



WQPN 93, September 2009

Light industry near sensitive waters

Purpose

Light industry is generally regarded as less intrusive than general or heavy industry. Because of this many people believe it poses less risk to the environment. Light industry includes a variety of small businesses, including manufacturing, fabrication, chemical formulation, trade and transport depots, and shops such as motor vehicle repairs, panel beaters, paint suppliers, printers, food processors, service stations and radiator repairs. These industries rarely operate with environmental works approvals or licences and as small businesses, may lack the capability to respond effectively to environmental issues.

Scope

This note applies to all light industrial facilities, as defined in the *Town planning regulations 1967* Appendix B, schedule 1 (as amended) that are located near sensitive water resources.

This note is not intended to cover cottage, extractive, general, mining, rural or service industries as defined in planning regulations, but may offer some useful guidance on potential risks to water resources and good practice. For more information on statutory requirements see [Appendix B](#).

Background

Over 95 per cent of businesses in Western Australia have been classified as small (Australian Bureau of Statistics 2002). Although the environmental impact by an individual business may be minimal, the cumulative impact is potentially large. All businesses, whether large or small, should accept responsibility for and manage, their environmental impacts.

Light industries often have limited resources such as staff, finance and access to environmental information. When this lack of resources is combined with vulnerable settings such as high permeability of coastal sand plains and shallow groundwater, the potential contamination risk of light industry to sensitive water resources is significant.

Swan-Canning industry survey 2000

Between 1997 and 1999 over 550 small to medium businesses in the Perth metropolitan area were surveyed by local government environmental health officers, Water and Rivers Commission (now the Department of Water) and Swan River Trust officers, with the majority from the automotive and engineering/manufacturing sectors.

The survey identified six key aspects that contributed to the environmental risks posed by light industry in the Perth region. These were:

- inappropriate chemical storage and management, including inadequate spill containment
- poor waste management practices, with the quantity generated largely unknown and a lot of storage outside buildings on unsealed surfaces
- inadequate wastewater treatment and disposal practices, with 50 per cent of surveyed premises not treating water before discharge, sometimes into stormwater drains
- questionable stormwater management practices, with 10 per cent unaware of where their premises discharge to and 92 per cent lacking onsite treatment facilities
- lack of emergency management, including emergency plans, trained staff and onsite spill clean up equipment
- limited environmental knowledge, including a lack of understanding of environmental values, contamination risks and the fate of any materials deposited on-site.

Overall, the survey process and resulting recommendations raised awareness of what the risks were and resulted in change among some industry owners and workers.

For more information or to view the survey please visit < www.swanrivertrust.wa.gov.au > select *Resources and publications* > *Swan-Canning cleanup program publications*.

Advice and recommendations

Location

- 1 Light industrial sites should be located in areas which are designated for light industry by state, metropolitan and regional planning schemes, and be appropriately zoned by local government in their local planning scheme.
- 2 If the site is located close to a residential area, the local community should be adequately consulted on the proposed development, prior to any works commencing.
- 3 Light industrial facilities should not be located in areas that are prone to waterlogging or may be flooded during a 100-year return frequency storm event. This includes land which is seasonally wet, requires artificial drainage or diversion of natural watercourses, or where construction will affect sensitive waterways or wetlands.
- 4 The availability of adequate service infrastructure, such as electricity, gas, water supply, communications, transport access, waste disposal, recycling and sewerage services, should be assessed when selecting a potential site.
- 5 If clearing of native vegetation is needed to establish the light industrial site, a clearing permit should be obtained from the Department of Environment and Conservation. For more information, see the brochure *Protecting Native Vegetation – New Laws for Western Australia*, published by the Department of Environment and Conservation.

- 6 Existing and legally established light industrial sites can normally remain near sensitive water resources; however, they should undertake regular environmental risk assessments and employ best environmental practice to limit the possibility of environmental harm.

Within public drinking water source areas (PDWSA)

These areas are proclaimed and managed to protect the quality of sources of drinking water used by the community. Public drinking water source areas and their associated management area and zone locations are available online at < www.water.wa.gov.au > select *Maps, data and atlases > geographic data atlas*, then highlight *environment > public drinking water source areas*. For information on the location of proclaimed PDWSA, see our water quality protection note 75 *Proclaimed public drinking water source areas* (Reference 4). For source protection measures and associated land use compatibility, see our water quality protection note 25 *Land use compatibility in public drinking water source areas*

- 7 Light industrial sites are incompatible within both P1 and P2 protection areas and reservoir or wellhead protection zones, as they conflict with the management objectives of risk avoidance and/or risk minimisation. These areas and zones are determined in drinking water source protection plans with community consultation.
- 8 Light industrial sites are normally accepted with conditions in P3 protection areas. The proponent should ensure that best environmental design, construction and operational practices are followed.
- 9 Where approval with conditions is given, vegetated buffers should be established from the infrastructure boundary to the top water level of any reservoirs, feeder streams and/or water source bore compounds. For more information please refer to the section on *Buffers to sensitive environments*.

Near conservation valued wetlands

- 10 Facilities proposed to be established within 500 metres of any wetland should be referred to the Department of Environment and Conservation for assessment, with supporting information addressing the environmental risks. For detailed information on wetland locations, protection and management objectives, see [References 3c, 5b & 5c](#).
- 11 Light industrial facilities should not be constructed within the buffer to any natural wetland with conservation values.
- 12 Where impact on a wetland is unavoidable, a target of no change in its function should be achieved through offsets such as the protection of a nearby equivalent wetland. This is in accordance with the Environmental Protection Authority position statement 9 *Environmental offsets* (EPA 2006).

Within proclaimed waterways management areas

- 13 Five waterways management areas have been proclaimed under the *Waterways Conservation Act 1976*. The establishment of light industrial sites requires written approval from this department.

To seek approval for development within these areas contact this department and provide details of the proposal. For online information see < www.water.wa.gov.au > select *water quality* > *waterways*.

Within the Swan River Trust management area

- 14 The Swan-Canning Estuary and abutting reserves are managed by the Swan River Trust in accordance with the *Swan River Trust Act 1988*. Written approval from the trust is required for any land or water-based development that may have an adverse effect on the estuary or drainage systems entering the estuary.

For more information please contact the Swan River Trust or for online data <www.swanrivertrust.wa.gov.au>

Buffers to sensitive environments

- 15 Vegetated buffers are key strategic elements among a series of protection barrier options that reduce the risk of contamination of sensitive water resources. The size of the buffer depends on the values of the water resource and the potential threats posed. For detailed information on buffers, see our water quality protection note 06 *Vegetated buffers to sensitive water resources* ([Reference 4](#))

Design and construction

- 16 Light industrial facilities should be constructed using weather-proof material with impervious flooring designed and graded to contain any spilt material, washdown water or contaminated stormwater. This is to ensure that during normal operation, maintenance or potential emergencies, the surrounding environment is not at risk of contamination. The area should, if practical, have a graded floor or perimeter bund with speed humps to allow vehicles into the contained area if required.
- 17 Any contaminated fluids should drain into an internal collection sump for appropriate treatment, recovery or offsite disposal.
- 18 If chemicals are stored on the premises, they should be kept within the containment compound on chemical-resistant surfaces. The compound should have the capacity to store at least 110 per cent of the volume of the largest container, plus 25 per cent of the volume of all other containers. Any chemical bulk storage tanks with a capacity exceeding 250 litres should follow the recommendations made in our water quality protection note 56 *Tanks for above ground chemical storage*. Additionally, any underground tanks containing chemicals or wastes (where approved) should follow the recommendations made in our water quality protection note 62 *Tanks for underground chemical storage* ([Reference 4](#)).

- 19 All toxic or hazardous chemicals, such as fuel, paint, solvents and pool chemicals, should be stored within containment compounds on chemically resistant surfaces. For more information, see our water quality protection note 65 *Toxic and hazardous substances – storage and use*.
- 20 Adequate security should be installed and maintained for the facility such as lockable buildings, fenced enclosures and a security system. This ensures that intruders cannot misuse the equipment or materials located within the compound and potentially cause environmental harm.
- 21 All stormwater and run-off from roofs and pavements should be diverted away from areas where chemicals are stored, used or may be spilt. Where practical, employee training and signs erected adjacent to stormwater drainage gully grates should be used to inform all staff that the disposal of chemicals and process wash-down water to drains is likely to flow into natural waterbodies causing environmental harm. For more information, see our water quality protection note 52 *Stormwater management at industrial sites* ([Reference 4](#)).

Site operation

Cleaner production technology

Cleaner production involves the efficient use of energy, water and material resources. A national strategy was released by the Australian Government in 1998.

It is called *Towards sustainability – achieving cleaner production in Australia* which establishes a framework for the increased adoption of cleaner production practices.

Some of the benefits for adopting such practices include a reduction in expenditure for packaging, energy, waste treatment or disposal, water and materials, increased employee environmental awareness and an improved public perception of the business.

In September 2004, an easy reference cleaner production directory, called *Environmental management and cleaner production directory for small and medium businesses*, was prepared for the Swan River Trust as part of the Swan-Canning cleanup program. This document has useful information and covers most light industrial sectors. For online information see < www.swanrivertrust.wa.gov.au >, select *Swan-Canning cleanup program* > *Publications*.

Green stamp program

Green stamp is an industry-specific environmental accreditation program that assists small to medium businesses to reduce, reuse, recycle or dispose of their wastes in an environmentally acceptable manner. Green stamp programs are under development or in operation for:

- *The printing industry association*. For detailed information contact the coordinator on (08) 9361 4625.
- *Building service contractors association* (formerly the *Master cleaners guild*). For detailed information contact the coordinator on (08) 9310 6518.

- *Motor trade association* (MTA). Detailed online information is available at < www.mtawa.com.au > or contact the coordinator on (08) 9345 3466.

Waste disposal – liquid and solid

- 22 Businesses should reduce or recycle as much potential waste as is practical. If the waste is not recyclable then it should be disposed of in the most environmentally acceptable manner. Some waste may require disposal at an authorised disposal site.
- 23 Any residual degradable, hazardous or intractable solid waste generated on the site should be effectively contained prior to disposal at an approved site. For information on waste acceptance criteria and determination of the appropriate type of landfill for disposal, see the *Landfill waste classification and waste definitions 1996 (as amended)* published by the Department of Environment and Conservation ([Reference 3a](#)).
- 24 All waste should be managed and disposed of in accordance with the *Environmental Protection (Controlled waste) Regulations 2004* and *Environmental (Unauthorised discharges) Regulations 2004*. It is unacceptable to discharge wastes that may cause environmental harm into soakage, sewer or drains. If detected, offenders may be prosecuted under the *Environmental Protection Act 1986* and are liable for severe penalties.
- 25 Where liquid waste is proposed to be disposed of into the sewer, effluent quality requirements should first be discussed with the local sewerage service provider, e.g. the Water Corporation, as pre-treatment and an associated permit may be required.
- 26 Liquid waste treatment systems should be regularly checked and maintained. Samples should be taken at regular intervals, such as monthly, and at least 90 per cent should achieve their design effluent quality over a 12-month period.
- 27 Treatment systems should have sufficient capacity to allow for routine maintenance or breakdowns without causing the release of partly treated wastewater.

For more information on waste management in general or tips on how to reduce, reuse and recycle waste to minimise environmental impacts please contact *Zero waste Western Australia* at < www.zerowastewa.com.au >

Equipment maintenance

- 28 All washdown facilities for mechanical equipment and/or vehicles should be constructed and operated in a manner which ensures no contaminated wastewater is released into the environment. For more information see our water quality protection note 68 *Wash down of mechanical equipment* ([Reference 4](#)).

Employee awareness

- 29 All employees should be trained effectively and reminded via signage of the environmental risks from chemical and wastewater discharge to local drains and soakage.

30 All employees should attend suitable training, such as the courses provided by the *Cleaner production training program* for industry within Curtin University in Perth and the industry-specific seminars and workshops provided by the Green stamp program. This training can help staff gain the necessary skills to identify site-specific risks and develop appropriate management practices.

Accidents and emergency response

31 If the site contains toxic or hazardous material, such as fuel, oil, paint or other chemicals which may cause environmental harm, an *Emergency response plan* should be developed and implemented. This plan will aid all workers in the event of a chemical spill, natural disaster, fire, vandalism and/or equipment malfunction and should identify local sensitive water resources. Designated employees should be trained on how to block chemical escape pathways and clean up spills.

32 Spill kits should be made available in easily accessible areas. They should include absorbent materials such as 'kitty litter', sawdust or rags and other clean up equipment such as mops, brooms and appropriate protective clothing. All chemical spills should be responded to and contained immediately and fluids recovered or disposed of. This is for occupational health and safety reasons and to prevent contamination of the local environment. For detailed information, see our water quality protection note 10 *Contaminant spills – emergency response* ([Reference 4](#)).

33 Any significant chemical spill (exceeding 20 litres) that escapes into the environment should be reported to the Department of Environment and Conservation's pollution response team immediately (phone 1300 784 782 all hours). If the spill is in a public drinking water source area, contact the Water Corporation (phone 13 13 75 all hours).

34 Under section 73 of the *Environmental Protection Act 1986* the occupier of any premises is liable for the clean-up costs of any contamination incident. The *Contaminated Sites Act 2003* and associated regulations introduced many new responsibilities relating to managing contamination in Western Australia. For more information, contact the Department of Environment and Conservation or for online data < www.dec.wa.gov.au > select *pollution prevention* > *contaminated sites*.

Monitoring and reporting

35 Where on-site wastewater treatment is required, the site operator should monitor the effluent quality to ensure acceptable system performance. For more information on water quality monitoring, see the Australian Government national water quality management strategy publication *Australian guidelines for water quality monitoring and reporting 2000* ([Reference 2](#))

36 Records and results of any monitoring program should be retained on site for at least two years to allow for inspection or reporting when requested by government agencies.

More information

We welcome your views on this note. All feedback is retained on our file **WT564**.

To comment on this note or for more information, please contact our water source protection branch as shown below, citing the note topic and version.

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Perth Western Australia 6000

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Perth Western Australia 6842

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Facsimile +61 8 6364 7601
Email waterquality@water.wa.gov.au

This note will be updated periodically as new information is received or industry/activity standards change. Updated versions are placed online at < www.water.wa.gov.au > select *water quality* > *publications* > *water quality protection notes*.

References and further reading

- 1 Australian Bureau of Statistics publication see < www.abs.gov.au > search small business
Australian small businesses operators 2005 -06
- 2 Australian Department of Environment, Water, Heritage and the Arts publications, see < www.environment.gov.au > then use *Search* < *topic* >
 - a *Towards sustainability – achieving cleaner production in Australia 1998*
 - b *Australian guidelines for water quality monitoring and reporting 7, 2000.*
- 3 Department of Environment and Conservation (WA) publications available online at < www.dec.wa.gov.au > select *pollution prevention or management and protection*:
 - a *Landfill waste classification and waste definitions 1996 (as amended)*
 - b Brochure - *Protecting native vegetation – new laws for Western Australia*
 - c Position statement *Wetlands* (WRC 2001),
- 4 Department of Water (WA) - Water quality protection notes available online at <www.water.wa.gov.au> select *water quality* > *publications* > *water quality protection notes*:
 - *WQPN 06 Vegetated buffers to sensitive water resources*
 - *WQPN 10 Contaminant spills – emergency response*
 - *WQPN 25 Land use compatibility in public drinking water source areas*
 - *WQPN 56 Tanks for above ground chemical storage*
 - *WQPN 62 Tanks for underground chemical storage*
 - *WQPN 65 Toxic and hazardous substances – storage and use*
 - *WQPN 68 Wash down of mechanical equipment*

- *WQPN 75 Proclaimed public drinking water source areas*

- 5 Environmental Protection Authority (WA) publications available online at < www.epa.wa.gov.au >:
 - a *Environmental guidance for planning and development*, draft guidance statement 33 (EPA 2005)
 - b *Environmental protection of wetlands*, position statement 4 (EPA 2004)
 - c *Environmental offsets*, position statement 9 (EPA 2006)
- 6 Swan River Trust publications, see < www.swanrivertrust.wa.gov.au >
 - a *Environmental management and cleaner production directory for small and medium businesses*
 - b *Swan-Canning industry survey 2000*

Appendix A - Key supporting information

The Department of Water is responsible for managing and protecting the state's water resources. It is also a lead agency for water conservation and reuse. This note offers:

- our views on minimising impacts of land use activities and facilities on water resources
- guidance on acceptable practices employed to protect the quality of water resources
- a basis for the development of a multi-agency environmental code or guidelines that considers the views of industry, government and the community, while sustaining a healthy environment.

The note provides a general guide on issues of environmental concern, and offers potential solutions based on professional judgement and precedent. Recommendations made in this note do not override any statutory obligation or government policy statement. Alternative practical environmental solutions suited to local conditions may be considered. This note shall not be used as this department's policy position on a specific matter, unless confirmed in writing. The note may be amended at our discretion, as new data becomes available.

Regulatory agencies should not use this note's recommendations in place of site-specific conditions based on a project's environmental risks. Any regulatory conditions should consider the values of the surrounding environment, the safeguards in place and take a precautionary approach.

Where a conflict arises between our recommendations and any proposed activity that may affect a sensitive water resource, this note may be used to assist negotiations with stakeholders. The negotiated outcome should not result in a greater risk to water quality than that which would apply if our recommended protection measures were used.

Sensitive water resources

Clean water resources used for drinking, sustaining aquatic and terrestrial ecology, industry, and aesthetic values, along with breathable air, rank as the most fundamental and important needs for viable communities. Water resources should remain within specific quality limits to retain their values and therefore require stringent and conservative protection measures. Guidance on water quality parameters that are necessary to maintain water values are published in the Australian Government's *National water quality management strategy guidelines*, available online at <www.environment.gov.au> select *water* > *water quality* > *national water quality management strategy*.

The Department of Water strives to improve community awareness of catchment protection measures, for both surface water and groundwater, as part of a multi-barrier protection approach to water resource quality.

Human activity and many land uses pose a risk to water quality if contaminants are washed or leached into sensitive water resources in discernible quantities. These waters include estuaries, waterways, wetlands and unconfined groundwater accessed by water supply wells.

Sensitive water resources support one or more of the environmental values described below:

- 1 Public drinking water sources (i.e. *water reserves, catchment areas or underground water pollution control areas*) proclaimed or assigned under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909*, the *Country Areas Water Supply Act 1947* or the *Health Act 1911*.
- 2 Private sources, used for the following water supplies:
 - a human or stock (animal) drinking water
 - b commercial or industrial water (requiring specific qualities that support activities such as aquaculture, cooling, food or mineral processing or crop irrigation)
 - c urban irrigation (that could affect people's health or wellbeing).
- 3 Recognised ecological functions in groundwater aquifers such as soil or cave fauna.
- 4 Social values in natural waterways including aesthetic appeal, boating, fishing, tourism and swimming.
- 5 Ecological functions of waterways including:
 - a those of high conservation significance described in the Environmental Protection Authority's guidance statement 33 *Environmental guidance for planning and development* (section B5.2.2), available online at <www.epa.wa.gov.au> select *EIA* > *guidance statements*

- b waterways managed by the Department of Water under the *Waterways Conservation Act 1976*, including the Avon River, Peel-Harvey Inlet, Leschenault Inlet, Wilson Inlet and Albany waterways
- c waterways managed by the Swan River Trust under the *Swan and Canning Rivers Management Act 2006*.

Engineered drains or constructed water features are excluded, because functional and operational factors may outweigh their water quality values.

- 6 Conservation values in wetlands (assigned or recognised, excluding those highly disturbed unless actively managed to restore specified environmental values), including:
- a Ramsar wetlands, described online at <www.ramsar.org>.
 - b High conservation significance wetlands as described in the Environmental Protection Authority's guidance statement 33 *Environmental guidance for planning and development* (section B4.2.2), available online at <www.epa.wa.gov.au> select *Environmental impact assessment > guidance statements*.
 - c Wetlands defined by the Australian Government in *A directory of important wetlands in Australia*, available online at <www.environment.gov.au> select *water > water for the environment > wetlands > wetlands publications, resources and links > books, reports directories*.
 - d Conservation valued and resource enhancement category wetlands identified in the *Geomorphic wetlands of the Swan coastal plain* dataset; all wetlands identified in the *South coast significant wetlands* dataset, and high value wetlands identified in the *Geomorphic wetlands Augusta to Walpole* dataset. The Augusta to Walpole wetland dataset awaits a detailed evaluation process. The Department of Environment and Conservation (DEC) is the custodian of wetland datasets and is responsible for maintaining and updating the information. The datasets can be viewed online at <www.dec.wa.gov.au> search *maps wetlands* or select *management and protection > wetlands > wetlands data*. Guidance on viewing the wetlands is provided on the same website at *water > wetlands > data* or by phoning DEC's nature conservation division for assistance on (08) 9334 0333.

Many aquifers, waterways and wetlands in this state still need a detailed scientific evaluation and their value remains to be classified. Unless proven otherwise, any natural waters that are largely undisturbed by human activity, should be considered to have sensitive values.

Community support for water values, the setting of practical management objectives, providing sustainable protection strategies and effective implementation are vital to protecting or restoring water resources for current needs and those of future generations.

Public drinking water source areas

Public drinking water source area (PDWSA) is the collective name given to any area proclaimed for the management and protection of a water source used for community drinking water supplies. PDWSA include *underground water pollution control areas, water reserves* and *catchment areas* administered under the provisions of the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* or the *Country Areas Water Supply Act*

1947. For online information on the location of PDWSA see < www.water.wa.gov.au >select *tools and data* > *maps and atlases* >*geographic data atlas* > *environment* > *public drinking water source areas*.

For land planning and development purposes within any PDWSA, three protection areas (P1, P2 and P3) have been defined based on present land use, tenure and the vulnerability of the water body to harm. These areas are each managed in a different way to provide for effective protection of water resource quality.

Protection areas are assigned in specific *drinking water source protection plans* or *land use and water management strategies*. These are prepared in consultation with government agencies, landowners, industry and community.

P1 areas are defined to ensure that there is *no degradation* of the water source. These areas are declared over land where the provision of the high quality drinking water for public use is the prime beneficial land value. P1 areas would typically include land under public ownership. P1 areas are managed in accordance with the principle of *risk avoidance* and so most land development and activity is normally opposed.

P2 areas are defined to ensure that there is *no increased risk of pollution* to the water source once the source protection plan has been published. These areas are declared over land where low intensity development (such as rural) already exists. Protection of public water supply sources is a high priority in these areas. P2 areas are managed in accordance with the principle of *risk minimisation*, and so restricted intensity development (with conditions) and activity with a low contamination risk is accepted.

P3 areas are defined to *manage the risk of pollution* to the water source. These areas are declared over land where public water supply sources must coexist with other land uses such as residential, commercial and light industrial development. Protection of P3 areas is achieved through management measures defined via *management guidelines* (such as these notes) or site-specific conditions that limit the contamination risk to water resources from the land use or activity. If however the water source becomes significantly contaminated, then water supplied from P3 areas may need to be treated or an alternative water source found.

Protection zones are defined close to the point where drinking water is harvested or stored. Additional constraints apply to activities in these zones to safeguard these most vulnerable water sources. These zones are described as *well-head protection zones* and *reservoir protection zones*.

Well-head protection zones are assigned within the immediate surrounds of water production wells and special restrictions apply. In these zones, groundwater moves rapidly towards wells. Any contamination leaching from the ground surface could rapidly migrate into scheme water supplies (before effective remedial action can occur). In porous soil catchments, well-head protection zones are usually circular, with 500 metres radius in P1 areas and 300 metres in P2 and P3 areas. These zones do not extend outside PDWSA boundaries.

Reservoir protection zones (RPZ) are defined within the immediate surrounds of public water supply reservoirs or pipe-heads, with special access and land use restrictions

applied. The aim is to restrict the likelihood of contaminants being deposited or washing into water sources following rainfall. RPZ consist of a buffer area of up to two kilometres around the top water level of a reservoir and include the reservoir itself.

For additional explanatory information on PDWSA, see our water quality protection note 25 *Land use compatibility in public drinking water source areas* and note 36 *Protection of public drinking water source areas - an overview*.

Buffers

Operational areas (where compatible) should have minimum vegetated separation distances to the full supply level of reservoirs, their primary feeder streams and production bores used as a source of drinking water. Buffers advice is provided in our water quality protection note 06 *Vegetated buffers to sensitive water resources*.

Clearing control catchments

There are special controls on vegetation clearing for salinity management purposes under part IIA of the *Country Areas Water Supply Act 1947*. These controls apply in *the Wellington Dam, Harris River Dam, Mundaring Weir and Denmark River* catchment areas and the *Kent River and Warren River* water reserves. Details on clearing controls may be obtained from our Swan-Avon, southwest and south coast regional offices.

Existing activities

We recognise that many land use activities were approved and established before publication of the source protection plan or strategy. We will negotiate with the operators of non-conforming activities to ensure that they progressively improve facilities and management practices to minimise the risk to water resources (while considering practical and economic constraints).

New or expanded activities

Any proposed new or expanded activities that may affect water resources should be referred to our nearest regional office for assessment and written response. The department may approve the proposal (with or without conditions), seek additional relevant information prior to taking a decision or reject the proposal due to inadequate protective measures to safeguard nearby environmental values. In order to gain environmental approval, operators will need to demonstrate that under both normal and abnormal operating conditions that materials and processes used on site do not pose a significant risk to the local waters.

Waterways management areas

Five *waterways management areas* have been declared via the *Waterways Conservation Act 1976* to provide special protection to estuaries and their associated waterways that are considered especially vulnerable to degradation.

These areas are the Albany Waterways, Avon River, Leschenault Inlet, Peel-Harvey Estuary, and Wilson Inlet. If a development is located within a proclaimed *waterways management area*, pre development approval in writing is needed from this department. Information on waterway values and the location of these management areas can be

obtained by contacting the local regional office (see online information at < www.water.wa.gov.au > select *Contact us*).

Appendix B - Statutory requirements and approvals relevant to this note include:

What is regulated?	Legislation	Regulatory agency
Land zoning and development approval	<i>Planning and Development Act 2005</i>	Western Australian Planning Commission Department of Planning www.planning.wa.gov.au Local government
Storage of hazardous, explosive or dangerous goods	<i>Dangerous Goods Safety Act 2004</i>	Department of Mines and Petroleum < www.dmp.wa.gov.au >
Light industrial sites in existing PDWSA Clearing of native vegetation in the Mundaring, Wellington, Harris, Denmark, Warren or Kent catchments	<i>Metropolitan Water Supply, Sewerage and Drainage Act 1909</i> <i>Country Areas Water Supply Act 1947</i>	Department of Water – regional office < www.water.wa.gov.au >
Licence to discharge wastes or effluent into proclaimed waterways	<i>Waterways Conservation Act 1976</i>	
Significant impact on the values and ecology of the environment, including natural waters	<i>Environmental Protection Act 1986</i> (Part III Policy or Part IV Environmental impact assessment)	Minister for the Environment and Conservation, guided by the advice of the Environmental Protection Authority < www.epa.wa.gov.au >
Waste disposal	<i>Environmental Protection (controlled waste) regulations 2004</i> <i>Environmental (unauthorised discharges) regulations 2004.</i> <i>Contaminated Sites Act 2003 and regulations</i>	Department of Environment and Conservation < www.dec.wa.gov.au >
Approval to discharge wastes or effluent into the Swan-Canning Estuary and feeder drains	<i>Swan River Trust Act 1988</i>	Swan River Trust < www.swanrivertrust.wa.gov.au >
Discharge to sewer via an industrial waste permit	<i>Metropolitan Water Supply, Sewerage and Drainage Act 1909</i> <i>Country Towns Sewerage Act 1948</i>	Water Corporation < www.watercorporation.com.au Other approved sewer service provider

Legislation copies are available online from the *State Law Publisher* at < www.slp.wa.gov.au >