural-borne noise and vibration by mounting equipment on vibration isolating platforms, rubber mats, or by increasing the mass weight of equipment.
- Fit mechanical ventilation systems (e.g. air conditioners, fans) with noise-proof ducting and acoustically designed intake and exhaust openings.
- Ask for noise-reduction devices when purchasing new plant and equipment.
- Close windows and roller doors facing noise-sensitive premises and seal all unnecessary openings.
- Only operate heavy vehicles in daylight hours.
- Regularly maintain all equipment and vehicles and attend promptly to any loose parts, rattling covers, worn bearings and broken components. This should be addressed through a regular maintenance schedule and correct staff training.

*Note: Premises causing ongoing noise problems may be required to introduce other noise control measures, including noise monitoring and reporting.*

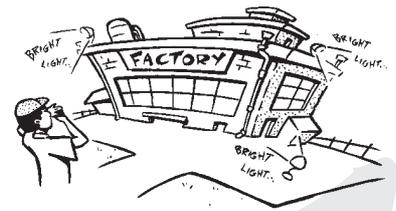
*Operators should be aware of the cumulative effects of noise levels on the receiving environment, and where practical, take appropriate steps to reduce noise levels from their operation, particularly before 7am and after 6pm.*



# VISUAL AMENITY

## Prevent environmental nuisance

- Ensure that lighting of the premises for security or any other reason does not cause annoyance to the occupants of neighbouring residential areas.
- Control measures for lighting include:
  - design and layout of lights and reflective surfaces
  - brightness of lights/shading of lights
  - height of lights
  - hours of operation of lights.
- Signage is to be compatible with Council town planning requirements for amenity.



# APPENDIX 1 – SPRAY BOOTH REQUIREMENTS

- Spray painting must be conducted in a fully enclosed booth that has an exhaust fan and a filtration system with a particle removal efficiency of at least 90%. The following table lists preferred filtration methods:

APPLICATION RATE	FILTRATION SYSTEM	FILTRATION EFFICIENCY
0-4 litres per hour	Dry (fibre) filter, water scrubber	> 90%
> 4 litres per hour	Water scrubber, activated carbon adsorption & dry (fibre) filter	> 90%

Overspray from large production can rapidly block dry filter pads, therefore where paint application rate is more than 4 litres/hour a water scrubber is the preferred filtration system.

- Exhaust gases must be discharged vertically through a stack with:
  - an internal diameter of not less than 0.5 metres **and**
  - either 8 metres high above the ground or 4 metres higher than the highest ridgeline of the surrounding buildings within 15 metres of the stack, whichever is higher.

Exit velocity of the exhaust gases must not be less than 10 metres per second. The stack must be fitted with an effective rain protection device that does not inhibit the vertical flow of gases.

A monitoring port must be installed at the exhaust stack. Refer to Australian Standard AS4323.1 (1995) - *Stationary Source Emissions. Method 1: Selection of Sampling Positions.*

The above conditions may be adjusted for particular circumstances if warranted by the risks involved. Large continuous spray painting operations and operations very close to sensitive areas may be required to install more advanced filtration system (e.g. activated carbon filter) to reduce the total volatile organic compound (VOCs) levels in the exhaust gases. These operations will be assessed on a case by case basis.

- For spray booth design requirements, refer to Aust. Standard (AS/NZS 4114.1 and 4114.2:1995) for *Spray Painting Booths* and check with the Queensland Division of Workplace Health and Safety.



## APPENDIX 2 – DEFINITIONS

### **Bund**

An impervious embankment or wall of brick, stone, concrete, or other approved material that may form part or all of the perimeter of a compound. For example, a bund may be used to contain spills from a fuel tank.

### **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.

### **Environmental Management Program (EMP)**

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

- (a) reducing environmental harm
- (b) detailing the transition to an environmental standard.

### **Environmental Management System (EMS)**

Is a systematic approach to managing the environmental aspects of an activity. As a minimum for the lower risk activities administered by Council, an EMS would entail documenting standard operating procedures for the aspects of the activity that may result in environmental harm or nuisance.

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

### **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**

Those wastes that have been identified as unsafe for sewer disposal due to their chemical nature (e.g. flammable). These wastes are outlined in Schedule 7 of the *Environmental Protection Regulation 1998*.

### **Regulated Solid Wastes**

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



**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.

**Trade Waste**

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

**Unreasonable Noise**

An unreasonable noise is one which:

- (a) causes 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
- (b) is 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.



## APPENDIX 3 – SCHEDULE 7 - REGULATED WASTES

Abattoir effluent	Heterocyclic organic compounds containing oxygen, nitrogen or sulphur	Pharmaceutical substances
Acids and acid solutions	Hydrocarbons (oxygen, nitrogen or sulphur)	Phenolic compounds (other than solid inert polymeric materials)
Adhesives (other than solid inert polymeric materials)	Industrial plant wash down waters	Phosphorus
Alkalis and alkaline solutions	Infectious substances	Pickling liquors
Antimony	Inks	Polychlorinated biphenyls and related substances
Arsenic	Inorganic cyanides and cyanide complexes	Polymeric lattices
Asbestos (all chemical forms)	Inorganic sulphur compounds	Poultry processing wastes
Azides	Isocyanate compounds (other than solid inert polymeric materials)	Quarantine waste
Barium	Laboratory chemicals	Reactive chemicals
Batteries	Lead	Reducing agents
Beryllium	Lime neutralised sludges	Resins (other than solid inert polymeric materials)
Biocides	Lime sludges	Saline effluent and residues
Boiler blowdown sludge	Materials or equipment contaminated with infectious substances	Selenium
Boron	Mercaptans	Silver compounds
Cadmium	Mercury and anything containing mercury	Solvent recovery residues
Caustic solutions	Metal finishing effluent and residues	Surfactants
Chlorates	Methacrylate compounds (other than solid inert polymeric materials)	Tallow
Chromium	Nickel	Tannery effluent and residues
Contaminated soils	Oil interceptor sludges	Tars and tarry residues
Copper compounds	Oil water emulsions and mixtures	Tellurium
Cytotoxic wastes	Oils	Textile effluent and residues
Detergents	Organic solvents	Thallium
Distillation residues	Oxidising agents	Timber preservative effluent and residues
Dyes	Ozone depleting substances	Treatment tank sludges and residues (including sewage tank sludges and residues)
Electroplating effluent and residues	Paint sludges and residues	Tyres
Filter backwash waters	Perchlorates	Vanadium
Filter cake sludges and residues	Pesticides	Vegetable oils
Fish processing waste	Petroleum tank sludges	Vehicle wash down waters
Fly ash		Wool scouring effluent & residues
Food processing waste		Zinc compounds

## APPENDIX 4 – ON-SITE TREATMENT AND REUSE OF WASTEWATER OR STORMWATER

- a) The operator should consult with the Council regarding any system for the collection, treatment and reuse of wastewater (e.g. washdown waters) or stormwater that may be contaminated. This needs to be approved by Council to ensure the method and level of treatment is adequate and safe.
- b) It is generally necessary to test and monitor treated waters to demonstrate effectiveness of the system for Council approval.
- c) Consideration must be made of:
  - volumes to be treated
  - handling and storage
  - key contaminants
  - types of treatment
  - disposal of wastes (e.g. sludge)
  - safety and hygiene
  - testing and frequency.

