MODEL LOCAL PLANNING POLICY
WATER SENSITIVE URBAN DESIGN

1 POLICY OBJECTIVES

1.1 To improve the achievement of total water cycle management outcomes via the planning and development approvals process, consistent with *State Planning Policy 2.9: Water Resources* (2006);

1.2 To achieve better integration of land and water planning and thereby improved water management outcomes for the catchments within the local government area; and

1.3 To ensure that land use planning decisions are consistent with the requirements of relevant Environmental Protection Policies and compatible with achievement of relevant objectives and environmental quality criteria.

2 POLICY PURPOSE

This policy aims to facilitate the application of urban water management practices as part of the planning approvals process which results in the sustainable use and management of water resources, demonstrated via commitments to water quality, quantity and efficiency targets and design objectives for strategic planning, subdivision and development.

3 INTERPRETATIONS

For the purpose of interpreting this policy, all terms shall have the meaning given under the provisions of Council's Town Planning Scheme No XX. In addition, the following definitions apply.

Best Management Practice (BMP) – Devices, practices or methods for removing, reducing or preventing targeted pollutants from reaching receiving waters and for reducing runoff volumes and velocities. Includes structural and non-structural controls.

Controlled Groundwater Level (CGL) - The controlled (i.e. modified) groundwater level (measured in metres Australian Height Datum) at which subsoil drainage inverts are set. The CGL must consider Ecological Water Requirements (EWRs) for groundwater dependent ecosystems, such as wetlands. Determination of EWRs of groundwater dependent ecosystems is outlined in the *Urban Development and Determination of Ecological Water Requirements of Groundwater Dependent Ecosystems* (DoW, in preparation). Once the EWRs have been determined, CGLs can then be set in accordance with the requirements of the *Decision Process for Stormwater Management in WA* (Appendix 2). CGLs should always aim to meet EWRs. However, if EWRs cannot be met, the likely impacts on the groundwater dependent ecosystems values should be outlined.

District Water Management Strategy – strategy prepared to address water management issues to accompany a planning proposal at the district scale (Local Planning Strategy, District Structure Plan).

Local Water Management Strategy – strategy prepared to address water management issues to accompany a planning proposal at the local scale (Local Structure Plan, Local Planning Scheme Amendment).

Maximum Groundwater Level (MGL) must be determined, through modelling and/or measurement. Where this information is not available from DoW local studies shall be undertaken and endorsed by DoW. Where the MGL is at or within 1.2m of the surface the importation of clean fill and/or the provision of sub surface drainage will be required to ensure that adequate separation of building floor slabs from groundwater is achieved. In such instances, the subsoil drainage will need to be placed at a DoW/Department of Environment and Conservation (DEC) approved Controlled Groundwater Level (CGL).

Non-Structural Practices - institutional and pollution prevention practices that prevent or minimise pollutants from entering stormwater runoff and/or reduce the volume of stormwater requiring management. They do not involve fixed permanent facilities and they usually work by changing behaviour through government regulation, persuasion and/or economic instruments. Such practices use alternative maintenance procedures, regulatory measures, economic incentives, education of management and technical personnel, or planning and design of structures to reduce the amount of pollutants entering stormwater and accumulating on impervious areas.

Regional Water Management Strategy – strategy prepared to address water management issues to accompany a planning proposal at the regional scale.

Regional Water Plan – Regional water plans are strategic in nature with a long term planning horizon that aligns with *State Water Plan 2007* (2006). Plans will seek to integrate significant issues that cross regional boundaries and will be prepared by the Department of Water.

Structural Practices – Structural stormwater quality and quantity best management practices are permanent, engineered devices implemented to control and improve stormwater quality and restore natural hydrological flows and velocities. Structural controls should be installed at or near the source of run-off/pollutant inputs, to prevent or treat pollution and manage the quantity of stormwater as high in the catchment as possible. A range of structural practices can be considered in a treatment train approach.

The Framework – *Urban Water Management Framework for the Swan Coastal Plain* (WAPC, in prep).

Total Water Cycle Management - water supply (potable and non potable), stormwater, groundwater and sewage services are interrelated components of catchment systems, and therefore must be dealt with using a holistic water management approach that reflects the principles of ecological sustainability. Water efficiency, re-use and recycling are integral components of total water cycle management.

Treatment Train - application of several types of stormwater best management practices in series or designed to achieve improved stormwater management.

Urban Water Management Plan – document prepared to address water management issues to accompany an application for subdivision or in response to a condition of subdivision.

Xeriscape Landscape - consisting of native or adapted plants which require nil or minimal watering.

4 APPLICATION

This policy applies to strategic and statutory proposals[1] that facilitate residential, commercial, industrial or rural-residential zoning, subdivision or development.

This Policy does not apply to rural zoned land, except where non-rural development is proposed or where the land is the subject of a Scheme Amendment which would enable the development of residential, commercial or industrial uses, in which case it would apply.

The application of this policy is limited to proposals within the Leschenault Catchment area of the City/ Shire of XXX (refer Appendix 3 for location map).

5 WSUD PRINCIPLES

Water Sensitive Urban Design (WSUD) principles shall be applied when undertaking strategic and statutory planning within the City/ Shire of XXX. These principles, in order of priority, are as follows.

5.1 Provide protection to life and property from flooding that would occur in a 100 year Average Recurrence Interval (ARI) flood event.

5.2 Maximise water use efficiency, reduce potable water demand, maximise reuse of wastewater and maximise the use of harvested water.

5.3 Manage small ARI rainfall (1 in 1 year) events to minimise runoff as high in the catchment and as near the source as possible. Use multiple low cost 'in-system' Best Management Practice measures to reduce runoff volumes and peak flows (for example, in sandy soil sites, maximise infiltration from leaky pipes and stormwater pits installed above pollutant retentive material). In low permeability sites the post development flows should not exceed the predevelopment peak flow rates.

5.4 Manage medium ARI (1in 5/10 year) and large ARI (1 in 100 year) rainfall events so that post development flows do not exceed predevelopment peak flows unless approved otherwise by the DoW

5.5 Retain and restore existing elements of the natural drainage system, including waterway, wetland and groundwater features, regimes and processes, and integrate these elements into the urban landscape, possibly through a multiple use corridor.

5.6 Minimise pollutant inputs through implementation of appropriate non-structural source controls (such as town planning controls, strategic planning controls, pollution prevention procedures, education and participation programs and regulatory controls) and structural controls (that manage the quantity and quality of stormwater runoff and prevent or treat stormwater pollution).

[1] Proposals include but are not limited to Local Planning Strategies, Local Rural Strategies, Planning Scheme Amendments, Structure Plans, Outline Development Plans, Detailed Area Plans, Subdivision Guide Plans, Subdivision Referrals, and Applications for Planning Consent

5.7 Enhance social amenity through multiple use corridors, lot landscaping and integrating water management measures into the landscape to enhance visual, recreational, cultural and ecological values.

Modified from Department of Water's *Stormwater Management Manual for Western Australia, 2004 - 2007.*

6 POLICY PROVISIONS

In determining or providing advice on strategic or statutory proposals, local government will have regard to the following when making planning decisions:

6.1 A change in land use proposed in strategic planning instruments shall aim to achieve and maintain the relevant Environmental Quality Criteria as set out in Appendix 1;

6.2 WSUD outcomes shall be achieved through compliance with the principles outlined in Section 5 of this Policy, preferentially applied using an integrated approach, consistent with the *Urban Water Management Framework for the Swan Coastal Plain* (WAPC, in prep) (hereafter referred to as "the Framework");

6.3 Application of this policy shall be practical and appropriate to the level of risk of the proposal. Guidance on level of risk is contained within Appendix 4;

6.4 Planning and development proposals shall implement the WSUD strategies outlined in Section 7 of this policy;

6.5 WSUD practices prescribed in strategic planning instruments shall be linked to a planning mechanism that ensures implementation and requires performance monitoring; and

6.6 Appropriate investigations shall be performed and documented to support the assessment and approval of strategic plans, scheme amendments, structure plans, subdivision and development proposals, consistent with the Framework (WAPC, in prep).

7 WSUD STRATEGIES

The following strategies should be applied in planning and development proposals to achieve improved water management outcomes via planning and development.

7.1 Compliance with environmental quality criteria

Strategic plans and proposals shall demonstrate compliance with relevant environmental quality criteria in Appendix 1. Demonstration of compliance may be achieved through appropriate computer models, reference against established performance criteria, assessments and calculations appropriate to the stage of planning and scope of the proposal, as supported by the DoW. Further information is contained within the Framework (WAPC, in prep).

7.2 Water conservation, reuse and recycling

Alternative sources of water for both potable and non potable needs and actions to minimise use of potable water should be investigated as part of the planning and design process. A total water balance should be completed for the plan area to guide identification of alternative sources of water. This should be considered in conjunction with proposed land uses to develop strategies for fit-for-purpose uses.

7.3 Compliance with stormwater management policies

Stormwater management systems should comprise appropriate structural and non-structural best management practices applied using a treatment train approach, in compliance with the principles, objectives and guidelines in the *Stormwater Management Manual for Western Australia* (DoW, 2004 - 2007) and designed in accordance with the Decision Process for Stormwater Management in WA (Appendix 2).

7.4 Soil Amendment

Any proposal to subdivide or develop land on sandy or duplex soils where the maximum groundwater level is less than 1.2 metres below natural ground level should encourage soil amendment in garden and grassed areas at the house construction stage to maximise the phosphorus retention capability of the soil. This should be undertaken in accordance with the *Stormwater Management Manual for Western Australia* (DoW, 2004 - 2007).

7.5 Connection to sewer and effluent disposal

A connection to reticulated sewerage is required as part of any proposal to develop land for residential, special residential, commercial, industrial or tourist uses where the land has a maximum groundwater level of less than 1.2m below the natural ground surface or where subsoil drainage is proposed or will be required as a part of subdivision or development.

Alternate onsite treatment and disposal systems will only be considered where they can be demonstrated to function adequately in such conditions and with no adverse impact to the environment.

Where access to a reticulated sewerage system is not available and the conditions are not consistent with those outlined above, on-site effluent disposal facilities are to be provided to treat and dispose of any domestic effluent. Soil permeability, nutrient retention characteristics and slope must be demonstrated to be appropriate for the proposed system.

No effluent disposal facility (including any leach drain or soak well) is to be located:

(a) within 6m of any open drainage channel or subsoil drain; or
(b) within 30 metres of the outer edge of an intermittent water course; or
(c) within 50 metres of the outer edge of a permanent water course in the case of a nutrient removal system or within 100 metres for a conventional septic system; or
(d) within 100 metres of any protected wetland, or within such greater distance as may be required to achieve a minimum one metre vertical separation between the finished ground level at that distance and the natural ground level of the adjacent wetland vegetation; or

(e) within 100 metres of a bore or underground water source used for human consumption, unless otherwise approved by the City/ Shire.

The City/ Shire may require additional setbacks for effluent disposal facilities and/or require the installation of specific types of facilities (including those involving the removal of nutrients) where it considers such requirements appropriate or necessary for the protection of water resources or other environmental values.

7.6 Retention of Bushland

All proposals shall where possible maximise retention of bushland, particularly where regionally significant. Proposals for "vegetation banking", or "environmental offsets" consistent with the principles and practices set out in the EPA Position Statement No. 9 (Environmental Offsets) 2005 will also be considered.

7.7 Building and Landscaping Guidelines

Local Structure Plans for new subdivision estates should include Building and Landscaping Guidelines. The guidelines should also apply to land ceded to Council ie. public open space. Refer to the Development Stage of the Framework for further information.

7.8 Construction and Building Site Management

Construction and operational activities on landholdings within the policy area should be consistent with an approved Construction and Building Site Management Plan. The plan should be submitted and approved prior to the start of site works.

8 IMPLEMENTATION

Implementation of this Local Planning Policy should be consistent with the Framework (WAPC, in prep).

8.1 Application Requirements

Any application for Council's planning consent shall meet all requirements set out in Schedule No XX of the City/Shire of XXX's Town Planning Scheme No XX, and have due regard for the requirements in the Framework (WAPC, in prep).

8.2 Assessment Criteria

In assessing any application within the Leschenault Catchment, the City/Shire of XX shall have regard to the provisions of this policy (Section 6), as well as the requirements outlined in the Framework (WAPC, in prep).

Application of this Policy and the Framework shall be based on the following principles.

- Informed decision-making – land use planning decision-making should be based on an appropriate level of information;
- Relevance – only issues that are relevant to the site require investigation and discussion, recognising that the planning process may not occur in an orderly fashion and that a practical approach should be applied where

regional/district-level information is lacking, particularly in areas of development pressure; and

- Risk management – relevant issues should be investigated at a scale consistent with land use planning decision making and to an extent that addresses the level of risk to the community and environment.

9 DELEGATED AUTHORITY

The Director Planning & Development Services shall be granted authority to deal with applications under this policy.

10 FURTHER INFORMATION

Further information may be obtained from the following resources:

- Stormwater Management Manual for Western Australia, 2004 – 2007
- State Planning Policy 2.9: Water Resources, 2006.
- Department for Planning and Infrastructure, Department of Water and Western Australian Local Government Association, 2007, Urban Water Management Framework for the Swan Coastal Plain – Final Draft, by Essential Environmental Services, unpublished.

APPENDIX 1: ENVIRONMENTAL QUALITY CRITERIA

The Environmental Quality Criteria for the protection of environmental values (including beneficial uses) within the Policy Area are those set out as parameters, targets, standards and criteria in the following documents, and any amendments thereto:

1) A Drainage and Water Management Plan prepared by the Department of Water (which may also be transcribed into Council's Local Planning Strategy).

2) A District Water Management Strategy prepared and applicable to the subject land that is endorsed by the Department of Water as consistent with the Framework.

3) A Local Water Management Strategy prepared and applicable to the subject land that is endorsed by the Department of Water as consistent with the Framework.

4) An Urban Water Management Plan prepared and applicable to the subject land that is endorsed by the relevant Local Government as consistent with the Framework.

5) The interim environmental quality criteria set out below.

In the event of any deficiency or inconsistency arising between the parameters, standards or criteria set out above shall be applied in the following order:

1) In the first instance an applicable Drainage and Water Management Plan prepared by the Department of Water;

2) An applicable District Water Management Strategy endorsed by the Department of Water;

3) An applicable Local Water Management Strategy endorsed by the Department of Water.

4) The interim environmental quality criteria set out below.

Interim Environmental Quality Criteria

The following interim environmental criteria are proposed to be used as a guide for development of the urban water management system for strategic planning, subdivision and development until finalisation of a Drainage and Water Management Plan or approved District Water Management Strategy. Demonstration of compliance with these design objectives may be through appropriate computer modeling or other assessment methods acceptable to the Department of Water.

Water Conservation – Potable & Wastewater

Principle:
The use of potable water outside of homes and buildings should be minimised and replaced with non potable sources where possible and practical

Design Objectives:
Consumption target for potable and non potable water of 100 kL/person/yr including not more than 40 – 60kL/person/yr of potable scheme water

Water Quantity Management

Principle
Post development peak flows be maintained relative to pre-development conditions, unless otherwise established through determination of Ecological Water Requirements for sensitive environments.

Criteria
Ecological Protection -For the critical 1 in 1 year ARI event, the post development peak flow rates shall be maintained at the pre-development conditions in all parts of the catchment. In sandy soils the infiltration of the 1 in 1 year event at or near source should be maximised. Where there are identified impacts on significant ecosystems, maintain or restore desirable environmental flows and/or hydrological cycles as specified by the DoW.

Serviceability- for the 1 in 5 year ARI event (residential) and 1 in 10 year ARI event (industrial) the post development peak flow rates shall be maintained at the predevelopment flow rate conditions.

Flood Management - Manage the catchment runoff for up to the 1 in 100 year ARI event within the development area to predevelopment peak flows unless otherwise indicated in an approved water management strategy or as negotiated with the relevant drainage service provider.

Water Quality Management

Principle
Maintain surface and ground water quality at or below pre-development levels (winter concentrations) and, if possible, improve the quality of water leaving the development area to maintain and restore ecological systems in the (sub)catchment in which the development is located.

Criteria
Contaminated Sites - To be managed in accordance with the Contaminated Sites Act 2003.

All other Land - If the pollutant outputs of development (measured or modeled median concentrations) exceed catchment ambient conditions, the proponent shall achieve water quality improvements within the development area or, alternatively, arrange equivalent water quality improvement offsets within the catchment. If catchment ambient conditions have not been determined, the development should meet relevant water quality guidelines stipulated in the *National Water Quality Management Strategy* (ARMCANZ & ANZECC, 2000),

Drainage: Ensure that all runoff contained within the drainage infrastructure network receives treatment prior to discharge to a receiving environment consistent with the Stormwater Management Manual. In addition, all outflows from subsoil drains should receive treatment prior to discharge to the stormwater system if those flows contain pollutants or nutrients.

Stormwater Modelling Criteria:

If it is proposed to use a computer stormwater modelling tool or established performance guidelines to demonstrate compliance with design objectives the following design parameters are recommended.

As compared to a development that does not actively manage stormwater quality:

- At least 80% reduction of total suspended solids
- At least 60% reduction of total phosphorus
- At least 45% reduction of total nitrogen
- At least 70% reduction of gross pollutants

Disease Vector and Nuisance Insect Management

To reduce health risk from mosquitoes, retention and detention treatments should be designed to ensure that between the months of November and May, detained immobile stormwater is fully infiltrated within a time period not exceeding 96 hours.

Permanent water bodies are discouraged, but where accepted by the DoW, must be designed to maximise predation of mosquito larvae by native fauna to the satisfaction of the Local Government on advice of DoW and Department of Health.

APPENDIX 2 – DECISION PROCESS FOR STORMWATER MANAGEMENT IN WA

APPENDIX 3 – POLICY AREA

Local Government to generate map of policy application area. Could be whole LGA or part of the LGA within Leschenault Catchment

APPENDIX 4: RISK CLASSIFICATION FOR SUBDIVISION AND DEVELOPMENT

RISK CLASSIFICATION FOR SUBDIVISION AND DEVELOPMENT		
Risk Level	**Subdivision**	**Development**
Low –	Good depth to groundwater (greater than 2m in sandy soils). Can accommodate all on site infiltration, with no significant water dependent ecosystems, and no offsite discharge or regional drainage issues Low-medium density residential subdivision creating less than four lots. Commercial, Industrial, or Rural Residential subdivision applications that create no more than 3 lots.	Residential development connected to reticulated sewerage scheme Commercial or industrial use connected to reticulated sewerage scheme or licensed under Part V of the *Environmental Protection Act*."
Medium	Offsite discharge is required to a local &/or regional drainage system and there are low environmental risks Medium acid sulfate soils risk Low-medium density residential subdivision creating four to 20 lots and less than 20ha. Commercial, Industrial, or Rural Residential subdivision applications that create no more than 15 lots.	Residential, commercial and industrial development not connected to reticulated sewerage scheme
High –	Any proposal on land where any of the following apply: o maximum groundwater level is less than 1.2 metres below the natural ground surface; o Any proposed off-site drainage could lead to degradation of wetlands or waterways. o Contains a floodplain o High acid sulfate soils risk o Contains any part of a Conservation Category wetland or its buffer o Phosphorus input is likely to exceed the 17kg/ha/pa. o Nitrogen input is likely to exceed 150kg/ha/pa.	Any proposal on land where any of the following apply: o maximum groundwater level is less than 1.2 metres below the natural ground surface; o Any proposed off-site drainage could lead to degradation of wetlands or waterways. o Contains a floodplain o High acid sulfate soils risk o Contains any part of a Conservation Category wetland or its buffer o Phosphorus input is likely to exceed 17kg/ha/pa. o Nitrogen input is likely to exceed 150kg/ha/pa.