



Operational policy 4.3: Identifying and establishing waterways foreshore areas

September 2012

Looking after all our water needs

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Department of Water
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1 Introduction

This policy describes the process for identifying and managing foreshore areas whose values are under pressure from land-use changes in the area around them. It aims to ensure that foreshore areas will maintain or improve the environmental, social and economic values of waterways and adjoining land.

Land-use and development activities are designed carefully near waterways to avoid flooding risks to properties and infrastructure, risks to public health, or harm to social values or the environment. This includes avoiding altered hydrological regimes, erosion, degradation of water quality and aquatic and riparian ecosystems and harm to social values such as visual amenity, recreation, heritage and sense of place.

Preventing degradation by managing and protecting waterways and their foreshore areas costs significantly less than restoring degraded waterways, and the benefits of the waterways are maintained for the future.

Due to their significance to the community, many foreshore areas are publicly owned to allow the community to share and have access to their benefits.

1.1 Purpose of the policy

This policy describes the process for identifying and managing foreshore areas. It guides land planners, environmental and planning consultants, waterway managers and landowners about the Department of Water's expectations.

The Department of Water's advice to planning authorities and other relevant people and agencies is based on this policy. The policy describes:

- our role in protecting waterways and their foreshore areas
- our expectations about how the boundaries of foreshore areas should be identified
- our expectations about the planning or legal mechanisms used to protect foreshore areas
- how we advise land planning authorities and administrators of other approval processes about the protection of foreshore areas
- our expectations about acceptable land-use activities within foreshore areas.

This policy updates and replaces *Foreshore policy no. 1: identifying the foreshore area* (Water and Rivers Commission 2002).

1.2 Important concepts

Foreshore areas are considered at all levels of land planning, when planning approval is required near waterways in accordance with the provisions of the *Planning and Development Act 2005*. Appendix A is an important part of the policy because it provides the details about our expectations at each of the levels of land planning (i.e. regional, district, local, subdivision and land development).

Foreshore areas may also be identified and protected by approval processes administered by other government agencies. For instance environmental impact assessments or processes to assess applications for native vegetation clearing permits, works approvals on prescribed premises, pastoral diversification and other permits on crown land, or development approvals in the Swan River Trust's Development Control Area.

The proponent of the change in land use is responsible for identifying the foreshore area and making commitments to protect or maintain it as part of land planning and other approval processes.

The Department of Water's role is to provide expertise and advice about foreshore areas to relevant people and agencies in accordance with the *Water Agencies (Powers) Act 1984* and other relevant legislation. Section 9 of the *Water Agencies (Powers) Act 1984* describes the general functions of the Minister for Water, including conserving, protecting and managing water resources. Appendix B outlines how legislation influences this policy.

1.3 Definitions

This section contains the definitions that are most important to the policy. These and other definitions are also provided in the glossary.

<i>Waterway</i>	Any river, creek, stream or brook, including its floodplain and estuary. This includes systems that flow permanently, for part of the year or occasionally; and parts of the waterway that have been artificially modified.
<i>Foreshore area</i>	The land that adjoins or directly influences a waterway. It is the area of transition between the edge of the waterway and the furthest extent of riparian vegetation, the floodplain and riverine landforms, or a negotiated area endorsed by the Department of Water.
<i>Foreshore reserve</i>	All or part of a foreshore area that is publicly owned and vested with a local government or state government department. It may be reserved for purposes such as foreshore protection or public recreation.
<i>Proponent</i>	For the purpose of this policy, a proponent is the person or organisation that is initiating a change in land use, subdivision or development activity. In the land planning process, this is the initiator of the planning proposal at each planning level (i.e. regional, district, local, subdivision or land development). For other approval processes, it is the initiator of the application or development proposal.

Biological and physical features of a waterway and its foreshore area

Its site-specific characteristics. These establish its capacity to support various functions and include:

- the extent of the riparian and terrestrial native vegetation associated with or influencing the waterway
- hydrology
- riverine landform (topography and geomorphology)
- landforms, soil types and soil characteristics that influence the extent of foreshore vegetation, erosion and the movement of nutrients and contaminants (including acid sulfate soils)
- aquatic and riparian flora and fauna and their habitat (including dry season refuges)
- land use.

Functions of a waterway and its foreshore area

The biological, chemical and physical processes that take place within the waterway (e.g. carbon and nutrient cycling) (Bennett et al. 2002).

Services of a waterway and its foreshore area

The beneficial outcomes to humans, or other ecosystems, that result from its flora, fauna and micro-organisms functioning together as an ecosystem, and its hydrology and landforms. For humans, the benefits are enjoyed, consumed or used to provide safety and wellbeing. The services include (modified from Lovett et al. 2004):

- protecting people and infrastructure from flooding
- reducing erosion and sedimentation
- maintaining river courses
- improving water quality
- retaining nutrients and decreasing nuisance or toxic algae and aquatic weeds
- draining land in the catchment
- maintaining healthy aquatic and riparian ecosystems, biodiversity and ecological connectivity
- providing water supplies for drinking, public purposes, agriculture and industry providing opportunities for recreation
- improving scenery, public amenity, cultural heritage and sense of place

- improving human health and psychological well-being
- benefiting commercial fishing, aquaculture, tourism and recreation-based businesses
- transportation by ferries and commercial boats and benefiting associated businesses
- contributing to increased property values.

2 Policy statement

The Department of Water's policy on foreshore areas is:

- 1 An appropriately identified and managed foreshore area is one that maintains or improves the functions, services and biological and physical features of the waterway (refer to Section 3.2).
- 2 Foreshore areas shall be identified and protected by planning or legal mechanisms when approvals are required near waterways to change the land use, subdivide or undertake a development activity (refer to sections 3.3 and 3.4).
- 3 The department will provide expertise and advice to land planning authorities and other government agencies who:
 - a identify foreshore areas through the land planning process (refer to Section 3.3)
 - b apply legal or planning mechanisms to protect foreshore areas, where appropriate (refer to Section 3.3.2)
 - c consider or apply legal mechanisms to protect foreshore areas in other approval processes (refer to Section 3.4)
 - d make decisions on proposed land uses and activities that may affect foreshore values (refer to sections 3.3, 3.4 and 3.5).
- 4 The proponent is responsible for identifying waterways foreshore areas as part of land planning and other approval processes (refer to sections 3.2 and 3.3.1).
- 5 Activities within the foreshore area that risk degrading the functions and services of a waterway are unlikely to be supported (refer to Section 3.5).
- 6 The requirements provided in Appendix A for each level of land planning shall be met.

3 Implementing this policy

3.1 When does this policy apply?

This policy applies to all waterways in Western Australia, except those in the conservation estate (e.g. national parks and nature reserves). This includes:

- waterways that flow permanently, for part of the year or only occasionally
- artificially modified waterways such as those that were excavated or straightened as part of historical management practices, including situations where constructed drains or irrigation channels form a section or reach of the waterway.

The policy is relevant to all levels of land planning and applies when an appropriate foreshore area has not already been established and when planning approval, in accordance with the provisions of the *Planning and Development Act 2005* is required near waterways (refer to Section 3.3). This includes when there will be changes to the existing land use, subdivision, or development where a development application is required.

The policy also applies to the advice that the Department of Water provides as part of approval processes administered by other government agencies (refer to Section 3.4).

3.2 How are foreshore areas identified?

A foreshore area that has been designed appropriately will:

- allow compatible land uses and related development activities to occur
- maintain or improve the functions, services and biological and physical features of the waterway
- enable future restoration when restoration is recommended for degraded waterways. This may include restoring meanders in a straightened waterway.

The proponent is responsible for identifying the foreshore area of waterways as part of land planning and other approval processes. The process outlined in Figure 1 should be followed in the land planning process. The process should also be followed when possible under other approval processes. The final decision is made by the authority that administers the land planning or other approval process. The Department of Water provides expertise and advice to the agency responsible for the final decision, and the proponent at steps 1 and 4.

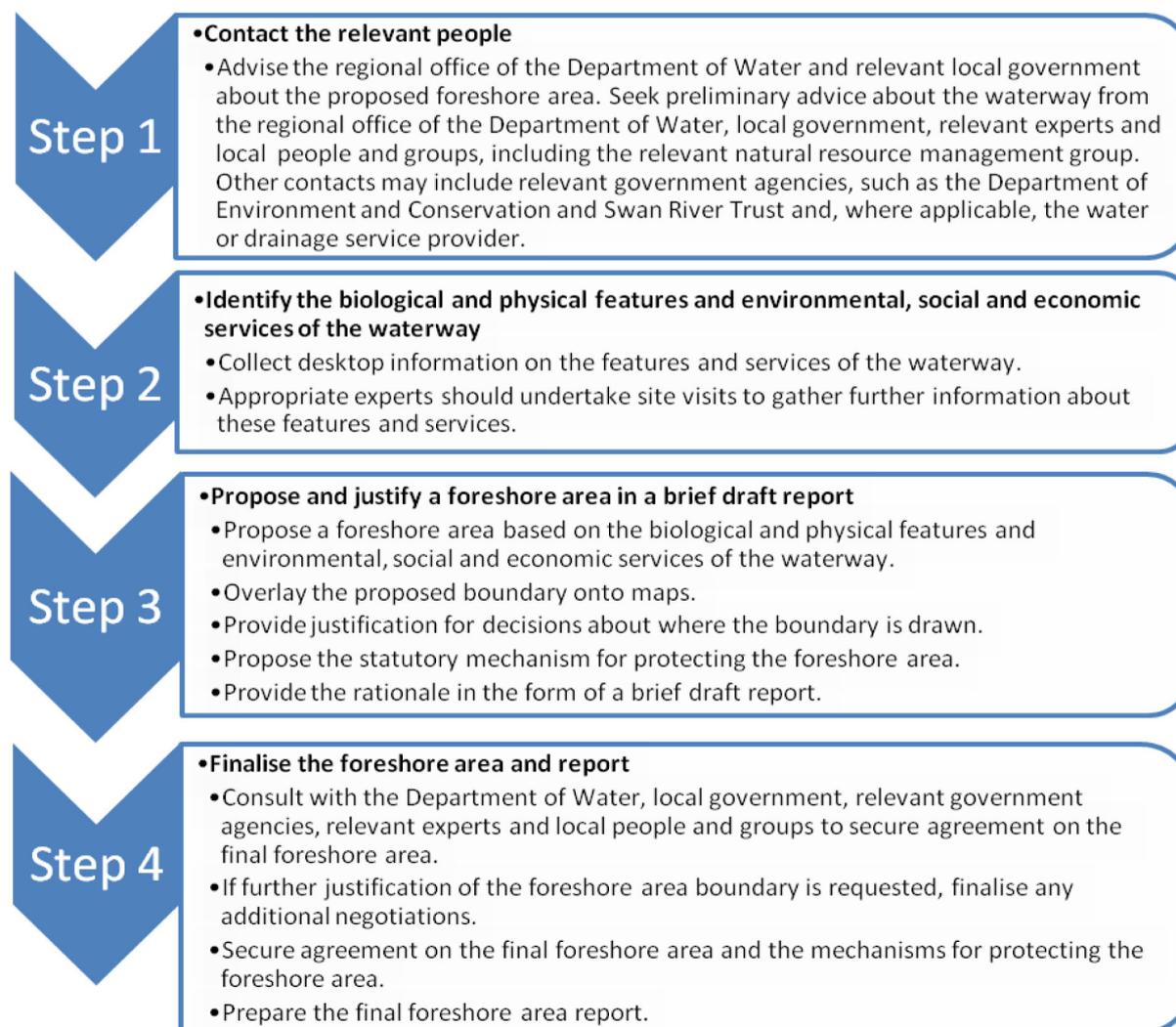


Figure 1 The steps for identifying the foreshore area

Where constructed drains or irrigation channels form a section or reach of the waterway, advice is required at Step 1 from the drainage service provider, where applicable. This is in addition to advice sought from other relevant people and agencies.

For further advice on how to identify a foreshore area, refer to the *Guidelines for identifying and establishing waterways foreshore areas* (Department of Water in preparation) when the guidelines are published. Until then, the existing guidelines, *Determining foreshore reserves* (Water and Rivers Commission 2001) should be used.

3.3 Approval and protection of foreshore areas in the land planning process

Land-use planning decisions are made by the planning authorities identified under the *Planning and Development Act 2005*. Depending on the nature of the proposal, the relevant authority may be the Minister for Planning, the Western Australian Planning Commission, a local government, redevelopment authority or development assessment panels.

The Department of Water provides expertise and advice to planning authorities to ensure that the appropriate level of protection is given to waterways. This includes providing advice about foreshore areas, assessing the proposed boundaries of foreshore areas and making recommendations for appropriate land uses and activities within foreshore areas.

3.3.1 The role of Better urban water management

This section explains how the requirements of *Better urban water management* (Western Australian Planning Commission 2008) are implemented in relation to foreshore areas.

Foreshore areas are considered at all levels of land planning. This ensures that the higher levels of land planning guide informed decisions about foreshore areas at subsequent planning levels.

The information about foreshore areas is contained in the relevant water management report (such as a regional, district or local water management strategy or urban water management plan) and reflected in the relevant land planning tool.

Figure 2 shows the range of land planning tools and water management reports required at each of the levels of land planning¹. Regional, district and local water management strategies are summarised in the relevant land planning tool and attached as a technical appendix.

The proponent is responsible for preparing the water management report. Depending on the level of land planning, the proponent may be the state government, redevelopment authority, local government or land developer.

At the regional and district level of land planning, indicative foreshore area boundaries are required to guide more detailed investigation and planning at later stages of the planning process. Exact foreshore area boundaries are identified at the local planning level, unless there are high risk (such as potentially polluting) land uses, significant site constraints or unless detailed district structure planning is being undertaken. In these circumstances, either refinement or finalisation may be expected at the district planning level.

¹ The water management report required at each planning level may depend on the water resource management issues and the risks from the proposed development. For further information, refer to *Better urban water management guidance note 2: Water management reports in the land planning process* (Department of Water in preparation).

If an urban water management plan is required at the subdivision level, it will accompany subdivision applications where an approved local water management strategy does not exist. Where an approved local water management strategy exists, the urban water management plan does not need to be lodged with the application for subdivision but is still required to be lodged and approved prior to any site works occurring. Subdivision and development applications are required to provide evidence of all relevant water management strategies and plans.

Further details about the person or agency responsible for preparing and approving these water management strategies and plans are provided in *Better urban water management* (Western Australian Planning Commission 2008).

Further information about the requirements for considering, identifying and protecting foreshore areas at each of the levels of land planning is provided in Appendix A. This is an important part of the policy because it explains the department's expectations in more detail.

The *Better urban water management* guidance note series provides further advice about water management strategies and urban water management plans.

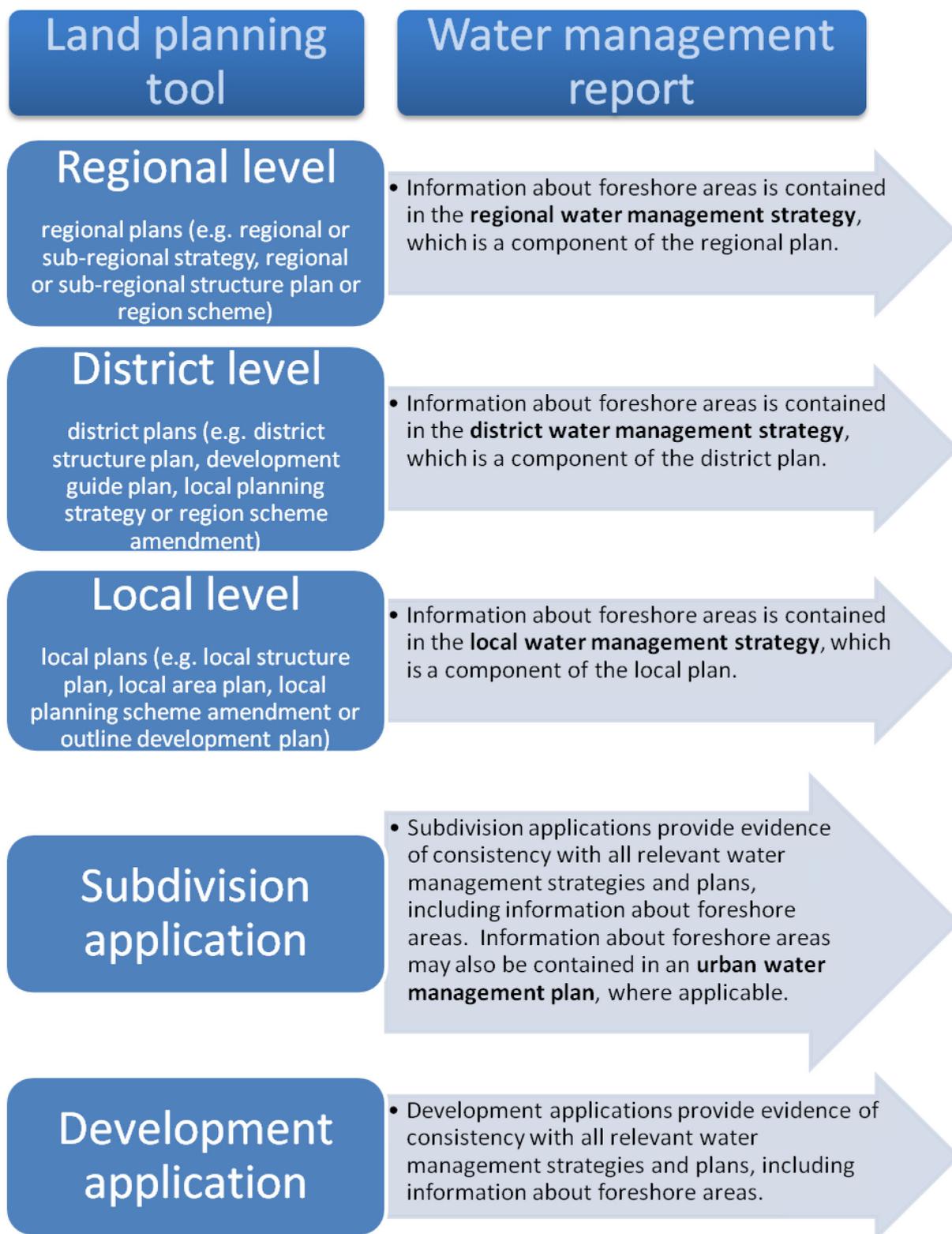


Figure 2 Land planning tools and water management reports at each of the levels of land planning

3.3.2 Protection of foreshore areas using land planning and land administration processes

Foreshore areas are protected in land planning and land administration processes by:

- creating and managing foreshore reserves
- creating public open space that includes a foreshore area
- conservation covenants
- restrictive covenants
- applying conditions such as building envelopes and installing fencing or other barriers.

These measures are integrated into the planning process to ensure that adequate consideration is given to protection of foreshore areas at each level of land planning.

Foreshore reserves and public open space that includes a foreshore area are preferred options because they allow for consistent management practices throughout the reserve and allow the foreshore to be shared as a public resource. Covenants and other protection measures, if acceptable to the covenanting agency, may be used when land is retained in private ownership, subdivided and sold to multiple landowners. This is generally less desirable as management practices may be inconsistent and public access may be restricted.

3.3.3 Exceptions to the requirement to establish a foreshore area

In special circumstances exceptions to the requirement to identify and establish a foreshore area may be granted. Examples include some small subdivisions and development applications where the proposed land use or development activity poses an insignificant additional risk to the waterway. In these circumstances, a standard foreshore width that adequately protects the waterway may be requested instead of the process described in Section 3.2. This could be 30 metres or another width appropriate to the site conditions, either measured outwards from the outer edge of the wetland vegetation, two- to three- year average recurrence interval floodway or the high water mark (or another method suitable to the site) on each bank of the waterway. (Refer to Appendix C, point 2 'Are standard foreshore widths recommended and is there a minimum foreshore width?' for further information.) Proponents are encouraged to discuss possible exceptions with the regional office of the Department of Water, local government and other relevant agencies.

3.4 Protection of foreshore areas by other approval processes

Foreshore areas may be protected via approval processes administered by the Environmental Protection Authority, Pastoral Lands Board or other government agencies, such as the Office of the Environmental Protection Authority, Department of

Environment and Conservation, Swan River Trust and Department of Regional Development and Lands. Examples are provided in Table 1 below.

Table 1 Examples of other approval processes relevant to foreshore areas

Approval process	Responsible agency	Legislation
Environmental impact assessment	Assessment by the Environmental Protection Authority, assisted by the Office of the Environmental Protection Authority	Part IV of the <i>Environmental Protection Act 1986</i>
Native vegetation protection (native vegetation clearing permits)	Department of Environment and Conservation and, where delegated, the Department of Mines and Petroleum	Part V of the <i>Environmental Protection Act 1986</i> and the <i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i>
Works approvals for prescribed premises	Department of Environment and Conservation	Part V of the <i>Environmental Protection Act 1986</i> and the <i>Environmental Protection Regulations 1987</i>
Development approval in the Development Control Area	Swan River Trust	<i>Swan and Canning Rivers Management Act 2006</i>
Pastoral diversification and other permits on crown land	Assessment by the Pastoral Lands Board, assisted by the Department of Regional Development and Lands	<i>Land Administration Act 1997</i>

The Department of Water may provide expertise and advice to relevant agencies to ensure that foreshore areas are adequately considered during decision making. Similarly, when policies, guidelines and management plans are prepared or administered by other state or local government agencies for specific areas, land uses or activities, the Department of Water provides advice that is consistent with this policy.

The Environmental Protection Authority considers waterways and their foreshore areas when undertaking the environmental impact assessment of development proposals and statutory planning schemes referred to it under Part IV of the *Environmental Protection Act 1986*. Chapter B5 of *Guidance statement 33: Environmental guidance for planning and development* (Environmental Protection Authority 2008) describes the way the Environmental Protection Authority considers waterways when undertaking environmental impact assessments of statutory planning schemes and proposals.

Under Section 51O of the *Environmental Protection Act 1986*, the Department of Environment and Conservation must have regard to the ten clearing principles contained in Schedule 5 of the Act when deciding to grant or refuse a native vegetation clearing permit. For instance, native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse (i.e.

waterway) or wetland (principle f), and native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water (principle i). Principle (f) aims to conserve vegetated waterways and wetlands and their foreshore areas and buffers (Department of Environment and Conservation 2009).

For clearing proposals, consideration must also be given to land planning tools, such as local and regional planning strategies, by-laws and policies, or other matters relevant to the clearing proposal. Examples of other relevant matters include consideration of the effects of land use, previous decisions related to the area, other legislative requirements related to the proposal² and the necessity of the clearing (Department of Environment 2009). If the clearing proposal is likely to have a significant effect on the environment, it may require referral to the Environmental Protection Authority under Section 38 of the *Environmental Protection Act 1986*³.

The Swan River Trust controls activities and land development in its Development Control Area, which includes the waters of the Swan and Canning rivers and the adjoining parks and recreation reserves. The trust also has a role in protecting and improving the ecological and community benefits and amenity of the Swan Canning Riverpark. One of the functions of the trust under the *Swan and Canning Rivers Management Act 2006* is to 'provide advice and assistance to planning authorities so that, in relation to the Riverpark, proper provision is made in planning schemes for the reservation of land for protection, and future acquisition of river foreshores'.

3.5 What land uses and development activities are compatible with a foreshore area?

The Department of Water advises on development activities that are compatible with a foreshore area. When providing this expertise and advice the department:

- considers the purpose of publicly owned foreshore reserves, which could be foreshore protection, or foreshore protection and public recreation
- aims to protect the functions and services of the waterway
- allows for future restoration where required.

Some development activities may be supported in foreshore areas where they are beneficial to the waterway, or they are appropriately located, designed and managed. These include the following circumstances:

² For example, whether the proposal requires a water licence under the *Rights in Water and Irrigation Act 1914*, which is administered by the Department of Water.

³ If the Environmental Protection Authority decides to assess a significant proposal, a decision about a clearing proposal must be consistent with the implementation decision that followed the Environmental Protection Authority's assessment. Clearing in accordance with that decision does not require a clearing permit (Department of Environment and Conservation 2009).

- Uses of land and water that by their nature need to be sited near waterways e.g. boat launching facilities, jetties and works for the protection of the foreshore area.
- Minimal impact development may be supported if it is compatible with the intent of protecting the functions and services of the waterway. For example, a walking trail or access points for water-based recreation may allow for more direct and less damaging public access to a waterway.
- Some foreshore areas in city and regional town centres may be publicly owned and managed as foreshore reserves for recreation. While retaining their native vegetation maintains their natural functions, in some situations parkland or grassed areas may be supported for social benefits.
- Similarly, in some situations, a limited number of small-scale buildings or facilities that provide public amenity (e.g. for recreation or tourism) may be supported in highly to moderately modified foreshore areas in town and regional centres, where they are:
 - designed, located and managed to have a minimal effect on the waterway and its foreshore area, including the native vegetation, landform, hydrology and water quality
 - designed and located to minimise flood risk, property damage and obstruction to river flood flows
 - connected to a reticulated sewerage system if wastewater management is required.

To ensure the appropriate location, design and management of these development activities, the Department of Water and other relevant government agencies should be consulted early in the land planning process. Preparation and implementation of a foreshore management plan may be required to minimise adverse effects on the waterway.

The Department of Water assesses the risks to waterways and supports proposals that appropriately manage these risks. The department generally does not support development activities within a foreshore area if they are not consistent with the purpose of the foreshore area, if they may damage the condition of a waterway, or if the risks to waterways are not appropriately managed. This includes development activities that require:

- native vegetation clearing for development activities that are not supported in a foreshore area⁴
- altering the hydrology of the waterway
- changes to the landform, including filling, excavating and mining

⁴ The Department of Water provides advice about native vegetation clearing in foreshore areas to the Department of Environment and Conservation and, where delegated, the Department of Mines and Petroleum. These agencies administer the *Environmental Protection Act 1986* and *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

- applying nutrients
- discharging wastewater, including via on-site wastewater management systems. On-site wastewater management systems should not be located within a foreshore area or within the separation distance to the waterway required by the Department of Health.
- disturbance of acid sulfate soils, unless managed appropriately. Any disturbance of acid sulfate soils must be in accordance with the requirements of the Department of Environment and Conservation.
- construction of buildings and types of infrastructure that are not supported in foreshore areas, unless the relevant state and local government agencies approve the proposal. Newly constructed stormwater infrastructure (e.g. pipes and constructed channels) should not be located within a foreshore area unless the Western Australian Planning Commission, Department of Water, Office of the Environmental Protection Authority or, where applicable, the Swan River Trust endorse the proposal.

The Department of Water may seek advice from the Department of Environment and Conservation regarding proposals in foreshore areas that may affect significant environmental values, such as biodiversity and threatened species and communities, and wetlands.

Any proposals in foreshore areas must be consistent with the legislation, regulations and policy requirements of government agencies, such as the Department of Water, planning authorities (e.g. Western Australian Planning Commission, Department of Planning, local government or redevelopment authority), Department of Environment and Conservation and, where applicable, the Swan River Trust. For instance, acceptable land uses in catchment areas and water reserves proclaimed under the *Country Areas Water Supply Act 1947* and *Metropolitan Water Supply, Sewerage and Drainage Act 1909* are specified in the relevant legislation and policies; and in areas subject to the *Swan and Canning Rivers Management Act 2006*, the relevant Swan River Trust policies, including development policies, apply.

4 General information

4.1 Policy principles

The following principles underpin this policy:

- Waterways are valuable state assets that contribute economic, social and environmental services to the Western Australian community. These services are dependent on the physical condition and ecological health of the waterway.
- Management decisions about foreshore areas should aim to protect waterway and foreshore values and avoid acute and cumulative adverse effects on the physical condition and ecological health of waterways. They should also aim to avoid or minimise degradation to waterways to reduce the cost of restoration in the future.

4.2 Policy outcomes

The application of this policy should result in a foreshore area that protects, maintains or improves the condition of waterways and riparian areas, and provides agreed public amenity. Within these areas, land based activities should be appropriately located, designed, constructed and approved to protect or maintain the community and environmental values and businesses that rely on the physical condition and ecological health of these waterways.

Appendix C, point 1 'Why do we need to protect and maintain foreshore areas?' provides further advice about the policy outcomes.

4.3 Links to other policies and documents

Policies and other relevant documents may change and new policies and documents may be developed. The Department of Water recommends visiting the websites of the relevant agencies to find the latest versions. The policies and other documents that are currently relevant to this policy include:

- *Intergovernmental agreement on a national water initiative* (Commonwealth of Australia et al. 2004)
- *State planning policy 2.9: Water resources* (Western Australian Planning Commission 2006a). (This policy is being reviewed and the latest version should be used when it is available.)
- *Better urban water management* (Western Australian Planning Commission 2008)
- *Liveable neighbourhoods: a Western Australian Government sustainable cities initiative* (Western Australian Planning Commission 2009a)
- *Guidance statement 33: environmental guidance for planning and development* (Environmental Protection Authority 2008), particularly Chapter B5 'Waterways'.

- *A guide to the assessment of applications to clear native vegetation under Part V of the Environmental Protection Act 1986* (Department of Environment and Conservation 2009).
- *State planning policy 2.10 Swan Canning river system* (Western Australian Planning Commission 2006b)
- *State-wide policy 13 – recreation within public drinking water source areas on crown land – draft for public comment* (Department of Water 2012). (This policy is being reviewed and the latest version should be used when it is available.)
- *Guidelines for identifying and establishing waterways foreshore areas* (Department of Water in preparation). Until these guidelines are finalised, the existing guidelines, *Determining foreshore reserves* (Water and Rivers Commission 2001) should be used.

Other complementary guidance documents include the *River restoration manual, a guide to the nature, protection, rehabilitation and long-term management of waterways in Western Australia* (Water and Rivers Commission 1999–2003), *Stormwater management manual for Western Australia* (Department of Water 2004–2007) and *Decision process for stormwater management in Western Australia* (Department of Water 2009).

4.4 How legislation influences this policy

Appendix B outlines how legislation influences this policy.

4.5 Commonly asked questions about foreshore areas

Appendix C answers some commonly asked questions about foreshore areas, including:

- Why do we need to protect and maintain waterways foreshore areas?
- Are standard foreshore widths recommended and is there a minimum foreshore width?
- What is the difference between a foreshore area and a defined floodplain?
- Is a foreshore area sufficient to protect water quality in the waterway?
- When should wetlands be included in a foreshore area?
- How is this policy different from the previous policy?

4.6 When will this policy be reviewed?

This policy will be reviewed within five years. As part of the review process, an evaluation of the effectiveness of this policy will be undertaken.

Appendices

Appendix A – Foreshore area requirements at each of the levels of land planning

Appendix A aims to provide general advice about the expectations of the Department of Water. Since not all situations are the same, a flexible approach will be taken. If information needed to meet the requirements of this appendix is not available from existing sources, such as higher planning level documents, then the proponent will be requested to conduct their own research to provide it.

The information requested from proponents to meet the requirements of this appendix is usually contained in a water management report (i.e. regional, district or local water management strategy or urban water management plan). The proponent is responsible for preparing the water management report. Depending on the level of land planning, this may be the state government, redevelopment authority, local government or land developer. The Department of Water provides expertise and advice to the proponent and the decision making authority. Refer to Section 3.3.

The following information outlines the requirements for identifying and protecting foreshore areas at each of the levels of land planning (refer to Section 3.3 and Figure 2).

If the proposed land-use change poses a high risk to waterways or if waterways have highly valued environmental, social or economic services, then the level of detail provided by the proponent at the early levels of land planning will be greater than otherwise required. Examples of high risks include situations where the nature of the development has a high potential to pollute the water, or where there are significant site constraints.

Regional, district and local planning

The following tables describe the main actions, supporting information and commitments required at the regional, district and local planning levels.

Main actions	Comments	Regional	District	Local
Map and identify waterways and their catchments	Done at an appropriate scale	✓	✓	✓
Define the foreshore area with the appropriate level of precision	As per Section 3.2 and the <i>Guidelines for identifying and establishing waterways foreshore areas</i> (Department of Water in preparation).			
<i>Indicative</i> foreshore area	For planning at a regional level	✓		

Main actions	Comments	Regional	District	Local
<i>Refined</i> foreshore area	Identified at the district planning level if: <ul style="list-style-type: none"> • the risks are low • there are no significant site constraints • detailed district structure planning is not being undertaken. 		✓	
<i>Final</i> foreshore area	Identified at the district planning level if: <ul style="list-style-type: none"> • the risks are high • there are significant site constraints • detailed district structure planning is being undertaken. Identified at the local planning level in low risk circumstances.		✓	✓
State that the boundary of any indicative foreshore areas will be further defined at the next planning level (where relevant).	If the foreshore area has not been defined at the planning level at which the land-use change is being proposed.	✓	✓	
Identify how foreshore areas will be protected in the planning process, and proposed ownership or vesting of the foreshore area (e.g. vesting agency or private ownership). For example by: <ul style="list-style-type: none"> • foreshore reserves • public open space that includes foreshore areas • conservation and restrictive covenants • applying conditions, such as building envelopes and installing fencing and other barriers. 	Planning mechanisms to protect foreshore areas and proposed ownership or vesting should be identified at the appropriate planning level. At earlier planning levels, conceptual or proposed advice may be appropriate, with commitments to refine decisions at the appropriate planning level.	✓	✓	✓
Set objectives for waterways management, in association with the Department of Water, local government and, where relevant, the Swan River Trust.	Including maintenance and protection of waterways features, functions and services, appropriate to the level of land planning.	✓	✓	✓

Main actions	Comments	Regional	District	Local
Recommend appropriate land uses and development activities within foreshore areas, in association with the Department of Water, local government and other relevant government agencies.	Appropriate land uses and development activities are outlined in Section 3.5. The level of detail should be appropriate to the level of land planning.	✓	✓	✓
Other actions.	Will depend on the features, services, management issues and current condition of the waterways and the risks from any proposed land development.	✓	✓	✓

Supporting information	Comments	Regional	District	Local
Describe the waterways and their indicative or final foreshore areas.	Include current condition, features, services and any management issues.	✓	✓	✓
Recognise the importance of the functions and services of waterways and their foreshore areas.		✓	✓	✓
Prepare a foreshore management plan.	Where relevant		✓	✓
State that a foreshore management plan will be prepared at the subsequent (lower) planning level.	Where required, and if a foreshore management plan has not been prepared at the planning level at which the land-use change is being proposed.	✓	✓	

Applications for subdivision

Ideally, the foreshore area should be identified before an application for subdivision is made. If it has not, then it will need to be identified in the subdivision application or urban water management plan.

The foreshore area should also be protected by planning or legal mechanisms before this level of land planning (e.g. by a foreshore reserve or public open space that includes the foreshore area), and a foreshore management plan should be available if required. Alternatively, these mechanisms may be required as conditions of subdivision.

Conditional approval may be required to protect foreshore areas at the subdivision level if they are not already part of foreshore reserves. The following conditions are consistent with the *Model conditions schedule* (Western Australian Planning Commission 2009b) and proposed new conditions. Conditions may include:

- a foreshore management plan
- setting aside a foreshore reserve

- a conservation or restrictive covenant, if acceptable to the covenanting agency
- fencing or other barriers to restrict livestock, vehicles or public access
- designing and constructing waterway crossings to minimise detrimental effects on the natural form and function of the waterway
- restoring riparian vegetation with local native species
- preparing and implementing a works management plan, erosion management plan or nutrient and irrigation management plan. Works management plans need to demonstrate that site works will not interfere with the waterway or adversely affect water quality. Erosion management plans detail how erosion is minimised during site works. Nutrient and irrigation management plans are designed to assist efficient water use and protect water quality by ensuring appropriate application of fertilisers. These plans may alternatively be part of a foreshore management plan.
- protecting the natural flow and ecology of the waterway
- allowing for the passage of aquatic fauna
- requiring building envelopes with appropriate setbacks from the waterway and its foreshore area, for buildings and on-site wastewater management systems
- stormwater management systems should be designed and constructed in accordance with the *Stormwater management manual for Western Australia* (Department of Water 2004–2007) and the *Decision process for stormwater management in Western Australia* (Department of Water 2009)).

If required, other conditions may be recommended by the Department of Water, local government or other state government agencies.

The agency that requested the attachment of a condition is responsible for advising the relevant planning authority that the proponent has met the requirements of the condition.

For some small subdivision applications where the proposed land use or development activity poses an insignificant additional risk to the waterway, a foreshore area may not need to be formally established. These exceptions need to be discussed and negotiated with the regional office of the Department of Water and the relevant local government. Other measures may be required to protect the functions and services of the waterway (e.g. a standard foreshore width may be applied and fencing and erosion management may be required).

Development applications

Ideally the foreshore area should have been identified and established before this stage. If it has not, then it may need to be identified using the method in this policy, or a standard foreshore width may be accepted by the Department of Water and the relevant planning authority. For low risk development applications, a foreshore area may not need to be formally established. However, these exceptions need to be

discussed and negotiated with the regional office of the Department of Water and the relevant planning authority, including the relevant local government.

Conditions similar to those for subdivisions may be required, such as:

- restrictive or conservation covenants
- works and erosion management
- restoring native riparian vegetation
- protecting the natural flow of the waterway
- allowing for the passage of native fauna
- developing a foreshore management plan
- building envelopes with appropriate setbacks to the waterway and its foreshore area, for buildings and on-site wastewater management systems
- permanent or temporary fencing.

Foreshore management plans

If a foreshore management plan is required, the actions to be implemented may include:

- protecting the waterway and foreshore area by, for example:
 - installing fencing, waterways crossings and clearly marked access points to avoid trampling of riparian vegetation
 - management of site works and erosion
 - use of best environmental practices for land uses and activities, and addressing how irrigation and application of fertilisers, pesticides and other chemicals will be managed
- designing and constructing restoration works in accordance with the river restoration manual, *A guide to the nature, protection, rehabilitation and long term management of waterways in Western Australia* (Water and Rivers Commission 1999–2003), where relevant
- fire, weed and pest management, where appropriate
- management of other issues determined to be relevant by the Department of Water, local government or other government agency.

Appendix B – How legislation influences this policy

Through the *Water Agencies (Powers) Act 1984*, the Department of Water leads waterways management in Western Australia by coordinating cross-government efforts to protect and manage water resources, including waterways.

This policy outlines how the relevant provisions of the *Water Agencies (Powers) Act 1984*, *Waterways Conservation Act 1976*, *Rights in Water and Irrigation Act 1914* and other legislation applies to waterway foreshore areas. Section 9 of the *Water Agencies (Powers) Act 1984* outlines the general functions of the Minister for Water, including conserving, protecting and managing water resources, assessing water resources and planning for the use of water resources.

Land-use planning and management requirements in foreshore areas are applied under legislation administered by other agencies, as outlined below.

The *Planning and Development Act 2005* is the principal land planning Act in Western Australia. It provides for a land-use planning system and promotes the sustainable use and development of land in the state. The Act is administered by the Minister for Planning, the Western Australian Planning Commission, the Department of Planning, local government and redevelopment authorities⁵.

The Department of Water has an important role in supporting planning authorities in the administration of the *Planning and Development Act 2005*. This includes advising land planning authorities on integrating land and water planning and ensuring that water resources are appropriately considered and protected in the land planning process.

The Department of Water also has a role in providing advice to, and considering the legislation administered by, the following agencies to ensure foreshore areas are appropriately considered and protected in other approval and land administration processes:

- Office of the Environmental Protection Authority when it assists the Environmental Protection Authority and the Minister for the Environment to administer the environmental impact assessment process under Part IV of the *Environmental Protection Act 1986*
- Department of Environment and Conservation when it administers licences, works approvals and the native vegetation protection process under Parts IV and V of the *Environmental Protection Act 1986*, Environmental Protection (Clearing of Native Vegetation) Regulations 2004 and Environmental Protection Regulations 1987

⁵ The Metropolitan Redevelopment Authority and local governments also operate under the *Metropolitan Redevelopment Authority Act 2011* and *Local Government Act 1995*, respectively.

- Department of Mines and Petroleum when it administers the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 and Part V Division 2 of the associated parts of the *Environmental Protection Act 1986* under delegation
- Swan River Trust when it administers the *Swan and Canning Rivers Management Act 2006* in relation to the Development Control Area, Riverpark and their enforcement actions (e.g. river protection notices) in the wider catchment
- Department of Regional Development and Lands when it assists the Pastoral Lands Board to administer the *Land Administration Act 1997* to manage land uses and permits on crown land, including pastoral diversification permits
- Department of Regional Development and Lands when it creates and manages foreshore reserves under the *Land Administration Act 1997*
- Department of Environment and Conservation, Department of Agriculture and Food and National Trust of Australia, when they create covenants to protect vegetation in foreshore areas under the *Transfer of Land Act 1893*, *Soil and Land Conservation Act 1945* and *National Trust of Australia (W.A.) Act 1964*, respectively.

Other statutory roles of the Minister for Water and Department of Water are involved when the department provides expertise and advice about waterways and their foreshore areas. They include:

- the general function of developing plans for and providing advice on flood management under Section 9 of the *Water Agencies (Powers) Act 1984*
- administering the declared management areas under the *Waterways Conservation Act 1976* (i.e. Albany waterways, Avon River, Wilson Inlet, Peel–Harvey estuaries and Leschenault Inlet). In addition to other water resource management functions, the minister is responsible for public amenity and has regard for maintaining public access in these areas.
- applying the *Country Areas Water Supply Act 1947* and *Metropolitan Water Supply, Sewerage and Drainage Act 1909* and associated by-laws to protect waterways that are public drinking water sources
- applying the *Rights in Water and Irrigation Act 1914*, which provides for a permit system for activities that may damage, obstruct or interfere with water flow or the beds and banks of watercourses and wetlands in proclaimed rivers, surface water management areas and irrigation districts. The objects of this Act include providing for the sustainable use and development of water resources, protection of their ecosystems and the environment in which water resources are situated, and assisting the integration of water resources management with other natural resources management.

Appendix C – Commonly asked questions about foreshore areas

1. Why do we need to protect and maintain waterways foreshore areas?

Waterways foreshore areas are protected and maintained because they provide important environmental, social and economic services. The quality of these services depends on the physical condition and ecological health of the waterway and its foreshore area.

Environmental services

The environmental services of waterways and their foreshore areas include protection from flooding, reduction of erosion and sedimentation, maintenance of river courses, improvements to water quality, retention of nutrients and decreased nuisance or toxic algae or aquatic weeds, drainage of the land in the catchment and maintenance of healthy terrestrial and aquatic ecosystems and biodiversity.

For example, well vegetated foreshore areas protect waterway banks during flooding by stabilising their banks. When waterway banks are cleared of their riparian vegetation, floods are more likely to cause waterways to change their course and form new meanders or flood channels. Topsoil can also be stripped from the floodplain and accelerated bank erosion can occur. This can lead to the loss of valuable agricultural land and infrastructure such as roads and bridges.

Good management of foreshore areas can decrease the amount of nutrient-rich runoff and soil entering waterways. Under the right conditions, well vegetated foreshore areas may uptake or process natural or added nutrients, which would otherwise be washed into waterways and promote the growth of nuisance algae and aquatic weeds. They also stabilise the waterway banks, reducing sediment loads and water turbidity.

Vegetated foreshore areas also help to reduce light and temperature in waterways. This controls the growth of nuisance or toxic algae and aquatic weeds, even when nutrient levels in the water have increased.

Natural foreshore areas play an important role in the lifecycle of native flora and fauna, including some that cannot live in other areas. They provide habitat for aquatic fauna, important food sources, biodiversity corridors, refuge for fauna during dry seasons, drought or fire and corridors for dispersal of native flora, preventing local extinctions and isolation of flora species (Lovett et al. 2004).

Social services

Waterways and their foreshore areas are important to people for reasons including provision of water supplies, recreation, amenity, Aboriginal and cultural heritage and sense of place.

Waterways and other natural areas can also help to build social interactions within a community. These areas play a vital role in human health, wellbeing and development. Recent research shows that accessibility to natural areas can reduce crime, foster

psychological wellbeing, reduce stress, increase productivity and promote healing (Deakin University and Parks Victoria 2008).

Good planning practices can ensure that communities have adequate public access to these areas. Recognition of the importance of these types of natural areas is also central to programs such as Healthy Parks, Healthy People (Department of Environment and Conservation undated) and Nature Play WA (Department of Sport and Recreation 2012).

Economic services

Waterways and their foreshore areas contribute significantly to the economy of Western Australia. Their economic services include:

- providing water supplies for drinking, public purposes, agriculture and industry
- providing employment opportunities in commercial fishing and aquaculture businesses
- providing employment opportunities in tourism and recreation based businesses, including water based adventure and boat tours, retail and hire businesses
- transportation by ferries and commercial boats and benefiting associated businesses, including increasing employment opportunities
- infrastructure, such as boat launching ramps and jetties
- contributing to increased property values due to their amenity and visual appeal. The values of rural and commercial properties also benefit from increased agricultural capacity and potential for water based recreation or tourism.

The economic services of waterways and their foreshore areas are often closely linked to their environmental and social services. For example, waterways and their foreshore areas that are in good condition may:

- avoid costs that would be incurred in the absence of environmental services (such as flood protection, bank stabilisation, maintenance of river courses and nutrient retention and reducing algal blooms)
- avoid or minimise replacement costs, since protecting or restoring a foreshore area is likely to cost less than stabilising banks after significant erosion has occurred, or to be less than the construction of a more effective public drinking water treatment plant due to degraded water quality. Costs of preventing and minimising degradation are significantly lower than for managing and restoring degraded waterways.
- protect the viability of waterway dependent businesses such as commercial fisheries and tourism cruises.

2. Are standard foreshore widths recommended and is there a minimum foreshore width?

The Department of Water recommends a flexible approach to identifying foreshore areas, rather than simply adopting 'standard' foreshore widths. Historically, a foreshore area width of 30 metres for waterways and 50 metres for estuaries was generally applied. It was measured separately for each bank of the waterway, outwards from either the outer edge of wetland vegetation, the two- to three- year average recurrence interval floodway or the high water mark (bankfull) level.

This is still the minimum acceptable foreshore width in some circumstances, as described in the *Guidelines for identifying and establishing waterways foreshore areas* (Department of Water in preparation). However, in many cases use of this method will not adequately protect waterways functions and services, or enable future restoration. This method also does not allow for negotiation of narrower foreshore widths (less than 30 metres) for some very minor waterways. For instance, this could include small upland tributaries that are heavily degraded (i.e. with few remaining functions and services), where restoration is not proposed and the proposed adjacent land use is not likely to cause additional degradation downstream.

The adoption of standard foreshore widths will be accepted by the Department of Water only in the special circumstances described in Section 3.3.3, for example for small subdivisions and development applications where the waterway will be adequately protected, and the proposed land use or development activity poses an insignificant additional risk to the waterway.

3. What is the difference between a foreshore area and a defined floodplain?

Floodplain development strategies and floodplain mapping are related to major river flooding only. They are site specific and are designed to minimise the risks to properties, infrastructure, public health and amenity. While flooding is a major consideration for land planning, other issues are addressed when identifying the foreshore area. These include protection of the functions and environmental, social and economic services of a waterway.

4. Is a foreshore area sufficient to protect water quality in the waterway?

Where potentially polluting land uses or activities are proposed near a waterway, the foreshore area may not provide a sufficient separation distance, so a foreshore buffer is required. A foreshore buffer is the additional distance required between a foreshore area and any proposed development to help protect the water quality and manage the condition of the waterway (Environmental Protection Authority 2008). Foreshore buffers provide an additional barrier to slow down or limit the passage of contaminants from normal operations or as a result of chemical or wastewater spills via surface runoff or groundwater. Potentially polluting land uses and activities include some types of intensive agriculture and effluent treatment facilities.

The recommended foreshore buffer will depend on the design and layout of the proposed land development and land use, the risk (likelihood and consequences) of

water contamination, the technology and management measures used to protect the waterway and the extent to which management measures are enforceable.

The foreshore buffer may be recommended by the Department of Water through the land planning process, the Department of Environment and Conservation through the land planning process or works approvals issued under Part V of the *Environmental Protection Act 1986*, or the Office of the Environmental Protection Authority via the environmental impact assessment process under Part IV of the *Environmental Protection Act 1986*.

Other considerations include existing site issues such as acid sulfate soils and contaminated sites. The Department of Environment and Conservation provides advice about acid sulfate soils and administers the *Contaminated Sites Act 2003*.

Foreshore buffers may be managed as though they are part of the foreshore area or separate to the foreshore area, depending on the site conditions and the requirements determined during the relevant approval process.

5. When should wetlands be included in a foreshore area?

The Department of Environment and Conservation has overall responsibility for wetland conservation, including management and protection of wetlands and their buffer areas. Wetlands that are adjacent to waterways or hydrologically connected to waterways may be included in a waterway foreshore area where this is supported by the Department of Environment and Conservation. These wetlands may be important to the functioning of the waterway and the foreshore area, for example, by retaining and slowing water during floods.

Wetlands are defined as areas of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, such as lakes, swamps, marshes, springs, and damplands. Excluded from this definition are waterways such as rivers, creeks, streams or brooks, and their floodplains and estuaries.

6. How is this policy different from the previous policy?

This policy is based on *Foreshore policy no. 1: identifying the foreshore area* (Water and Rivers Commission 2002).

The policy has been updated to ensure consistency with current government policy and practice, including *Better urban water management* (Western Australian Planning Commission 2008). Some minor changes have been made to the way that foreshore areas are identified and managed, and the land uses and development activities that are compatible with a foreshore area.

Glossary

Amenity	A concept encompassing the natural or man-made qualities of the environment from which pleasure, enrichment or satisfaction are derived. For the purpose of this policy, it includes the features and facilities (e.g. recreation facilities) of a waterway and its foreshore area.
Average recurrence interval	The average or expected value of the periods between exceedances of a given rainfall total accumulated over a given duration.
Bankfull	The water level at the top of the banks of a waterway, where any further rise to the water level would cause water to overflow to the floodplain. Due to changes in hydrology and land uses in the catchment, and waterways management issues (e.g. degraded riparian vegetation), the bankfull level is often no longer at the top of the bank and may be difficult to define.
Biological and physical features of a waterway and its foreshore area	The biological and physical features of a waterway foreshore area are its site-specific characteristics. These establish its capacity to support various functions and include: the extent of the riparian and terrestrial native vegetation associated with or influencing the waterway; hydrology; riverine landform (topography and geomorphology); the landforms, soil types and soil characteristics that influence the extent of foreshore vegetation, erosion and the movement of nutrients and contaminants; aquatic fauna and flora and their habitat, including dry season refuges; and land use.
Building envelope	A building envelope shows the outline of where buildings can be built, including the setbacks to the property boundaries and other features, such as waterways. It also shows the maximum area of a building footprint.
Ecosystem	An ecosystem is a natural system consisting of all the flora, fauna and microorganisms (biotic factors) in an area functioning together with all the non-living physical (abiotic) factors of the environment.
Ephemeral waterways	Waterways that flow for only part of the year or only occasionally. They are also known as seasonal or intermittent waterways.
Development application	An application under a planning scheme or interim development order for approval of development.
Estuary	The lower part of a waterway that has access to the ocean and is subject to tides and salt intrusion from the ocean.

Eutrophication	The condition where a waterway has very high concentrations of nutrients. This is a natural process of accumulation of nutrients that causes increased aquatic plant growth in water bodies, including waterways. Human activities that contribute fertilisers and other high nutrient wastes can accelerate the process, leading to algal blooms and deterioration in water quality.
Flood fringe	The areas of the floodplain, outside the floodway, that are affected by flooding. These areas are generally covered by still or very slow moving waters during a 100-year average recurrence interval flood.
Floodplain	The portion of a waterway valley that is covered with water when it overflows its banks during major flows.
Floodway	The river channel and the portion of the floodplain that forms the main flow path of flood waters once the main channel has overflowed.
Foreshore area	The land that adjoins or directly influences a waterway. It is the area of transition between the edge of the waterway and the furthest extent of riparian vegetation, the floodplain and riverine landforms, or a negotiated area endorsed by the Department of Water.
Foreshore buffer	The additional distance required between a foreshore area and any proposed development to help manage the condition of the waterway (Environmental Protection Authority 2008).
Foreshore reserve	All or part of a foreshore area that is publicly owned and vested with a state government department or local government. It may be reserved for purposes such as foreshore protection.
Functions of a waterway and its foreshore area	The functions of a waterway and its foreshore area include the biological, chemical and physical processes that take place within the waterway (e.g. carbon and nutrient cycling) (Bennett et al. 2002).
Geomorphology	The branch of geology dealing with the characteristics, origin and development of landforms.
Proponent	For the purpose of this policy, the proponent is the person or organisation that is initiating a change in land use, subdivision or development activity. In the land planning process, this is the initiator of the planning proposal. For other approval processes, it is the initiator of the application or development proposal.
Recurrence interval	See average recurrence interval.

Riparian vegetation	The vegetation associated with a waterway, e.g. vegetation that adjoins, influences or is influenced by a waterway.
Riverine landform	Any feature of the land that adjoins, regularly influences, or is influenced by a waterway.
Services of a waterway and its foreshore area	<p>The services of a waterway and its foreshore area are the beneficial outcomes to humans, or other ecosystems that result from its plants, animals and micro-organisms functioning together as an ecosystem (Bennett et al. 2002). For humans, the benefits are enjoyed, consumed or used to provide safety and wellbeing. The services include (modified from Lovett et al. 2004):</p> <ul style="list-style-type: none">• protecting people and infrastructure from flooding• reducing erosion and sedimentation• maintaining river courses• improving water quality• retaining nutrients and decreasing nuisance or toxic algae and aquatic weeds• draining land in the catchment• maintaining healthy riparian and aquatic ecosystems, biodiversity and ecological connectivity• providing water supplies for drinking, public purposes, agriculture and industry• providing opportunities for recreation• improving scenery, public amenity, cultural heritage and sense of place• improving human health and psychological well-being• benefiting commercial fishing, aquaculture, tourism and recreation-based businesses• transportation by ferries, commercial boats and benefiting associated businesses• contributing to increased property values.
Topography	The relief features or surface configuration of an area (e.g. the elevation, slope and orientation of land features).
Waterway	Any river, creek, stream or brook, including its floodplain and estuary. This includes systems that flow permanently, for part of the year or occasionally, and parts of the waterway that have been artificially modified.

- Wetland** Areas of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, such as lakes, swamps, marshes, springs, and damplands. Excluded from this definition are waterways such as rivers, creeks, streams or brooks, and their floodplains and estuaries.
- Wetland vegetation** Vegetation that is typically found below the high water mark (bankfull level) or within the floodway. It can tolerate some inundation such as tea trees, paperbarks and submerged or emergent species like rushes or sedges.

References

- Bennett J, Sanders N, Moulton D, Phillips N, Lukacs G, Walker K & Redfern F 2002, *Guidelines for protecting Australian waterways*, Land & Water Australia.
- Commonwealth of Australia and the governments of New South Wales, Victoria, Queensland, South Australia, the Australian Capital Territory and the Northern Territory 2004, *Intergovernmental agreement on a national water initiative*, viewed 29 June 2012, <www.nwc.gov.au/data/assets/pdf_file/0019/18208/Intergovernmental-Agreement-on-a-national-water-initiative2.pdf>.
- Deakin University and Parks Victoria 2008, *Healthy parks, healthy people: the health benefits of contact with nature, a review of relevant literature*, 2nd edition, Deakin University and Parks Victoria, Melbourne.
- Department of Environment and Conservation undated, *Healthy parks, healthy people*, Department of Environment and Conservation, viewed 29 June 2012, <www.dec.wa.gov.au/content/view/163/506>.
- 2009, *A guide to the assessment of applications to clear native vegetation under Part V of the Environmental Protection Act 1986*, Department of Environment and Conservation, Perth.
- Department of Sport and Recreation 2012, *Nature play WA*, Department of Sport and Recreation, viewed 29 June 2012, <www.natureplaywa.org.au>.
- Department of Water 2004–2007, *Stormwater management manual for Western Australia*, Department of Water, Perth.
- 2009, *Decision process for stormwater management in Western Australia*, Department of Water, Perth.
- 2012, State-wide policy 13 – *Recreation within public drinking water source areas on crown land – draft for public comment*, Department of Water, Perth.
- in preparation, *Guidelines for identifying and establishing waterways foreshore areas*, Department of Water, Perth.
- in preparation, *Better urban water management guidance note 2: Water management reports in the land planning process*, Department of Water, Perth.
- Environmental Protection Authority 2008, Chapter B5 'Waterways' in *Guidance statement 33: Environmental guidance for planning and development*, Environmental Protection Authority, Perth.
- Lovett S, Price P & Cork S 2004, *Riparian ecosystem services*, Fact sheet 12, Land and Water Australia, Canberra.
- Water and Rivers Commission 1999–2003, *River restoration manual, a guide to the nature, protection, rehabilitation and long-term management of waterways in Western Australia*, Water and Rivers Commission, Perth.

—2001, *Determining foreshore reserves*, River restoration report 16, Water and Rivers Commission, Perth.

—2002, *Foreshore policy no. 1: identifying the foreshore area*, Water and Rivers Commission, Perth.

Western Australian Planning Commission 2006a, *State planning policy 2.9: Water resources*, Western Australian Planning Commission, Perth. This policy is being reviewed and the latest version should be used when it is available.

—2006b *State planning policy 2.10 Swan Canning river system*, Western Australian Planning Commission, Perth.

—2008, *Better urban water management*, Western Australian Planning Commission, Perth.

—2009a, *Liveable neighbourhoods: a Western Australian Government sustainable cities initiative*, Western Australian Planning Commission, Perth.

—2009b, *Model conditions schedule*, version 9, Western Australian Planning Commission, viewed 29 June 2012, <www.planning.wa.gov.au/dop_pub_pdf/Model_conditions_document.pdf>.

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Please direct any enquiries relating to the implementation of this policy or to management of water resources in the regions to the following regional offices:

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