

# Policy

## Development within Cockburn Sound Catchment



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The purpose of this policy is to ensure the protection of the marine waters of Cockburn Sound from nutrient contamination (particularly nitrogen) from diffuse land use sources. Specifically, the objectives of the Policy are:

- To ensure changes to land uses that have the potential to increase nutrient contamination to surface or groundwater are compatible with long-term protection and maintenance of water quality within the Cockburn Sound Catchment.
- To ensure such land uses and development within the catchment take into account potential nutrient and other contamination issues, and includes specified protection measures (such as appropriate conditions) where a risk is identified.
- Where appropriate, to maintain or increase native local vegetation in the Cockburn Sound catchment area including wetland areas to assist in natural nutrient attenuation and uptake.
- To ensure an efficient and consistent process for local government and proponents, when dealing with land use proposals within the Cockburn Sound catchment.

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Legal Authority:	Local Government Act Section 2.7 – The Role of Council Town Planning & Development Act S.5AA Town Planning Schemes No.2 & No.3

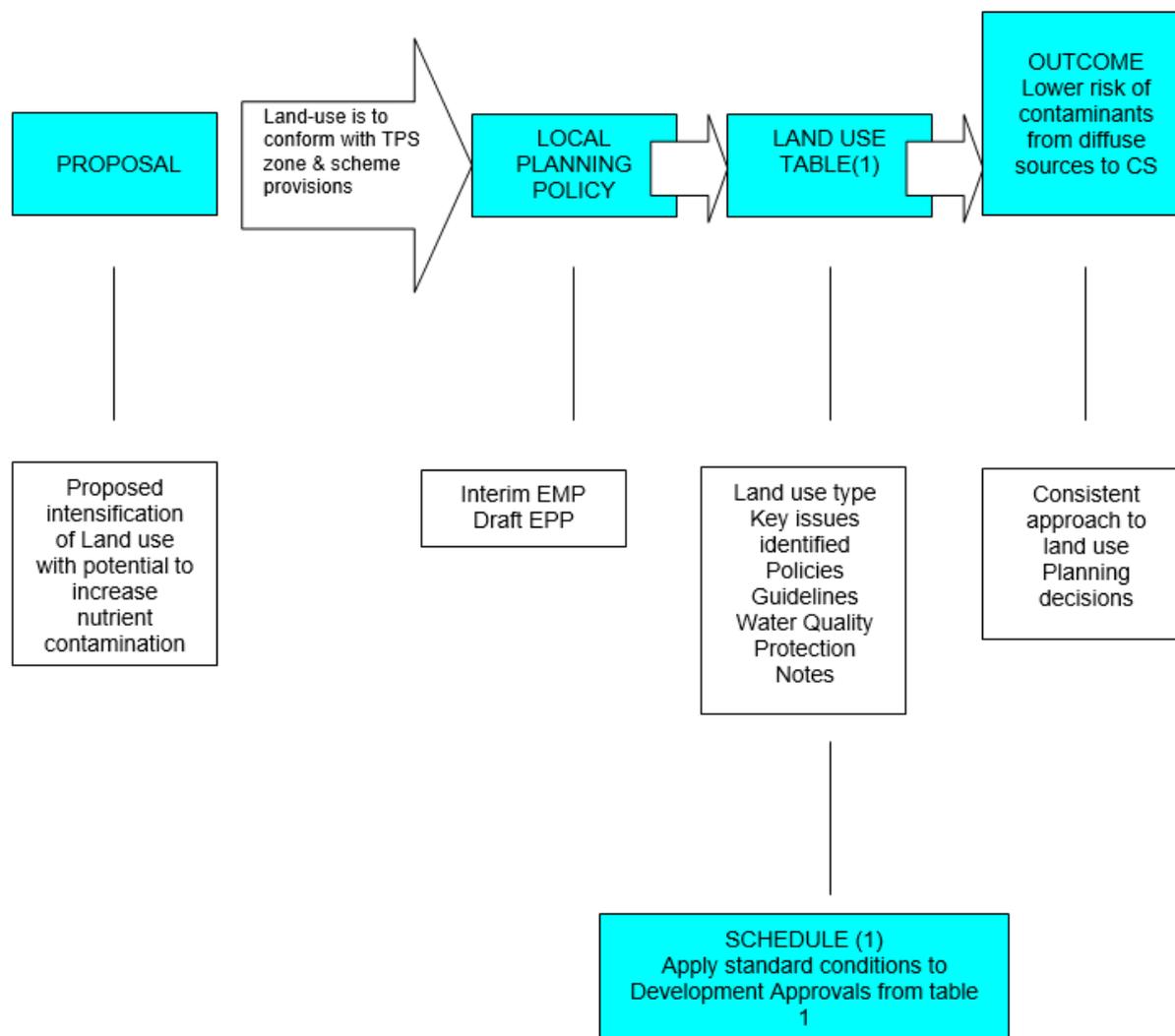
## Policy:

### 1 Policy Application

This Policy applies to any proposed change or intensification of land use (for uses permitted under existing TPS's), or proposed development that may have the potential to increase

nutrient loading to surface or groundwater resources or Cockburn Sound, within the Cockburn Sound catchment.

This policy will be used by local governments within the Cockburn Sound catchment when considering and determining Development Applications for land uses specified in Table 1 of the Policy, and may also be used as a guide when considering subdivision proposals, TPS amendments or other planning proposals with potential to impact on water quality in the catchment.



## 2 Policy Implementation

This Policy only deals with aspects of contaminants and nutrient management in the consideration of planning approvals, and is intended to be a planning guide and may assist in decision making with regard to proposals where management of nutrients and other contaminants is a factor.

The outcome of this policy is essentially to ensure new or proposed land uses within the Cockburn Sound catchment are managed to minimise nutrient and contaminant issues associated with the proposed land use. This will be achieved by ensuring appropriate management measures are put in place primarily through the development approval process. The Policy clearly defines the land-uses that require specific controls, and thus landowners or developers are aware of the land use types that will require particular consideration of nutrient management through the submission of an application and the approval process. These are identified through the Land Use Table (1) and the Conditions Schedule (1).

Where a local government makes a determination to approve a development proposal (either a material change in land use or construction of works), the policy should be applied to ensure suitable management controls are put in place through conditions. The conditions should either be selected from Schedule 1, or similar conditions based on previous local government's experience and on recommendation of the EPA or other referral agency advice.

Planning decision-makers and managers should also recognise the Policy in a more strategic context in order to provide broader consideration to the issues identified, and to use the Policy as a guide to higher level decision making. Strategic consideration of the issues, and compliance with matters raised in the Land Use table will ensure better outcomes for subsequent statutory planning and ensure increased awareness of the issues and Policy to the community, landowners or developers.

### 2.1 Land Use Table

The Land Use Table is to be referred to when local government is considering its determination of a planning proposal. As a part of this process, local government reserves the right to refer any such proposal to a relevant agency, or the EPA if it considers the potential environmental impacts may be significant.

In its consideration of all the relevant factors, this LPP specifically requires local governments to give special attention to nutrient and other potential contamination issues. The land use table will give local government direction as to the appropriate inter-agency guidelines or codes of practice, relevant policies and guidelines for the land uses types identified, and highlight the specific management requirements.

The Land Use table may also be used when considering advice to the WAPC on scheme amendments or subdivision proposals. It may be useful as a guide to highlight the relevant issues and recommend similar provisions or conditions are imposed as outlined in Schedule 2 (suggested conditions). This Policy may also be referred to when consulting with the EPA or other government agencies through various planning processes including structure planning and more detailed subdivision or development design.

In order to ensure an efficient and effective process, local governments may wish to use or refer to the relevant policy, guidelines or water quality protection notes when considering an application or in making its determination. Proponents should be required to submit sufficient information with a proposal that addresses the areas of concern listed in the Land Use Table, and the relevant policy or guideline, and in turn local government use these as guidelines for assessing and determining such proposals.

It is important to note that the land uses listed in the table do not necessarily indicate their overall acceptability or approval, as this decision is made by local government or the WAPC in its overall determination based on relevant planning, environmental and other aspects, such as suitability of the site and Town planning scheme and master plan provisions.

## 2.2 Guidance for Implementing the Land Use Table

Land uses listed in the above mentioned Land Use table, or any other land use identified by local government that has potential nutrient or other contaminants that require specific management measures, should generally comply with the following guidance.

### 2.2.1 Nitrogen Loading

When considering development (or intensification of land uses) that may present nutrient issues, the desired outcome is that the proposal is able to demonstrate improved management of the issue and ultimately reduced loading from the catchment. This is in accordance with the Interim EMP for Cockburn Sound and the precautionary approach. The principles of achieving nutrient reductions in the catchment have been broadly endorsed by the community and government in its adoption of the Interim EMP.

Appropriate protection of water resources is dependent on a range of site factors (soil type, permeability, hydrology and vegetation) and the management measures proposed. Proposals are to be considered on their own merits, and nutrient loading from a site based on consideration of all the relevant factors. Critical to this will be the requirement for proponents to demonstrate clearly that proposals will be acceptable and within recommended guideline water quality values.

The principles of 'minimising risk', and 'managing to reduce' nitrogen contamination are to be used as the basis for determining proposals. As a general rule, a maximum application rate for total nitrogen of 25kg/ha/year is a recommended guide, with total nitrogen concentrations in surface or groundwater not exceeding 4 mg/l. This is a reasonable guide to meeting the level of protection required for Cockburn Sound under the EPP, and is based on a similar level of protection as the Jandakot Groundwater Protection Policy - SPP No 6. Proponents may propose to vary this rate, through a more detailed analysis of site characteristics and proposed management techniques.

For more detailed information and analysis on water quality parameters, proponents should refer to nationally recognised guidelines such as the

ANZECC, 2000 Australian and New Zealand Guidelines for Marine and Fresh Water Quality, and the Draft EPA Western Australian Water Quality Guidelines for Fresh Marine Waters, 1993. It is acknowledged that further research into acceptable nitrogen application rates and concentrations in groundwater is desirable to refine guideline concentrations at a catchment, and sub-catchment level.

#### 2.2.2 Nutrient Intensive Land Uses

Land uses identified in this Policy as nutrient intensive (refer to Land Use Table schedule 1), require specific detail and justification through the preparation and implementation of site specific Drainage and Nutrient Management Plans. These management plans should be in place prior to the commencement of site works, as they may require specific implementation measures that apply to the development or land use. Generally, proponents will be required to enlist suitable and qualified consultants to carry out this requirement, and negotiation should occur with the local government and DoE as required. The approval of such management plans will be in accordance with local government requirements on advice from relevant agencies.

As a guide, local governments may require proponents to submit such applications in accordance with the guideline or policy (refer to Land Use table), or in accordance with a form similar to the existing Department of Environment 'Horticulture Development Application Form'. The expansion of existing land uses, where determined to require development approval and with potential for increased nutrient release should be controlled in a similar manner to new land uses or developments, and should also be required to prepare and implement a Drainage and Nutrient Management Plan.

#### 2.2.3 Nutrient Retentive Effluent Disposal Systems

Proposed dwellings and buildings requiring effluent disposal systems within the Cockburn Sound Catchment must be connected to an adequate sewerage service or a 'Nitrogen Retentive Effluent Disposal System' to reduce nitrogen loading to surface or groundwater. Such system upgrades on existing buildings in the Catchment should be ongoing, and conditional on building extensions or improvements.

Land in the catchment should not be rezoned for urban, industrial or commercial purposes unless connection to an adequate sewerage service or provision of nutrient retentive effluent disposal systems are proposed satisfactory to the EPA and Health Department. Further research into nitrogen retentive effluent disposal systems is occurring, and as new approved systems become available their use should be encouraged through consideration of new proposals.

#### 2.2.4 Stormwater Management

Stormwater management within the Cockburn Sound catchment should be in accordance with the DoE Interim Position Statement 'Urban Stormwater Management in WA: Principles and Objectives (February 2003). This document represents the current best management for stormwater

management particularly on the Swan Coastal Plain, with the emphasis on protecting water quality at a catchment level. This position statement is interim, the DoE is in the process of up-dating its Manual for Managing Urban Stormwater in WA (1998).

Urban stormwater management should be in accordance with this Position Statement, and the revised stormwater Manual. Proponents should also be referred to the WAPC's Liveable Neighbourhoods policy as a further reference for ensuring best practice 'water sensitive urban design' is incorporated in subdivision planning and design.

#### 2.2.5 Native Vegetation and Wetland Management

The retention and rehabilitation of existing vegetation is to be encouraged to ensure the natural up-take and attenuation of nutrients in the catchment is maximised. Remnant vegetation plays a significant role in ensuring natural processes, nutrient cycling and hydrological balances and bio-diversity values are maintained. The principle of no net loss of vegetation should also be encouraged, where equal or greater areas of local native vegetation are replanted on sites that require clearing for approved (permitted) uses. Clearing permits or advice from local government or the DoE must be obtained prior to any site works.

Similarly, wetlands should be managed through the development approval process to ensure local endemic wetland vegetation is either retained or replanted. Issues of drainage, hydrological balance and protection measures should be in accordance with the DoE - Interim Wetlands Position Statement (June 2001).

### 3.0 Responsibilities

- Local government is the primary user of this policy, through its consideration and determination of development applications, and when providing advice on other planning matters within the Cockburn Sound catchment. The land use table and suggested conditions should be used by local government as a guide to ensure a consistent approach across the local governments. Suggested conditions may be varied to suit circumstances of a particular proposal or type of planning proposal.
- CSMC will use the Policy as a guide if required to assess or comment on land uses within the catchment.
- The EPA and DoE will have regard to the Policy when providing advice or through the formal assessment process for proposals within the catchment
- Proponents, landowners and developers should have regard to the Policy when considering or submitting a planning application or approval for works within the catchment.

## Schedule 1 - LAND USE TABLE

Land Use	Key Issues	Policy/Guidelines/Approvals	Management Requirements	<b>Conditions / Planning Controls</b>  <i>(LG to select appropriate conditions or advice from Schedule 1 – suggested options relating to KEY ISSUES provided below)</i>
<b>RURAL USE Low Intensity</b>				
Caretakers dwelling/ Dwelling	<ul style="list-style-type: none"> <li>• Effluent disposal.</li> <li>• Nitrogen</li> <li>• Separation from groundwater and surface water features (waterway or drain)</li> </ul>	<ul style="list-style-type: none"> <li>• Dept. Health WA</li> <li>• Local Government Provisions Policy and TPS</li> </ul>	<ul style="list-style-type: none"> <li>• Effluent and wastewater disposal requires assessment.</li> <li>• Must connect to sewer or use Nitrogen Retentive Effluent disposal system</li> </ul>	EDC1 to EDC4 General Conditions and select from
Equestrian Uses/ Livestock	<ul style="list-style-type: none"> <li>• Manure</li> <li>• Drainage and</li> <li>• Nutrient Mgt.</li> <li>• Soil disturbance.</li> </ul>	<ul style="list-style-type: none"> <li>• SPP No. 2.3 (previously 6)</li> <li>• Inter Agency Guidelines for Horse Facilities and Activities 2002</li> <li>• Dept. Agriculture Stocking rate</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrient loading to groundwater - must comply with water quality objectives.</li> <li>• Must comply with agreed nutrient and drainage management plan.</li> </ul>	RUC1 to RUC13 and General Conditions

<b>RURAL USE Medium Intensity</b>				
Kennels Stables/	<ul style="list-style-type: none"> <li>• Manure</li> <li>• Drainage -Nitrogen</li> </ul>	<ul style="list-style-type: none"> <li>• DoE Guideline 25Waste management of kennel operations within Jandakot UWPCA1998</li> <li>• Inter Agency Guidelines for Horse Facilities and Activities2002</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrient loading to groundwater - must comply with water quality objectives.</li> <li>• Must comply with agreed nutrient and drainage</li> <li>• Management plan.</li> </ul>	RUC1 to RUC13 and General Conditions
Horticulture – eg. Nursery, plantation, floriculture, orchard.	<ul style="list-style-type: none"> <li>• Nutrient application rates</li> <li>• Drainage</li> <li>• and nutrient management</li> </ul>	<ul style="list-style-type: none"> <li>• WQPN Floriculture Activities2003</li> <li>• WQPN Nurseries and Garden Centres 2002</li> <li>• WQPN Nutrient and Irrigation Management Plans1998</li> <li>• WQPN Wineries in PDWSA's2002</li> <li>• Inter-agency Environmental Management Guidelines for Vineyards2002</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrient loading to groundwater - must comply with water quality objectives.</li> <li>• Must comply with agreed nutrient and drainage management plan.</li> </ul>	RUC1 to Conditions RUC13 and General
<b>RURAL USE Intensive</b>				
Intensive Agriculture, eg. turf farm, marketgarden	<ul style="list-style-type: none"> <li>• Nutrient application rates</li> <li>• Drainage and nutrient management</li> </ul>	<ul style="list-style-type: none"> <li>• Code of Practice for Environmentally Sustainable Vegetable and Potato Production in WA 2002 (and reference manual2002)</li> <li>• Environmental Guidelines for the Establishment and Maintenance of Turf and Grassed Areas(2001)</li> <li>• WQPN Nutrient and Irrigation</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrient loading to groundwater - must comply with water quality objectives.</li> <li>• Must comply with agreed nutrient and drainage management plan.</li> </ul>	RIC1 to Conditions RIC8 and General

		<ul style="list-style-type: none"> <li>• Management Plans 1998</li> </ul>		
<p>Intensive Animal - eg. stock</p> <p><i>holding yards</i></p> <p><i>Piggeries,</i></p> <p><i>Poultry Farm</i></p> <p><i>etc.</i></p>	<ul style="list-style-type: none"> <li>• Effluent</li> <li>• Waste-water</li> <li>• Disposal, Drainage and Nutrient Management</li> <li>• Soil disturbance</li> </ul>	<ul style="list-style-type: none"> <li>• Subject to Works Approval / Licence under Pt 4 EPAAct1986</li> <li>• Dept. Agriculture Stockingrates</li> <li>• Inter-Agency Environmental Management for Animal Based Industries - Dairy FarmEffluent 1998</li> <li>• Guidelines for the Environmental Management of Beef Cattle Feedlots in WA2002</li> <li>• Guidelines for Direct Land Application of Bio-solids and Bio- solid Products2002</li> <li>• Environmental Guidelines for New and Existing Piggeries: Bulletin 4416, 2000</li> <li>• WQPN Poultry Farms in PDWSA 1999</li> <li>• WQPN Irrigating Vegetated Land with Nutrient Rich Waste-water 1998</li> <li>• WQPN Animal Industry Waste-water Ponds 1998</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrient loading to groundwater - must comply with water quality objectives.</li> <li>• Must comply with agreed</li> <li>• Nutrient and drainage management plan.</li> </ul>	<p>RIC1 to Conditions RIC8 and</p> <p>General</p>

<b>OTHER USES</b>				
Aquaculture	<ul style="list-style-type: none"> <li>• Nutrient rich drainage</li> <li>• Waste-water disposal</li> </ul>	<ul style="list-style-type: none"> <li>• WQPN Aquaculture Projects1998</li> <li>• WRC Aquaculture Assessment Guidelines</li> <li>• Fisheries WAPermit</li> </ul>	<ul style="list-style-type: none"> <li>• Must be managed in accordance with WQPN Aquaculture Projects1998</li> </ul>	AQC1 to AQC4 and General Conditions
Commercial	<ul style="list-style-type: none"> <li>• Nutrient rich drainage</li> <li>• Waste-water disposal</li> <li>• Effluent disposal</li> </ul>	<ul style="list-style-type: none"> <li>• DoE Urban Stormwater Management in WA: Principles &amp; Objectives2003</li> <li>• HDWA Sewerage advice</li> </ul>	<ul style="list-style-type: none"> <li>• Lot size and wastewater disposal requires assessment.</li> <li>• Sewerage connected to Nitrogen Retentive Effluent disposal system or sewer.</li> <li>• Design based on DoE Position Statement and Water Sensitive Urban Design Guidelines.</li> </ul>	Select from General Conditions
Industrial / Public Utilities	<ul style="list-style-type: none"> <li>• Nutrient rich drainage</li> <li>• Waste-water disposal</li> <li>• Effluent disposal</li> <li>• Storage of Chemicals or concentrated nutrients</li> </ul>	<ul style="list-style-type: none"> <li>• Subject to Works Approval / Licence under Pt 4 EP Act 1986</li> <li>• DoE Urban Stormwater Management in WA: Principles &amp; Objectives2003</li> <li>• HDWA Sewerageadvice</li> <li>• WQPN Industrial Sites Near Sensitive Water Resources1999</li> <li>• WQPN Stormwater Management and Industrial Sites2002</li> <li>• WQPN Temporary Above Ground</li> <li>• Chemical Storage in PDWSA2000</li> </ul>	<ul style="list-style-type: none"> <li>• Lot size and wastewater disposal requires assessment.</li> <li>• Sewerage connected to Nitrogen Retentive Effluent disposal system or sewer.</li> <li>• Stormwater based on DoE Position Statement and Water Sensitive Urban Design Guidelines.</li> <li>• Condition storage and transport</li> <li>• Of potential contaminants to minimise risk.</li> </ul>	IPC1 to IPC9

			<ul style="list-style-type: none"> <li>Any storage of Chemicals / nutrients to be in accordance with DoE guidelines.</li> </ul>	
Recreation Facilities / Ovals / Public Open Space	<ul style="list-style-type: none"> <li>Nutrient and Drainage Management</li> <li>Fertiliser application</li> <li>rate</li> <li>Effluent Disposal</li> </ul>	<ul style="list-style-type: none"> <li>WQPN Nutrient and Irrigation Management Plans1998</li> <li>Environmental Guidelines for the Establishment and Maintenance of Turf and Grassed Areas2001</li> </ul>	<ul style="list-style-type: none"> <li>Fertiliser use to be minimised. Design to minimise reticulated grass areas.</li> <li>Nutrient and Irrigation Management Plan to be Implemented</li> <li>Sewerage Disposal to be using Nitrogen Retentive Disposal Systems or connection to sewer.</li> </ul>	RFC1 to RFC4 and General Conditions
Residential	<ul style="list-style-type: none"> <li>Nutrient Management</li> <li>Effluent Disposal</li> <li>Stormwater Management</li> </ul>	<ul style="list-style-type: none"> <li>DoE Urban Stormwater Management in WA: Principles &amp; Objectives2003</li> <li>HDWA Sewerage advice</li> <li>WQPN Subdivision of Land in PDWSA1999</li> </ul>	<ul style="list-style-type: none"> <li>Sewerage connected to reticulated sewer.</li> <li>Design based on DoE Position</li> <li>Statement and Water Sensitive Urban Design Guidelines.</li> </ul>	Select from General Conditions

Notes:

WQPN = Water Quality Protection Note PDWSA = Public Drinking Water Source Area

SPP = Statement of Planning Policy (No.2.3 {previously No. 6} – JandakotGroundwater Protection Policy

**Schedule 2 – Suggested Standard Conditions (reference list sourced from Department of Environment, City of Cockburn, Town of Kwinana, and City of Rockingham)**

**1.0 General Conditions**

**1.1 Native Vegetation**

SUBJECT	CONDITIONS	CODE
Retention of remnant vegetation	Satisfactory arrangement must be made with the {relevant body} to ensure that all remnant vegetation, other than that cleared for necessary site works, is preserved to the satisfaction and specifications of {relevant body}	NVC1
Rehabilitation	Areas of remnant vegetation disturbed during construction being rehabilitated and stabilised to the satisfaction of {relevant body}.	NVC2
Identification and protection of vegetation worthy of retention	<p>Measures must be taken to the satisfaction of the {local government} to ensure identification and protection of any native vegetation on site worthy of retention prior to commencement of site works.</p> <p><i>Note</i>  <i>The subdivider should liaise with the {local government} to identify vegetation worthy of retention prior to the commencement of works. All native vegetation should be preserved so far as practicable after clearing of site works and services to accommodate the proposed urban development.</i></p>	NVC3
<p>Development areas and building envelopes</p> <p><i>(define development area to minimise disturbance of existing vegetation)</i></p>	<p>Site plans identifying the location of all proposed development or building envelope are to be prepared to the satisfaction of the {relevant body}. Development areas or building envelopes must ensure clearing of the site is minimised.</p> <p><i>Note 1</i>  <i>An amended version of this condition may also apply at re-zoning or subdivision.</i></p> <p><i>Note 2</i>  <i>The plans should include where possible, physical characteristics of the site including landform, soil types, contours, drains, watercourses, bores, wells, dams and wetlands.</i></p> <p><i>The proponent or subdivider shall cause the proposed building envelopes to be pegged on site in accordance with the plans required to be submitted in the above condition and shall submit certification from a Licensed Surveyor certifying the consistency of this pegging on-site with the approved plans.</i></p> <p><i>The subdivider is advised that no vegetation shall be cleared within any allotment except for the purposes of:</i></p> <ul style="list-style-type: none"> <li><i>(a) Compliance with the requirements of the Bush Fires Act</i></li> <li><i>(b) Clearing within the building envelope for a reasonable area of the construction of an approved dwelling or other building</i></li> <li><i>(c) To construct a vehicular access as approved by the Council</i></li> <li><i>(d) For another valid reason where specific written approval has first been obtained from the Council.</i></li> </ul>	NVC4
Native Vegetation Management Plans	Prior to commencement of any site works, the proponent shall prepare and implement a native vegetation management plan for the area as described in the attached diagram, to the satisfaction of the {local government}.	NVC5

SUBJECT	CONDITIONS	CODE
	<p><b>Note</b></p> <p><i>The Management Plan shall address, but not be limited to, the following issues: (Provide a list of issues – eg. Control of introduced species, fire management, revegetation, public access/recreation, rubbish management, prevention of livestock access, etc.)</i></p>	
Vegetation Rehabilitation	<p>The vegetated area as shown in the attached diagram, shall be rehabilitated with local native species prior to site works, at the proponents' expense, to the satisfaction of the {relevant body}.</p> <p><b>Note</b></p> <p><i>Advice on local native species can be sought from local native plant nurseries, local regional Herbaria, the Western Australian Herbarium (Department of Conservation and Land Management), Local Governments, or environmental consultants with experience in rehabilitation. Advice can also be obtained from the Department of Environment.</i></p>	NVC6
Subdivision style building envelope condition  <i>(to minimise disturbance to vegetation in larger lot subdivisions)</i>	<p>The Subdivider shall carry out the following to the satisfaction of the {relevant body};</p> <p>(a) prepare a plan of the location of building envelopes on each lot (such building envelopes shall generally reflect the locations shown by the approved plan of subdivision, be located on land that has the best capability for construction of dwellings and on-site effluent disposal and, where possible, be located outside of the areas of remnant vegetation;</p> <p>(b) identify the building envelopes on-site by survey;</p> <p>(c) make arrangements to ensure appropriate mechanisms are established to require all buildings and effluent disposal on each lot to be located within the building envelopes; and</p> <p>(d) make arrangements to ensure prospective purchasers of the proposed lots are made aware of the plan of building envelopes, the location of building envelopes on-site and the requirement to locate all buildings and effluent disposal within the envelopes.</p>	NVC7

## 1.2 Wetlands

SUBJECT	CONDITIONS	CODE
Wetland Management Plans	<p><i>Prior to commencement of site works, the proponent shall prepare and implement a wetland management plan for wetland (wetland name/number) and its buffer, as described in the attached diagram, to the satisfaction of the {local government}.</i></p> <p><b>Note</b></p> <p><i>The Wetland Management Plan shall address, but not be limited to, the following issues: (Provide a list of issues – eg. Control of introduced species, fire management, revegetation, public access/recreation, rubbish management, control of nuisance insects, water quality monitoring, prevention of livestock access, maintenance of hydrological regimes etc.)</i></p> <p style="text-align: center;"><b>OR</b></p> <p><i>With regard to the preparation of a Wetland Management Plan, the proponent should liaise with the Department of Environment.</i></p>	WTC1
Vegetation Rehabilitation	<p>The wetland and buffer area, as shown within the Protected Area in the attached diagram, shall be rehabilitated with local native species prior to site works, at the proponents' expense, to the satisfaction of the {relevant body}.</p> <p><b>Note</b></p>	WTC2

SUBJECT	CONDITIONS	CODE
	<i>Advice on species local to the wetland and it's buffer area can be sought from local native plant nurseries, local regional Herbaria, the Western Australian Herbarium (Department of Conservation and Land Management), Local Governments, or environmental consultants with experience in rehabilitation. Advice can also be obtained from the Department of Environment on rehabilitation of wetlands.</i>	
Stormwater impact on Wetlands	Prior to the commencement of any site works, the proponent shall submit stormwater management infrastructure plans for approval of the {local government}, to demonstrate that no infrastructure is contained within the wetland or its buffer, described as the Protected Area in the attached plan.	WTC3
Stormwater impact on wetlands	The proponent shall ensure the proposed stormwater management infrastructure for the subject land does not alter the local groundwater levels beyond a level acceptable to the Department of Environment. Stormwater infrastructure plans shall be submitted to the Department of Environment for approval prior to commencement of site works.	WTC4
Conservation Category Wetlands Restrictive Covenant	<p>A restrictive covenant pursuant to section 129BA of <i>the Transfer of Land Act 1893</i> shall be imposed on &lt;insert lot(s)&gt; for the purpose of protecting &lt;insert wetland and its vegetation buffer, at the proponents cost.</p> <p><i>Note</i>  <i>The covenant will cover an area surrounding &lt;insert wetland name/number&gt;, as determined through (EITHER site assessment / the attached plan). The conditions of the covenant will include restrictions on stock access, clearing vegetation and other matters deemed appropriate by the Department of Environment.</i></p>	WTC5
Wetlands Buffers Conservation Category OR <i>(may be used for other wetlands also)</i>	The proponent shall establish a buffer on (insert lot details) between the proposed development and adjacent wetland (insert wetland name or number). The buffer shall be measured from the furthest extent of wetland dependent vegetation to the nearest outside edge of the proposed development. The buffer shall be determined using the DoE Wetlands Position Statement, or as shown and described as the Protected Area in the attached diagram.	WTC6
Conservation Category Wetlands <i>(Where stock is to be kept or agisted).</i>	Stock proof fencing shall be erected, at the cost of the applicant, around <wetland name and number> and its buffer, described as the Protected Area in the attached diagram, prior to commencement of any development of the land.	WTC7

### 1.3 Stormwater Management

SUBJECT	CONDITIONS	CODE
Urban subdivisions – Water Quality protection	The stormwater management system is to be designed to protect the water quality and ecology of the downstream surface and ground water (receiving environment). The stormwater management system is to be designed and constructed in accordance with the guidelines contained in the Department of Environment’s “Stormwater Management Manual”, and interim Position Statement “Stormwater Management”.	SWC1
Urban subdivisions where the groundwater table is shallow (<1.5m)	Any proposal to limit maximum groundwater levels must comply with the principles and guidelines in the Stormwater Management Manual to the satisfaction of the Department of Environment.  <i>Note</i> <i>The Department of Environment does not support the artificial lowering of groundwater levels, particularly in areas where this may result in nutrient export off the site. Drainage invert levels should be at or above the Average Annual Maximum Groundwater level.</i>	SWC2
Approval of Plans	Stormwater management plans shall be in accordance with the Department of Environment’s “Stormwater Management Manual”, and interim Position Statement “Stormwater Management”. Plans shall be submitted to and approved by the {local government} prior to {insert development or subdivision} commencing.	SWC3
Stormwater Management Plan	A stormwater management strategy being prepared and implemented to the satisfaction of the {local government} incorporating the principals of water sensitive design, and the Department of Environment Position Statement – Stormwater Management, prior to the commencement of development or any other site works.	SWC4

### 1.4 Effluent Disposal

SUBJECT	CONDITIONS / ADVICE	CODE
Reticulated Sewerage	All dwellings are to be connected to an approved reticulated sewerage service to the satisfaction of the local government and HDWA.	EDC1
Water resource Protection	Septic tanks, leach drains, or other such installations for on site disposal of sewerage effluent or wastes shall not be constructed closer than 100 metres from a watercourse, wetland or stream and / or not within land subject to flooding.	EDC2
Sewerage unavailable	The proponent making arrangements satisfactory to the <insert LGA> to install suitable on-site effluent disposal systems designed for long term usage (such as an nitrogen retentive ATU’s).	EDC3
On-site effluent disposal	The subdivision or development should ensure positioning of on-site effluent disposal units at least 100 metres from the nearest water body and at least 2 metres from the highest known groundwater level.	EDC4

## 1.4 Development setbacks / Foreshores

SUBJECT	CONDITIONS	CODE
Foreshore buffer	The proponent must provide an appropriate foreshore reserve / setback, through the use of an appropriate buffer or foreshore reserve (ceding of land if appropriate), as identified through an assessment of biophysical factors, and in accordance with relevant planning policies (ie State Coastal Planning SPP).	FBC1
Foreshore Management Plan	The proponent is to prepare and implement a foreshore management plan, at the proponent's cost, to the satisfaction of the {insert authority}, for the management and protection of the <insert> foreshore.  <i>Note</i> <i>The foreshore management plan should address issues such as public access controls, weed management, rehabilitation, fencing and other pressures or management issues identified.</i>	FBC2
Fenced, vegetated buffer	A vegetated buffer, based on an assessment of biophysical factors for the <insert waterway>, is to be established, maintained and (if stock) fenced to the satisfaction of the <insert LGA>.  <i>Note</i> <i>Specify fencing, stock exclusion and management of buffer area or foreshore – determine advice based on pressure / level of protection or management required.</i>	FBC3

## 2.0 LAND USE SPECIFIC CONDITIONS

*Note – generally the above conditions and advice can be applied to the specific land uses at the discretion of local government or on advice from referral agencies. Those provided below can be used specifically for the land uses or development identified (Land Use Table).*

### 2.1 Rural Use – Low to Medium Intensity

SUBJECT	CONDITION	CODE
Ground and surface water monitoring	The applicant is to conduct groundwater and surface water monitoring to the satisfaction and specifications of the {relevant authority} to ensure an adequate pollutant or nutrient audit is undertaken. The proponent should consult with the Department of Environment for further advice with regard to this condition.	RUC1
Nutrient buffer	The proponent is to provide a vegetated buffer (either existing or re-planted with native species) between the development and the {waterway / drain / wetland}, of a width to be determined by site assessment and depicted on the submitted plan, to attenuate nutrients and run-off.	RUC2
Nutrient and Irrigation Management Plan	A Nutrient and Irrigation Management Plan is to be prepared and implemented in accordance with the DoE requirements as described in the WQPN – Nutrient and Irrigation Management Plans, to the satisfaction of the {local government}.	RUC3
Hard stand areas	All hardstand areas are to be sealed and impervious. Wastewater including stormwater and other run-off containing leachate from these areas, nursery production and wash down areas shall be managed and disposed of appropriately	RUC4

SUBJECT	CONDITION	CODE
	(see WQPN - Nurseries and Garden Centres).	
Erosion control	Prior to commencement of site works, the proponent is to prepare and submit to {local government} for approval, plans detailing erosion control measures, and once approved implement such measures to the satisfaction of {local government}	RUC6
Keeping of Horses ( <i>may also apply to live-stock</i> )	Prior to approval being granted, the proponent is to prepare a management plan in accordance with the Environmental Management Guidelines for Horse Facilities and Activities (DoE and HDWA, 2002).	RUC7
	Stock proof fencing shall be installed and maintained on the perimeter of the buffer zone between any areas where horses are to be kept / agisted and conservation wetlands, waterways, seasonally boggy areas or Bush Forever sites, as shown on the attached plan.	RUC8
	Stable floors or manure collection area floors are to be impermeable	RUC9
	<p>All horse manure shall be collected from stables, paddocks and yards, and temporarily stored in impermeable, waterproof containers prior to disposal at an approved site.</p> <p><i>Note</i>  <i>If composting manure, ensure it is conducted in accordance with AS 4454-1999: Compost, soil conditioners and mulches.</i></p>	RUC10
Stocking rates	<p>Grazing stocking rates for cattle, sheep, horses and goats are to be determined. This can be achieved through liaison with the Department of Agriculture and Department of Environment.</p> <p><i>Note</i>  <i>The stocking rates should be based on the area of pasture available to stock and not total lot size. Establishing these rates is critical in order to prevent any further erosion and any further impacts on water quality in the catchment.</i></p>	RUC11
Soil erosion	Linear features (eg roads, electricity lines, etc) should be installed to follow the contour. Where these facilities need to deviate from the contour they should be carefully designed to minimise soil erosion (ie: minimise the slope, use flat bottomed channels, install frequent dissipation structures to prevent concentration of water flow, etc).	RUC12
New vineyard - draft COP	New viticulture proposals are to be developed in accordance with the Department of Environment's <i>Environmental Code of Practice for Vineyards 2002</i> , to ensure environmentally sensitive vineyard management.	RUA13

## 2.2 Rural Use – Intensive

SUBJECT	CONDITIONS	CODE
Nutrient and Irrigation Management Plan	A Nutrient and Irrigation Management Plan is to be prepared and implemented in accordance with the DoE requirements as described in the WQPN – Nutrient and Irrigation Management Plans, to the satisfaction of the {local government}	RIC1
Ground and surface water monitoring	The applicant is to conduct groundwater and surface water monitoring to the satisfaction and specifications of the Department of Environment, to ensure an adequate pollutant / nutrient audit is undertaken.	RIC2
Nutrient buffer	The proponent is to provide a vegetated buffer of a width to be determined through a biophysical assessment, in order to increase foreshore stability and attenuate nutrients and run-off, at the proponent's cost, to the satisfaction of the {local government}.	RIC3
Prevention of groundwater pollution (Development Proposal)	All settling and storage ponds to be constructed so as to prevent infiltration of effluent rich waste water into the groundwater, and to prevent the export of nutrients off-site or into adjacent waterways.	RIC4
Stocking rates	Grazing stocking rates for cattle, sheep, horses and goats are to be determined. This can be achieved through liaison with the Department of Agriculture. The stocking rates should be based on the area of pasture available to stock and not total lot size. Establishing these rates is critical in order to prevent any further erosion and any further impacts on water quality in the catchment.	RIC5
Soil erosion	Linear features (eg roads, electricity lines, etc) are to follow contours. Where these facilities need to deviate from the contour they should be carefully designed to minimise soil erosion (ie: minimise the slope, use flat bottomed channels, install frequent dissipation structures to prevent concentration of water flow, etc).	RIC6
Nutrient export	Intensive land-uses likely to export nutrients (eg horticulture) on soils with poor nutrient retention ability should be located not less than 300 metres upstream from a <insert wetland / watercourse>.	RIC7
Nutrient Export	<p>The following management practices should be implemented to reduce the export of nutrients off site:</p> <ul style="list-style-type: none"> <li>• Revegetate and fence watercourses or revegetated areas where stock will be kept, to improve the capacity of surrounding vegetation to filter particles.</li> <li>• Do not construct additional drainage lines.</li> <li>• Provide for retention of sediments and nutrients on site rather than transporting them to wetlands and watercourses off the property.</li> </ul> <p>In order to protect the water quality of nearby wetlands a nutrient, pesticide and irrigation management plan should be prepared by the proponent so that excess nutrients, pesticides and water are minimised and contained on-site.</p>	RIC8

## 2.5 Industrial / Public Utilities

SUBJECT	CONDITIONS / ADVICE	CODE
Aquaculture	The applicant shall comply with the attached “General Guidelines for Acceptability of Aquaculture Proposals”, and the DoE WQPN Aquaculture Proposals.	AQC1
Marron proposals	The operation shall be conducted in accordance with relevant policies and guidelines, including the Fisheries WA Aquaculture Info Sheet 4 – Building Marron Ponds.	AQC2
Aquaculture/ water quality monitoring	The potential impact on marine water quality shall be monitored and managed to protect recognised environmental values in the area. This project should meet the water quality criteria specified in EPA Bulletin 711 (1993) draft “ <i>Western Australian Water Quality Guidelines for the Fresh and Marine Waters</i> ” for the protection of aquatic ecosystems. A copy of this document is attached. A suitable monitoring program should be developed in consultation with the Department of Environment and/or CALM that recognises these criteria. A summary of the monitoring results should be submitted annually to Fisheries WA and the Department of Environment and be available to other government agencies.	AQC3
Aquaculture/ discharge pipe	Any proposed discharge pipe shall extend at least 100m offshore and avoid areas of seagrass and reef. The water quality criteria specified in the EPA’s Bulletin 711 (1993) should be met within 50 m of the discharge pipe. A suitable monitoring program should be developed in consultation with the Department of Environment and/or CALM that recognises these criteria. It is envisaged that the monitoring program would be modified as production increases (ie to more thoroughly assess the impact on water quality). A summary of the monitoring results should be submitted annually to Fisheries WA and the Department of Environment and be available to other Government agencies.	AQC4

## 2.4 Commercial

Refer to above general stormwater and effluent disposal conditions and advice

SUBJECT	CONDITIONS	CODE
Proposed industrial development	The proponent / development shall not discharge wastewater to the environment or be used as a ‘wet industry’ without the prior approval of the {local government / DoE}.	IPC1
Trapping of specific pollutants	As a safeguard to protect downstream water quality a [insert type of control device ie oil separator, gross pollutant trap] to be installed in the stormwater management network. Design and construction and regular maintenance of the [insert type of control device] is to be to the specifications and satisfaction of [local government].	IPC2

## 2.5 Industrial / Public Utilities

Pollution control contingency	The applicant must prepare a contingency plan detailing procedure, an action plan and available equipment in the event of spillage constituting a pollution threat to the [insert waterway]. The plan to be prepared to the specifications and satisfaction of [local government]	IPC3
Prevention of groundwater pollution	All settling and storage ponds to be constructed to the satisfaction of the {local government}, so as to prevent infiltration of effluent rich waste water into the groundwater, and to prevent the export of nutrients off-site or into adjacent waterways.	IPC4
Industrial developments where spills are likely	In the event of any spillage or leakage of hydrocarbons, chemicals, sewage or waste-water from the proposed facility and associated activities to exposed ground surface, the Department of Environment should be notified immediately.	IPC5
Industrial developments likely to produce liquid wastes	If the proposed lots are to be occupied by industry that produces liquid wastes that conform to the Water Corporation's Industrial Waste Acceptance Criteria, the lots should be connected to a reticulated sewerage service. If a sewerage service is not available, the waste should be held in secure containers and exported to a site approved by the Department of Environment's Waste Management Division.	IPC6
Pollution control contingency plan	The applicant to prepare a contingency plan detailing procedure, an action plan and available equipment in the event of spillage constituting a pollution threat to the <insert waterway>. The plan to be prepared to the specifications and satisfaction of <insert relevant body>	IPC7
Bunding of Loading and batching areas	The proponent is to bund all loading / unloading or batching areas. Such areas are to be of impermeable surfaces, with all drainage being captured and treated on-site	IPC8
Where proposed development will result in the storage of chemical and a Permit is required.	The land subject to this subdivision is located within the <insert name> Underground Water Pollution Control Area (UWPCA), which has been gazetted for priority <insert classification> source protection. Under By-Law 5.5.2 of the <i>Metropolitan Water Supply Sewerage and Drainage Act 1909</i> the landowner requires a permit to use and/or store certain substances/chemicals, including fuel, on the property. Owners and prospective purchasers must apply to the Department of Environment for permits of this nature.	IPC9

SUBJECT	CONDITION	CODE
Ground and surface water monitoring	The applicant is to conduct groundwater and surface water monitoring to the satisfaction and specifications of the {local government}, on advice from the Department of Environment and or the local government.	RFC1
Nutrient buffer	The subdivider to provide a vegetated buffer of a width to be determined through a bio-physical assessment, in order to increase foreshore stability and attenuate nutrients and run-off, at the subdividers cost and to the satisfaction of the {local government}.	RFC2
NIMP for Irrigated Grassed Areas (POS etc)	Proponent is to prepare and implement a Nutrient and Irrigation Management Plan that demonstrates minimising export of nutrients to the surrounding environment, in accordance with the DoE WQPN – Nutrient and Irrigation Management Plans.	RFC3
Nutrient Export	<p>The following management practices shall be implemented to reduce the export of nutrients off site:</p> <ul style="list-style-type: none"> <li>• Do not construct additional drainage lines.</li> <li>• Provide retention basins to allow sedimentation and infiltration of pollutants and nutrients on site rather than transporting them to wetlands and watercourses off the property.</li> </ul> <p>The design and management of this proposal should ensure the rate of nutrient export is maintained at or below the current levels. To achieve this target a number of initiatives should be considered including:</p> <ul style="list-style-type: none"> <li>• Construction of drainage retention systems</li> <li>• Development of detailed management programs to address nutrient management.</li> <li>• Design and implementation of a monitoring program to check the system performance.</li> <li>• Preparation of contingency plans to deal with the most likely failure scenarios.</li> </ul>	RFC4

## 2.7 Residential

Refer to above general stormwater and effluent disposal conditions

Schedule 3 – Map of Cockburn Sound Catchment and Local Government Areas



## **Memorandum of Understanding – CSMC and local government**

(To be referenced)

## **Land Use Planning Paper, Sound Land Use Planning**

(To be referenced)

## **Appendix 2 – Relevant Policies, Guidelines**

### **1. Inter-agency guidelines**

Inter-agency guidelines combine the requirements of each agency into a single document. Relevant guidelines currently available include:

- Best Environmental Management Practices for Environmentally Sustainable Vegetable and Potato Production in Western Australia - A Reference Manual (2002)
- Environmental Management for Animal-based Industries - Dairy Farm Effluent (1998)
- Environmental Guidelines for New and Existing Piggeries: Bulletin 4416 (May 2000) (Copies available from the Department of Agriculture)
- Environmental Guidelines for the Establishment and Maintenance of Turf and Grassed Areas (December 2001)
- Environmental Guidelines for Horse Facilities and Activities (December 2002)
- Code of Practice for Environmentally Sustainable Vegetable and Potato Production in Western Australia (2002)
- Guidelines for the Environmental Management of Beef Cattle Feedlots in Western Australia (July 2002)
- Environmental Management Guidelines for Vineyards (June 2002)
- Guidance Notes on Dangerous Goods Storage (October 2002) Guidelines for Direct Land Application of Bio-solids and Bio-solids Products (Draft) (February 2002)

### **2. DoE Position Statements, Policies, Guidelines, and Water Quality Protection Notes**

- These are available on the WRC website: [www.wrc.wa.gov.au](http://www.wrc.wa.gov.au)
- The Cockburn Sound Management Council documents are located at <http://www.wrc.wa.gov.au/policy/csmc>