



Australian Government
Bureau of Meteorology



Water Information
DATA › INFORMATION › INSIGHT

Future Water Infrastructure Challenges

..... Framing the issues

BITRE Conference
Parliament House, Canberra

Rob Vertessy
18 June 2009



Australian Government

Bureau of Meteorology

Framing the issues

- Recent shifts in the urban water supply:demand balance
- Indicate how the urban water sector is adjusting
- Highlight the complexity of choices to be made



Water Information
DATA › INFORMATION › INSIGHT



Australian Government
Bureau of Meteorology

Context

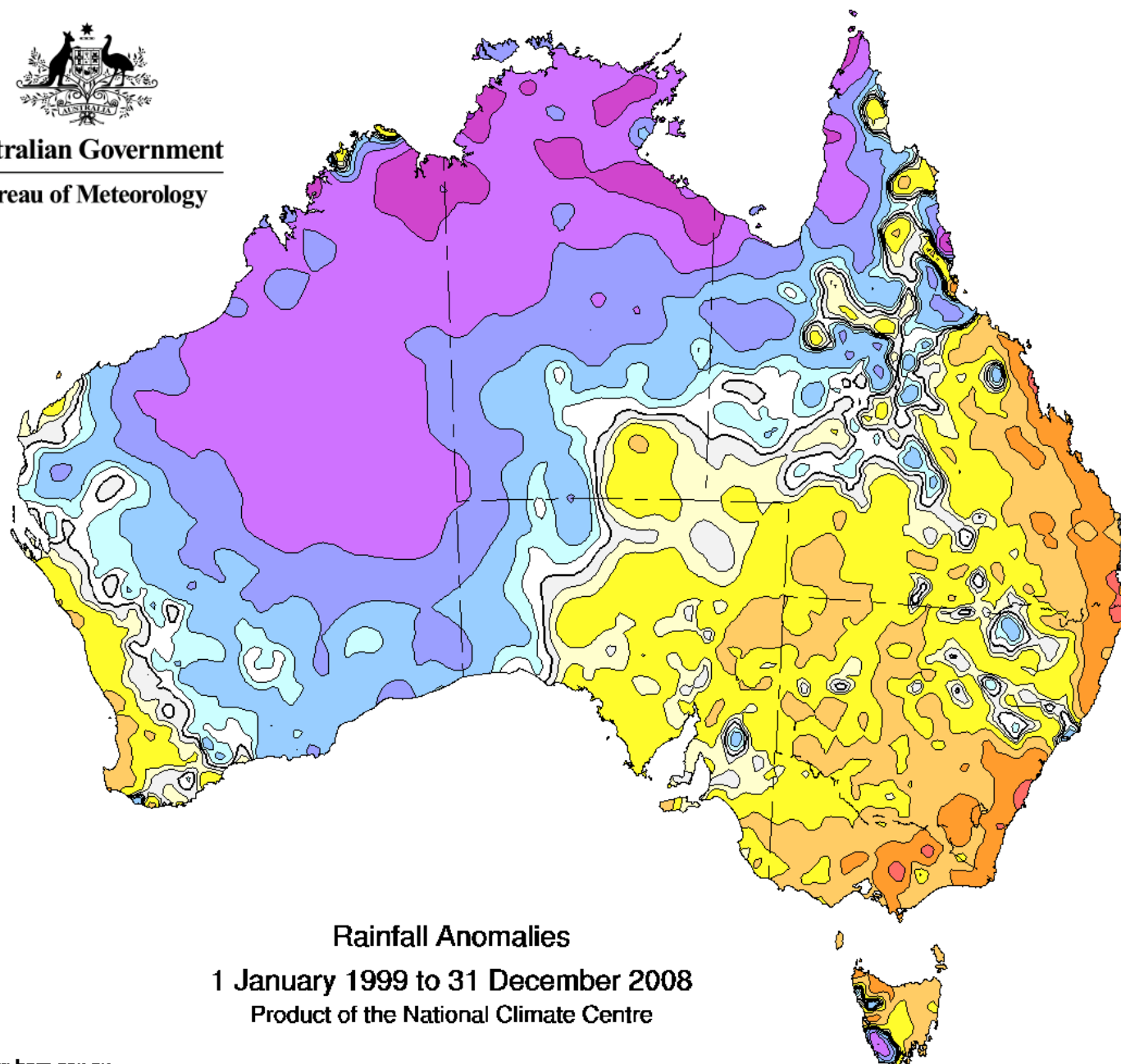
- Demand for water driven by population increase, rapid industrialisation and growth in primary production
- Major droughts and floods influenced dam building
- System yields assumed to be stationary, but in fact variable
- Abrupt drying of climate over the last 1-2 decades has changed the supply:demand equation



Water Information
DATA › INFORMATION › INSIGHT



Australian Government
Bureau of Meteorology



Rainfall anomaly (mm/yr)



Rainfall Anomalies
1 January 1999 to 31 December 2008
Product of the National Climate Centre

<http://www.bom.gov.au>

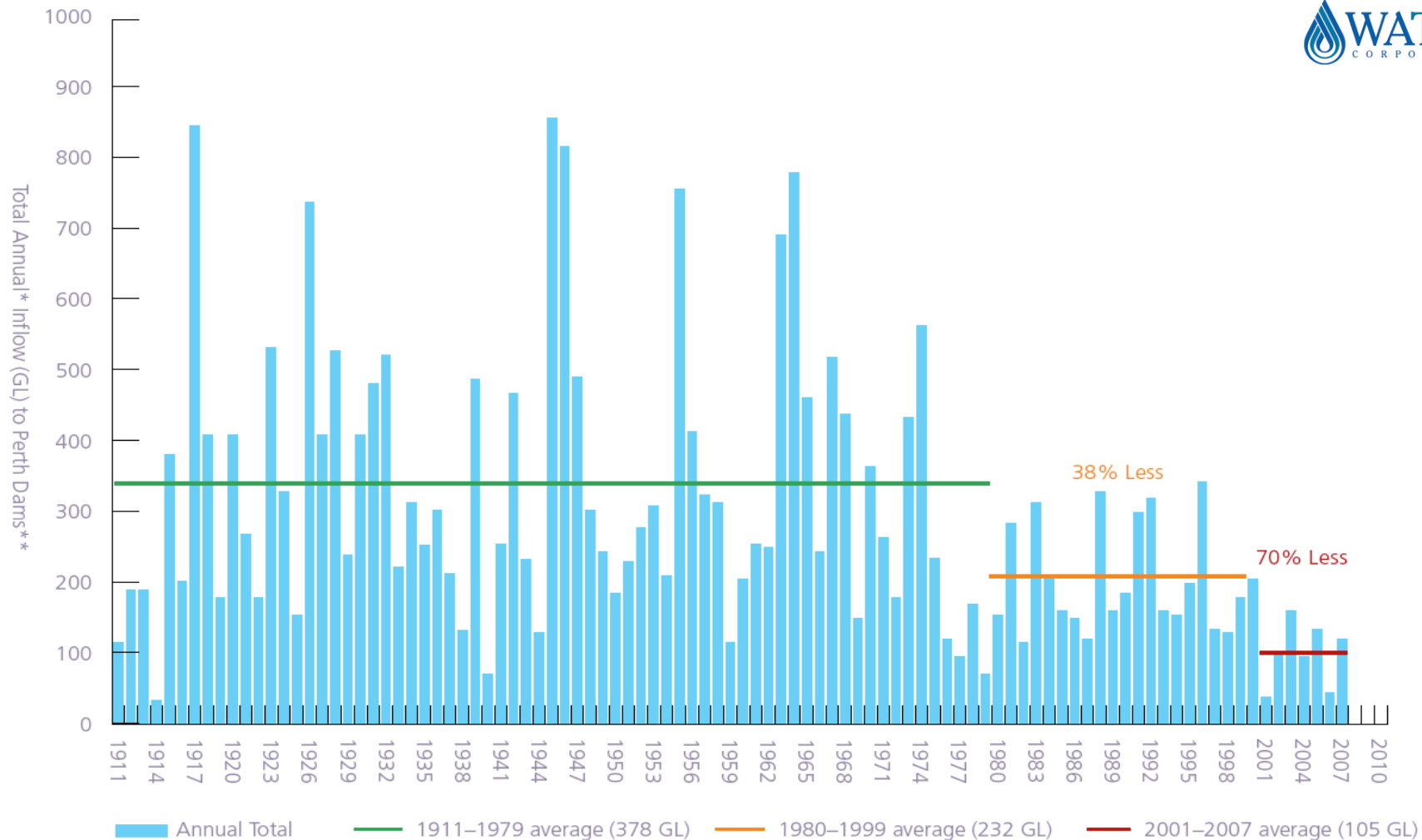


Australian Government

Bureau of Meteorology

Inflows to Perth's reservoirs

YEARLY INFLOW TO PERTH DAMS INCLUDING SOUTHERN SOURCES



* a year is taken as May to April

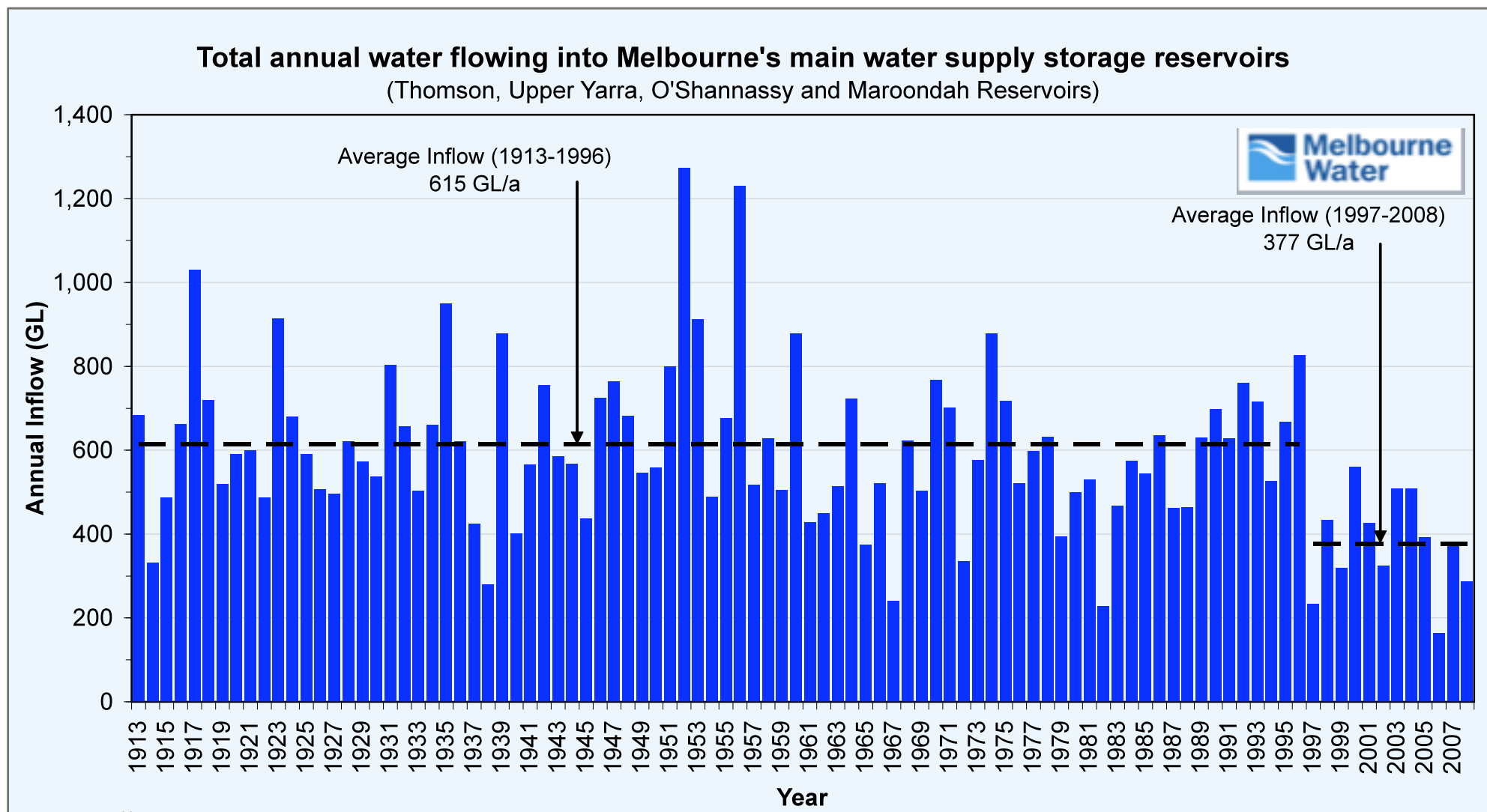
** 2004/05 inflow to 31 Jan 2005



Australian Government

Bureau of Meteorology

Inflows to Melbourne's reservoirs



Notes:

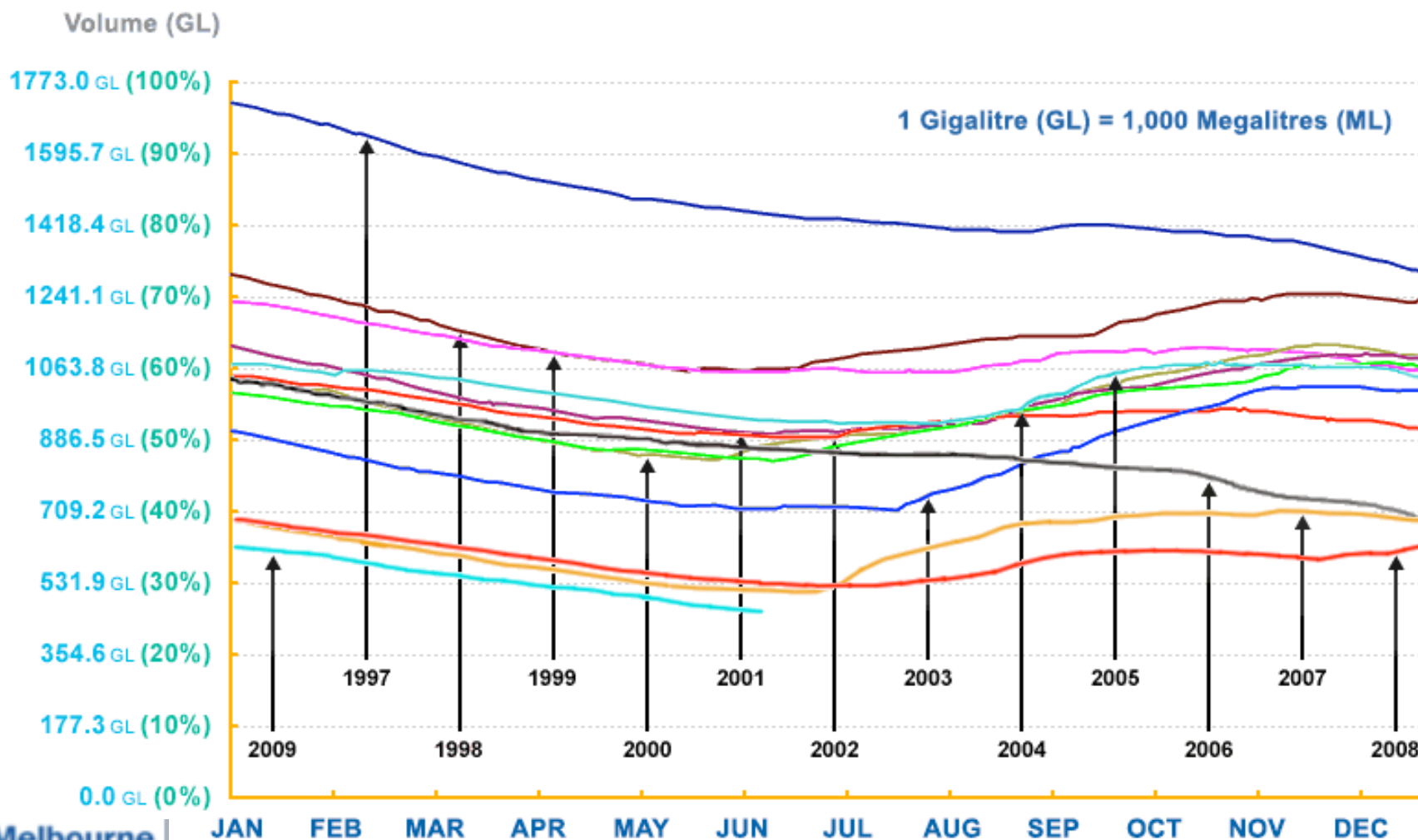
1. Annual inflow is taken as calendar year inflow (January to December) and is calculated using hydrological methods and gauging records.



Australian Government

Bureau of Meteorology

Melbourne's water storage





Australian Government

Bureau of Meteorology

Security

?

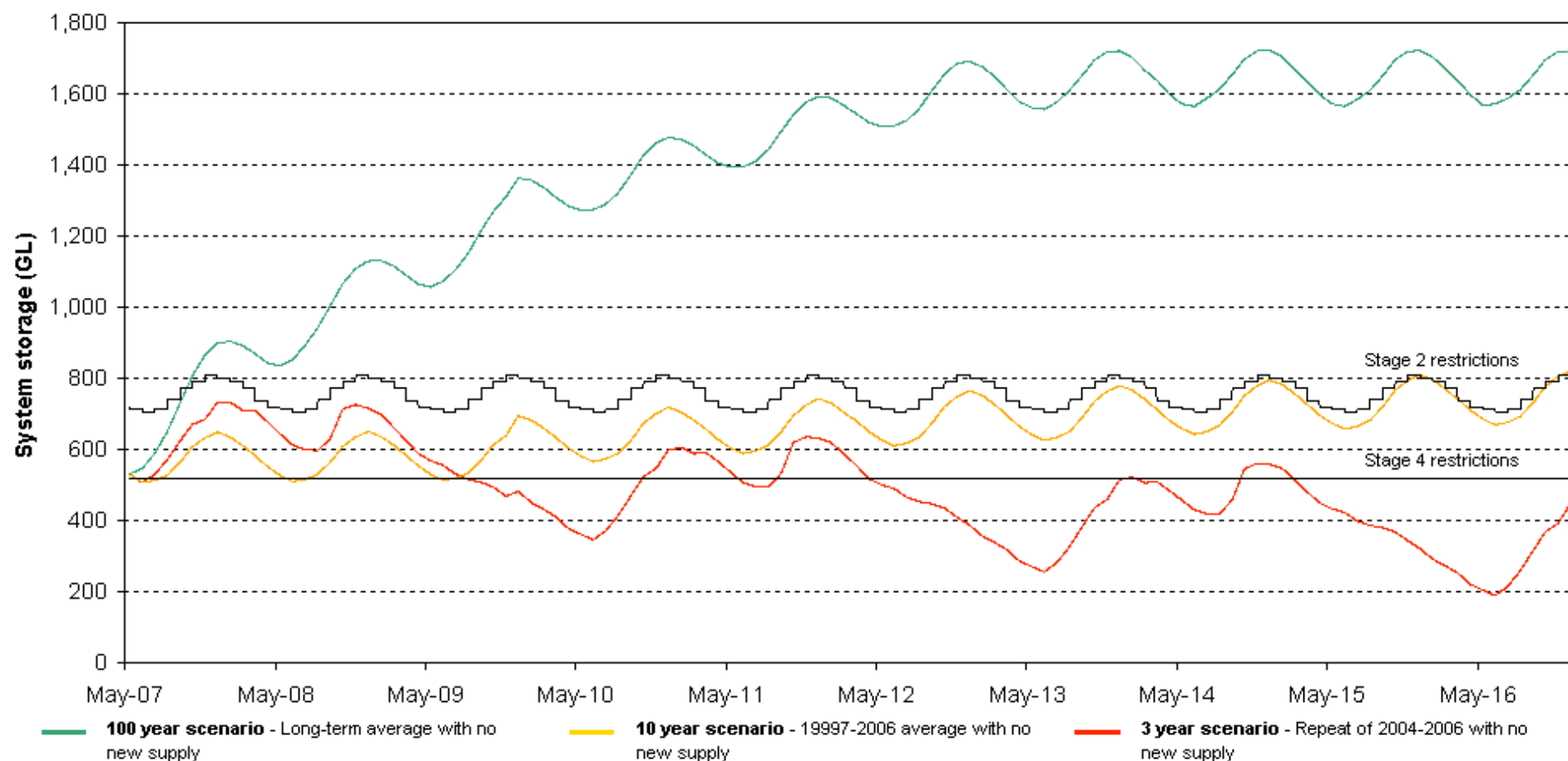
?

?

Cost

Forecast Melbourne storage levels 2007-2016 under three inflow scenarios

With no new supply

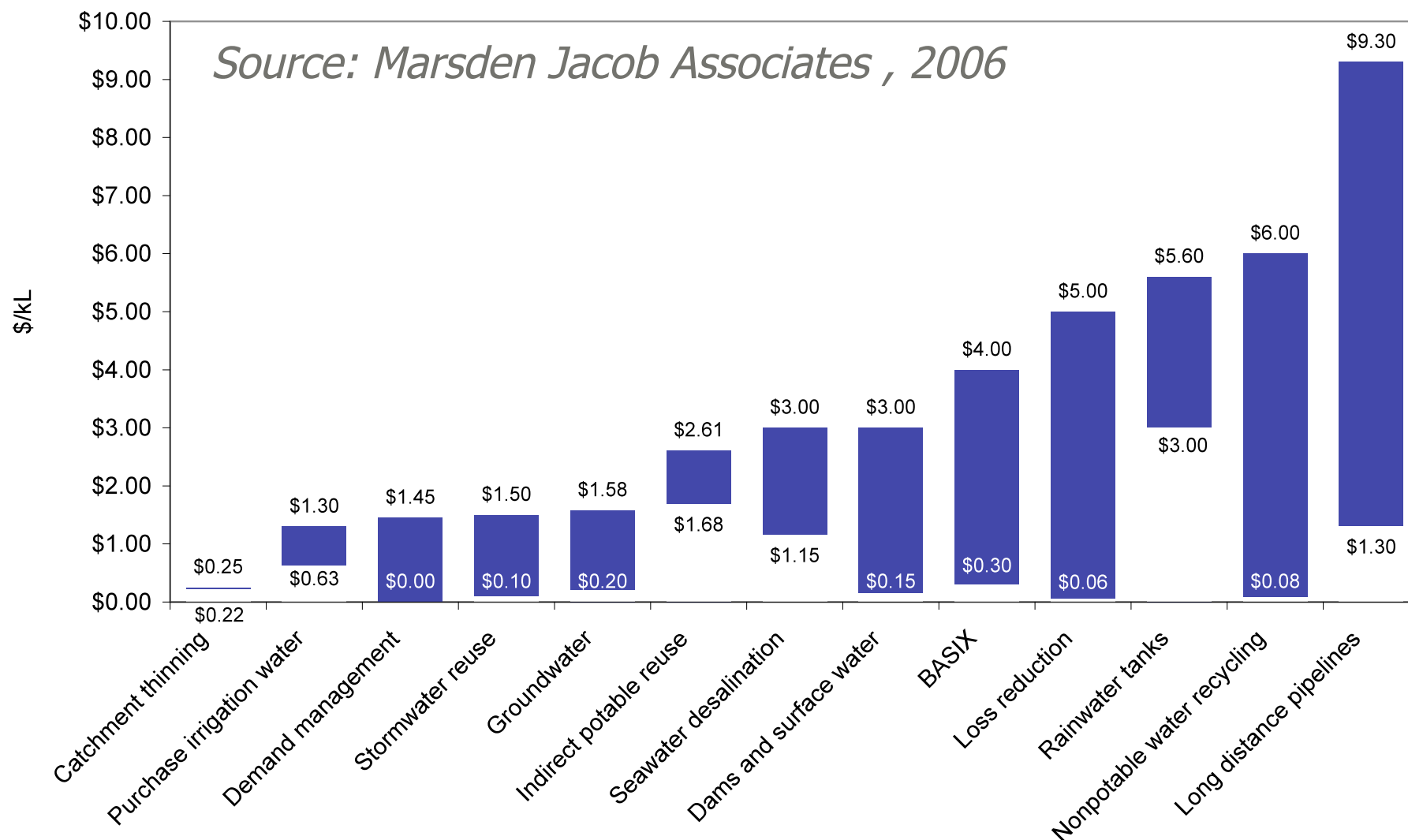




Australian Government

Bureau of Meteorology

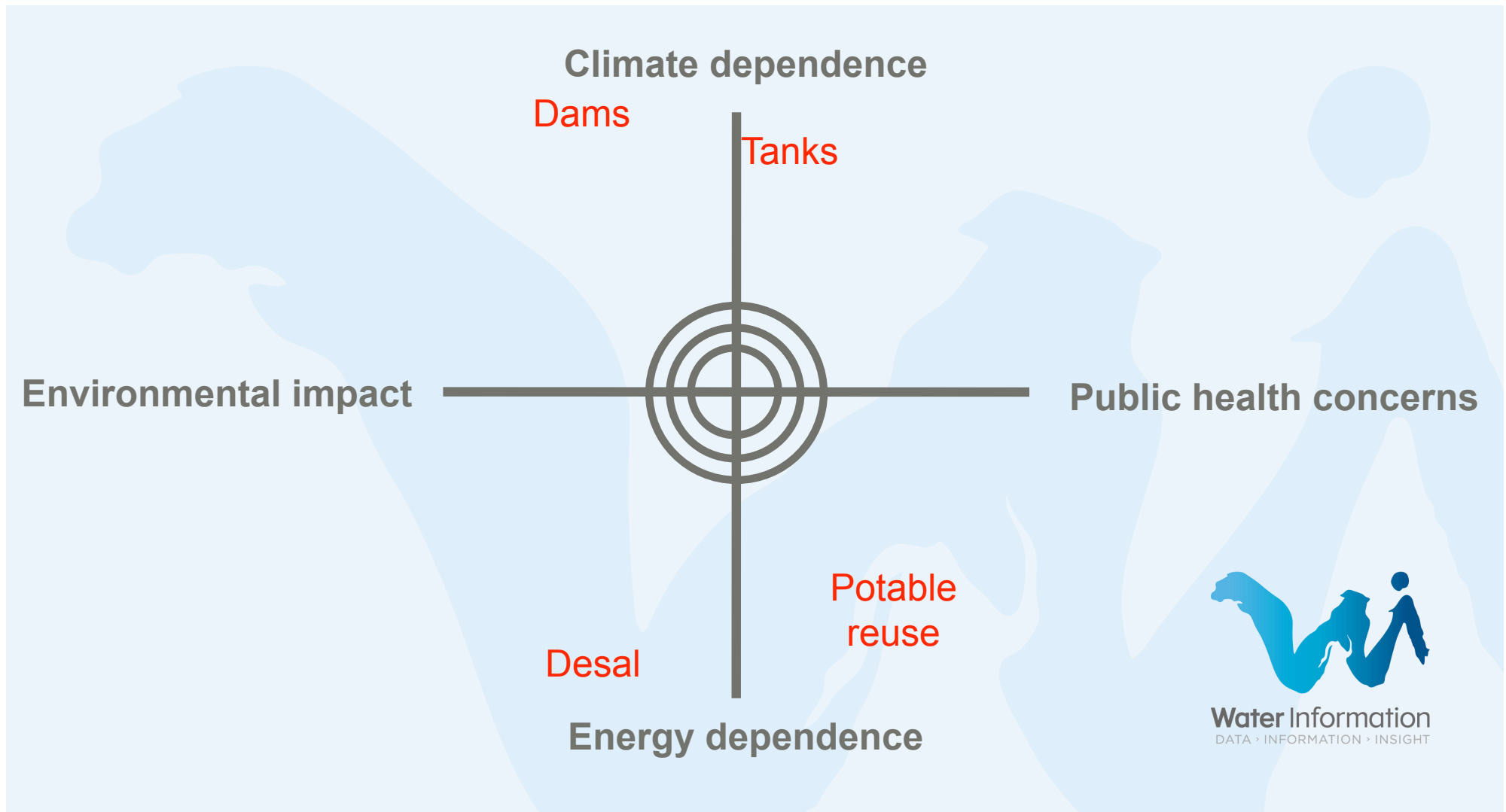
Many options





Australian Government
Bureau of Meteorology

Augmenting supply ... no silver bullets

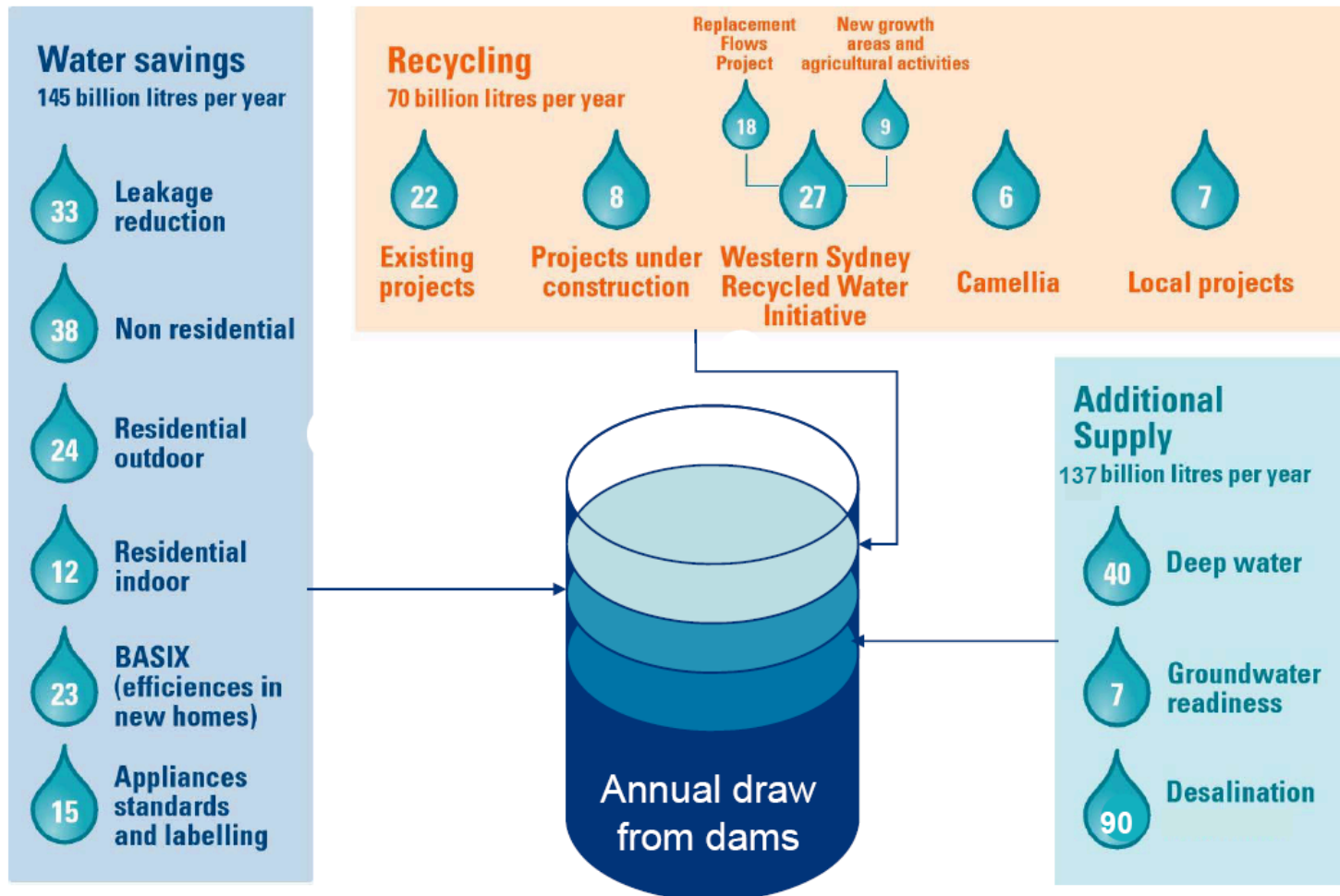




Australian Government
Bureau of Meteorology

Security through Diversity

eg. *Balancing supply & demand in Sydney*



Water Information
DATA > INFORMATION > INSIGHT



Australian Government
Bureau of Meteorology

Water information

- Water availability forecasts intelligence (weekly, seasonal, decadal) crucial for planning
- National Water Account will provide the ongoing supply-demand-storage balance sheet
- Water Resources Assessments will pin-point trouble areas and provide early warning
- See www.bom.gov.au/water



Water Information
DATA › INFORMATION › INSIGHT



Australian Government
Bureau of Meteorology



Water Information
DATA › INFORMATION › INSIGHT

Thank you.

Contact:

Dr Rob Vertessy

r.vertessy@bom.gov.au

02 6232 3501

0417 702 424