Implementation of the National Water Quality Management Strategy

This paper is made available to the National Competition Council (NCC) as a guide to assess the implementation of the Council of Australian Governments (CoAG) water resources policy by State and Territory governments. It was prepared by Environment Australia and the Department of Agriculture Fisheries and Forestry Australia in consultation with State and Territory government agencies.

Background

In 1994 CoAG agreed:

'that action needs to be taken to arrest widespread natural resource degradation in all jurisdictions occasioned, in part, by water use and that a package of measures is required to address the economic, environmental and social implications of future water reform'.

In relation to the National Water Quality Management Strategy (NWQMS), CoAG agreed in clause 8(b) of the Strategic Framework to:

Support ANZECC and ARMCANZ in their development of the National Water Quality Management Strategy, through the adoption of a package of market based and regulatory measures, including the establishment of appropriate water quality monitoring and catchment management policies and community consultation and awareness.

In the third tranche assessment, the Council will be looking for further evidence to demonstrate that the benefits from the changes to systems and structures have been realised. The NCC is undertaking preliminary work to identify progress in developing the National Water Quality Management Strategy Guidelines and their implementation by jurisdictions. When deciding how to assess, the Council will look at, where possible, drawing on work already agreed by states and territories.

The National Competition Council request

Environment Australia was requested, on 10 February 2000, to provide the following assistance to the NCC:

- advice on progress in finalising the Strategy Guidelines;
- an outline of what the Strategy expects of the various jurisdictions; and

• advice as to progress by jurisdictions in meeting these expectations.

This discussion paper aims to respond to the first two points. Environment Australia and AFFA prepared this advice in consultation with all relevant State and Territory agencies.

Policy context

The National Water Quality Management Strategy (the Strategy)

Aims and principles

The National Water Quality Management Strategy aims to deliver a nationally consistent approach to water quality management. It is being developed in response to growing community concern about the condition of the nation's water. The policy objective of the Strategy is 'to achieve sustainable use of the nation's water resources by protecting and enhancing their quality while maintaining economic and social development.'

The overriding principles of the Strategy include:

- ecologically sustainable development;
- an integrated approach to water quality management;
- community involvement in setting water quality objectives;
- developing State and Territory water quality management plans; and
- government endorsement of water quality objectives for particular water bodies, catchments or uses.

The Strategy sets out a national framework within which all stakeholders can contribute to better water quality management. The Strategy is based on policies and principles for water quality management that apply nation-wide and includes guidelines covering key elements of the water cycle including groundwater, aquatic ecosystems, agricultural water use and industrial water quality. The Strategy is being developed to assist jurisdictions in establishing appropriate environmental outcomes.

Implementation responsibility

Approaches to water quality management are to be focussed at the State and Territory level using water quality planning and policy instruments to set water quality objectives and goals that are in line with agreed national guidelines. Development and implementation of local management strategies is encouraged. Regional communities are to be invited to

The full range of policy principles is listed in "ARMCANZ and ANZECC (1994), *Water Quality Management – an outline of the policies*, Commonwealth of Australia, p 4-7.

participate on a catchment basis in the identification of local environmental values and the associated water quality criteria. The strategy for achieving sustainable water quality management is to build on a full mix of approaches (including but not limited to regulatory and market based approaches, education and guidance).

The responsibility for implementing the Strategy falls largely to State and Territory governments. No guidance is given in the NWQMS on what is a reasonable period for each of the Strategy Guideline documents to be 'adopted' by each jurisdiction.² For the purposes of this discussion paper, the Commonwealth after consultation with States and Territories has proposed that implementation should be assessed through a 2 yearly review process. What constitutes a reasonable adoption period is not specified.³

The NCC supports the review process proposed and would encourage the Commonwealth and the States and Territories to work together to develop reasonable adoption periods and approaches to implementing the NWQMS. States and Territories should specify in the assessment the period of time necessary to implement the NWQMS objectives including justifications for the timeframe nominated.

The Council notes that the modules comprising the NWQMS strategy are intended as **guidelines** that provide broad principles rather than be prescriptive agreements. Jurisdictions will need to demonstrate an approach to the use of the relevant NWQMS guidelines. This may include local guidelines or codes of practice consistent with the national guidelines so far completed for those industries covered under the NWQMS.

Implementation expectations

2

An attempt has been made to identify the higher level and more detailed expectations. The detailed expectations are described in Appendix B. The higher level expectations are:

a) Each jurisdiction should be able to demonstrate a high level of political commitment to implementation of the Strategy, including to achieving the policy objectives. Such commitment would include the development of practical on-ground action, which could include the use of legislation, policy instruments, programs or plans. These should contain

The word adopted in this context means implementation of the National Water Quality Management Strategy in accordance with the National Competition Council's assessment

However, to improve effectiveness of implementation of the Strategy and the Guidelines this is something that will need to be further discussed and agreed among jurisdictions.

- provisions which are consistent with the guidelines, and scope for review such as through the proposed two-yearly reviews.
- b) Each jurisdiction should have a publicly stated commitment to implementing the principles identified in the Strategy and have implemented an approach for adopting the scientific framework outlined in *the Australian Water Quality Guidelines for Fresh and Marine Waters* (ANZECC, 1992). Jurisdictions should be using this to underpin the objectives and standard setting process for achieving aquatic ecosystem protection. There should be an appropriate statewide approach to water quality management.
- c) Each jurisdiction should have in place a water reform program that integrates water quality and quantity management requirements in their approaches to land-use planning. In relation to water quality, this program should target the attainment of the ambient environmental quality objectives set in consultation with the community.
- d) All relevant legislative, regulatory and policy measures to protect water quality should, where practicable, be consistent with the *Implementation Guidelines for the National Water Quality Management Strategy 1998.* In particular, they should include measures to promote:
 - integrated resource management
 - identification of environmental values and associated water quality objectives; and
 - catchment, coastal and groundwater management planning.
- e) The principles of waste minimisation, cleaner production, best management practices and reuse and recycling should be fundamental considerations, particularly for effluent management.⁴
- f) Each jurisdiction should be able to demonstrate use of the relevant National Guidelines. Where necessary, jurisdictions should have produced local guidelines or codes of practice consistent with the Guidelines so far completed for those industries covered under the NWQMS. The national Guidelines seek adoption of local guidelines to underpin the regulation of each of the activities covered and these should be consistent with the national Guidelines.⁵ A list of those Guidelines and their current status is provided in the <u>Appendix</u>.

4

Each of the industry specific Guidelines requires that any State or local guidelines should be consistent with the NWQMS Guidelines.

Each of the industry specific Guidelines requires that State or local guidelines should be consistent with the Guidelines.

g) The strategy for the achievement of sustainable water quality management should build on a full mix of approaches (including but not limited to regulatory and market based approaches⁶, education and guidance). This is supported by CoAG. Market based approaches should play a complementary role in achieving protection and enhancement of water quality where appropriate.⁷

Conclusion

This paper outlines the broad expectations related to water quality management that can reasonably be placed on the Commonwealth, States and Territories.

A list of all guidelines and their status and more detailed expectations for each of the completed Guidelines are discussed in the Appendix.

This paper does not assess the level to which jurisdictions meet these expectations. This will need to be subject to assessment by the NCC through a separate exercise.

It is intended that this document will be used as a basis for discussions with the NCC and the High Level Steering Group to assist in the development of an assessment framework for the Third Tranche assessment.

-

⁶ ANZECC and ARMCANZ (1994), Water quality management – an outline of the policies.

ANZECC and ARMCANZ (1994), Policies and principles: a reference document.

Appendix: Documents and Implementation of the National Water Quality Management Strategy

# 1	Water Quality Management - An Outline of the Policies
# 2	Policies and Principles - A Reference Document
# 3	Implementation Guidelines
Water 0	Quality Benchmarks
# 4	Australian Water Quality Guidelines for Fresh and Marine Waters
***4	Australian and New Zealand Guidelines for Fresh and Marine Water Quality
***4a	An Introduction to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality
# 5	Australian Drinking Water Guidelines - Summary
# 6	Australian Drinking Water Guidelines
***7	Australian Guidelines for Water Quality Monitoring and Reporting
***7a	Australian Guidelines for Water Quality Monitoring and Reporting - Summary
Ground	lwater Management
#8	Guidelines for Groundwater Protection
Guideli	nes for Diffuse and Point Sources
# 9	Rural Land Uses and Water Quality
# 9 ***10	
	Rural Land Uses and Water Quality
***10	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management Guidelines for Sewerage Systems - Effluent Management
***10 # 11	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management
***10 # 11 # 12	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management Guidelines for Sewerage Systems - Effluent Management Guidelines for Sewerage Systems - Acceptance of Trade Wastes (Industrial Waste)
***10 # 11 # 12 13	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management Guidelines for Sewerage Systems - Effluent Management Guidelines for Sewerage Systems - Acceptance of Trade Wastes (Industrial Waste) Guidelines for Sewerage Systems - Sludge (Biosolids) Management
***10 # 11 # 12 13 14	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management Guidelines for Sewerage Systems - Effluent Management Guidelines for Sewerage Systems - Acceptance of Trade Wastes (Industrial Waste) Guidelines for Sewerage Systems - Sludge (Biosolids) Management Guidelines for Sewerage Systems - Use of Reclaimed Water
***10 # 11 # 12 13 14	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management Guidelines for Sewerage Systems - Effluent Management Guidelines for Sewerage Systems - Acceptance of Trade Wastes (Industrial Waste) Guidelines for Sewerage Systems - Sludge (Biosolids) Management Guidelines for Sewerage Systems - Use of Reclaimed Water Guidelines for Sewerage Systems - Sewerage System Overflows
***10 # 11 # 12 13 14 15 #16a	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management Guidelines for Sewerage Systems - Effluent Management Guidelines for Sewerage Systems - Acceptance of Trade Wastes (Industrial Waste) Guidelines for Sewerage Systems - Sludge (Biosolids) Management Guidelines for Sewerage Systems - Use of Reclaimed Water Guidelines for Sewerage Systems - Sewerage System Overflows Effluent Management Guidelines for Dairy Sheds
***10 # 11 # 12 13 14 15 #16a #16b	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management Guidelines for Sewerage Systems - Effluent Management Guidelines for Sewerage Systems - Acceptance of Trade Wastes (Industrial Waste) Guidelines for Sewerage Systems - Sludge (Biosolids) Management Guidelines for Sewerage Systems - Use of Reclaimed Water Guidelines for Sewerage Systems - Sewerage System Overflows Effluent Management Guidelines for Dairy Sheds Effluent Management Guidelines for Dairy Processing Plants
***10 # 11 # 12 13 14 15 #16a #16b	Rural Land Uses and Water Quality Australian Guidelines for Urban Stormwater Management Guidelines for Sewerage Systems - Effluent Management Guidelines for Sewerage Systems - Acceptance of Trade Wastes (Industrial Waste) Guidelines for Sewerage Systems - Sludge (Biosolids) Management Guidelines for Sewerage Systems - Use of Reclaimed Water Guidelines for Sewerage Systems - Sewerage System Overflows Effluent Management Guidelines for Dairy Sheds Effluent Management Guidelines for Dairy Processing Plants Effluent Management Guidelines for Intensive Piggeries

[#] Completed prior to development of the third Tranche assessment framework and included in the framework.

^{***}Completed but not included in the assessment framework for the third Tranche.

Implementation of the NWQMS guidelines

1. Australian Water Quality Guidelines for Fresh and Marine Waters (2000)

These Guidelines are the result of a substantial review and rewrite of the 1992 Australian Water Quality Guidelines for Fresh and Marine Waters. Their main objective is to provide an authoritative guide for setting water quality objectives required to sustain current, or likely future, environmental values for natural and semi-natural water resources in Australia and New Zealand.

The Guidelines have adopted an innovative approach that allows specific water quality objectives to be defined for application in specific locations to address specific management goals and problems. They recognise that water quality, ecosystem health and the surrounding environment are all intimately connected. The Guidelines have been broadened to include biological assessment, sediment guidelines and advice on determining environmental flows. The new Guidelines also consider water quality issues such as algal blooms rather than simply concentrations of individual chemicals. The emphasis is on involving the community in setting management goals for levels of protection and establishing the balance between social, cultural, political and economic concerns and considering costs and benefits.

The environmental values addressed by the 2000 Guidelines are:

- Aquatic ecosystems
- Primary industries
 - Irrigation and general water use
 - livestock

Aquaculture and human consumers of aquatic foods

- Human health values
 - Recreational water quality and aesthetics
 - Drinking water

Target Audience

The Guidelines provide Government and the general community (particularly catchment/water managers, regulators, industry, consultants and community groups) with a sound set of tools for assessing and managing ambient water quality in natural and semi-natural water resources.

Guideline expectations

Jurisdictions should have adopted an approach to water quality management that includes:

- provides a clear definition of the primary management aims including environmental values, unambiguous management goals and level of protection;
- ii. determines appropriate water quality guidelines for waterbodies;
- establishing appropriate water quality objectives or targets taking into account social, cultural, political and economic concerns where necessary;
- iv. establishes effective management frameworks including cooperative, regulatory, feedback and auditing mechanisms as well as market based mechanisms where appropriate;
- v. establishes monitoring and assessment programs focused on the water quality objectives;
- vi. initiates an appropriate management response based on attaining or maintaining water quality objectives including developing and initiating remedial action for waterbodies considered to be under stress; and
- vii. develops and initiates community education programs in water quality management and encourages local communities to participate in the identification of environmental values.

2. Australian Guidelines for Water Quality Monitoring and Reporting (2000)

The Australian Guidelines for Water Quality Monitoring and Reporting is a benchmark document of the National water Quality Management Strategy. It provides a comprehensive framework and guidance for the monitoring and reporting of the quality of fresh and marine water, including groundwater. The guidelines are based on current best practice monitoring approaches and should be used with the other guidelines of the Strategy, particularly the Australian and New Zealand Guidelines for Fresh and Water Quality (2000).

Target Audience

Personnel with basic technical training, people at all levels in Government, water authorities, consultant groups, tertiary institutions, industry, and community groups involved in monitoring.

Guideline Expectations

When designing and implementing monitoring programs, jurisdictions should have adopted the following from the guidelines, the framework and checklists for:

- i. setting monitoring program objectives;
- ii. study design;
- iii. designing a sampling program;
- iv. designing a laboratory analysis program;
- v. data analysis and interpretation; and
- v. reporting the monitoring program results.

3. Australian Drinking Water Guidelines (completed 1996)

These guidelines represent a framework for identifying acceptable water quality through community consultation. They provide a reference for use within the administrative and legislative framework to ensure the accountability of both water authorities and State/Territory health authorities.

The guidelines are intended to meet the needs of consumers, and apply at the point of use. They provide a total management approach for appropriate agencies to ensure drinking water of acceptable quality to the community. They present the water supply industry and community with guidance on what constitutes good quality drinking water. They are applicable to any water intended for drinking.

These guidelines are undergoing a rolling revision.

Target audience

Responsibility for implementation of the *Drinking Water Guidelines* falls largely on each jurisdiction's water resource managers, water supply authorities and health authorities.

Guideline expectations

- i. Appropriate legislative and administrative frameworks should be in place to ensure accountability for the quality of water in the reticulation mains, by jurisdictions and water providers.
- ii. Water authorities should have adopted a 'best-practice catchment to tap' quality system management approach to provide and maintain

the quality of water supplied at the highest practicable quality and to meet agreed levels of service.

- iii. Effective communication strategies with consumers should be in place including public participation in the water authority's decision-making processes such as:
 - Setting levels of service;
 - Considering options for future works expenditure, particularly those concerned with improving aesthetic quality; and
 - Considering options for effective and accountable monitoring and reporting on performance.
- iv. Steps that jurisdictions should be taking to guarantee the safety of water supplies, include:
 - Regular inspections of catchment areas to identify chemical use;
 - Registration of chemicals, such as pesticides and other toxic organic and inorganic compounds;
 - Public awareness and education programs;
 - Control of industrial, mining, forestry, agricultural and human activities within catchment boundaries;
 - Effective barriers to prevent contamination and transmission of micro-organisms through the water supply system;
 - Maintenance of water supply equipment; and
 - Use of approved water treatment chemicals.

4. Guidelines for Groundwater Protection in Australia (completed 1995)

The objective of these guidelines is to provide a national framework for the protection of groundwater from contamination. The framework will enable government groundwater and environmental managers to develop policies and strategies to achieve groundwater protection that are tailored to their specific needs. They also aim to place the cost of contamination firmly with potential polluters.

The guidelines rely on a framework in which there is the identification of existing or potential beneficial uses for each groundwater resource. Once a beneficial use determination has been made, the developer of an industry or activity that has the potential to contaminate the groundwater body should bear the full costs of protection of the aquifer against any threats that the development may pose.

Target audience

Responsibility for implementation of the *Groundwater Protection Guidelines* generally falls within the scope of agencies involved in water resource management.

Guideline expectations

- i) Jurisdictions should have developed a beneficial use classification framework for major aquifers.
- ii) Where appropriate, legislative measures should be in place to prevent contamination of groundwater from point and non-point sources. Such legislation could include:
 - · Controls on extraction rates, for example licensing
 - Monitoring
 - Provisions for licensing of polluting industries
 - Penalties for polluters
- iii) Legislative means to protect particular groundwater areas (such as particularly stressed areas or public water supply areas) through establishment of a groundwater reserve system should be in place.
- iv) Groundwater management policies and plans that address water quality should be developed and implemented and should address water quality and quantity issues.
- v) Land-use planning measures are to be used to assess the potential impact of development proposals and to manage, control, and where necessary, place restrictions on development in groundwater areas.
- vi) Appropriate guidelines and tools to assist key stakeholders in the planning, assessment and management of groundwater protection are to be developed and provided to such stakeholders.
- vii) Effective community education programs that address community actions that may impact water quality in groundwater areas should have been developed and implemented.

5. Guidelines for Sewerage Systems - Effluent Management (completed 1997)

These Guidelines provide a range of procedures for the discharge of effluent from municipal wastewater treatment plants to land, to inland waters and to oceans and other marine waters. The principal aim of effluent management is to return treated wastewater to the environment in a way which the community accepts after considering both environmental and cost factors.

Target audience

These Guidelines are intended for use by:

- those responsible for decisions on the management of effluent;
- water authorities, regulators or decision makers, community groups, special interest groups and all organisations and people involved in the preparation of catchment management plans such as government departments and agencies;
- those involved in approval processes such as Commonwealth, State and local government, and major environmental and industry groups;
- all others with an interest in the management of sewerage systems, such as customers of water authorities.

Guideline expectations

State and Territory governments should have:

- i. Set clear water quality goals for receiving waters which integrate environmental and economic considerations, with the full participation of stakeholders and consideration for community views;
- ii. Removed duplication and filled gaps in government responsibility for water and wastewater regulations;
- iii. Put in place clear accountabilities and established a steward for water resources;
- iv. Ensured community input into decision making processes; and
- v. Put in place means to monitor management practices and water quality against objectives. These will have been decided after considering existing ecosystems, environmental values and uses of the receiving water, environmental flows and other community objectives.

Sewerage authorities should have in place means to:

- i. Manage the sewerage system effectively and efficiently;
- ii. Encourage community participation in determining broad management approaches;
- iii. Inform the community about the impact of its decisions;
- iv. Participate in a comprehensive catchment management approach;
- v. Identify the financial, environmental and social costs of decisions for the community;
- vi. Advise government on technical issues and the options available;
- vii. Maintain close liaison with government on the performance of the sewerage system; and
- viii. Provide a return for its shareholders.

Discharges should to be managed so that receiving water quality complies with:

- Health Department regulations.
- Planning regulations.
- Catchment regulations.
- Environment authority works approvals.
- Environment authority discharge licences.
- Pollution control statutes.

6. Guidelines for Sewerage Systems - Acceptance of Trade Waste (Industrial Waste) 1994

These guidelines provide information on developing a trade waste management program including trade waste surveys, compliance monitoring, charging policy, and acceptance criteria. They provide national guidelines for trade wastes discharged to sewer and can assist sewerage authorities with the implementation of their trade waste management programs. Trade waste should be managed to:

- Minimise the cost to the community of processing trade waste;
- Ensure environmental protection; and
- Encourage waste minimisation.

Target audience

The Trade Waste Guidelines are intended for use by:

- State and Territory government agencies involved in water resource management and protection;
- Sewage authorities; and
- Trade waste generating industries.

Guideline expectations

- i. The national acceptance guidelines should have been adopted by authorities as the basis for acceptance of trade waste discharged to sewer. They should not allow less stringent levels unless it can be demonstrated on a scientific basis that a less strict level of control will not compromise governing trade waste acceptance criteria for sewerage systems under their control.
- ii. Trade waste management programs are to include legislation that allows the implementation of an effective trade waste management program, monitoring and control of trade waste discharges, and the provision of a clear legal framework within which sewerage

authorities are able to negotiate and administer their management programs. Legislation should provide the sewerage authority with the adequate legal power to control trade waste generators and must also include realistic penalties for non-compliance. The sewerage authority must be able to:

- Deny or impose requirements on existing, new, increased or varied contributions of trade waste discharges to a sewerage system.
- Establish and enforce deadlines for the installation of any pretreatment facility or technology needed to meet applicable discharge criteria.
- Control through permits, agreements or other means, the discharge of trade waste to the sewerage system.
- Carry out inspections, surveillance and monitoring required determining compliance or non-compliance with applicable criteria and practices. Sewerage authority staff should have the authority to enter waste generating premises for the purpose of inspecting, sampling and monitoring waste discharges.
- Set penalties for non-compliance and/or collect liquidated damages.
- Be empowered to order waste generators to halt immediately any actual or potential discharge.
- iii. Sewerage authorities should have conducted surveys of their own sewerage system and of their trade waste generators to:
 - Identify the characteristics and associated mass loads and the sources of these loads within its system;
 - Locate all possible trade waste generators;
 - Determine the volume and characteristics of wastes discharged; and
 - Identify industries that do not discharge trade waste to sewer but which have the potential to contaminate the sewerage system by accidental spillage.
- iv. Sewerage authorities should have developed policies and procedures to implement their trade waste management program. These procedures could include:
 - Identifying and locating all possible trade waste generators.
 - Obtaining information regarding the quantity and quality of trade waste being generated.
 - Assessing and approving applications to discharge trade waste to sewer.
 - Notifying trade waste generators of pre-treatment requirements.

- Specifying the sampling frequency and regime for trade waste.
- Specifying standard methods for trade waste analysis.
- Dealing with non-compliance.
- Developing and implementing trade waste charging procedures.
- v. Local acceptance criteria should, at a minimum, be based on meeting national, state and local requirements. These criteria should be regularly reviewed.

7. Australian Guidelines for Urban Stormwater Management (2000)

These guidelines aim to provide a nationally consistent approach for managing urban stormwater in an ecologically sustainable manner. The approaches outlined in the document represent current best practice in stormwater planning and management in Australia. In particular these guidelines aim to assist managers to identify objectives for stormwater management – and to integrate management activities at the catchment, waterway, and local development level. The tools and approaches in the guidelines will assist managers to undertake integrated stormwater management planning in accordance with the values and conditions of the local environment, while integrating these activities into the catchment context.

Target Audience

State, Territory and local government, water authorities, developers and other parties undertaking stormwater management activities.

Guideline Expectations

Jurisdictions should:

- i. Adopt a multiple objective approach to stormwater management, which considers objectives such as:
 - ecosystem health both aquatic and terrestrial;
 - flooding and drainage control;
 - public health and safety;
 - economic considerations:
 - recreational opportunities;
 - social considerations; and

- aesthetic values.
- ii. Develop stormwater management plans which include the management hierarchy consisting of:
 - retain and restore (or rehabilitate) valuable ecosystems such as natural channels, wetlands and riparian vegetation.
 - source control non-structural measures for limiting changes to the quantity and quality of stormwater at the source.
 - source control structural measures installed at or near the source to manage stormwater quantity and quality.
 - in-system management measures installed within stormwater systems to manage stormwater quantity and quality prior to discharge into receiving waters.

Such plans should provide for integrated urban land use and drainage management on a catchment or sub-catchment basis and follow, as appropriate, the process set out in the Guidelines (Part 7).

- iii. Utilise the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000) and the *Australian Guidelines for Water Quality Monitoring and Reporting* (2000) in their development and implementation of stormwater management plans.
- iv. Develop a stormwater management approach that considers the hydrological, geomorphological, ecological, soil, land-use and cultural characteristics of a catchment and its watercourse network.
- v. Base new urban development on water sensitive urban design principles including:
 - minimising impervious areas;
 - minimising use of formal drainage systems;
 - encouraging infiltration; and
 - encouraging stormwater reuse.

8. Guidelines for Specific Industries

Effluent Management Guidelines for Dairy Sheds (completed June 1999)

Effluent Management Guidelines for Dairy Processing Plants (completed June 1999)

Effluent Management Guidelines for Intensive Piggeries (completed June 1999)

Effluent Management Guidelines for Aqueous Wool Scouring and Carbonising (completed 1999)

Effluent Management Guidelines for Tanning and Related Industries (completed 1999)

Effluent Management Guidelines for Australian Wineries and Distilleries (completed 1998)

These specific industry Guidelines provide the framework where guidelines or codes of practice are to be developed, as appropriate, to assist with the regulation of each of the industry types. Any such State, Territory or local guidelines should be consistent with the Guidelines. Existing codes of practice or regulations should be consistent with, and at least as stringent as, these Guidelines.

The objective in developing the guidelines is to ensure a nationally consistent approach to effluent management for each industry throughout Australia. They can serve as a basis for sustainable resource development extension programs and for negotiations between regulatory authorities, local government and the industry on conditions for the management, monitoring and reporting for effluent management that should apply at the regional level.

Target audience

These guidelines are intended for use by:

- People involved in each of the industry types covered by the Guidelines;
- Regulators;
- · Planning agencies; and
- The broader community.

Proposed expectations

i. Regulatory measures including licensing or permit systems are recommended and should have been implemented for the following industries as appropriate:

- Dairy sheds;
- Dairy processing plants;
- Intensive piggeries;
- Aqueous wool scouring and carbonising;
- Tanning and related industries; and
- Australian wineries and distilleries.
- ii. Policy measures to ensure that effluent management guidelines and codes of practice are incorporated into land use planning decision making and provided to development proponents should have been developed.

9. Guidelines yet to be completed

There are currently a further three documents proposed for the National Water Quality Management Strategy series. These are:

- Guidelines for Sewerage Systems Sludge (Biosolids) Management
- Guidelines for Sewerage Systems Use of Reclaimed Water
- Guidelines for Sewerage Systems Sewerage System Overflows

It is expected that as these documents are completed, a framework for determining jurisdictional implementation will be developed in consultation with relevant agencies and will be subject to the proposed two-yearly review should this occur.

Note: The above expectations have not been subject to consultation with State and Territory departments nor have they been cleared by Agriculture Fisheries and Forestry – Australia. Prior to any review of jurisdictional implementation, it would be appropriate to undertake consultation with relevant agencies on these expectations.