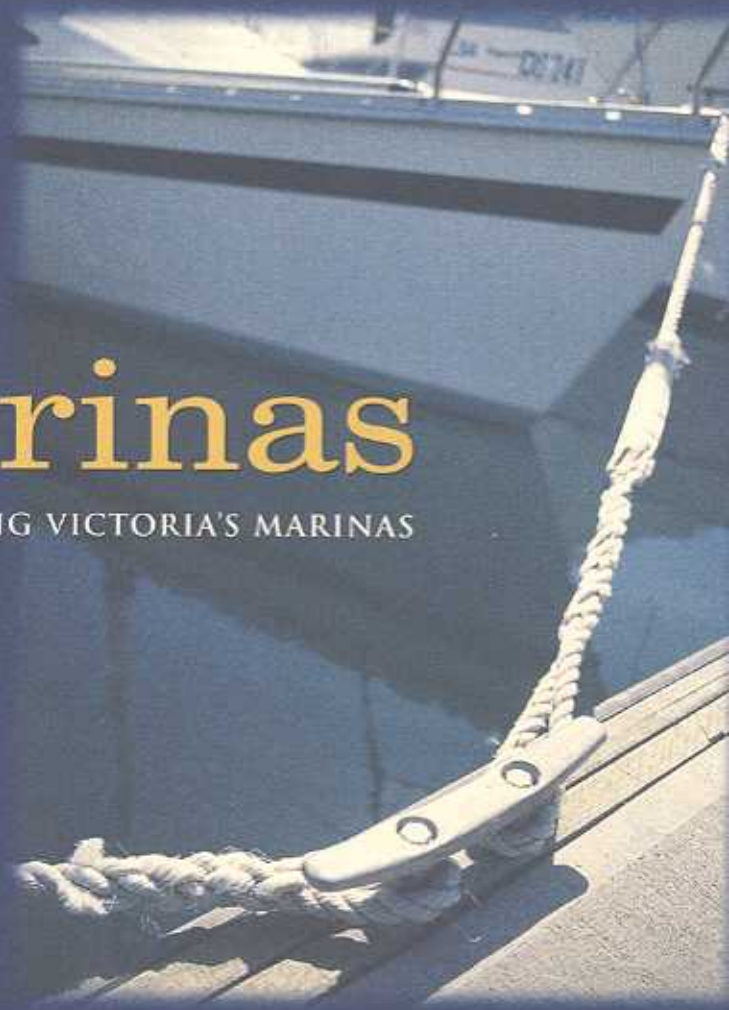
Cleaner Marinas

EPA GUIDELINES FOR PROTECTING VICTORIA'S MARINAS



ENVIRONMENT PROTECTION AUTHORITY

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Guidelines for Cleaner Marinas

Introduction

Recreational boating and watersports are enjoyed by many Victorians.

Some people have smaller craft which they store away from the water. Others have larger vessels and need the facilities of a marina to store them and a place to maintain them.

During the course of normal marina operations, activities such as refuelling, waste disposal, maintenance and cleaning can cause pollution.

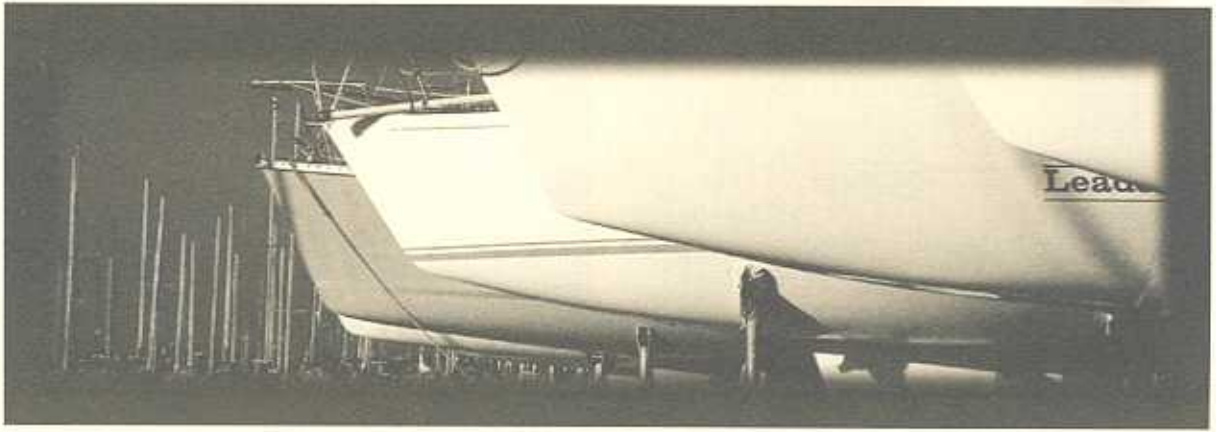
Best Practice Environmental Guidelines help to improve environmental management in marinas and protect the quality of our marine environment. They include examples of how to minimise waste and prevent pollutants from entering surface waters. The guidelines provide a framework within which marina operators can prepare their own environment management plans.

This booklet does not address the siting and construction of marinas.

Objectives

There are four main areas of concern when dealing with marina environments:

- protecting air and land environments, as well as surface water, from pollution
- recognising pollution sources in marinas
- minimising the entry of toxic substances into surface waters
- minimising all waste.



Pollutant types and

CONTAMINANTS OUTLINED BELOW CAUSE SERIOUS DAMAGE

Metals

Metals and metal-containing compounds are necessary in boat operation, maintenance and repair. Lead is used as a fuel additive but may be released through exhausts and boat bilge water discharges. Compounds of copper and tin are used in antifouling paints and zinc is used to prevent corrosion.

Unfortunately many of these compounds – which are toxic to marine life – are now found in the waters and sediments of our marinas. Many remain in the sediments until mobilised by dredging or other physical disturbances.

Heavy metals accumulate in aquatic organisms – for example, lead, zinc and copper can reach sufficiently high concentrations in oysters and shellfish to endanger human health.

impacts

Petroleum hydrocarbons

There are many sources of hydrocarbons in marinas – including fuelling docks, engine repairs, maintenance activities, stormwater runoff and boat operation.

Petroleum hydrocarbons also become incorporated into sediments. They may remain there for years, resulting in prolonged exposure for marine creatures and plant life. Hydrocarbons are toxic to flora and fauna, and can affect fish flesh, making it inedible.

Like heavy metals, hydrocarbons may persist in sediments until mobilised by dredging.

Pollutant types and impacts cont.

Other chemicals

Solvents, acids/alkalis and detergents are used for boat maintenance, cleaning and repair. They may enter surface waters through spillage and uncontrolled stormwater.

Sewage

Sewage discharge from boats can cause high bacteria and nutrient concentrations in coastal waters. This is a concern for swimmers and shellfish producers.

Levels of excessive nutrients can also cause nuisance weed and algal growths.

Exotic species

Vessels arriving from other areas of Victoria, from interstate or overseas can carry undesirable living organisms on their hulls or in bilge water. Such organisms can severely and permanently affect the ecology of an area.

Waste management

There is a hierarchy of waste management that should be observed by all marina and marine users. Following this formula will reduce the amount of waste that needs disposal.

Boat maintenance and repair

Boat maintenance and repair areas are potential sources of pollution in marinas. It is important for marina operators to apply measures to control pollution from these areas.

These are some measures that should be used:

- designated work areas should be provided for boat repairs and maintenance, with all maintenance work that can generate pollutants performed in the designated area
- maintenance work should be performed inside buildings or under cover when possible, to reduce contamination to stormwater
- all maintenance activities should be performed over impenetrable surfaces that are properly drained to a collection pit to prevent material entering the water
- materials such as rubbish, sandings, paint chips and paint cans should be cleaned up immediately after use and placed in the appropriate bins for disposal
- abrasive blast cleaning should be performed within spray booths or suitable enclosures so all residues can be contained, collected and properly disposed of
- vacuum sanders and grinders should be used to minimise potentially polluting dust when possible
- brushes and rollers are preferred to spray painting equipment.

Boat cleaning

Contaminated washwaters and the importation of exotic marine organisms can lead to problems.

The practices outlined below will minimise impacts on our marine environment.

- All cleaning should be performed in a way to ensure no marine organisms or harmful paints fall into marina waters.
- To minimise the carriage of waterborne contaminants, washing hulls on land by mechanical scraping is preferable to pressure washers.
- High pressure wash guns produce a wastewater contaminated with marine organisms, hull paint and fragments of hull material. They must be used only where proper collection, treatment and disposal facilities are provided.
- Solid waste from boat maintenance and cleaning areas should be contained in watertight covered bins for disposal into a licensed landfill.
- Bio-degradable cleaning products are preferred. The use of cleaning compounds should be minimised and discharges into the sea prevented.
- Bilge water from distant ports or marinas should not be discharged to the local environment. It should be disposed of in the open sea or to sewer. This will reduce the risk of transferring unwanted species.

Solid waste

Rubbish is the most visible pollution around marinas. If not managed properly, it reduces the visual appeal of beaches, waterways and other natural assets.

Use these good management practices to avoid the mess.

- Adequate and proper rubbish bins should be located in convenient positions and emptied regularly.
- Recycling and/or reuse of materials is preferred to disposal. Extra bins should be provided for recyclables such as glass, aluminium and paper.
- People who have caught fish should be encouraged to take the fish home to clean, or clean them at appropriate facilities.
- Where facilities are provided, fish waste should be collected regularly.

Refer to Recreational Fishing in Port Philip Bay - Disposal of Fish Cleaning Wastes (EPA Publication IB 289).

Liquid waste management

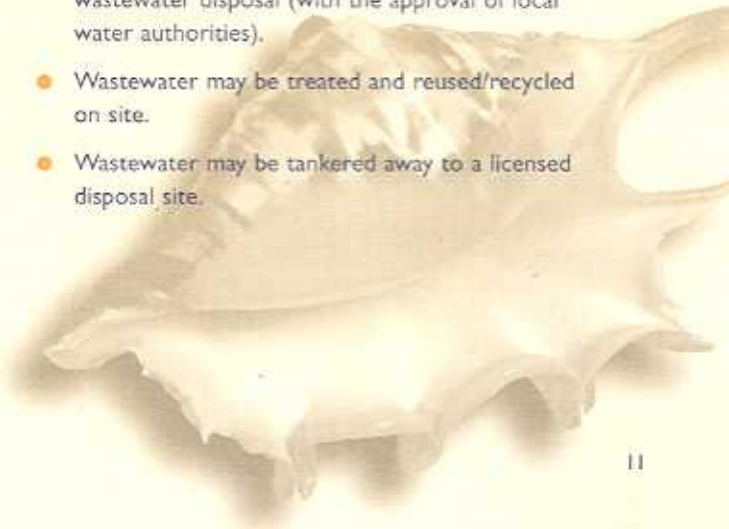
Stormwater control

- Drainage systems should be arranged to prevent contamination of stormwater.
- Diverting stormwater from non-working areas using drains and bunding will reduce the amount of contaminated stormwater and the size of control equipment.
- Stormwater collection pits should be provided in the boat maintenance and cleaning areas. The pits should hold at least the first flush of contaminated stormwater, or the expected volume of wastewater from wet cleaning. The water should then be treated. Stormwater after the first flush can be directed into the stormwater drain.
- Only uncontaminated stormwater should be discharged directly to the surface waters.

Wastewater disposal

Before considering disposal methods, generation of wastewater should be minimised. There are different options for wastewater disposal in marinas.

- Where sewerage is available, it should be used for wastewater disposal (with the approval of local water authorities).
- Wastewater may be treated and reused/recycled on site.
- Wastewater may be tankered away to a licensed disposal site.



Petroleum control

Fuel and oil are commonly released into surface waters during fuelling operations through the fuel tank air vent, during bilge pumping and from spills. Although individual releases are small, they add up to hundreds of litres a year.

- The fuel installation – including the area the filler hoses extend to – should be located on an impenetrable base and be enclosed in a bund draining to stormwater via a suitable oil separator. This would reduce the likelihood of fuel spills or leaks polluting the water.
- Automatic shut-off nozzles should be used to prevent spills during fuelling. These nozzles should be checked and maintained regularly.
- The use of fuel/air separators on air vents or tank stems of inboard tanks should be promoted.
- The use of oil-absorbing materials in the bilge areas of all boats with inboard engines should be promoted. Dedicated disposal facilities for these materials should be provided.
- Engine repair areas should be designed and controlled to prevent any discharge of oil to the environment.
- Waste oil should be collected for recycling.

Refer to Waste Control at Motor Vehicle Repair and Service Premises – Best Practice Environmental Management (EPA Publication 462).

- An oil spill plan should be developed.
- Oil spill response equipment should be available and easily accessible.

Chemicals control

Liquid chemicals such as solvents, detergents, strong acids and alkaline compounds can pollute the environment but are routinely used in marinas during boat cleaning and maintenance. If they are not handled properly they can pollute coastal waters.

Integrating best environmental management practices into the operation will minimise hazards from these materials.

- The prohibition of the tributyl tin (TBT)-based paints should be enforced. TBT can only be used for boats larger than 25 metres and only with EPA approval.

Refer to the Environment Protection (Organotin Antifouling Paint) Regulations 1989.

- All chemicals should be kept in a secure area and each container labelled clearly to make disposal and possible recycling easier.
- Areas used for storage of liquid materials must be bunded to contain spills.

Refer to Bunding Guidelines (EPA Publication 347).

- Recycling of chemicals such as oils and solvents should be encouraged with remaining unwanted chemicals disposed of at an EPA licensed facility.

Refer to the Environment Protection (Prescribed Waste and Transport) Regulations 1998.

- Non-prescribed waste can be disposed of via normal rubbish collections.
- A spill plan should be developed and appropriate spill response equipment stored and kept easily accessible.

Boat sewage discharges

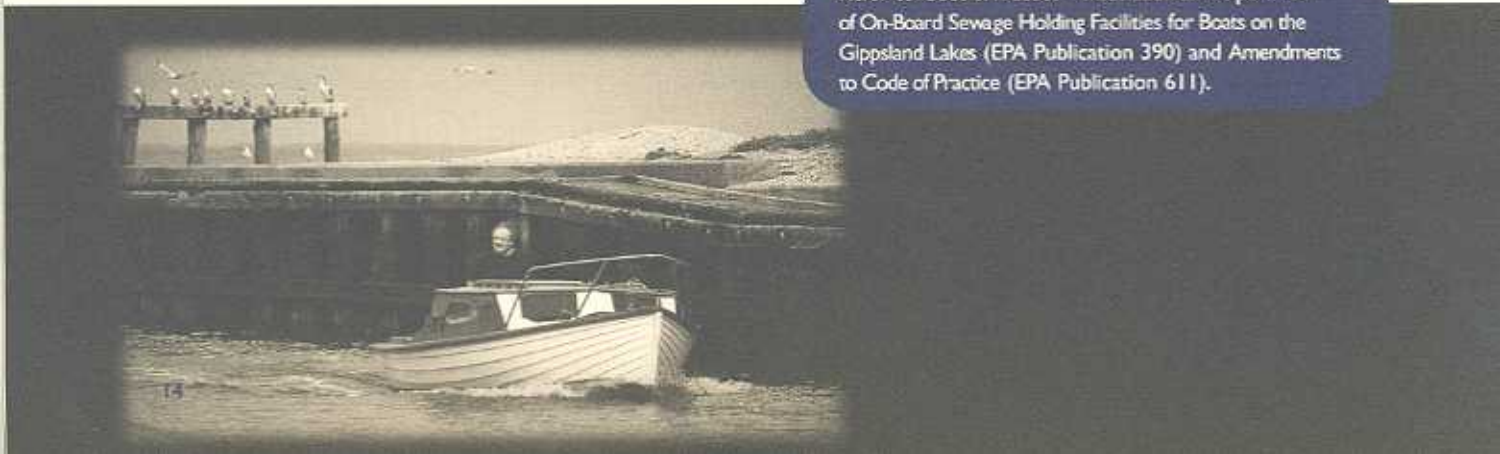
The discharge of sanitary sewage has been a concern in marine environments for years.

EPA published a Code of Practice to prevent disposal of sewage into the Gippsland Lakes. Marina operators in that area are required to provide sewage pump-out stations in accordance with the provisions of the Code of Practice.

In the new State Environment Protection Policy (Waters of Victoria) Schedule F6 (Waters of Port Phillip Bay), marina operators and users are required to adopt practices to ensure that sewage is not disposed of to the waters of Port Phillip Bay.

In addition, the State Environment Protection Policy (Waters of Western Port Bay and Catchment) requires sewage discharges to the bay to be avoided.

Refer to Code of Practice – Installation and Operation of On-Board Sewage Holding Facilities for Boats on the Gippsland Lakes (EPA Publication 390) and Amendments to Code of Practice (EPA Publication 611).



Dredging

Most marinas require dredging to maintain adequate depth for vessels. Marina operators should develop a dredging strategy to ensure ongoing dredging causes minimal environmental impact.

Noise

In the metropolitan area, marinas should ensure their noise emissions comply with limits prescribed under the State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 at the nearest residences.

Outside the metropolitan area, marinas should comply with the Interim Guidelines for Control of Noise from Industry in Country Victoria.

Education

The best method of preventing pollution from marinas is to educate users about the causes and effects of pollution and effective preventative steps.

- Marina operators should inform their customers, staff and the outside contractors about the best environmental management practices in the marina.
- Adequate signs should be erected highlighting best environmental management practices.

Environmental management

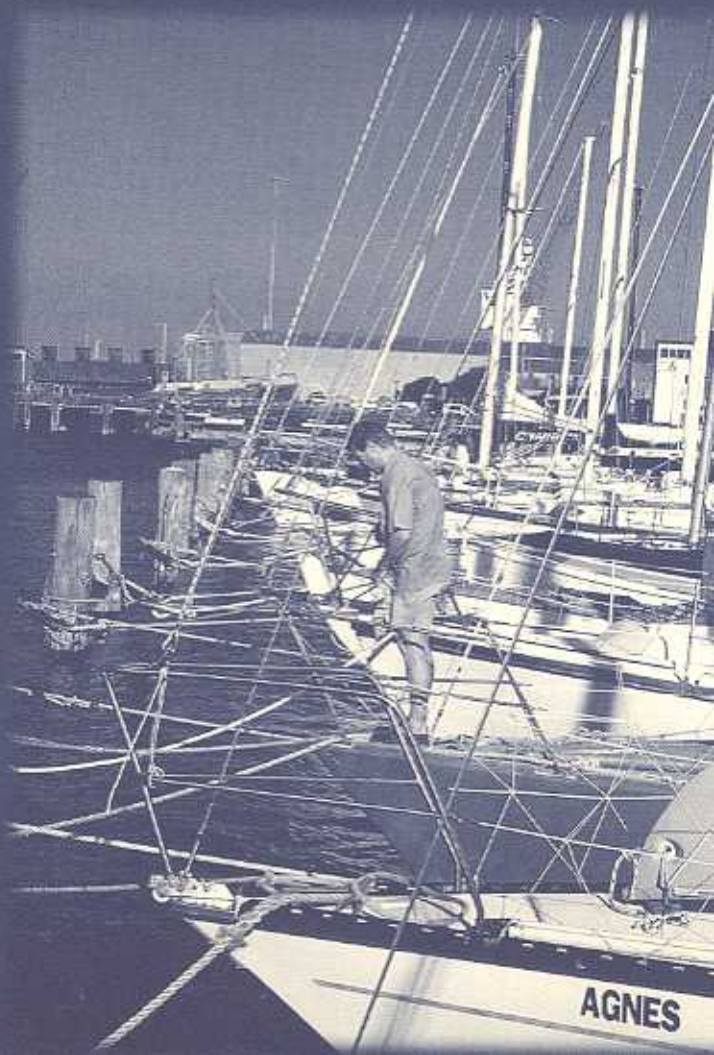
To achieve consistently high levels of environmental performance, each marina should prepare an environmental management plan.

An environmental management plan should include:

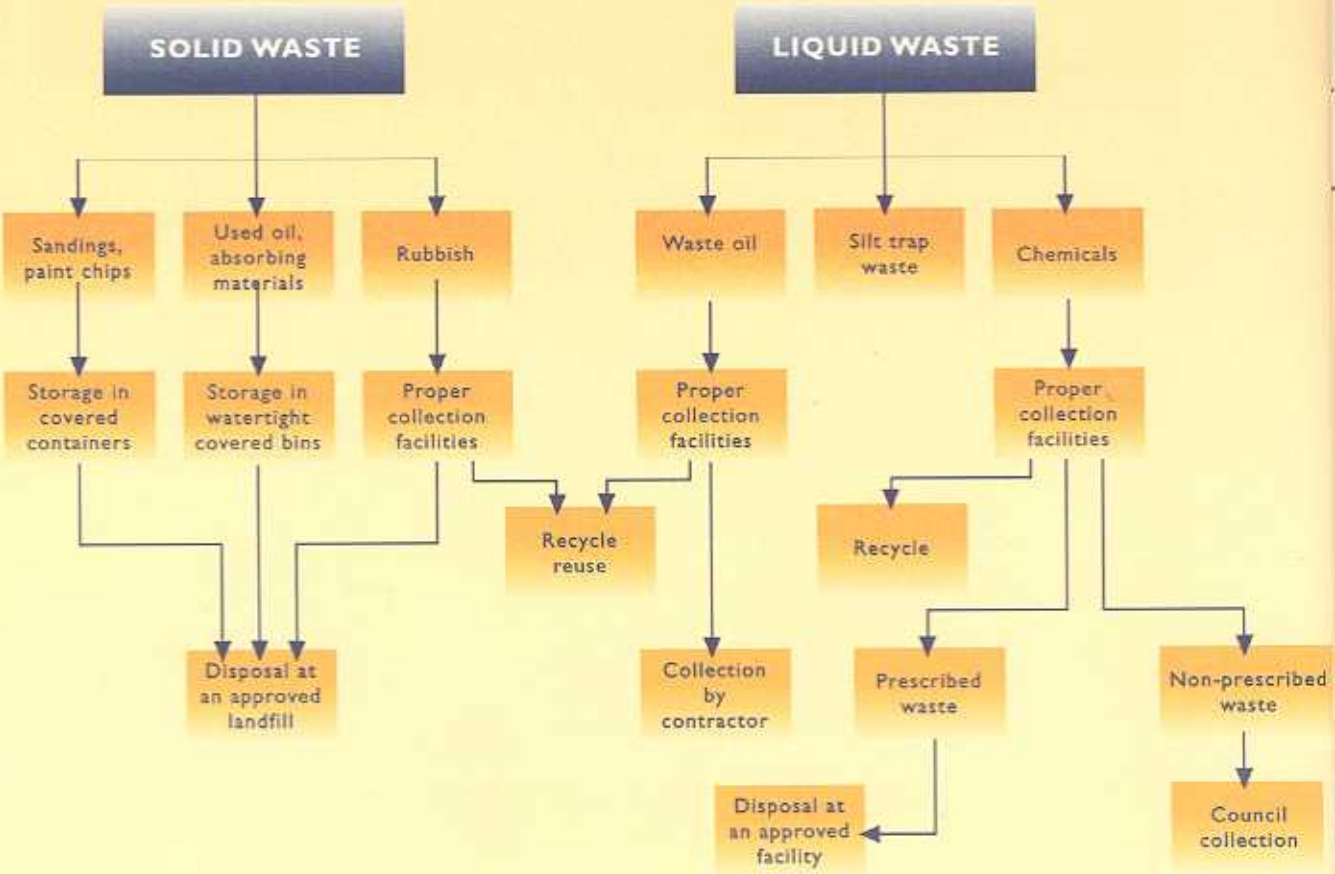
- a description of operations and associated environmental effects
- a description of plant operating procedures where these impact on the environment
- a waste management plan that identifies measures to minimise the generation of waste, the safe reuse/recycling of wastes where possible and appropriate disposal of residual waste
- a description of measures to ensure that discharges from marinas meet relevant State environment protection policies and other statutory requirements
- a program for monitoring the marina's environmental performance
- a dredging strategy
- a description of measures to achieve continuous improvement in environmental performance associated with activities in the marina

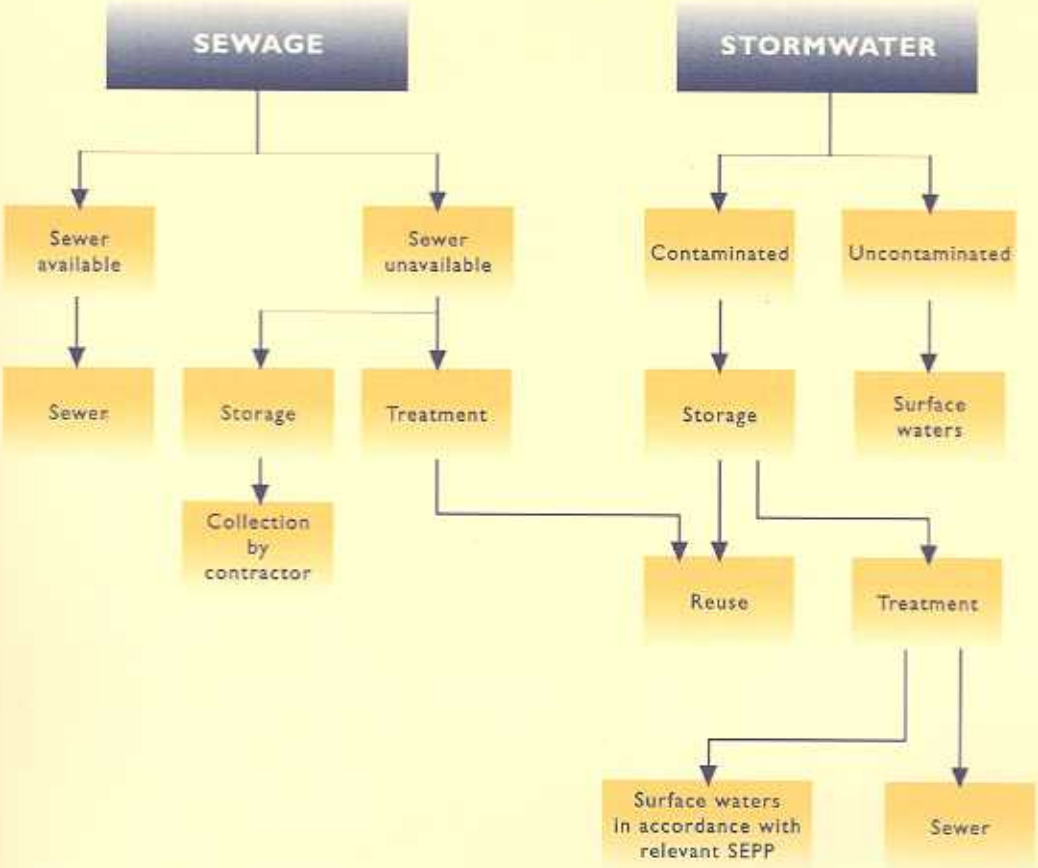
- a plan to avoid spills, leaks and breakdowns causing pollution, including:
  - emergency holding and clean-up procedures
  - action to minimise adverse environmental effects
  - methods for disposal of spilled materials
  - training staff and customers in correct operating procedures to avoid or minimise potential spills.

Refer to Guidelines for Preparation of Waste Management Plans (EPA Publication 383).



WASTE DISPOSAL AT MARINAS




SEWAGE
STORMWATER
Sewer available
Sewer unavailable
Contaminated
Uncontaminated
Sewer
Storage
Treatment
Storage
Surface waters
Collection by contractor
Reuse
Treatment
Surface waters in accordance with relevant SEPP
Sewer

Further reading and information

Reading

Clean Marinas - Clear Value, Environmental and Business Success Stories, USEPA 841-R-96-003

Ballast Water, Hull Fouling and Exotic Marine Organism Introductions Via Ships – A Victorian Study, EPA Publication 494

Minimum Control Requirements Abrasive Blast Cleaning, EPA Publication AQ 20/91

Best Practice Guidelines for Waste Reception Facilities at Port, Marinas and Boat Harbours in Australia and New Zealand, ANZECC

EPA Contact Details

EPA Information Centre, Yarra and West Metro Regions
HWT Tower, 40 City Road, Southbank, Victoria 3006
Tel: (03) 9695 2722
Fax: (03) 9695 2710

EPA Regional Offices:

Gippsland
7 Church Street, Traralgon 3844
Tel: (03) 5176 1744
Fax: (03) 5174 7851

North-East
24 Ely Street, Wangaratta 3677
Tel: (03) 5721 7277
Fax: (03) 5721 2121

North-West
43 Williamson Street, Bendigo 3550
Tel: (03) 5442 4393
Fax: (03) 5443 6555

South Metro
45 Princes Highway, Dandenong 3175
Tel: (03) 9794 0677
Fax: (03) 9794 5188

South-West
Cnr Lt Mallop & Fenwick Streets, Geelong 3220
Tel: (03) 5226 4825
Fax: (03) 5226 4632

EPA Internet site:
www.epa.vic.gov.au

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