

Vessel facility development (and redevelopment)

Issued December 2010

EPA 923/10: This information sheet is part of a series on environmental management practices for vessel and facility management on marine and inland waters. The information is extracted from the code of practice published in 2008.

Introduction

Any over-water or underwater development carries with it an inherent risk of environmental harm both in its construction and ongoing operation. Vessel facilities are generally constructed or are manufactured to operate in low energy, sheltered environments to benefit the types of operations performed (ie vessel storage/maintenance). These environments, such as rivers, bays and estuaries are ecologically significant and are known to be more sensitive to the influx of pollutants than higher energy, more exposed environments. As such, the development of new and existing vessel facilities requires careful consideration to avoid environmental harm.

Who this applies to

- vessel facility developers (including development of and within ports, marinas, slipways, moorings, boat yards and ramps).

Vessel facility developers must (required outcomes)

- 1 ensure the necessary development application process is followed
- 2 for activities of major environmental significance or development that is within both the River Murray Water Protection Area and a River Murray Protection Area, ensure vessel facilities are fit for the purpose (refer to Glossary) of permitted vessel operations, and avoid, as far as is reasonable and practicable, the release of pollutants to the environment:
 - BY
providing in-built structural pollution controls in areas designated for activities that are proposed through the operation of and use of the facility (this includes refuelling, cleaning, fibreglassing, abrasive blasting and painting)
 - AND
providing waste and wastewater collection facilities and/or waste transfer (reception) stations and/or by facilitating waste transporters, commensurate to the type of vessels and activities likely to be performed, through the operation of and use of the facility (this includes wastes from vessels such as black, grey and bilge water, garbage and those from vessel service and repair activities)
 - AND
during the course of development, ensure spill, erosion and sediment control equipment are available for all pollutants likely to be generated through construction.

Vessel facility developer should (recommended practices)

- 3 increase the use of dry dock storage for vessels (including air berths and racking)
- 4 use water sensitive vessel facility design techniques
- 5 for in-water development, use a hydrological model to determine the relationship between water circulation, water exchange and potential pollutant concentrations in the water column, sediments and aquatic organisms in order to choose the most environmentally sustainable vessel facility design
- 6 avoid having entrance channels that are deeper than adjacent navigable channels.
- 7 have entrance channels to the vessel facility that follow the natural alignment of the waterway with only gradual bends, and parallel to the direction of the prevailing winds
- 8 have a wide entrance to a vessel facility if there is a small tidal range
- 9 have a small entrance to a vessel facility if there is a large tidal range
- 10 establish two openings to promote flow-through currents in the vessel facility
- 11 design open marinas with as few enclosed water sections or separated basins as possible, especially if in poorly flushed water bodies
- 12 establish curved corners instead of square corners, to eliminate stagnant water in the vessel facility
- 13 install floating wave attenuators instead of fixed breakwaters where appropriate
- 14 install mechanical aerators in the vessel facility to improve flushing and water quality where basin and entrance channel configuration cannot provide adequate flushing
- 15 where shorelines need structural stabilisation, rip-rap revetment is preferable to solid vertical bulkheads
- 16 use locally indigenous vegetative plantings to stabilise shorelines and protect disturbed areas from further erosion
- 17 design and install moorings to avoid scouring of riverbed from the swinging action of restrained vessels. Planning authorities may have restrictions on the creation of swing moorings
- 18 minimise the construction of in- or over-water structures.
- 19 over-water structures should be designed to maximise the penetration of sunlight into the water column where the catchment of pollutants by the structure is not a priority concern (eg walkways)
- 20 install catchment devices into slipways, wharves and pontoons used for the maintenance of vessels and handling of bulk materials (such as fuel, oil, catch or bait) to avoid the release of materials into adjacent waters
- 21 avoid the use of timbers treated with copper chrome arsenate (eg permapipe), creosote and pentachlorophenol in water structures (refer to use of treated timbers)
- 22 use materials such as recycled plastics, aluminium, steel, concrete and fibreglass where in- and over-water structures cannot be avoided
OR
choose naturally marine resistant renewable timbers, such as turpentine timber (*Syncarpia glomulifera*)
OR
endeavour to purchase pre-immersed treated timbers for use in aquatic construction (harmful volumes of leachate can be removed this way)
- 23 install stormwater management devices such as first-flush diverters, gross pollutant traps, oil/water separators, hydrocarbon absorbers, sediment traps and/or soluble pollutant removers to control runoff. Wastewater treatment specialists should be consulted to determine which management system would be most effective for the vessel facility
- 24 install wash-down facilities with appropriate wastewater containment, treatment and disposal controls
- 25 install maintenance facilities with appropriate waste containment, treatment and disposal controls

26 install individual connections to moorings for wastewater pump out (ie black and grey water)

27 install roofed and bunded waste transfer and refuelling stations.

Development regulations

In South Australia, planning and development are regulated by the *Development Act 1993* and the *Development Regulations 1993*.

Organisations should contact their local government/council authority for further information on development regulations and planning policies for developments in or on water.

In accordance with section 37 of the Development Act and Regulation 24 of the Development Regulations (Part 5), planning authorities are required to refer certain types of development applications to other agencies, known as 'prescribed bodies', for specialist advice. The EPA is one of these prescribed bodies.

Schedule 8 of the Development Regulations outlines the circumstances under which referral is required, the time allocated for response, and the nature of advice to be provided.

Activities of environmental significance

- a Non-complying development in the Mount Lofty Ranges Water Protection Area or the River Murray Water Protection Area: the EPA is required to provide a response within six weeks which planning authority is required to have regard to. When development is within both the River Murray Water Protection Area under the Environment Protection Act 1993 and a River Murray Protection Area under the *River Murray Act 2003*, the EPA may direct the planning authority, including direction to refuse an application. The planning authority must comply with any EPA direction to refuse an application or to impose conditions.
- b Activities specified in Schedule 21 of the Development Regulations: the EPA is required to provide a response within four weeks, which the planning authority must have regard to.

Activities of major environmental significance (specified in Schedule 22 of the Development Regulations): the EPA is required to provide a response within six weeks. The EPA may direct the planning authority, including direction to refuse an application. The planning authority must comply with any EPA direction to refuse an application or to impose conditions.

Any conditions applied to a development approval are important as they are legally binding, that is, they provide statutory force to the prescribed environmental protection measures.

Water sensitive design

Water sensitive design (WSD) is a technique to manage components of urban water, including potable water supply, wastewater, stormwater and groundwater. WSD has multiple environmental benefits including improving urban landscape, reducing pollutant export, retarding storm flows and reducing irrigation requirements.

Stormwater and wastewater pollution issues are apparent on many vessel facilities around the state. Significant environment protection gains could be had with improved operational and supporting structural mechanisms in place.

Use of treated timbers

Restrictions on the use of treated timbers as in-water structures in the River Murray may apply. Please contact the Department for Water for further information <www.waterforgood.sa.gov.au>.

Creosote is a timber preservative that is registered for use in the marine environment. However, creosote can release polycyclic aromatic hydrocarbons (PAHs) at toxic levels into the aquatic environment following immersion and is not recommended for use.

Copper chrome arsenate (CCA) is also a registered timber preservative for use in aquatic environments. CCA-treated timber is known to undergo a certain amount of leaching, which is at its highest during the initial stages following immersion. The elements of this leachate tend to accumulate in the sediments and organisms immediately surrounding the timber, or are dispersed through the water column. There are also significant concerns with regard to the sustainability of treated timber disposal to landfill.

Glossary

In general, a **fit-for-the-purpose** vessel facility is one that can demonstrate it has the structural and operational capabilities to minimise the environmental impacts of its uses.

Wastewater collection facility: a facility designed and constructed to receive the contents of a holding device for vessel wastewaters. Facility operators should provide for those vessels with fixed or portable holding devices.

Waste transfer (reception) stations: structures designed to temporarily store vessel wastes in an environmentally responsible manner (such as waste oil, bilge water, fish waste, oil absorbent materials and garbage).

Waste transporter: a mobile service provider contracted to remove wastes.

References

Adelaide indigenous plant maps and a list of growers of native plants, www.backyards4wildlife.com.au/.

ANZECC, *Best practice guidelines for waste reception facilities at ports marinas and boat harbours in Australia and New Zealand*, www.environment.gov.au/archive/coasts/pollution/waste-reception/pubs/waste-reception.pdf.

Australia's Clean Marina Program, www.marinas.net.au.

DHS & EPA, *SA reclaimed water guidelines*, www.epa.sa.gov.au/xstd_files/Waste/Guideline/reclaimed.pdf.

EPA website, www.epa.sa.gov.au/.

EPA, *EPA Guideline: Bunding and spill management*, www.epa.sa.gov.au/xstd_files/Waste/Guideline/guide_bunding.pdf

EPA, *Code of practice for vessel and facility management (marine and inland waters)*, www.epa.sa.gov.au/xstd_files/Water/Code%20of%20practice/vessels.pdf.

Planning SA, *Guide to Development Assessment—An Integrated Planning and Development Assessment System for South Australia*, <dataserver.planning.sa.gov.au/publications/24p.pdf1>.

Melbourne Water, *Water sensitive urban design engineering procedures: stormwater*, www.publish.csiro.au/pid/4974.htm.

WaterWise Plumbers: (08) 8292 4000

Useful websites

EPA Vessel and facility management pages, www.epa.sa.gov.au/vfm.

Disclaimer

This publication is a guide only and does not necessarily provide adequate information in relation to every situation. This publication seeks to explain your possible obligations in a helpful and accessible way. In doing so, however, some detail may not be captured. It is important, therefore, that you seek information from the EPA itself regarding your possible obligations and, where appropriate, that you seek your own legal advice.

Further information

Legislation

Legislation may be viewed at: <www.legislation.sa.gov.au>

Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet
Adelaide Service SA Centre
108 North Terrace
Adelaide SA 5000

Telephone: 13 23 24
Facsimile: (08) 8204 1909
Website: <shop.service.sa.gov.au>

For general information please contact:

Environment Protection Authority
GPO Box 2607
Adelaide SA 5001

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Facsimile: (08) 8124 4670
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Website: <www.epa.sa.gov.au>
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