

Australian Water Recycling  
**Centre of Excellence**



# Water Recycling in Australia

Presented by

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CEO - Centre of Excellence



Australian Government  
Water for the Future



Alice Springs

Brisbane

4000 km

Perth

Adelaide

Melbourne

Sydney



# Australia

Historically dry country

Increasing water challenges

Significant water reform  
agenda

Implementing alternate  
water supply options

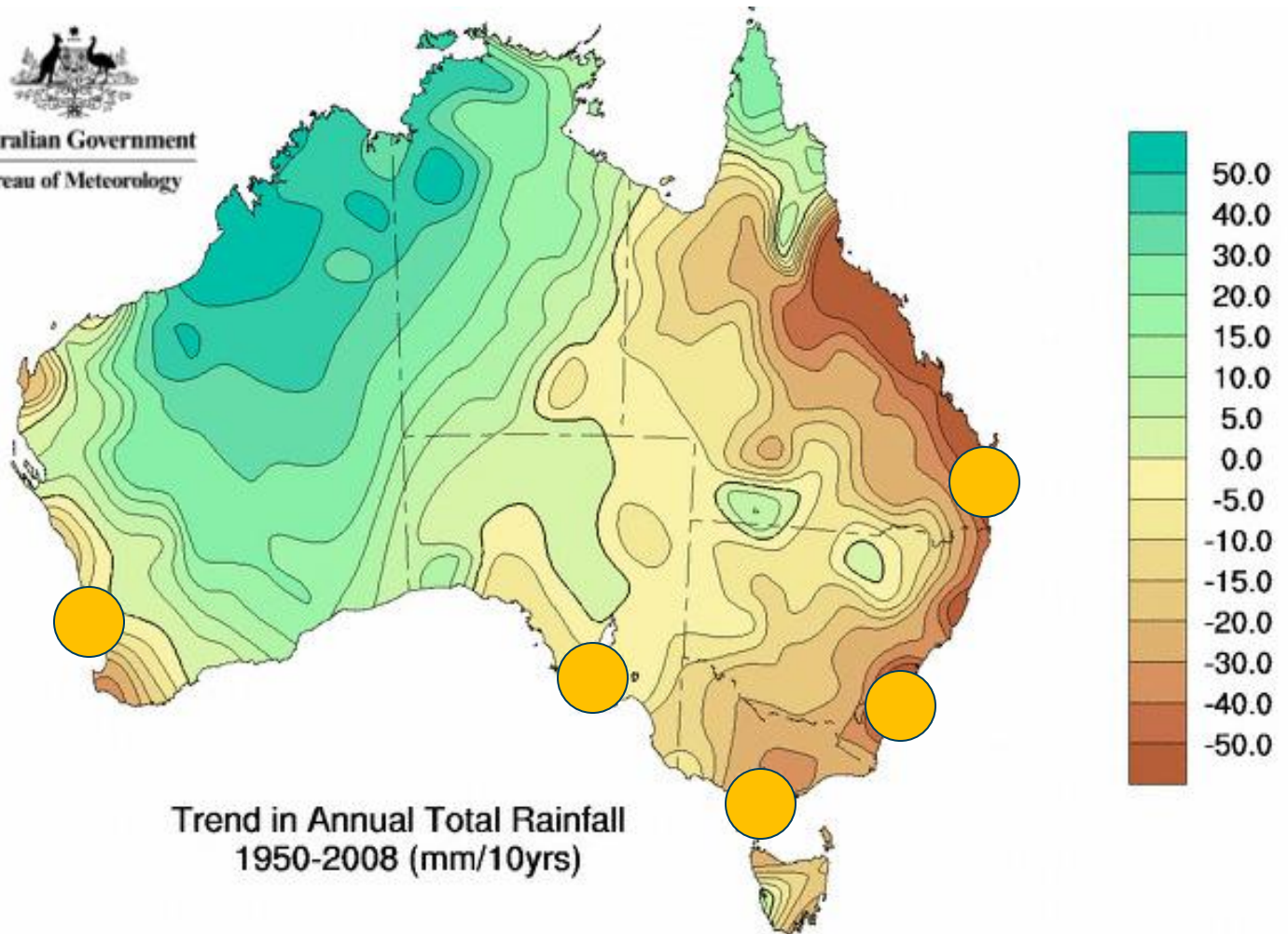
Water recycling a significant  
part of Australia's future



# Long Term Trend in Rainfall



Australian Government  
Bureau of Meteorology



Urban centres

Trend in Annual Total Rainfall  
1950-2008 (mm/10yrs)



# Wivenhoe Dam (circa 2000)

100%

An aerial photograph of the Wivenhoe Dam and its reservoir. The dam is a long, narrow structure that curves through a green, hilly landscape. The reservoir is a large, deep blue body of water that fills a valley. The surrounding land is a mix of green fields and dense forests. In the distance, more hills and a flat landscape are visible under a clear blue sky.

**Spillway**

**Water Supply** = 1,165 GL  
**Flood Capacity** = 1,450 GL

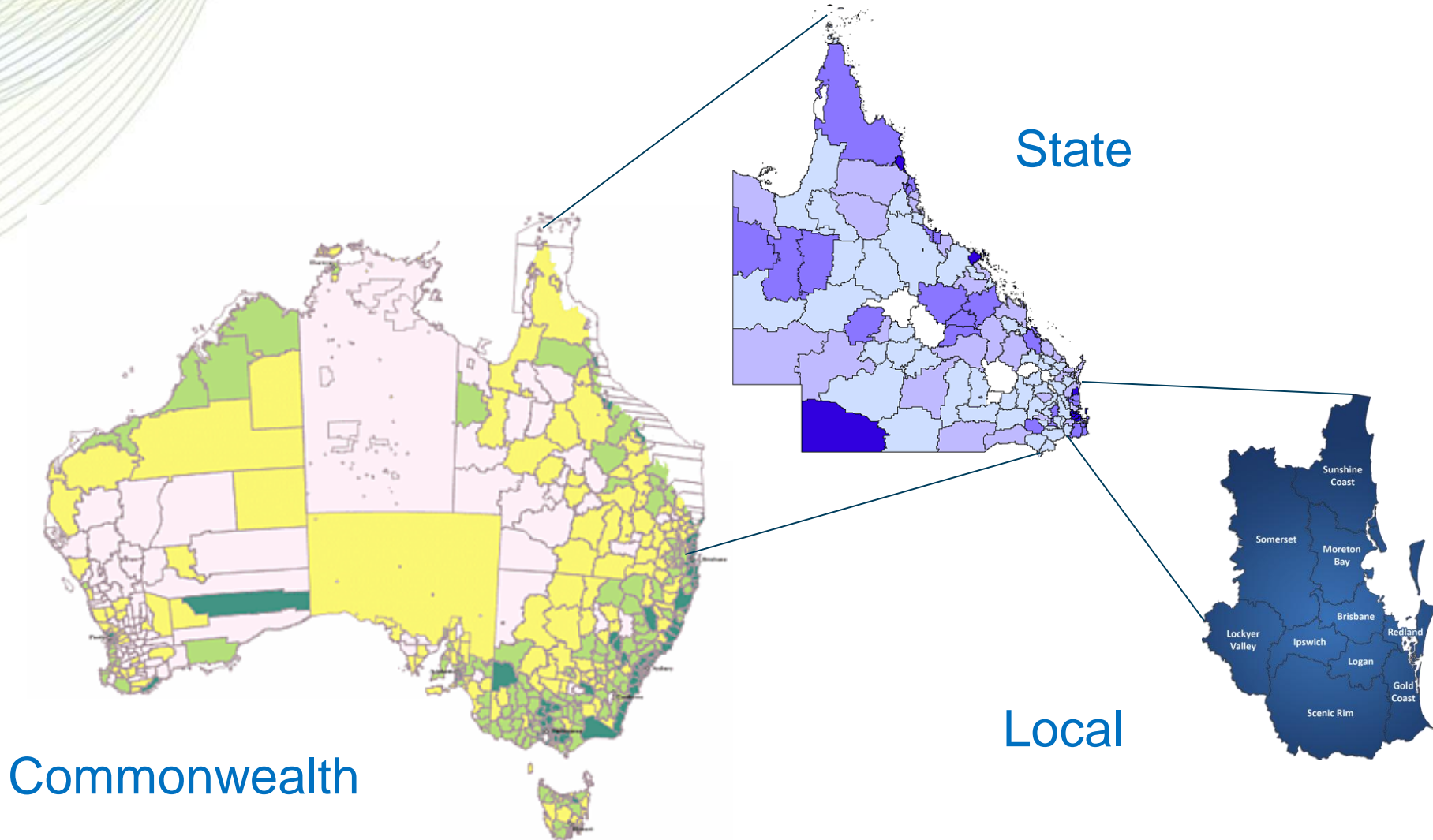


# Millenium Drought

Spillway

Wivenhoe Dam (April 07)  
~ 18% capacity

# Government in Australia



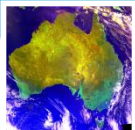


## Owned the built assets





- 
- A horizontal timeline arrow pointing to the right, with three vertical tick marks indicating the years 1994, 2004, and 2008. Below each tick mark, two lines of text describe the events of that year.
- | Year | Event  | Details                       |
|------|--|-------------------------------|
| 1994 | COAG Water Reform                                    | Reform tied to \$'s to States |
| 2004 | National Water Initiative administered by Commission | Govt water fund \$2 bill      |
| 2008 | Water for the Future                                 | \$12.9 bill                   |



# National Guidance

## NATIONAL WATER QUALITY MANAGEMENT STRATEGY

**AUSTRALIAN GUIDELINES 23  
FOR WATER RECYCLING:  
MANAGING HEALTH AND  
ENVIRONMENTAL RISKS  
(PHASE 2)**

**STORMWATER HARVESTING  
AND REUSE**

JULY 2009



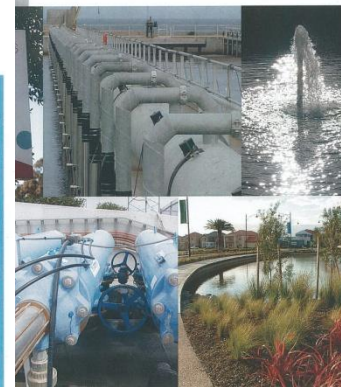
Natural Resource Management Ministerial Council  
Environment Protection and Heritage Council  
National Health and Medical Research Council

## NATIONAL WATER QUALITY MANAGEMENT STRATEGY

**AUSTRALIAN GUIDELINES 22  
FOR WATER RECYCLING:  
MANAGING HEALTH AND  
ENVIRONMENTAL RISKS  
(PHASE 2)**

**AUGMENTATION OF DRINKING  
WATER SUPPLIES**

2008

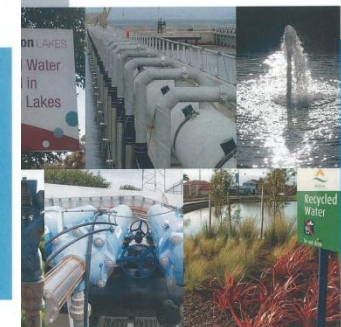


Natural Resource Management Ministerial Council  
Environment Protection and Heritage Council  
National Health and Medical Research Council

## NATIONAL WATER QUALITY MANAGEMENT STRATEGY

**AUSTRALIAN GUIDELINES 21  
FOR WATER RECYCLING:  
MANAGING HEALTH  
AND ENVIRONMENTAL  
RISKS (PHASE 1)**

2006



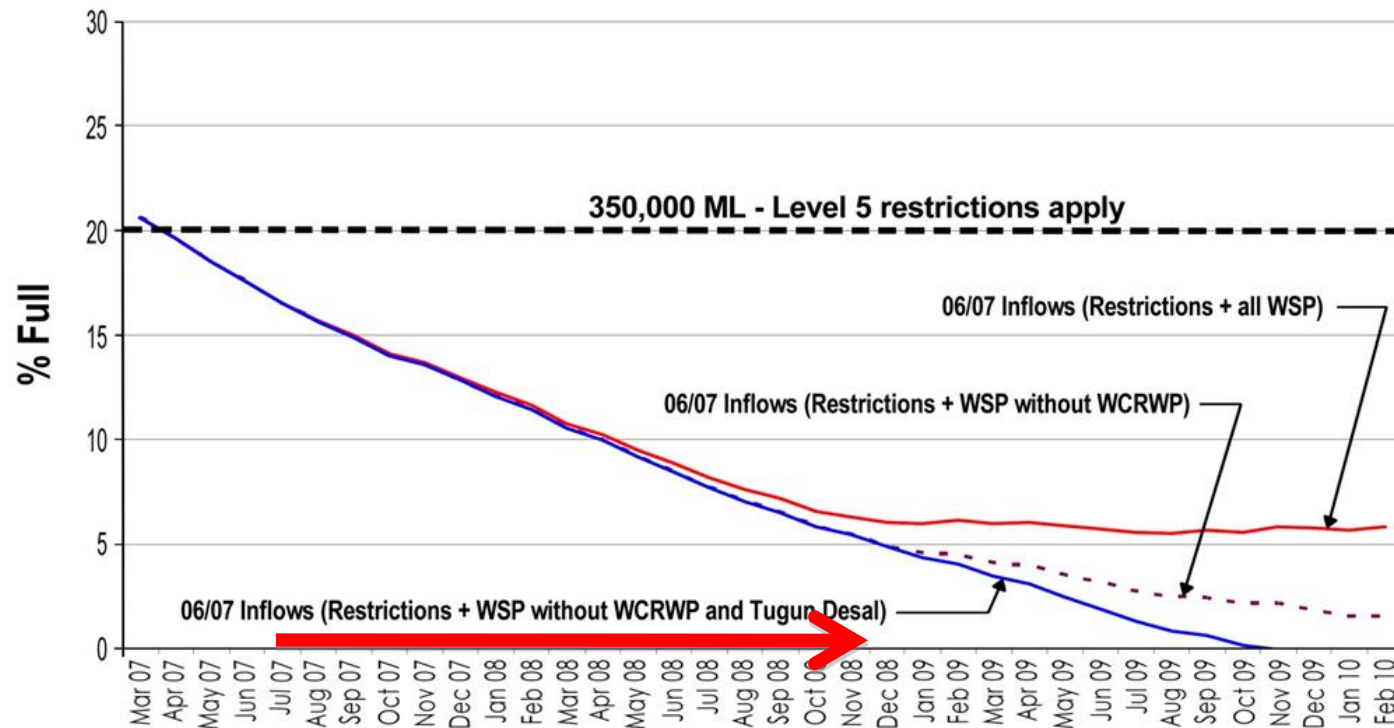
Natural Resource Management Ministerial Council  
Environment Protection and Heritage Council  
Australian Health Ministers Conference





# Millenium Drought

**Spillway**



**Forecast Dam Levels with Level 5 restrictions**

WSP = Water Supply Projects

WCRWP = Western Corridor Water Recycling Project

Wivenhoe Dam (April 07)  
~ 18% capacity

# SEQ Water Supply System

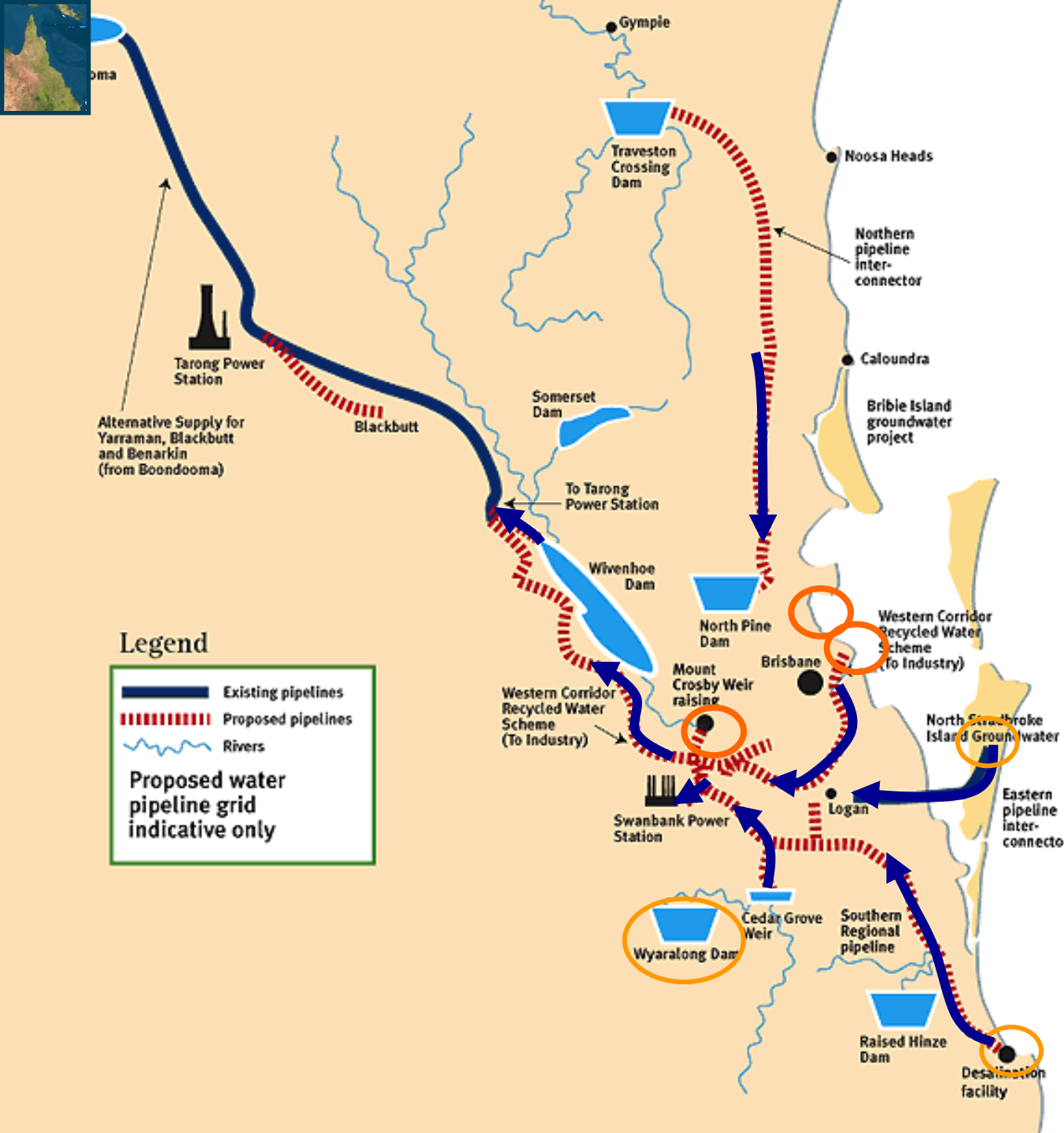
3 Advanced Water Treatment Plants

1 Desalination Plant

Groundwater Sources

Several Bulk Pipelines & New Storages

Total asset investment of \$7.5 bill over 5 yrs





Groundwater Replenishment Trial, WA  
(courtesy of WA Water Corporation)



WetSide Water Education Park, QLD  
(courtesy of Wide Bay Water)



Lion Nathan Brewery, QLD  
(courtesy of GHD)



# Water Reuse Schemes

Increasing diversity of applications

Reuse for agriculture, environment, industry and consumption

Innovative approaches to large and small scale recycling schemes

Collectively these schemes and initiatives are making a difference

Examples of water recycling around Australia



Eastern Treatment Plant Recycling Trials, VIC  
(courtesy of Melbourne Water)

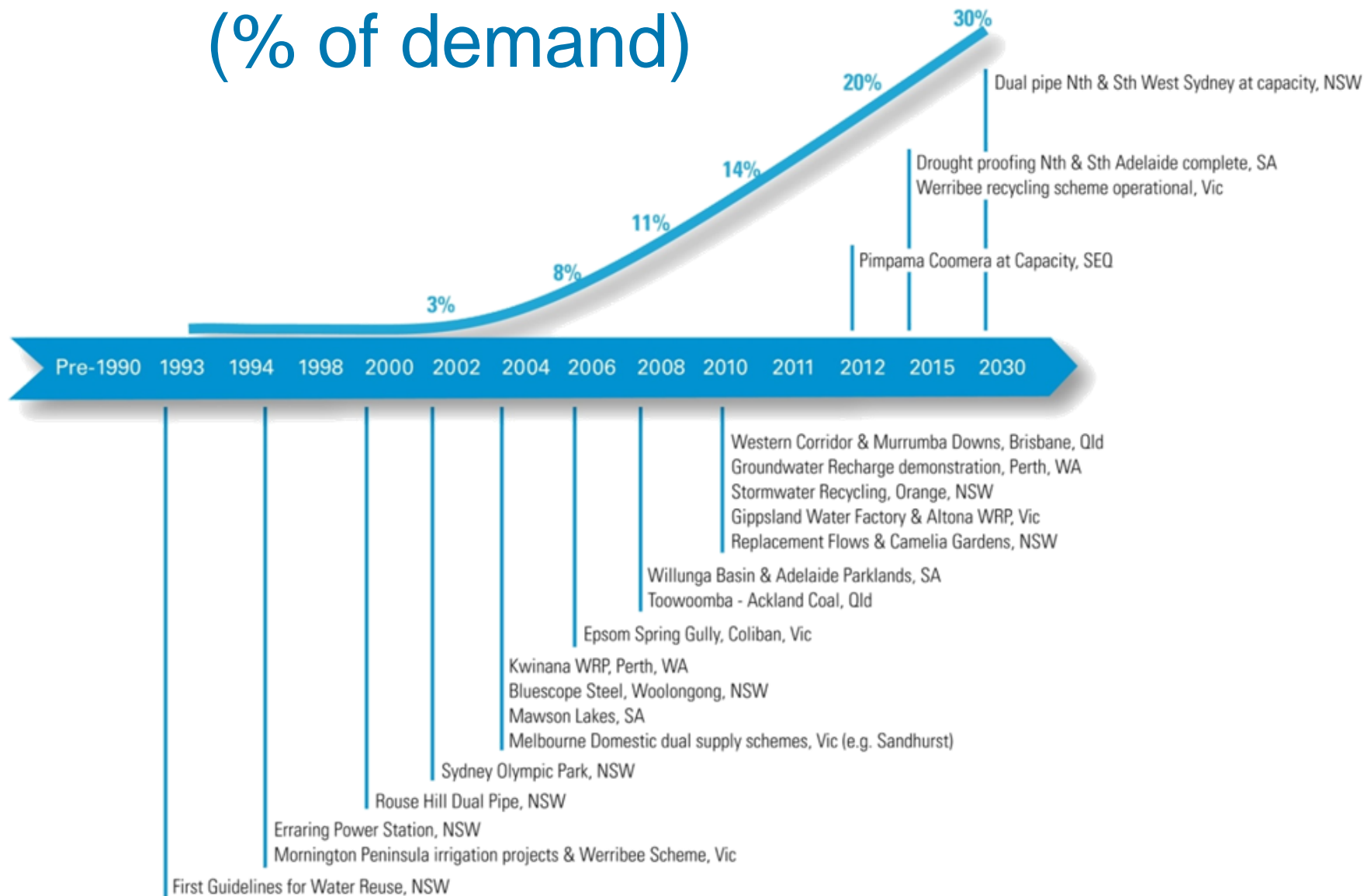


North Head Recycling Scheme, NSW  
(courtesy of Sydney Water)



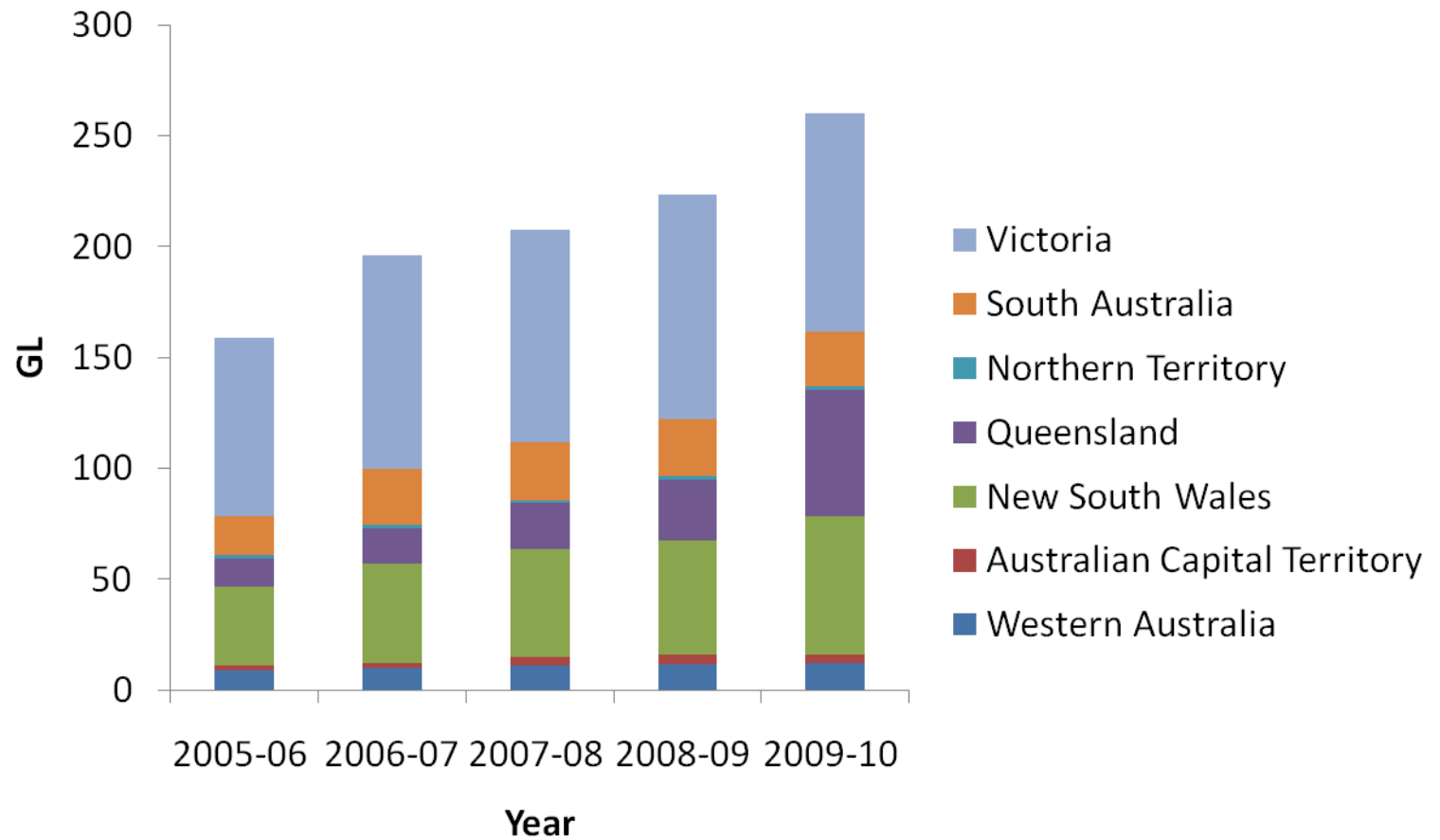
Woollongong irrigation with reclaimed water, NSW  
(courtesy of Sydney Water)

# Uptake of Water Recycling (% of demand)





## Total recycled water supplied (GL)



## Australian Water Recycling Centre of Excellence



Initial funding from the Commonwealth Government (\$20million)

AWRCoE Limited – not for profit company limited by guarantee

Centre currently hosted by Seqwater – a QLD Government utility

Centre participants comprise utilities, consulting, water service and research entities

Centre participants comprise the Centre's Research Advisory Committee and help set the Strategic Research agenda



**Australian Government**  
**Water for the Future**



# Current Goals

Australian Water Recycling  
Centre of Excellence



**The social/ economic/ environmental value of Water Recycling is demonstrated and enhanced** – projects to demonstrate and promote water recycling as a high value (social/economic/ environmental) option to secure future water needs, including research with a focus on optimising water recycling for purposes including environmental, industrial and agricultural end uses.

**A national validation framework for water recycling is established** - projects to support a national validation framework for water recycling schemes and the research to support regulator and industry confidence in regional and metropolitan implementation.

**Reclaimed water is seen as an acceptable ‘alternate water’ for augmenting drinking water supplies** – projects that demonstrate water recycling as a viable option for sustainable potable water supply, including research into communication and other challenges associated with water recycling for potable use.

**A national knowledge, training and education program for water recycling is established** – projects to consolidate recycled water knowledge and activities in Australia, with research that supports student and postdoctoral appointees and provides opportunities to capture and relay the industry learnings that are rapidly being developed at the jurisdictional level.



# Australian and Global Challenges

Overcoming Barriers to Reuse 2010 – Black & Veitch	Strategic Research Plan 2010 - CoE
Emphasise the value of recycled water as a sustainable resource for future demands	Goal 1: The social/economic/environmental value of water recycling is demonstrated and enhanced
Streamline regulations and clearer guidelines	Goal 2: A national validation framework for water recycling is established
Overcome public misconceptions through clear communications about water reuse	Goal 3: Reclaimed water is viewed as an acceptable option to augment potable supplies
Water recycling should be seen as one part of the diversification of supplies needed to ensure future water security	





# Additional Information

[www.australianwaterrecycling.com.au](http://www.australianwaterrecycling.com.au)

[www.environment.gov.au](http://www.environment.gov.au)

[www.nwc.gov.au](http://www.nwc.gov.au)

[www.qwc.qld.gov.au](http://www.qwc.qld.gov.au)

[www.wsaa.com.au](http://www.wsaa.com.au)