



SECOND SESSION OF THE THIRTY-SIXTH PARLIAMENT

**INTERIM REPORT OF THE
STANDING COMMITTEE ON
PUBLIC ADMINISTRATION AND FINANCE
IN RELATION TO
WATER SERVICES IN WESTERN AUSTRALIA**

Presented by Hon Barry House MLC (Chairman)

Report 8
November 2004

STANDING COMMITTEE ON PUBLIC ADMINISTRATION AND FINANCE

Date first appointed:

May 24 2001

Terms of Reference:

The following is an extract from Schedule 1 of the Legislative Council Standing Orders:

- “2. Public Administration and Finance Committee
- 2.1 A Public Administration and Finance Committee is established.
- 2.2 The Committee consists of 7 members.
- 2.3 The functions of the Committee are -
- (a) to inquire into and report on the structure, efficiency, effectiveness, and economic management of the system of public administration;
 - (b) to consider and report on any bill or other matter referred by the House;
 - (c) to inquire into and report on practice or procedure applicable or relating to administrative acts or decisions (either generally or in a particular case without inquiring into or reporting on the merits of the case);
 - (d) to inquire into and report on the existence, adequacy, or availability, of merit and judicial review of administrative acts or decisions;
 - (e) to consult regularly with the Parliamentary Commissioner for Administrative Investigations, the Auditor General, the Public Sector Standards Commissioner, the Information Commissioner, and any person holding an office of a like character.
- 2.4 Subject to subclause 2.3 (b), the following are excluded from inquiry by the Committee -
- (a) the Governor’s establishment;
 - (b) the constitution and administration of Parliament;
 - (c) the operations of the Executive Council;
 - (d) a decision made by a person acting judicially;
 - (e) a decision made by a person to exercise, or not exercise, a power of arrest or detention.”

Members as at the time of this inquiry:

Hon Barry House MLC (Chairman)	Hon John Fischer MLC
Hon Ed Dermer MLC (Deputy Chairman)	Hon Dee Margetts MLC
Hon Murray Criddle MLC	Hon Ken Travers MLC
Hon Sue Ellery MLC	Hon Norman Moore MLC, participating member

Staff as at the time of this inquiry:

Kelly Campbell, Advisory Officer (General)	Jan Paniperis, Senior Committee Clerk
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REPORT OF THE STANDING COMMITTEE ON PUBLIC ADMINISTRATION AND FINANCE

IN RELATION TO

WATER SERVICES IN WESTERN AUSTRALIA

1 REFERENCE AND PROCEDURE

- 1.1 On June 11 2003 the Legislative Council passed the following motion by Hon Norman Moore MLC, referring the Water Services inquiry to the Public Administration and Finance Committee (**Committee**):

That the Public Administration and Finance Committee inquire into and report on the issues confronting Western Australia that arise from, or relate to, the present and future sustainable supply, quality, retention, and maintenance of water services throughout the State.¹

- 1.2 The Committee advertised the inquiry in *The West Australian* newspaper on June 28 2003 and wrote to a range of identified stakeholders inviting submissions on July 1 2003. The Committee received 53 public submissions. See Appendices 1 and 2 respectively for lists of organisations and people written to, and submissions received by the Committee.
- 1.3 The Committee resolved to appoint a Subcommittee to “*conduct inquiries, hear evidence and produce a draft report for the consideration of the Committee in connection with the Water Services Inquiry*” on October 20 2003. Hon Barry House MLC was appointed Convenor and Hons Dee Margetts, Ken Travers and John Fischer MLCs were appointed as Subcommittee Members. Hon Norman Moore MLC sought and was granted leave in accordance with Standing Order 326 to participate in the deliberations of the inquiry.
- 1.4 At its meeting on March 12 2004 the Subcommittee agreed that the main focus of the inquiry would be:
- the quantity, quality and location of water resources currently available in Western Australia;
 - possibilities for future sources of water;

¹ Hon Norman Moore MLC, Western Australia, Legislative Council, *Parliamentary Debates (Hansard)*, June 11 2003, p8543b - 8546a /1.

- the quantity, quality and location of current and potential future demand for water; and
 - the most cost-efficient way to meet current and potential future demand for water.
- 1.5 Subsequently, the Subcommittee resolved to include these focus points whenever reference was made to the terms of reference of the inquiry.
- 1.6 To date, the Subcommittee has heard 38 witnesses during 11 public hearings and met 17 times. See Appendix 3 for a list of hearings and witnesses.
- 1.7 The Subcommittee acknowledges and thanks all those who have provided submissions and attended hearings during the course of the inquiry thus far.
- 1.8 On November 8 2004 the Subcommittee presented its draft report to the Committee for consideration.

Travel

- 1.9 To further its inquiry, the Subcommittee travelled to various locations throughout the State to gather evidence and conduct site visits. The evidence received provides the basis for case studies to illustrate various points of the inquiry.

Kununurra

- 1.10 The Subcommittee travelled to Kununurra on July 21-23 2004. A site visit was conducted on July 21 2004 to Ivanhoe Crossing, Ord River Irrigation Area, part of the proposed irrigation area (Ord River Stage II) and Lake Kununurra. The Subcommittee would like to thank Mr Peter McCosker, Acting Regional Manager, Department of Agriculture and Mr Scott Goodsen, Waterways Management Coordinator, Department of Environment, for hosting the site visit and providing valuable information during the course of the afternoon.
- 1.11 The Subcommittee held hearings in Kununurra on July 22 2003 and in the afternoon conducted a site visit to Lake Argyle, visiting the hydro power plant and spillway. Mr Tony Chafer, Area Manager - East Kimberley, Water Corporation, conducted the tour and the Subcommittee thanks him for his time and expertise.

Bunbury

- 1.12 The Subcommittee travelled to Bunbury on July 29 2004 and held hearings in relation to the south-west Yarragadee, Harvey Irrigation and agricultural water use.

Kalgoorlie

- 1.13 On September 27 2004 the Subcommittee held hearings in Kalgoorlie in relation to Kalgoorlie's water supply and a proposal to pipe desalinated water from Esperance.

Time Constraints

- 1.14 The Committee sent this inquiry to a subcommittee in order to try to ensure that the workload of the Committee was dealt with as expediently as possible. Due to the water services inquiry's wide-ranging terms of reference, the Subcommittee decided consideration of issues could not be properly completed in the time available. The Subcommittee has not had time to fully consider the significant evidence that it has already received and is waiting on various pieces of information from agencies to add to the wide range of material that has already been supplied. In addition, more evidence could be needed to clarify some of the conclusions the Committee may wish to draw.
- 1.15 Therefore the Committee tables this interim report in order to highlight some of the important issues that the Subcommittee has canvassed over the course of the inquiry to date. The Committee strongly urges that the Public Administration and Finance Committee take up this inquiry in the new Parliament. The Committee believes that the evidence it has collected and work it has carried out to this point should be provided to any future committee conducting inquiries on these matters.
- 1.16 The following section outlines some of the issues upon which the Subcommittee has taken evidence and considers are worth exploring further. Water is a very topical issue presently, and the Committee believes that this interest is likely to continue.

2 ISSUES THAT THE COMMITTEE IS EXAMINING

- 2.1 The Subcommittee chose to divide its examination into the four focus points that it had agreed upon, as set out at paragraph 1.4 above.

Administrative and Legislative Framework

- 2.2 The Subcommittee examined the administrative and legislative framework for water services in Western Australia, exploring Federal, State and regional relationships. The Subcommittee examined some of the related legislation, and the relationships between Ministers and state agencies. The Subcommittee received evidence commenting on administrative relationships, and on recent and possible amendments to the *Rights in Water and Irrigation Act 1914*.

Current Water Resources in Western Australia

- 2.3 The Subcommittee spoke to representatives of both the Water and Rivers Commission and Water Corporation in order to gain an overview of the State's current water

resources in terms of quantity, quality and location. The Subcommittee also began to examine the current pricing mechanisms used in Western Australia.

- 2.4 In order to progress this part of the inquiry, the Subcommittee concentrated on the different water needs in the metropolitan area in comparison to rural domestic, agricultural and mining needs. The Subcommittee noted a strong line of interest in this comparison coming through the submissions it received. The Subcommittee received evidence in Kalgoorlie regarding restrictions on domestic water use in a rural area.
- 2.5 Of interest in respect to current water resources was evidence received regarding recent rainfall in the south west of Western Australia, and claims of decreased run-off into dams. The Subcommittee looks forward to these issues being examined in more detail.
- 2.6 The Subcommittee took some time gathering evidence to clarify sources of recent growth in water use.
- 2.7 The Subcommittee received evidence in Kununurra regarding the Ord Irrigation Stage II proposal, which will form the basis of a case-study to explore competing demands for water from one source - including environmental demands. Kununurra provided a second potential case-study in regard to the location of the domestic water supply bore field and its possible impact on the potential for local businesses to develop in that area of the town.

Potential Future Sources of Water

- 2.8 Potential future sources of water are very topical at present due to perceived water shortages. During the course of the Subcommittee's inquiries, Water Corporation announced that it needed a new 45-gigalitre source, and looked at options including extracting water from the south-west Yarragadee and desalination.
- 2.9 The Subcommittee took evidence from a range of witnesses including from representatives of the Commonwealth Scientific and Industrial Research Organisation, (CSIRO); Professor Jorg Imberger; a representative from a cloud seeding company; and an expert who assesses cloud seeding programs.
- 2.10 The Subcommittee concentrated its inquiries on the following areas as potential sources and believes that all of these matters deserve further exploration:

Groundwater

- 2.11 Groundwater is the water that 'percolates' down through the ground and collects either in the soil, or in fissures in rocks.
- 2.12 The Subcommittee received evidence in Bunbury in relation to the proposed extraction of 45 gigalitres from the south-west Yarragadee as a case-study regarding the issues

involved in extracting groundwater. The Subcommittee also began to look at the issue of recharging aquifers with re-used water.

Surface Water

- 2.13 Surface water refers to water that flows from creeks and river systems into dams.
- 2.14 The Subcommittee took evidence from Water Corporation regarding the current run-off rates from catchments into metropolitan dams. The Subcommittee also began to explore other potential surface water sources. Evidence received in Bunbury will provide the basis of a case-study exploring a proposal to improve the quality of Wellington dam water, which may open up this large source for a wider range of uses.

Regional Transfers

- 2.15 Regional transfers refers to the process of shifting or piping water from one water basin or catchment to another.
- 2.16 The Subcommittee explored this issue in regard to the transfer of water from the south-west Yarragadee and also took evidence in Kalgoorlie regarding transferring desalinated water from Esperance to Kalgoorlie in order to alleviate pressure on the Mundaring to Goldfields pipeline. During the course of the inquiry thus far, the issue of transferring water from the Kimberley to the metropolitan area was raised in the media many times and the Subcommittee asked various witnesses for their opinion on this issue.

Demand Reduction

- 2.17 Demand reduction is the concept of using water more efficiently to achieve the same outcomes in order to save water. An example is a dual-flush toilet, which uses 3 or 6 litres to flush, in comparison to an older-design toilet that uses 11 litres for the same result.
- 2.18 The Subcommittee heard evidence from Water Corporation regarding its plan to reduce consumption of water to an average of 155 kilolitres per person per year without water restrictions and of various Government initiatives to try and reduce domestic use. As the basis of a case-study regarding improving agricultural water-use efficiency, the Subcommittee took evidence in Bunbury from Harvey Water concerning a proposal to replace its open channel irrigation system with a piped system.

Desalination

- 2.19 Desalination is a process where salt is removed from saline water. Saline water may be obtained from the ocean, groundwater or surface water.
- 2.20 During the course of the inquiry the Government announced that a desalination plant was to be built in Kwinana to produce 45 gegalitres of water per year. The

Subcommittee also heard evidence regarding a proposal to desalinate water in Esperance for transferral to Kalgoorlie. Some evidence urged the Subcommittee to explore the concept of desalination at various rural towns as an alternative option to transferring water into a region that is salt-prone, as the transferred water has the potential to raise the water table and exacerbate the salinity problem.

Re-use

- 2.21 Re-use refers to cleaning used water and using it again. Re-used water can be purpose-cleaned - that is, cleaned to a point that is fit for the purpose for which it is to be used.
- 2.22 The Subcommittee found that this topic covered a range of issues such as re-use by industrial users; for parks, ovals and gardens; by agricultural users; and in the household. The Subcommittee would have liked to more thoroughly explore the issues surrounding re-use and quality of water in accordance with public health criteria. Also of interest is the potential to augment water supplies in aquifers by reinjecting them with re-used water. The Subcommittee heard evidence in Kununurra regarding a proposal to use a dual-pipe system to supply houses with both potable and non-potable water.

Stormwater

- 2.23 Stormwater is water washed down drains.
- 2.24 The Subcommittee heard evidence regarding the potential to collect stormwater and either use it, or direct it to augment ground water supplies.

Cloud Seeding

- 2.25 Cloud seeding is a process where aerosols are released into a cloud in an attempt increase precipitation.
- 2.26 An opportunity arose for the Subcommittee to hear from a cloud seeding operative and an expert who assesses cloud seeding programs, both of whom were visiting from the United States of America.

Harvesting Water Offshore

- 2.27 The Subcommittee received a submission, including follow-up information, regarding a proposal to harvest water as it discharges into the ocean from on-shore groundwater sources.

Future Demand for Water

- 2.28 The Subcommittee explored this issue in relation to population fluctuations, both metropolitan and rural, and in terms of future agricultural and mining demand. The

Subcommittee heard evidence that future planning had been complicated in recent times by the unexpected drop in rainfall and change in rainfall patterns.

- 2.29 The Subcommittee heard evidence in Kalgoorlie regarding the future demand of both domestic and industrial users and that this may be adversely impacting on growth. Evidence was taken from the proponents of a project to build a desalination plant in Esperance and to pipe water to Kalgoorlie.
- 2.30 In Bunbury the Subcommittee heard evidence regarding an expected increase in demand for water in the south west. Witnesses suggested that population increases and the expansion of industries such as dairy, viticulture and fruit growing may lead to the need for more water in the future.

Cost Effectively meeting Future Demand

- 2.31 The Subcommittee began to explore this issue in terms of both the cost of potential sources and the matters that were raised in both written and oral evidence regarding current pricing, and proposed changes to pricing systems.
- 2.32 The Subcommittee notes that an issue raised in regard to cost was that government agencies take a 'triple bottom line' approach, which includes assessing environmental, economic, and social implications. Under this regime, agencies may not necessarily choose the most cost-effective source if they believe there are environmental or social reasons for not doing so.

3 CONCLUSION

- 3.1 The Committee commends this body of work and evidence to the House in the anticipation that it will be taken up in the new Parliament and reported in a completed form.

Recommendation 1: The Committee recommends that this inquiry and its evidence be taken up in the next Parliament by the Public Administration and Finance Committee, or another appropriate committee, and reported on fully.



Hon Barry House MLC
Chairman
November 11 2004

APPENDIX 1
LIST OF PEOPLE AND ORGANISATIONS TO WHOM THE
COMMITTEE WROTE

Dr J Limerick
Director General
Department of Industry and Resources

Dr Brian Martin
Co-ordinator
Office of Water Regulation

Dr Jim Gill
Managing Director
Water Corporation

Mr F Tromp
Acting Chief Executive Officer
Water and Rivers Commission

Mr D McCutcheon
Chief Executive Officer
Busselton Water Board

Mr G Oddy
Chief Executive Officer
Bunbury Water Board

Mrs K Sanderson
Chief Executive Officer
Fremantle Port Authority

Mr M Daube
Commissioner of Health
Department of Health

Ms L Smith
Acting Chief Executive Officer
Rottneest Island Authority

Mr F Tromp
Acting Chief Executive Officer
Department of Environment and Water

Mr R Mitchell
Chief Executive Officer
Fire and Emergency Services Authority

Mr B Bowen
Environmental Protection Authority

Mr K McNamara
Acting Executive Director
Department of Conservation and Land
Management

Ms R Crane
Director
Pilbara Development Commission

Mr T Ruland
Chief Executive Officer
Pilbara Regional Council

Mr I Taylor
Chairman
Regional Development Council

Mr C Nicholl
President
Western Australian Farmers Federation

Mr B Court
President
Pastoralists and Graziers Association

Mr R McFerran
Executive Manager
Western Australian Fruit Growers
Association

The Executive Manager
Western Australian Vegetable Growers
Association

Ms S Dent
Chief Executive Officer
Wine Industry Association

Mr L Rowe
Chief Executive
Chamber of Commerce and Industry

Mr T Banton
Manager
Small Business Institute of Western
Australia

Mr P Lalor
Chair
The Chamber of Minerals and Energy

Ms R Siewert
Coordinator
Conservation Council of WA

Ms L McIntosh
Principal Solicitor
Environmental Defender's Office

Ms J Madgwick
Regional Manager
World Wide Fund for Nature Australia

Mr H Bamsey
Chief Executive
Australian Greenhouse Office

Mr D Wren
Secretary
WA Water Users Coalition

Mr D Milton
Executive Officer
Minerals and Energy Research Institute of
Western Australia

Mrs C Wood
Manager
The Centre of Water Research
University of Western Australia

Mr M McFarlane
"Dangemanning"
Doodlakine WA

Roger Meakes

Dr Graeme Pearman
Chief Scientist
CSIRO Atmospheric Research

Dr Tom Hatton
Principal Research Scientist
CSIRO Land and Water

Dr Geoff Syme,
Research Director, Water Security and
Sustainable Communities
CSIRO Land and Water

Dr Frank Harman
Murdoch University Business School
Murdoch University

Mr Richard Wilkes
Consultant

Professor Peter Newman
Director, Sustainability Policy Unit
Department of the Premier and Cabinet

Mr Heinz Ludwig and Ms Karen
Stummeyer
Fichtner Consulting

Professor Stuart White
Director, Institute for Sustainable Futures
University of Technology Sydney

Mr Andre Taylor
CRC Catchment Hydrology

Professor Tom Parry
Independent Pricing and Regulatory
Tribunal

Ms Blair Nancarrow
Director, Australian Research Centre for
Water in Society
CSIRO Land and Water

Mr Ian Duncan
Academy of Technological Sciences and
Engineering

Mr G Calder
Harvey Water

Ms Ricky Burgess
Chief Executive Officer
Western Australian Local Government
Association

Mr K Antonio
Acting Chief Executive Officer
Gascoyne Development Commission

Mr C Purcell
Chief Executive Officer
Goldfields Esperance Development
Commission

Mr Bruce Manning
Chief Executive Officer
Great Southern Development Commission

Mr J Gooding
Chief Executive Officer
Kimberley Development Commission

Mr G Baesjou
Chief Executive Officer
Mid West Development Commission

Ms M DeLacey
Chief Executive Officer
Peel Development Commission

Ms R Crayne
Chief Executive Officer
Pilbara Development Commission

Mr D Punch
Chief Executive Officer
South West Development Commission

Mr D Singe
Chief Executive Officer
Wheatbelt Development Commission

Mr M Griffith
Chief Executive Officer
REIWA

Mr I Steele
Chief Executive Officer
Bunbury-Harvey Regional Council

Mr Gavin Watters
Chief Executive Officer
East Metropolitan Regional Council

Mr R Boucher
Chief Executive Officer
Geraldton-Greenough Regional Council

Mr K Poynton
Chief Executive Officer
Mindarie Regional Council

Mr D Morrissey
Chief Executive Officer
Murchison Regional Vermin Council

Mr A Cooper
Chief Executive Officer
Pilbara Regional Council

Mr H McKenzie
Secretary
South East Metropolitan Regional Council

Mr S McAll
Chief Executive Officer
Southern Metropolitan Regional Council

Mr C Burton
Chief Executive Officer
Western Metropolitan Regional Council

Ms J Sheehan
Chief Executive Officer
Avon Regional Organisation of Councils

Ms K Walford
Executive Officer
CAPEROC (WA)
Shire of Augusta/Margaret River

Mr Kenn Donohoe
Executive Officer
North Eastern Wheatbelt Regional
Organisation of Councils

Cr Vic Haeuster
Chairperson
North Midlands Voluntary Regional
Organisation of Councils

Mr Andrew Hammond
Secretary
Rainbow Coast Regional Council

Mr J McNally
Chairperson
South West Group

Mr A Hammond
Chief Executive Officer
City of Albany

Mr R Tame
Chief Executive Officer
Shire of Armadale

Mr S Deckert
Chief Executive Officer
Shire of Ashburton

Mr I Bodill
Chief Executive Officer
Shire of Augusta-Margaret River

Mr G Evershed
Chief Executive Officer
Town of Bassendean

Mr M Carosella
Chief Executive Officer
City of Bayswater

M B Genoni
Chief Executive Officer
City of Belmont

Mr Keith Byers
Chief Executive Officer
Shire of Beverley

Mr P Bradbrook
Chief Executive Officer
Shire of Boddington

Mr W Pearce
Chief Executive Officer
Shire of Boyup Brook

Mr T Clynch
Acting Chief Executive Officer
Shire of Bridgetown-Greenbushes

Mr I Curley
Chief Executive Officer
Shire of Brookton

Mr G Powell
Chief Executive Officer
Shire of Broome

Mr P Fitzgerald
Chief Executive Officer
Shire of Broomehill

Mr S O'Halloran
Chief Executive Officer
Shire of Bruce Rock

Mr G Trevaskis
Chief Executive Officer
City of Bunbury

Mr A Macnish
Chief Executive Officer
Shire of Busselton

Mr G Partridge
Chief Executive Officer
Town of Cambridge

Mr I Kinner
Chief Executive Officer
City of Canning

Mr P Sheedy
Chief Executive Officer
Shire of Capel

Mr L Farrell
Chief Executive Officer
Shire of Carnamah

Mr C Strugnell
Chief Executive Officer
Shire of Carnarvon

Mr M Battilana
Chief Executive Officer
Shire of Chapman Valley

Mr R Hooper
Chief Executive Officer
Shire of Chittering

Mr G Dunt
Chief Executive Officer
Shire of Christmas Island

Mr A Kyron
Chief Executive Officer
Town of Claremont

Mr R Brown
Chief Executive Officer
Shire of Cockburn

Mr M Chester
Chief Executive Officer
Shire of Dardanup

Mr B Jarvis
Chief Executive Officer
Shire of Cocos (Keeling) Islands

Mr P Durtanovich
Chief Executive Officer
Shire of Denmark

Mr I Miffling
Chief Executive Officer
Shire of Collie

Mr J Throssell
Chief Executive Officer
Shire of Derby-West Kimberley

Mr J Fraser
Chief Executive Officer
Shire of Coolgardie

Mr J Attwood
Chief Executive Officer
Shire of Donnybrook-Balingup

Mr G Sherry
Chief Executive Officer
Shire of Coorow

Mr L Crichton
Chief Executive Officer
Shire of Dowerin

Mr B Mead
Chief Executive Officer
Shire of Corrigin

Mr I Craven
Chief Executive Officer
Shire of Dumbleyung

Mr S Tindale
Chief Executive Officer
Shire of Cottesloe

Mr B Willoughby
Chief Executive Officer
Shire of Dundas

Mr G Stanley
Chief Executive Officer
Shire of Cranbrook

Mr S Wearne
Chief Executive Officer
Town of East Fremantle

Mr P Naylor
Chief Executive Officer
Shire of Cuballing

Mr A Cooper
Chief Executive Officer
Shire of East Pilbara

Mr S Scott
Chief Executive Officer
Shire of Cue

Mr M Archer
Chief Executive Officer
Shire of Esperance

Mr K Petit
Chief Executive Officer
Shire of Cunderdin

Mr K Graham
Chief Executive Officer
Shire of Exmouth

Mr B Atkinson
Chief Executive Officer
Shire of Dalwallinu

Mr R Glickman
Chief Executive Officer
City of Fremantle

Mr B Golding
Chief Executive Officer
Shire of Dandaragan

Mr R Jefferies
Chief Executive Officer
City of Geraldton

Mr S Fraser
Chief Executive Officer
Shire of Gingin

Mr F Ludovico
Chief Executive Officer
Shire of Gnowangerup

Mr C Kerp
Chief Executive Officer
Shire of Goomalling

Mr S Jardine
Chief Executive Officer
City of Gosnells

Mr B Perry
Chief Executive Officer
Shire of Greenough

Mr P McConnell
Chief Executive Officer
Shire of Halls Creek

Mr K Leece
Chief Executive Officer
Shire of Harvey

Mr J Merrick
Chief Executive Officer
Shire of Irwin

Mr D Long
Chief Executive Officer
Shire of Jerramungup

Mr D Smith
Chief Executive Officer
City of Joondalup

Mr D Vaughan
Chief Executive Officer
Shire of Kalamunda

Mr I Fletcher
Chief Executive Officer
Shire of Kalgoorlie-Boulder

Mr B Jones
Chief Executive Officer
Shire of Katanning

Mr F Peczka
Chief Executive Officer
Shire of Kellerberrin

Mr I Fitzgerald
Chief Executive Officer
Shire of Kent

Mr W Lenyszyn
Chief Executive Officer
Shire of Kojonup

Mr G Hadlow
Chief Executive Officer
Shire of Kondinin

Mr G McDonald
Chief Executive Officer
Shire of Koorda

Mr B Price
Chief Executive Officer
Shire of Kulin

Mr R Searle
Chief Executive Officer
Town of Kwinana

Mr N Hale
Chief Executive Officer
Shire of Lake Grace

Mr M Brown
Chief Executive Officer
Shire of Laverton

Mr J Epis
Chief Executive Officer
Shire of Leonora

Mr M Newman
Chief Executive Officer
City of Mandurah

Mr V McKay
Chief Executive Officer
Shire of Manjimup

Mr T Hartman
Chief Executive Officer
Shire of Meekatharra

Mr J McNally
Chief Executive Officer
Shire of Melville

Mr N Leach
Chief Executive Officer
Shire of Murray

Mr M Cheverton
Chief Executive Officer
Shire of Menzies

Mr S Collie
Chief Executive Officer
Shire of Nannup

Mr P Anastasakis
Chief Executive Officer
Shire of Merredin

Mr A Wright
Chief Executive Officer
Shire of Narembeen

Mr H Van Der Ende
Chief Executive Officer
Shire of Mingenew

Mr G McKeown
Chief Executive Officer
Shire of Narrogin

Mr P Stubbs
Chief Executive Officer
Shire of Moora

Mr G O'Neill
Chief Executive Officer
Town of Narrogin

Mr G Merrick
Chief Executive Officer
Shire of Morowa

Mr S Silcox
Chief Executive Officer
City of Nedlands

Mr T Harken
Chief Executive Officer
Town of Mosman Park

Mr C Paget
Chief Executive Officer
Shire of Ngaanyatjarraku

Mr P Webster
Chief Executive Officer
Shire of Mount Magnet

Mr A Middleton
Chief Executive Officer
Shire of Northam

Mr K Donohoe
Chief Executive Officer
Shire of Mt Marshall

Mr D Burnett
Chief Executive Officer
Town of Northam

Mr A Borrett
Chief Executive Officer
Shire of Mukinbudin

Mr G Keeffe
Chief Executive Officer
Shire of Northampton

Mr G Wilks
Chief Executive Officer
Shire of Mullewa

Mr B Fensome
Chief Executive Officer
Shire of Nungarin

Mr M Williams
Chief Executive Officer
Shire of Mundaring

Mr G Simpson
Chief Executive Officer
Shire of Peppermint Grove

Mr N Warne
Chief Executive Officer
Shire of Murchison

Mr B Thompson
Chief Executive Officer
Shire of Perenjori

Mr F Edwards
Chief Executive Officer
City of Perth

Mr G Carter
Acting Chief Executive Officer
Shire of Pingelly

Mr R Stewart
Chief Executive Officer
Shire of Plantagenet

Mr T Ford
Chief Executive Officer
Town of Port Hedland

Mr G Fardon
Chief Executive Officer
Shire of Quairading

Mr S Taylor
Chief Executive Officer
Shire of Ravensthorpe

Mr G Holland
Chief Executive Officer
City of Rockingham

Mr T Ruland
Chief Executive Officer
Shire of Roebourne

Mr K Hastie
Chief Executive Officer
Shire of Sandstone

Mr D Price
Chief Executive Officer
Shire of Serpentine-Jarrahdale

Mr M Hook
Chief Executive Officer
Shire of Shark Bay

Mr S Goode
Chief Executive Officer
City of South Perth

Mr L Delahaunty
Chief Executive Officer
City of Stirling

Mr C Burton
Chief Executive Officer
City of Subiaco

Mr E Lumsden
Chief Executive Officer
City of Swan

Ms J Trezona
Chief Executive Officer
Shire of Tambellup

Mr Frank Peczka
Chief Executive Officer
Shire of Tammin

Mr G Little
Chief Executive Officer
Shire of Three Springs

Mr I Stubbs
Chief Executive Officer
Shire of Toodyay

Mr K Dickson
Chief Executive Officer
Shire of Trayning

Mr J Newton
Chief Executive Officer
Shire of Upper Gascoyne

Mr J Bonker
Chief Executive Officer
Town of Victoria Park

Mr P Anning
Chief Executive Officer
Shire of Victoria Plains

Mr J Giorgi
Chief Executive Officer
Town of Vincent

Mr M Parker
Chief Executive Officer
Shire of Wagin

Mr M Oliver
Chief Executive Officer
Shire of Wandering

Mr C Johnson Chief Executive Officer City of Wanneroo	Mr P Marshall Chief Executive Officer Shire of York
Mr K O'Connor Chief Executive Officer Shire of Waroona	Ms S Wallace President Blackwood Valley Wine Industry Association
Mr N Mason Acting Chief Executive Officer Shire of West Arthur	Mr P Buxton President Denmark Winegrowers Association
Mr J Murphy Chief Executive Officer Shire of Westonia	Mr M Warburton President Frankland River Winemakers Association
Mr Calneggia Chief Executive Officer Shire of Wickpin	Mr M Lowe President Geographe Vignerons Association
Mr J Epiro Chief Executive Officer Shire of Williams	Mr M Katich President Grape Grower's Association of WA (Inc.)
Mr T Doust Chief Executive Officer Shire of Wiluna	Mr A Diletti President Great Southern Wine Producers' Association
Mr A Moles Chief Executive Officer Shire of Wongan-Ballidu	Ms C Ing Chief Executive Officer Margaret River Wine Industry Association
Ms B Knight Chief Executive Officer Shire of Woodanilling	Mr P Nicholas President Manjimup Wine Region Association
Mr M Keeble Chief Executive Officer Shire of Wyalkatchem	Mr K Martin President Moollabeenee Grape Growers' Association
Mr C Adams Chief Executive Officer Shire of Wyndham-East Kimberley	Mr I Tyler President Mount Barker Wine Producers Association
Mr W Olsen Chief Executive Officer Shire of Yalgoo	Mr P Franzone President Peel Wine Association
Mr P Clarke Chief Executive Officer Shire of Yilgam	

Mr R Liebeck
President
Pemberton Wine Region Association

Mr J Walsh
President
Perth Hills Vignerons' Association

Mr A Diletti
President
Porongurup Grape and Wine Producers'
Association

Mr B de Tastes
President
Swan Districts and Regional Winemakers'
Association

Ms L Baker
Executive Director
WA Council of Social Services Inc

Ms S Mayman
Secretary
Unions WA

Ms D Lynch
Ellenbrook Integrated Catchment Group

Ms L Raynor
Eastern Hills Catchment Management
Project

Ms S Lake
Claise Brook Catchment Group

Ms R Thorpe
Chittering and North Swan LCDC

Ms Kelly Exell
Canning Plain Catchment Group

Ms R Hindmarsh
Brockman River Catchment Group

Ms J Huston
Blackadder/Woodbridge and
Susanna/Millendon Catchments

Ms M Cahill
Belmont-Victoria Park Catchment Group

Ms J Robert
Bannister Creek Catchment Group

Ms C Martin
Armadale/Gosnells Landcare Group

Ms L Taman
North East Catchment Committee

Ms A Krupa
Phosphorus Action Group

Mr D Staude
Wooroloo Brook LCDC

Mr T Martella
General Manager, Associations
Master Plumbers and Gasfitters Association
of WA

Mr M Mitchell
Secretary
CEPU, Plumbing Division

Mr Richard Usher
Director
WA Division
The Institute of Engineers

Mr D Kelly
Secretary
Miscellaneous Workers Union

Professor J Imburger
Chair
Centre for Water Research
University of Western Australia

Associate Professor Paul Lavery
Head of School
Natural Sciences Department
Edith Cowan University

Dr R Frond
Director
Centre for Ecosystem Management
School of Natural Sciences
Edith Cowan University

Ms Ros Hegarty
Secretary
Rural Water Council

APPENDIX 2

LIST OF PUBLIC SUBMISSIONS

No.	From	Organisation	Date
1.	Mr R L Down		July 4 2003
2.	Mr Neil R Smithson Managing Director	Smithson Planning	July 8 2003
3.	Mr V Epiro Chief Executive Officer	Shire of Williams	July 18 2003
4.	Mr M Battilana Chief Executive Officer	Shire of Chapman Valley	July 16 2003
5.	Mr I Duncan		July 23 2003
6.	Kevin O'Connor Chief Executive Officer	Shire of Waroona	July 28 2003
7.	Mr Mark L Chester Chief Executive Officer	Shire of Dardanup	July 28 2003
8.	Mr Tim Clynh A/Chief Executive Officer	Shire of Bridgetown- Greenbushes	August 14 2003
9.	Mr F B Ludovico Chief Executive Officer	Shire of Gnowangerup	August 18 2003
10.	Chris Adams Chief Executive Officer	Shire of Wyndham-East Kimberley	August 22 2003
11.	John Giorgi Chief Executive Officer	Town of Vincent	August 25 2003
12.	Ian V Craven Chief Executive Officer	Shire of Dumbleyung	August 27 2003
13.	Shane Collie Chief Executive Officer	Shire of Nannup	August 29 2003
14.	Allen Cooper Chief Executive Officer	Shire of East Pilbara	September 1 2003

No.	From	Organisation	Date
15.	Mr P A Anning Chief Executive Officer	Shire of Victoria Plains	September 5 2003
16.	Paul Ryan FESA Manager Resources	Fire and Emergency Services Authority	September 8 2003
17.	Mr John B Clark		September 11 2003
18.	Mr G Trevaskis Chief Executive Officer	City of Bunbury	September 12 2003
19.	Mr Robert Bropho	Swan Valley Nyungah Community	September 15 2003
20.	Mr Robert Fenn Executive Director Development Services	City of Albany	September 12 2003
21.	Mr Ian Miffling Chief Executive Officer	Shire of Collie	September 18 2003
22.	Ms Lisa Baker Executive Director	Western Australian Council of Social Service Inc	September 22 2003
23.	Mrs Anne Arnold Chief Executive	Association of Mining and Exploration Companies (Inc)	September 2003
24.	Mr Stan Scott Chief Executive Officer	Shire of Cue	September 23 2003
25.	Colin Nicholl President	The Western Australian Farmers Federation	September 23 2003
26.	Mr Geoff Oddy Chief Executive Officer	Aqwest - Bunbury Water Board	September 23 2003
27.	Mr Brett Flugge Director, Planning and Development Services	Shire of Murray	September 23 2003
28.	Mr Don Punch Chief Executive Officer	South West Development Commission	September 23 2003

No.	From	Organisation	Date
29.	Mr James Riley Principal Environmental Health Officer	City of Bayswater	September 24 2003
30.	Mr KJ Graham Chief Executive Officer	Shire of Exmouth	September 24 2003
31.	Mr Matt Katich President	Grape Growers Association of WA (Inc)	September 24 2003
32.	Dr JI Gill Managing Director	Water Corporation	September 23 2003
33.	David Singe Chief Executive Officer	Wheatbelt Development Commission	September 23 2003
34.	Mr David McFerran Executive Officer	West Australian Pork Producers' Association	September 23 2003
35.	Dr John Byrne Acting Executive Director	Department of Conservation and Land Management	September 24 2003
36.	Mr Robert McFerran Executive Manager	WA Fruit Growers Association	September 24 2003
37.	Mr Geoff Calder General Manager	Harvey Water	September 23 2003
38.	Mr M McFarlane		September 22 2003
39.	Mr Colin Purcell Chief Executive Officer	Goldfields-Esperance Development Commission	September 19 2003
40.	Mr Bruce Teede JP		September 23 2003
41.	Matt Taylor Project Coordinator	Business Development Unit Commonwealth Scientific and Industrial Research Organisation Land and Water	Undated
42.	Charlotte Stockwell Director Strategy	City of Perth	September 25 2003
43.	Simon Fraser Chief Executive Officer	Shire of Gingin	September 26 2003

No.	From	Organisation	Date
44.	Tim Shanahan Chief Executive	The Chamber of Minerals and Energy of WA	September 24 2003
45.	David Wren Water Rights Spokesperson	Private Property Rights Committee Pastoralists and Graziers Association	September 24 2003
46.	Simon Skevington General Manager Infrastructure Planning and Management	Department of Industry and Resources	Undated
47.		The Frankland River Winemakers and Grapegrowers Association	September 2003
48.	Mr Ormond Cail President Mrs Ros Hegarty Secretary	Rural Water Council of West Australia Inc.	Undated
49.	D Carew-Hopkins A/Chief Executive	Water and Rivers Commission Department of Environment	October 17 2003
50	Hon Alannah MacTiernan Minister for Planning and Infrastructure		October 22 2003
51	Mike Daube Director General	Department of Health	October 27 2003
52	Ian Parker	Seavista Consulting	Undated
53	Charlotte Verany	Extracting and Marketing Offshore Fresh Water	March 2004

APPENDIX 3

LIST OF WITNESSES

Wednesday May 5 2004

Dr Jim Gill, Managing Director, Water Corporation

Mr Garry Meinck, General Manager, Planning and Development, Water Corporation

Thursday May 12 2004

Dr Don McFarlane, Director, Resource Management, Water and Rivers Commission

Mr Rod Banyard, Manager, Strategic Development and Planning, Water and Rivers Commission

Monday June 21 2004

Session 1

Dr Tom Hatton, Deputy Chief, CSIRO Land and Water

Dr Bryson Bates, Director, CSIRO Climate Program

Dr Simon Toze, Principal Research Scientist, CSIRO Land and Water

Session 2

Dr Don McFarlane, Director, Resource Management, Department of Environment

Mr Ian Loh, Strategy Manager, Strategic Development and Planning, Resource Management Division, Department of the Environment

Monday June 28 2004

Mr Ross Marshall, Director, Investment Facilitation Division, Department of Industry and Resources

Mr David Meehan, Project Manager, Department of Industry and Resources

Wednesday June 30 2004

Dr Roelof Bruintjes, Scientist, Principal Investigator, Rainfall Enhancement Programs, National Center for Atmospheric Research

Mr Patrick Sweeney, President, Weather Modification Inc

Thursday July 22 2004

Session 1

Mr Tony Chafer, Area Manager - East Kimberley, Water Corporation

Session 2

Mr Andrew Kelly, Chief Executive Officer, Ord Irrigation Co-operative

Mr Lindsay Innes, Farmer and Vice Chairman, Ord Irrigation Co-operative

Session 3

Mr Christopher Adams, Chief Executive Officer, Shire of Wyndham-East Kimberley

Session 4

Mr Keith Wright, Private Citizen

Session 5

Mr Jim Hughes, Chief Executive Officer, Ord River District Cooperative Ltd

Session 6

Mr Desmond Hill, Member, Steering Committee, Aboriginal Social and Economic Impact Assessment Committee

Thursday July 29 2004

Session 1

Ms Catherine Harrison, Manager, Water Allocation Branch, Department of Environment

Dr Fionnuala Hannon, Program Manager, Department of Environment

Mr David Philip Commander, Principal Hydrogeologist, Department of Environment

Session 2

Mr Geoff Calder, General Manager, Harvey Water

Session 3

Mr Chris Scott, Water Spokesperson, Western Australian Fruit Growers' Association

Mr Robert McFerran, Executive Manager, Western Australian Fruit Growers' Association

Session 4

Mr David Wren, Water Rights Spokesperson, Pastoralists and Graziers Association, Secretary, Western Australian Water Users Coalition

Mr Eric Phillips, Committee Member, Western Australian Water Users Coalition

Session 5

Mr Roger Doyle, Irrigation and Drainage Consultant, Audax Enterprises Pty Ltd

Session 6

Ms Helen Shervington, Member, Southern Yarragadee Committee, c/- Shire of Augusta-Margaret River

Monday August 16 2004

Professor Jorg Imberger, Chair and Vice Chancellor's Distinguished Fellow, Centre for Water Research, University of Western Australia

Monday August 23 2004

Mr Des Pearson, Auditor General, Office of the Auditor General

Mr Glen Clarke, Executive Director, Compliance and Information Service, Office of the Auditor General

Wednesday September 22 2004

Ms Susan Worley, Regional Manager, North West Region - Pilbara and Kimberley, Department of Environment

Monday September 27 2004

Session 1

Mr Hugh Gallagher, Chief Executive Officer, Kalgoorlie-Boulder Chamber of Commerce and Industry

Session 2

Mr Ron Yuryevich, Mayor, City of Kalgoorlie-Boulder

Session 3

Mr Stanley Boath, Public Relations Manager, United Utilities Australia

Mr Philip Endley, Project Manager, United Utilities Australia