

DRAFT COUNTRY SEWERAGE POLICY

DRAFT from 22 September 2002 SOCWM meeting **Amended September 2003**

FOREWORD

Growth in many country centres, and progress with the Government's Infill Sewerage Program in country towns, have brought recognition of the need for a Country Sewerage Policy to improve amenity and foster the development of townsites through the orderly provision of sewerage services.

This Policy sets out the wastewater disposal requirements for new subdivisions and developments to proceed. It has been endorsed by the Cabinet Committee on Waste Management following a three-month public comment period during which numerous submissions were received and taken into consideration in the development of this Country Sewerage Policy by the Senior Officers Committee on Waste Management.

Under the Policy reticulated sewerage is required for all subdivision or development, except where certain discretionary provisions may apply. In the Perth Metropolitan Region a parallel document entitled '*Sewerage Policy - Perth Metropolitan Region*' guides the requirement for wastewater disposal at subdivision and development stages.

While there have been improvements in the technology associated with on-site wastewater treatment, reticulated sewerage remains the most reliable, efficiently managed and environmentally acceptable means of wastewater disposal. It also provides flexibility to support the widest variety of land uses. Wastewater treatment plants are designed, controlled and monitored to ensure that the quality of treated wastewater is satisfactory for release back to the environment, with minimal impact and the greatest regard for public health. For these reasons reticulated sewerage is used extensively throughout the world to serve cities and smaller towns, and has been adopted as the preferred system in all Australian States.

The main objectives of this Policy are to protect public health, the environment, and water supplies, to minimise the need for public funds to provide infill sewerage and to foster regional development objectives. Installation of sewerage in country towns will provide development opportunities not previously available, whilst improving the amenity of existing development. As these objectives cannot always be successfully advanced simultaneously, it might on occasion be necessary to find an acceptable balance between them while still ensuring adequate public health and environmental outcomes.

The Policy provides guidance to statutory authorities, local government and the development industry about sewerage requirements at subdivision and development stages. It also details options available in locations where sewerage is unlikely to be available in the near future, subject to the Policy objectives not being compromised.

The Department of Health is the Government agency with primary responsibility for administering the Policy, as the principal agency responsible for supervising and regulating onsite wastewater systems.

The Policy's requirements that all new subdivisions and developments shall be provided with reticulated sewerage, except where the discretionary provisions of this Policy allow otherwise, are endorsed.

MINISTER FOR HEALTH

MINISTER FOR PLANNING
AND INFRASTRUCTURE

MINISTER FOR THE ENVIRONMENT

MINISTER FOR LOCAL
GOVERNMENT AND
REGIONAL DEVELOPMENT

MINISTER FOR
GOVERNMENT ENTERPRISES

1. POLICY OBJECTIVES

The objectives of this Policy are:

- to protect public health;
- to protect the environment and the State's water resources;
- to reduce the extent of reticulated infill sewerage required in already developed areas and cost to the community in providing it;
- to provide flexibility in the control of subdivisions or density developments for which reticulated sewerage is unlikely to be available for some time; and
- to foster regional development, by being integrated with regional development objectives.

2. DEFINITIONS

The following definitions are used in this Policy unless inappropriate to the particular context:

Commercial and Industrial Development - means commercial and industrial developments, including caravan parks, motels, hotels, shopping centres and hospitals but otherwise excluding any use that could result in permanent residential accommodation.

Consultative authorities — means the Department of Health, the Western Australian Planning Commission, the Department of Environment, the Water and Rivers Commission, Economic Regulation Authority, relevant Regional Development Commission and relevant local government and the relevant sewerage provider.

Density development means:

- (a) any residential development greater than a single house; or
- (b) a non-residential development likely to produce wastewater at a rate greater than a single residential equivalent.

Formal planning approval — means conditional subdivision approval or development approval.

Lot — includes strata lot.

Natural Ground Level – means the levels on a site which precede the proposed development, excluding any site works unless approved by the Council or established as part of subdivision of the land preceding development.

Public Drinking Water Source Areas (PDWSAs) – means those areas declared under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909*, and the *Country Areas Water Supply Act 1947* for the management and protection of water sources used for public drinking water supply. They include Underground Water Pollution Control Areas, Water Reserves and Catchment Areas. A three-tier priority classification system is used to manage PDWSAs, these are:

- **Priority 1 source protection areas** are defined to ensure that there is no degradation of the water source. Priority 1 areas are managed in accordance with the principle of risk avoidance, so land development is generally not permitted.
- **Priority 2 source protection areas** are defined to ensure that there is no increased risk of pollution to the water source. Priority 2 areas are managed in accordance with the principle of risk minimisation, so some development is allowed under specific guidelines.
- **Priority 3 source protection areas** are defined to manage the risk of pollution to the water source. Priority 3 areas are declared over land where water supply sources need to co-exist with other land uses such as residential, commercial and light industrial developments.

Remote and isolated subdivision or development — means subdivision or development of land that is remote from existing or proposed urban land or unlikely to be connected to sewerage in the foreseeable future.

Relevant sewerage provider — the body holding a licence from the Economic Regulation Authority for the provision of sewerage services, which would be affected by the application of a sewerage requirement to a proposed subdivision or density development.

Residential Development - means developments capable of providing permanent residential accommodation and excludes commercial and industrial development.

Reticulated sewerage — means a network of sewers collecting wastewater, for off-site disposal from a subdivision or development.

Single residential equivalent — when applied to non-residential development means that it is predicted to have wastewater output of no more than 540 litres per day (and usually means not more than three major plumbing fixtures).

Statutory Authority -- Means the authority that makes the final decision on an approval application as prescribed under legislation.

Subdivision — includes strata subdivision.

Town — means land within a gazetted townsite and any adjacent existing or proposed urban land.

Urban land — means land, which may be developed at densities greater than R5 under a town-planning scheme, and includes residential, industrial and commercial land use.

3. SCOPE

This Policy applies across the state of Western Australia, excluding the Perth Metropolitan Region to:

- 3.1 all subdivision except the subdivision of rural zoned land for rural purposes ;
- 3.2 all density development (note: this does not include development on an existing vacant lot of a single house, or a non-residential development having a single residential equivalent); and
- 3.3 all rezoning of land for residential, special residential, rural-residential, commercial and industrial purposes.

NOTE:

- **Rural land use for rural purposes does not include special rural or rural-residential land uses.**
- **This policy does not exempt proposals from complying with other statutory obligations. For example: it does not allow smaller minimum lot sizes or greater development densities than prescribed under the local government Town Planning Scheme.**

4. MANDATORY PROVISIONS

The Policy requires the provision of reticulated sewerage to all subdivision or density development (except for those exemptions permitted under the discretionary provisions of Section 5), and includes the following:

- 4.1 subdivision or density development on land served by reticulated sewerage;
- 4.2 subdivision or density development in towns listed in Schedule 1 and which the statutory authority, after considering the advice of consultative authorities, determines can reasonably be connected to sewer;
- 4.3 subdivision or density development where the absence of sewerage is considered by the statutory authority, after considering the advice of consultative authorities, to endanger public health, the environment or the quality of underground or surface water supplies;
- 4.4 subdivision or density development where the absence of sewerage is considered by the statutory authority, after considering the advice of consultative authorities, to prejudice, physically or financially, the ability to provide sewerage to adjoining areas; and
- 4.5 subdivision or density development in PDWSAs which fail to comply with the development density restrictions and siting requirements as

specified for Public Drinking Water Source Areas detailed in Appendix 1.

5. DISCRETIONARY PROVISIONS

The only exceptions to the requirements for provision of reticulated sewerage are as set out below:

5.1 Small Infill

Proposals for small infill subdivision or density development can be considered where there is no potential for the creation of more than four additional lots, dwellings or single residential equivalents in the immediate vicinity (generally interpreted as within the street block), so that the proposal completes rather than extends an existing pattern of subdivision. Lot sizes and land use shall be consistent with the existing pattern of subdivision or development.

5.2 Large Lots

Proposals for large lot subdivision or density development can be considered if they do not involve the creation of lots less than 2000m², or density development at a density greater than R5, provided the statutory authority, after considering the advice of consultative authorities, is satisfied that there is no opportunity within the area covered by the proposal for further subdivision without sewerage.

5.3 Remote and Isolated Subdivision or Remote and Isolated Residential Development

Proposals in remote and isolated locations may be supported, depending on the nature of the site and the wastewater disposal arrangement chosen, and subject to:

- the development being a maximum density of R10 and no more than 25 lots or dwelling units in total;
- the overall objectives of the policy not being compromised; and
- the statutory authority being satisfied, after considering the advice of consultative authorities, that the intended wastewater disposal arrangements are acceptable.

5.4 Subdivision or Residential Density Development in Towns Without Sewerage

Subdivision or residential density development in towns not listed in Schedule 1 may be permitted, subject to:

- the proposals not resulting in creation of lots less than 1000m²;
- proposals not exceeding a maximum development density of R10;
- no individual proposal exceeding 25 lots or dwellings; and
- a total town expansion of no more than 100 lots or dwelling units, occurring within the town after the introduction of this Policy.

The sum of 25 lots or dwellings for individual proposals will include planned future extensions of a proposal, such as when a subdivision or density development is planned to occur in several stages, but will not include proposals for lots 2000m² or greater that are capable of being developed only at a density of R5 or less.

The total of 100 is deemed to have been utilised at the time of formal planning approval.

5.5 Commercial and Industrial Development

Proposals for commercial or industrial development in locations other than towns listed in Schedule 1 may be permitted, subject to:

- the overall objectives of the policy not being compromised; and
- the statutory authority being satisfied after considering the advice of consultative authorities that the intended wastewater disposal arrangements are acceptable.

6. ON-SITE WASTEWATER DISPOSAL REQUIREMENTS

Statutory authorities considering proposals under the discretionary provisions of Section 5, after considering the advice of consultative authorities, must be satisfied the minimum requirements for onsite wastewater disposal as prescribed in Appendix 1 are met prior to issuing approval.

Where permission for a proposal is being sought from the statutory authority under the discretionary provisions of section 5, it is the applicant's responsibility to provide the required information to demonstrate the minimum site requirements as prescribed in Appendix 1, can be met, and the intended method of wastewater disposal will satisfy any special requirements of Appendix 1. For example: depending on the nature of the proposal this might require that a detailed geotechnical report be provided or undertakings be given for memorials to be lodged on new titles detailing any special wastewater disposal requirements.

In towns listed in Schedule 2 (ie. "*Locations with Public Health and/or Environmental Constraints for Onsite Wastewater Disposal*"), detailed information and detailed assessment by statutory and consultative authorities may be required in assessing the acceptability of proposals.

7. POLICY IMPLEMENTATION

7.1 All subdivision and density development continue to be subject to controls and procedures under relevant planning, environmental and health legislation.

7.2 In considering proposals involving subdivision or development of land, local governments should apply the relevant provisions of this Policy in order to receive the necessary approval from the statutory authorities.

- 7.2.1** It is recognised that the effect of the Policy on a town may be to restrict future growth so severely that a further review of its application in that town may be required. To enable this to occur, the procedure to be followed will be:

Where the Minister for Planning and Infrastructure, on advice from the Western Australian Planning Commission, is satisfied a local government has demonstrated that a particular town within its district is severely constrained or restricted in subdivision and/or development by this policy, the matter shall be referred to the Senior Officers Committee on Waste Management.

The Senior Officers, in conjunction with the local government, shall carry out an assessment of the various options available and make recommendations for a possible variation of the Policy for that town or part of the town. Those options may include various on-site and off-site sewage disposal methods, but should not be permitted to prejudice the overall objectives of the Policy. When the Senior Officers Committee has recommended a variation to the Policy, the matter shall be referred to the Cabinet Committee on Waste Management for endorsement.

- 7.3** To ensure uniform application of this Policy, the following statutory authorities have agreed to adhere to a coordinated plan of action:

7.3.1 The Western Australian Planning Commission will issue a planning policy adopting this Policy by reference.

7.3.2 The Executive Director, Public Health, will take this policy into consideration when deciding on the acceptability of applications for onsite wastewater disposal.

7.3.3 The Policy will be taken into account when deciding upon the environmental acceptability of proposals assessed under the *Environmental Protection Act 1986* and in the setting of environmental conditions on them, and advice on development proposals provided by the Department of Environment will be consistent with this Policy.

- 7.4** Where an unsewered subdivision or density development has received formal subdivision and/or development approval at the time the Policy comes into effect, such development may proceed subject to the conditions applicable at the time of approval, for as long as that approval remains valid.

- 7.5** Implementation of this Policy will not affect any right of development outside the scope of the Policy, as set out in Section 3.

- 7.6** The determination of whether a subdivision or density development can reasonably be connected to sewer, as referred to in Section 4.2, will be considered having regard to the type and scale of the proposal, and the cost and alternative options available, subject to the overall objectives of the Policy.

Where aggrieved by the imposition of a sewerage condition imposed on a subdivision application by the Western Australian Planning Commission, an applicant may, in seeking the Commission's reconsideration under *section 24(5) of the Town Planning and Development Act 1928*, request that advice be sought from the Senior Officers Committee on Waste Management as to whether connection to sewer is reasonable in the circumstances.

8. DATE OF IMPLEMENTATION

This Policy comes into effect on (DATE). There will be a further review after three years.

WHERE TO SEEK FURTHER ADVICE ABOUT THIS POLICY

Advice or queries about application of this policy can be directed to the Wastewater Management Branch, Department of Health, as the agency with responsibility for day to day administration of the policy.

Further advice about review of decisions made under this Policy can be directed to the Department of Health.

Schedule 1

LOCALITIES WITH ESTABLISHED SEWERAGE SCHEMES

Albany	W	*Finucane Island	P	Nannup	W
Augusta	W	Fitzroy Crossing	W	Narrogin	W
Australind	W	Furnissdale	W	Newdegate	W
Beverley	W	Geraldton	W	Newman	P/W (joint)
Binningup	W	Gnarabup	W	*Norseman	L
Boddington	W	Gnowangerup	W	Northam	W
Bootenall	W	Goomalling	L	Nyabing	L
Boulder	L	Greenough	W	Ongerup	L
Bremer Bay	W	Halls Creek	W	Onslow	W
Bridgetown	W	Harvey	W	Pannawonica	P
Brookton	L	Jerramungup	L	Paraburdoo	P
Broome	W	Jurien Bay	W	Pemberton	W
Brunswick	W	Kalbarri	W	Pingelly	W
Bunbury	W	Kalgoorlie	L	Pingrup	L
Burekup	W	*Kambalda	P	Pinjarra	W
Busselton	W	Karratha	W	Pinjarra North	W
Calingiri	L	Katanning	W	Port Hedland	W
Capel	W	Kellerberrin	W	Prevelly	W
Carnarvon	W	Kojonup	W	Quairading	W
Cervantes	W	*Koolyanobbing	P	Quindalup	W
Collie	W	Koorda	L	Ravensthorpe	L
Coolgardie	L	Kununurra	W	Roebourne	W
Corrigin	W	Lake Argyle	W	Seabird	W
Cowaramup	W	Lake Grace	L	South Hedland	W
Cranbrook	W	Lancelin	W	Southern Cross	L
Cunderdin	W	Laverton	W	Three Springs	W
Dalwallinu	L	Ledge Point	W	Tom Price	P
Dampier	P	Leeman	W	Toodyay	W
Dardanup	W	*Leinster	P	Wagin	W
Denham	W	Leonora	W	Walpole	W
Denison	W	Lower King	W	Warooka	W
Denmark	W	Mandurah	W	Wickepin	L
Derby	W	Manjimup	W	Wickham	W
Dongara	W	Margaret River	W	Williams	L
Donnybrook	W	Marvel Loch	L	Wongan Hills	W
Dowerin	L	Meckering	W	Wundowie	W
Dumbleyung	L	Merredin	W	Wyalkatchem	W
Dunsborough	W	Moora	L	Wyndham	W
Eaton	W	Morawa	L	Yerecoin	L
Emu Point	W	Mount Barker	W	York	W
Eneabba	W	Mukinbudin	W	Yunderup	W
Esperance	W	*Mullewa	L		
Exmouth	W	Narembeen	W		

Key: Sewerage scheme operated by - W = Water Corporation L = Local Government P = Private
* Not licensed by OWR

Note: Schedules 1 and 2 are subject to continual review but shall be specifically reviewed at least annually. Suggested changes should be forwarded to the Senior Officers Committee on Waste Management, Department of Health.

SCHEDULE 2

LOCATIONS WITH PUBLIC HEALTH AND/OR ENVIRONMENTAL CONSTRAINTS FOR ONSITE WASTEWATER DISPOSAL

Allanson	Guilderton	Northcliffe
Balingup	Horrocks	Nullagine
Beacon	Hyden	Nungarin
Bencubbin	Kemerton	Oakajee
Bindoon	Kendenup	Peppermint Grove
Boyanup	Kondinin	Preston Beach
Boyup Brook	Kukerin	Ravenswood
Broomehill	Kulin	Roelands
Bruce Rock	Leeman	Smiths Beach
Coolup	Mingenew	Stakehill
Coorow	Muchea	Tammin
Coral Bay	Mullewa	Vasse
Darkan	Nannup	Wiluna
Donnybrook	Narrikup	Wokalup
Gingin	Nornalup	Yarloop/Wagerup
Greenhead	North Dandalup	

Note: Schedules 1 and 2 are subject to continual review but shall be specifically reviewed at least annually. Suggested changes should be forwarded to the Senior Officers Committee on Waste Management, Department of Health.

ON-SITE WASTEWATER DISPOSAL REQUIREMENTS

The acceptability of unsewered proposals (ie. for those proposals that may be considered without sewerage connection under the *discretionary provisions* of this Policy {Section 5}) is dependant on applicants demonstrating that an adequate area of suitable land is provided for long term (ie. permanent) on-site wastewater disposal. Demonstration of this may require that information in support of the proposal be provided about surface contours, soil profiles, soil permeability and evidence of highest known groundwater levels to show the land does or can be engineered to meet the minimum site requirements.

In areas where site conditions are suitable, on-site wastewater disposal in certain locations can still pose a risk to public health, water supplies and/or the environment. In such locations, protective measures may be required to minimise those risks. Those protective steps may include complying with: wastewater system installation requirements (specific to the location), only allowing permitted maximum unsewered development densities or use of specific wastewater systems.

Minimum Site Requirements

- Irrespective of the type of on-site wastewater disposal system proposed, there should be at least 0.5 metres separation between the **natural** ground surface and the highest known groundwater level. Correctly engineered drainage solutions may be used to increase the clearance between the natural surface and the highest known groundwater level, subject to such drainage works being environmentally acceptable.
- The site is required to have soil characteristics capable of receiving all wastewater likely to be generated on the site without risk to public health or the environment. Sites that have shallow or no permeable topsoils, underlain by rock or low permeability soils (eg. clays, etc.) are less able to receive wastewater. On such sites, proposals will need to be supported by a detailed geotechnical site report, with accompanying wastewater system design based on the site's capability and the proposal's details.
- The natural land slope on which wastewater disposal is to occur shall not exceed a one in five gradient. Proposals for sites with gradients exceeding this may be engineered to allow on-site wastewater disposal. Proposals should demonstrate that the intended wastewater disposal design prevents the risk of wastewater run-off.

Minimum Wastewater System Installation Requirements

These requirements apply as a minimum in all locations other than Public Drinking Water Source Areas and Environmentally Sensitive Areas, where specific additional requirements may apply. This list is not exhaustive. A more detailed list of installation requirements can be found in the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*. Regulations may be purchased from the State Law Publisher.

- The wastewater disposal site should not be subject to inundation or flooding at a probability greater than once in 10 years.
- No wastewater system shall be constructed so that effluent or liquid wastes will be discharged into the ground at a distance less than 30 metres from any well, stream or private water supplies intended for consumption by humans.

- No wastewater system shall be constructed so effluent or liquid waste is discharged into the ground within 6 metres of any subsoil drainage system or open drainage channel.
- The depth to highest known groundwater level from the underside of a septic tank effluent drainage receptacle shall be a minimum of 1.2 metres. (For existing developed areas or infill areas a depth to highest known groundwater level may be a minimum of 1.2 metres from ground level.)
- Setbacks, groundwater clearance and installation requirements of systems other than conventional septic tank systems shall comply with any particular requirement relevant to the particular system. These are as required under the *Health (Treatment of Sewage and Disposal of effluent and Liquid Waste) Regulations 1974*, or conditions set by the Executive Director, Public Health.

Requirements in Public Drinking Water Source Areas and Environmentally Sensitive Areas

For the purposes of the following recommendations, septic tank and leach drain/soakwell systems will be referred to as **conventional septic systems**, and Aerobic Treatment Units (ATUs), composting toilet/greywater systems (including the burial of compost toilet waste), and septic tanks with amended soil in the disposal field will collectively be referred to as **Alternative Treatment Systems**.

Public Drinking Water Source Areas – all types of wastewater treatment systems

Feature	Soil type	Minimum buffer distance or lot size*	Comments
All surface water bodies (watercourses and wetlands)	All soils	100 metres	Measured from the edge of fringing (wetland dependent) vegetation around wetlands; and from the edge of a watercourse channel. Where fringing vegetation no longer exists, measured from the highest seasonal water level.
Public water supply production bores	All soils	100 metres	
Prohibited Zone (PZ) (Also referred to as the Reservoir Protection Zone)	All soils	Not located in the PZ, which is generally upstream of a dam and within 2 kilometres of the top water level of any reservoir in a Catchment Area.	Only applies to Crown land. Permission must be sought from the Water and Rivers Commission to install a wastewater treatment system in a PZ.
Priority 1 areas	All soils		Usually only applies to Crown land. Permission must be sought from the Water and Rivers Commission to install a wastewater treatment system in a P1 area.
Priority 2 areas	All soils	4 hectare	Rural zone
Priority 2 areas	All soils	2 hectares	Special rural zone/Rural residential
Priority 3 areas	All soils	1 hectare	

Please note: Priority 1 and 2 PDWSAs also exclude sewerage subdivisions or density development.

Environmentally Sensitive Areas⁽¹⁾ - conventional septic systems and non-phosphate removing Alternative Treatment Systems:

Feature	Soil type	Minimum buffer distance or lot size*	Comments
Environmentally sensitive areas ⁽¹⁾ – all water features	PRI ⁽²⁾ < 5	100 metres ⁽³⁾ and not within 1:10 year Average Recurrence Interval extent of flooding ⁽⁴⁾ , whichever is the greatest.	Where floodplain mapping information (eg flood levels) is not available, the wastewater disposal area should be at least 100 metres from the edge of a watercourse channel.
Environmentally sensitive areas ⁽¹⁾ – wetlands ^(h) only	PRI ⁽²⁾ ≥ 5	50 metres ⁽³⁾	This buffer reflects the Water and Rivers Commission's and Environmental Protection Authority's policies on the minimum buffer required for any type of development near a wetland.
Environmentally sensitive areas ⁽¹⁾ - watercourses, estuaries and marine environment only	PRI ⁽²⁾ ≥ 5	30 metres ⁽³⁾ and not within 1:10 year Average Recurrence Interval extent of flooding ⁽⁴⁾ , whichever is the greatest.	Where floodplain mapping information (eg flood levels) is not available, the wastewater disposal area should be at least 30 metres from the edge of a watercourse channel. The wastewater disposal system should only be located at this distance if installation does not disturb riparian vegetation.
Environmentally sensitive areas ⁽¹⁾ – wetlands ^(h) only	All soils	1 hectare	
Environmentally sensitive areas ⁽¹⁾ - watercourses, estuaries and marine environment only	All soils	Densities in the Metropolitan Sewerage Policy and the Country Sewerage Policy.	This includes water bodies proven to not be affected by nitrogen ⁽⁵⁾ addition from wastewater systems.

Environmentally Sensitive Areas⁽¹⁾ – approved phosphate removing systems:

Feature	Soil type	Minimum buffer distance or lot size*	Comments
Environmentally sensitive areas ⁽¹⁾ – wetlands ^(h) only	All soils	50 metres ⁽³⁾	This buffer reflects the Water and Rivers Commission's and Environmental Protection Authority's policies on the minimum buffer required for any type of development near a wetland.
Environmentally sensitive areas ⁽¹⁾ - watercourses, estuaries and marine environment only	All soils	30 metres ⁽³⁾ and not within 1:10 year Average Recurrence Interval extent of flooding ⁽⁴⁾ , whichever is the greatest.	Where floodplain mapping information (eg flood levels) is not available, the wastewater disposal area should be at least 30 metres from the edge of a watercourse channel. The wastewater disposal system should only be located at this distance if installation does not disturb riparian vegetation.
Environmentally sensitive areas ⁽¹⁾ – wetlands ^(h) only	All soils	1 hectare	
Environmentally sensitive areas ⁽¹⁾ - watercourses, estuaries and marine environment only	All soils	Densities in the Metropolitan Sewerage Policy and the Country Sewerage Policy.	This includes water bodies proven to not be affected by nitrogen ⁽⁵⁾ addition from wastewater systems.

Appendix Notes:

* Unless otherwise specified in applicable Environmental Protection Policies, Statement of Planning Policies, or other statutory statements/measures.

(1) Environmentally sensitive areas are capture zones of environmentally significant water bodies.

Environmentally significant water bodies are those identified in or as:

- watercourses^(a);
- estuaries
- marine environment
- the Ramsar Convention^(b);
- Australian Nature Conservation Agency's *Directory of Important Wetlands in Australia*^(c);
- National Estate listings^(d);
- Environmental Protection Policy wetlands^(e)
- Conservation Category Wetlands^(f); and
- Resource Enhancement Wetlands^(f).

a) **Watercourse** – A river, stream or creek in which water flows in a natural channel, whether permanently or intermittently (Water Facts 1, Water and Rivers Commission, January 1998).

b) UNESCO 1971, Article 1, Part 1, *Convention on Wetlands of International Significance*. Published in Australia, 1976, for Department of Foreign Affairs, Australian Government Publishing Service, Treaty Series 1975, No 48. Website: http://ramsar.org/profiles_australia.htm; or contact Department of Conservation and Land Management.

c) Usback, S. and James, R. (eds) 1993, *A Directory of Important Wetlands in Australia*, Australian Nature Conservation Agency, Canberra. Website: <http://www.ea.gov.au/water/wetlands/>

d) Australian Heritage Commission 1990, *Criteria for the Register of the National Estate, Australian Heritage Commission Background Notes*. Website: <http://www.ahc.gov.au/register/easydatabase/database.html>

e) Department of Land Administration 1992, Miscellaneous Plan No. 1815: Swan Coastal Plain Lakes. Also contact the Department of Environment.

f) Contact the Department of Environment regional office for information regarding the location and status of 'Conservation Category' and 'Resource Enhancement' wetlands. The Wetlands Geomorphic Mapping (GIS) Database can be obtained by contacting the Wetlands Section on 9278 0300.

In the absence of site specific information, capture zones of environmentally significant water bodies are defined as:

- 1 kilometre up-gradient^(g) and 250 metres down-gradient from a wetland^(h); where the regional groundwater gradient^(g) is unknown, apply a 1 kilometre radius;
 - Within 100 metres of a watercourse^(a), estuary or marine environment.
- g) To determine the existence of information regarding regional groundwater gradients, contact the Resource Information Desk at the Department of Environment on 9278 0580.
- h) **Wetland** – for this application is an area of seasonal, intermittent or permanent inundated land, whether natural or otherwise, fresh or saline (eg. lake, swamp, dampland) **and** identified in either footnote (b), (c), (d), (e) or (f).

(2) Soil tested for Phosphorus Retention Index (PRI) must be collected from the soil in which effluent disposal will occur. The sampling and testing procedure must comply with Department of Health requirements.

(3) Measured from the edge of fringing (wetland dependent) vegetation around estuaries and wetlands; from the tidal high water mark of marine environments; and from the edge of a watercourse channel. Where fringing vegetation no longer exists, measured from the highest seasonal water level.

(4) The extent of flooding is the area which floodwaters will rise to during a certain flood magnitude.

(5) To obtain water quality information for water bodies, contact the Resources Information Desk at the Department of Environment on 9278 0580.

Department of Environment regional head office contact details:

Regional Head Office	Address	Contact Details
Kwinana/Peel	165 Gilmore Ave, Kwinana	Ph: 9419 5500, Fax: 9419 5897
Midwest/Gascoyne	25 Forrest St, Geraldton 6530	Ph: 9964 5978, Fax: 9964 5983
North West	Chiratta Road, Karratha 6714	Ph: 9144 2000, Fax: 9144 2610
South Coast	5 Bevan Street, Albany 6330	Ph: 9842 5760, Fax: 9842 1204
South West	Unit 2 Leschenault Quays, Austral Parade, Bunbury 6230	Ph: 9721 0666, Fax: 9721 0600
Swan Goldfields Agricultural	7 Ellam Street, Victoria Park 6100	Ph: 6250 8000, Fax: 6250 8050

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