

Appendix 4 - Thought Provoker

“Thought Provoker” Implementation of the National Water Quality Management Strategy (NWQMS)

These questions are only guides to your jurisdiction’s response to how you have implemented the NWQMS.

Feel free to add further information, especially at the end with your suggestions for future directions and priorities for the NWQMS.

Emerging issues related to future NWQMS directions: (Further thought provokers on these questions are provided in the following pages)

- How does it integrate/link to total water cycle management?
- How well or otherwise has it been used with the national NRM programs (e.g. NHT, NAPSWQ, Coastal Catchments Initiative)
- How could it be linked to future national and other NRM programs?
- Do people think it is mainly “physical-chemical” WQ management?
- Is its focus on water quality management too narrow? Should it be integrated waterway management?
- Should it be called a “healthy waterways management strategy” - which more closely relates to community aspirations and catchment scale environmental objectives? If so, how does it integrate with water quantity management activities?

Is it timely to review the NWQMS Vision?

Current Vision (Policy Objective):

to achieve sustainable use of the nation's water resources by protecting and enhancing their quality while maintaining economic and social development

Future Vision?? - Add your thoughts - Here’s one example:

to achieve healthy waterways that support livelihoods and lifestyles, with sustainable use of the nation's water resources, by protecting and enhancing their quality through collaboration with stakeholders and community

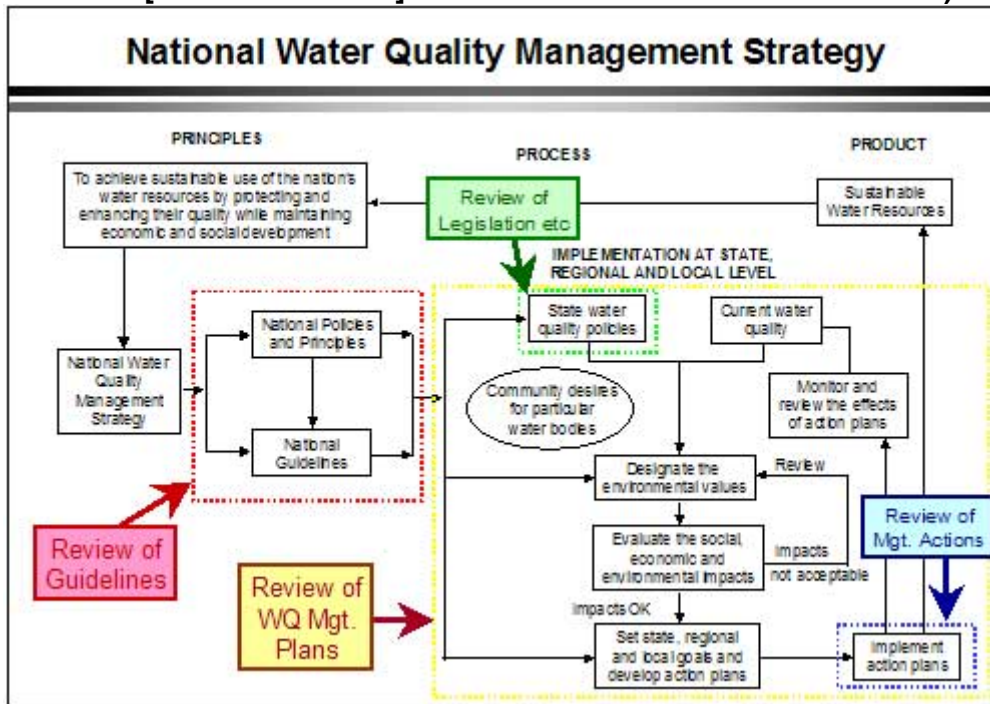
Background Thought Provokers

Total water Cycle Management

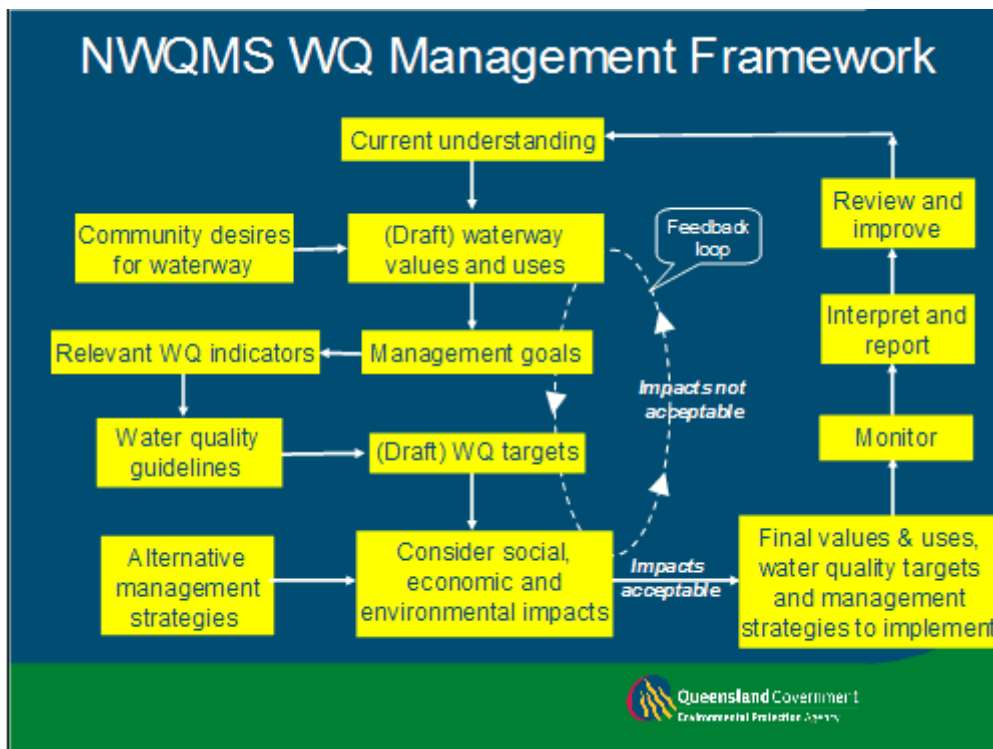


(Source: Queensland Waterwise Program)

Two Graphical Representation of the NWQMS WQ Management Framework (the first at the national level [from the NWQMS] and the second at the catchment level)

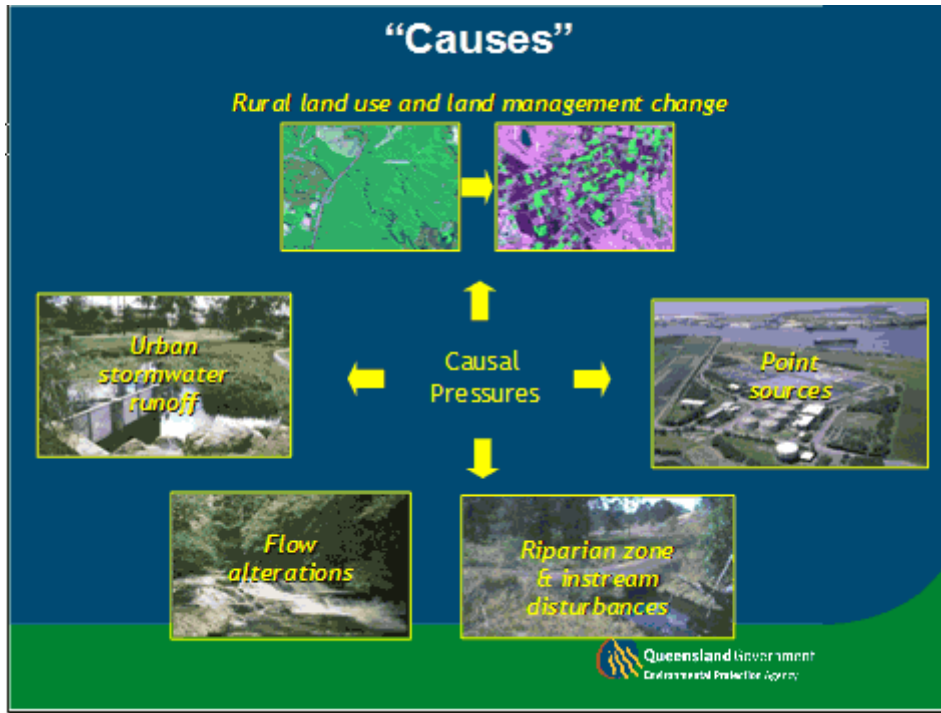


The coloured boxes aim to show where the groups of specific questions on pages 8-9 fit in



NWQMS Documents 2&3 describe the whole WQ management process above
 NWQMS Document #4 relates to the "WQ Guidelines" box above
 NWQMS Document #7 relates to the "Monitoring & Reporting" boxes above
 Does this fit with the WQ management processes implemented in your jurisdiction?

What needs to be managed to protect waterway values and uses?



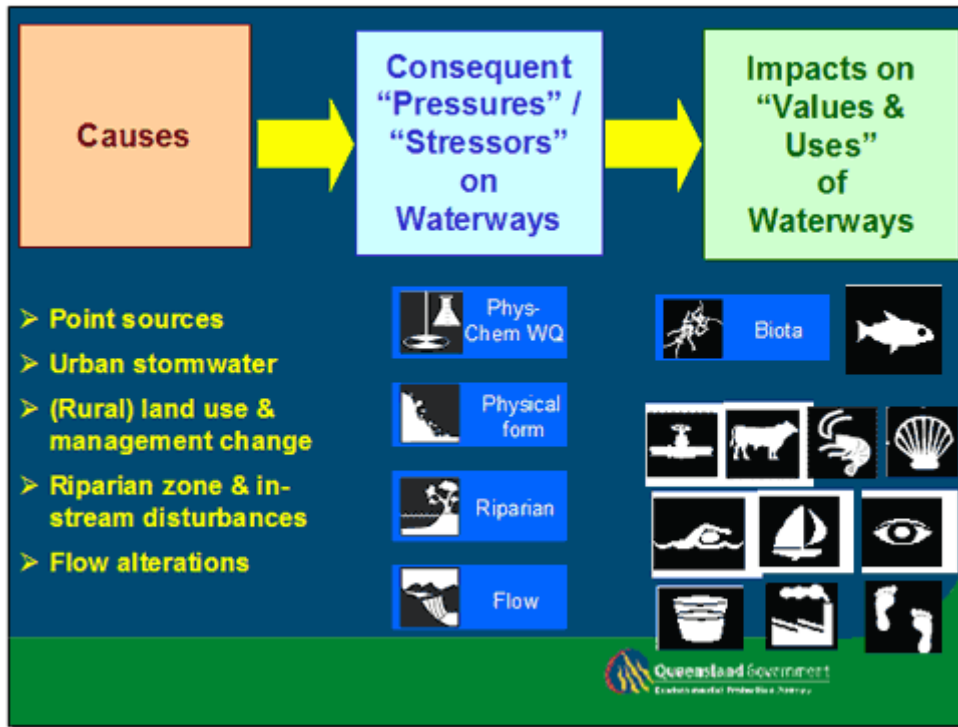
Who is responsible for managing the “causes” of deterioration in waterway health?

**Integrated Waterway Management
- Roles & responsibilities (Qld example)**

		Categories for Management (based on Bennett and Moss [2005] & HWS2007)					
		Point source management	Urban stormwater management	Rural land use & land management	Flow management	Riparian and in-stream management	Protection & Conservation
‘Partners’ in Waterway Management	Environmental Protection Agency	✓✓	✓	✓			✓
	NR & W		✓	✓	✓✓	✓✓	✓✓
	Primary Industries & Fisheries	✓		✓		✓	✓
	OUM		✓	✓	✓	✓	✓
	DLGP		✓	✓		✓	✓
	SEQ Catchments			✓✓		✓	✓
	Local Governments	✓	✓✓			✓	✓
	Rural Industry Bodies			✓✓		✓	✓
	MBW&CP						✓

Note: ✓✓ is used to indicate the ‘lead agency’ for each management category

Some of the complexities of water quality /ecosystem health management:



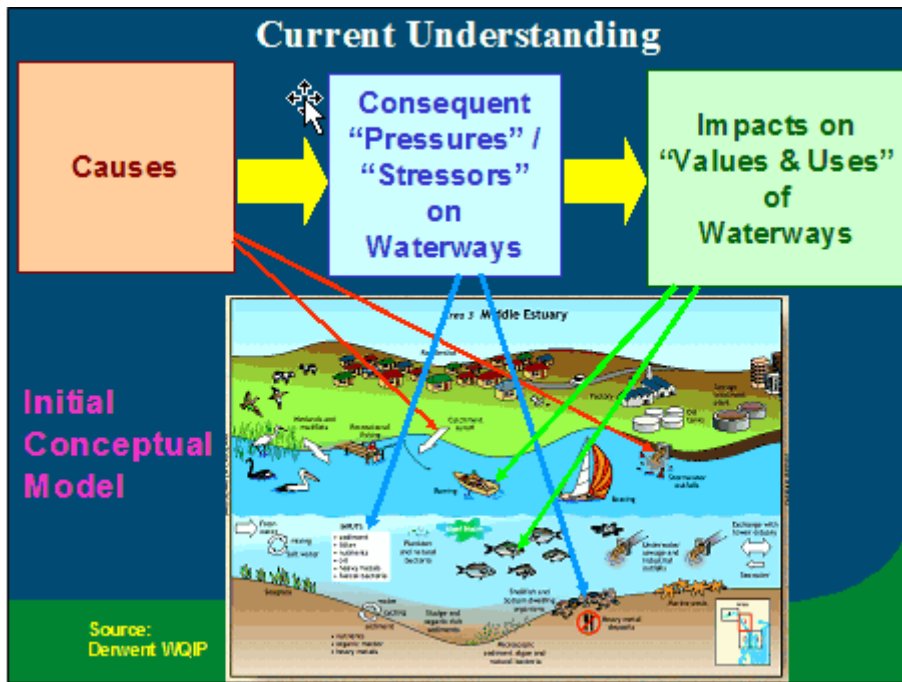
Environmental values (as defined in NWQMS), shown with the symbols on the right hand side above, incorporate ecological, economic (e.g. primary industries), social (e.g. recreational) and cultural values? For these same waterway values and uses, NAP/NHT documents use the terms - values of "critical assets" (where the assets are the lakes, rivers, wetlands, estuaries, etc).

Human values and uses (i.e. economic and social values) are reasonably easy to establish and the "physical-chemical" WQ guidelines in the national WQ guidelines (i.e. Document #4) are reasonably well known for these.

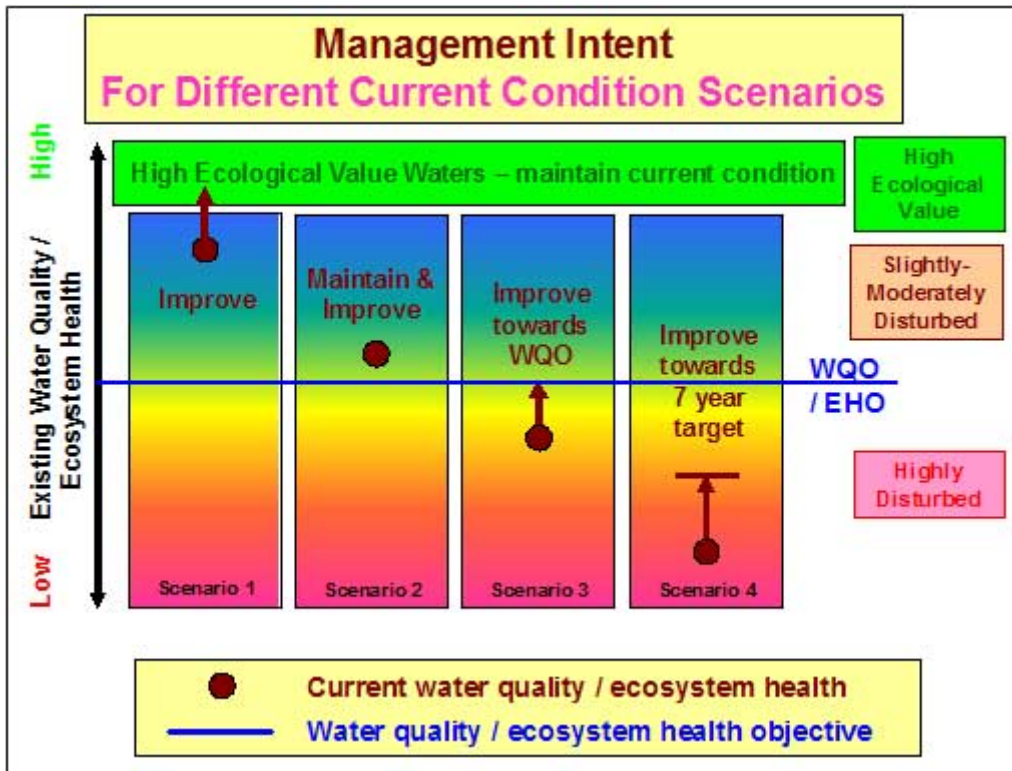
Ecological values relate to the key components of aquatic ecosystems (e.g. biota, physical form, riparian vegetation, flow and physical-chemical water quality – see the "blue" symbols above) and are more difficult to define. We need to set environmental management goals/outcomes for these components of ecosystem, use appropriate indicators for these outcomes, then ideally set levels of acceptable change to these indicators to achieve ecosystem protection (i.e. ecological health objectives = water quality objectives [WQOs]). The ecological values vary depending on water type (e.g. lake, river, estuary, coastal areas, marine).

For ecological values, physical-chemical WQOs need to be considered as a component of ecosystem health objectives. In some cases, the physical-chemical WQOs are used as surrogates for specific ecosystem health objectives. For downstream waters, these physical-chemical WQOs (concentrations) are used to derive "sustainable" loads of pollutants. These then form the basis for prioritising actions to reduce loads to these "sustainable" levels and achieve the protection of downstream aquatic ecosystems.

What use has been made of conceptual models in WQ management in your jurisdiction?



NWQMS includes three levels of protection for three aquatic ecosystem conditions (shown symbolically on the right hand side of the graphic below)



DEWHA through its Aquatic Ecosystems Task Group is leading discussions about identification and appropriate protection/management of high ecological value (HEV) waterways.

Has your jurisdiction done any assessments of the relative values of aquatic ecosystems, either statewide or catchment wide (e.g. based on criteria such as diversity, rarity, representativeness, naturalness, special features, etc) and taking actions to protect high value waterways (e.g. by using the HEV level of protection in the NWQMS)?

Water quality objectives / targets

The graphic above shows possible management intents for different scenarios of current water quality/ecosystem health. Has your jurisdiction got any formal/informal policies on management intent for different current WQ scenarios?

The terms WQ objective and WQ target can be confusing to stakeholders. Have you any definitions for either/both of these terms?

Specific questions/issues related to how NWQMS has been and could be better implemented in your jurisdiction

Legislation, policies, regulation (also see attached NWC “pdf” file for your jurisdiction)

- Does the attached file (Appendix 12) accurately represent your jurisdiction’s legislation, policy instruments, regulations for water quality management?
- If not, please update it to reflect your current situation.
- How well do these instruments fit with the NWQMS?
- What are the strengths and weaknesses of these instruments?
- What role do local governments have in WQ management and how is it linked to State/Territory legislation?
- What role do regional NRM bodies/catchment management authorities have in WQ management and how is it linked to State/Territory legislation?
- If possible, fill in the attached roles and responsibilities matrix (see Qld example on page 67, Appendix 4-1 and the attached ACT example of a draft matrix)

Ecological value assessments and protection of high value waterways (also see p7)

- Has your jurisdiction a program to assess ecological values of waterways? Is this done opportunistically?
- Has your jurisdiction got processes in place to identify and protect high value waterways?

Water quality management plans (also see Appendix 4-2)

What approach has your jurisdiction taken to developing catchment/region based WQ management plans:

- State/Territory led? On a prioritised basis?
- Opportunistic? e.g. with NRM Plans, WQ Improvement Plans, etc.
- How well do your regional NRM Plans establish EVs, WQOs and management actions to protect them (simply indicate in attached table in Appendix 4-2)
- Alternatively, have you focused on establishing environmental values (EVs) and water quality objectives (WQOs) as a basis for all relevant planning in the catchment/region?
- Are there key cross-jurisdictional/cross-regional plans (e.g. Murray-Darling Basin, Great Barrier Reef)?
- Have these plans covered all waterways – lakes, ground waters, rivers, estuaries, coastal (or has there been a priority focus on a particular water type e.g. rivers)
- How do you involve stakeholders in developing and implementing the plans?
- What social, economic and environmental assessments are undertaken in developing the plans?
- How are the plans implemented? Who leads/coordinates?
- Do the plans result in monitoring programs that can be used to evaluate, report and adaptively manage waterway health? How well do these monitoring programs link to Statewide monitoring programs? What are the Statewide monitoring programs?

NWQMS Guideline Documents (also see attached table [Appendix 5] with questions for each one)

Please complete the attached table for each of the NWQMS documents and provide your best assessment/answers to the questions raised, for example:

- How has your jurisdiction used each of the NWQMS documents?
- What types of information would you like to see updated in each of these documents (e.g. scientific methods, policy, program information)?
- Who are the key users of each document?
- What other documents are needed?

Management of key causes of WQ deterioration

- Outline your jurisdictions' approach to managing point sources of pollution
- Outline your jurisdictions' approach to urban stormwater management
- Outline your jurisdictions' approach to managing runoff from non-urban areas
- Outline your jurisdictions' approach to managing riparian areas
- Outline your jurisdictions' approach to establishing and managing environmental flows
- Outline your jurisdictions' approach to groundwater management

Specific NWQMS-related documents developed by your jurisdiction

Please list any documents that your jurisdiction has developed to assist with implementation of the NWQMS.

Future directions, needs, etc - (also see attached draft priority table [Appendix 4-3] previously developed by the NWQMS contact group)

Please feel free to give us your jurisdictions' ideas, priorities, etc for future directions for the NWQMS, based on all the above thoughts and feedback, your own experiences, knowledge of strategies successfully applied to other areas or to WQ management overseas, etc:

Please include your ideas on all issues, including:

- Legislation, policy instruments, regulation e.g. need for a National Environmental Protection Measure (NEPM)?
- WQ Management Planning/Plans
- New/updated guidelines
- Better coordination/knowledge sharing across jurisdictions
- Stakeholder engagement in WQ management
- Better community education and awareness programs
- Dedicated website to provide information, training, etc.
- Incentive based programs for improved WQ management

Appendix 4-1 – Waterway Management Roles

In the context of the Victorian River Health Strategy, Doolan (2000) outlined the following roles at different levels of waterway management.

This could be considered in conjunction with the matrix on page 67, which relates to the roles and responsibilities from the State to the Community Group (as well as subdividing the roles relative to the “causes” being addressed).

National role

- funding to States, groups and individuals to achieve national objectives;
- facilitates interstate coordination;
- invests in development of national principles, best management practices, tools, research and development to facilitate improved management; and
- ensures Australia meets its international obligations.

State role

- sets State-wide policy and strategic directions;
- establishes legislative and regulatory frameworks;
- establishes institutional arrangements;
- invests in provision of advice, research and monitoring, planning, extension, on-ground works and enforcement functions;
- implements State responsibilities under nationally agreed strategies; and
- provides funding to groups and individuals to achieve State and regional priorities.

Regional role

- develops regional strategies and action plans;
- provides advice to State on regional resourcing priorities;
- coordinates and implements work programs;
- provides incentives and support for groups and individuals; and
- provides mechanisms for community involvement in natural resource management.

Local government role

- incorporates waterway management objectives, priorities and actions into statutory planning processes; and
- provides local support for local action groups.

Landcare (community) groups’ role

- smaller-scale waterway and catchment management projects.

Landholders’ role

- land stewardship.

Reference

Doolan, J. 2000, *Integrating science and policy – the Victorian river health strategy* Paper presented to Riversymposium, Brisbane, 6–8 September 2000.

**Appendix 4-2
Inclusion of NWQMS elements in NRM Plans
- NHT and NAP regions across Australia**

NHT Region (see map)	EVs	WQOs	Management actions to protect EVs	State / Territory
Torres Strait				Queensland
Cape York				
Northern Gulf				
Southern Gulf				
Desert Channels				
Wet Tropics				
Mackay – Whitsunday				
Burdekin*				
Fitzroy*				
Burnett – Mary*				
South East*				
Border Rivers				
Condamine				
Balonne – Maranoa				
South West*				
Western				New South Wales
Central West				
Northern Rivers				
Border Rivers - Gwydir				
Namoi				
Hunter – Central Rivers				
Hawkesbury – Nepean				
Sydney Metro				
Lachlan				
Murrumbidgee				
Murray				
Southern				
Lower Murray Darling				
Murray Darling Basin (SA)*				
South East				
Northern and Yorke Agricultural District*				
Kangaroo Island				
Mt Lofty Ranges and Greater Adelaide				
Eyre Peninsula				
Rangelands				
Aboriginal Lands				
Mallee				Victoria
Wimmera				
North Central				
Goulburn Broken				
Glenelg Hopkins				
Corangamite				
Port Phillip and Western Port				
North East				
West Gippsland				Tasmania
East Gippsland				
North*				
South*				Western Australia
North West				
Rangelands (WA)				
South Coast Region*				
Avon				
South West Region				
Swan*				
Northern Agricultural Region*				
Ord				NT
Northern Territory				ACT
ACT				

* Denotes only part of NHT catchment included in NAP region

Appendix 4-3 Draft Priority Table Developed By NWQMS Contact Group
(summarises the report into the TOR and Work Plan for the NWQMS)

Priority	Action
1: Implementation of the National Water Quality Management Strategy	
1 (a)	Develop a communication strategy that incorporates: <ul style="list-style-type: none"> • NWQMS website with links to other sites • Advertise the NWQMS and new tools • Develop flyers and handouts on the Strategy
1 (b)	Assist regional delivery by providing regional workshops
1 (c)	Develop easy to use tools, such as an 'water quality targets online' Develop a draft decision support system to enable easy extraction of information from NWQMS document 4.
1 (d)	Develop easy to use fact sheets or guides and short summary documents on key issues from Documents 4 and 7 eg assessing compliance with guidelines, sampling requirements for specified detectable change in water quality and the NWQMS water quality management framework.
1 (e)	Produce and maintain a register of Environmental Values of waters in Australia
1 (f)	Improved regionalisation of Water Quality Guidelines
1 (g)	Evaluate NWQMS outcomes of 2003 NCC assessment
1 (h)	Evaluate the relationship between the NWQMS and the Standards and Targets and Monitoring and Evaluation Frameworks of NHT/NAP
1 (i)	Assessment of current NWQMS implementation – This project!
2: Additional guidelines for new and expanding industries and additional issues	
2 (a)	Review existing documents, identify gaps, develop a process and prioritise those areas where guidelines for new industries are needed and provide recommendations on their development
2 (b)	Workshop to identify the need for regional/national water quality guidelines for particular industries eg aquaculture and viticulture
2 (c)	Investigate approaches to encourage industries to fund and/or develop industry specific guidelines suitable for inclusion in the NWQMS
3: Revision of Some Existing Guidelines	
3 (a)	Development of water reuse/recycling guidelines to supersede NWQMS documents 10 and 14.
3 (b)	Prioritise NWQMS guidelines potentially requiring revision eg rolling revision, complete revision and timelines.
4: Accreditation of Other, Non-NWQMS Guidelines	
4 (a)	Identify a process for assessing guidelines documents that are not part of the NWQMS for possible accreditation under the NWQMS i.e. additional list that meet certain requirements such as consistency with the NWQMS, quality of information, presentation, currency and relevance.

Appendix 5 - Pro-forma seeking feedback on all NWQMS Guidelines

No.	Title	How has your jurisdiction used this document?	Examples of other feedback required
	Policies and Process for Water Quality Management		
1	<i>Water Quality Management — An Outline of the Policies</i>		<i>Need updating? What needs to be added, updated?</i>
2	<i>Policies and Principles — A Reference Document</i>		<i>Need updating? What needs to be added, updated?</i>
3	<i>Implementation Guidelines</i>		<i>Need updating? What needs to be added, updated?</i>
	Water Quality Benchmarks		
4	<i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality</i>		<i>What needs to be added, updated? How can these be regularly updated? Better links to jurisdictions guidelines? How to set priorities for new guidelines?</i>
6	<i>Australian Drinking Water Guidelines (currently being revised)</i>		<i>What needs to be added, updated? How can these be regularly updated? Any links to jurisdictions guidelines? How to set priorities for new guidelines?</i>
7	<i>Australian Guidelines for Water Quality Monitoring and Reporting</i>		<i>What needs to be added, updated? How can these be regularly updated? Any links to jurisdictions guidelines? How to set priorities for new guidelines?</i>
	Groundwater Management		
8	<i>Guidelines for Groundwater Protection</i>		<i>What needs to be added, updated? How can these be regularly updated? Any links to jurisdictions guidelines? How to set priorities for new guidelines?</i>

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	Guidelines for Diffuse and Point Sources		
9	<i>Rural Land Uses and Water Quality — A Community Resource Document</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
10	<i>Guidelines for Urban Stormwater Management</i>		<i>How to link with TWCM/WSUD/USWM? Any relevant jurisdictions guidelines?</i>
11	<i>Guidelines for Sewerage Systems — Effluent Management</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
12	<i>Guidelines for Sewerage Systems — Acceptance of Trade Waste (Industrial Waste)</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
13	<i>Guidelines for Sewerage Systems — Biosolids Management</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
14	<i>Guidelines for Sewerage Systems — Use of Reclaimed Water</i>		<i>Replaced by new recycling guidelines?</i>
15	<i>Guidelines for Sewerage Systems — Sewerage System Overflows</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
16a	<i>Effluent Management Guidelines for Dairy Sheds</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
16b	<i>Effluent Management Guidelines for Dairy Processing Plants</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>

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17	<i>Effluent Management Guidelines for Intensive Piggeries</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
18	<i>Effluent Management Guidelines for Aqueous Wool Scouring and Carbonising</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
19	<i>Effluent Management Guidelines for Tanning and Related Industries in Australia</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
20	<i>Effluent Management Guidelines for Australian Wineries and Distilleries</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
21	<i>Australian Guidelines For Water Recycling - Managing Health And Environmental Risks - Phase 1</i>		<i>Who uses it? What value is it? What needs to be added, updated? Any relevant jurisdictions guidelines?</i>
21a	<i>Australian Guidelines For Water Recycling - Phase 2</i> <ul style="list-style-type: none"> • <i>Augmentation of Drinking Water Supplies – penultimate draft for endorsement and publication.</i> • <i>Managed Aquifer Recharge – draft for release for public consultation.</i> • <i>Stormwater Re-use – draft for release for public consultation.</i> 		
	Recommendations for new documents		

Appendix 6 - Pro-forma - WQ Management roles & responsibilities, incl. relevant legislation, policies, regulations, plans, monitoring and reporting

	WQ Planning	Point source management ^a	Urban stormwater management ^a	Rural land use and land management ^a	Flow Management ^a	Riparian & in-stream management ^a	Protection & Conservation	Ambient WQ Monitoring	Reporting
General Comments									
'Partners' in Waterway Management	Environment Agency								
	Water Resource Agency								
	Primary Industry / Agricultural Agency								
	Planning Agency								
	Regional NRM Body								
	Local Governments								
	Add new rows for other partners??								

Notes: ^a Categories for Management (based on Bennett & Moss (2005))