



Demand management: influence of new supply infrastructure and declining perceptions of scarcity

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4th National Water
Efficiency Conference
Melbourne 1-3 Mar 2011



Presentation Overview

Demand management after the rain / desal / pipeline...

- new challenges in a new context

Ballarat/Maryborough Case Study (Central High. Water)

- build on community engagement following restrictions
- suite of demand management options

Framing the future

- asking the right questions for sustainable outcomes

Headlines 2007



13 March, 2007 8:07PM AEDT

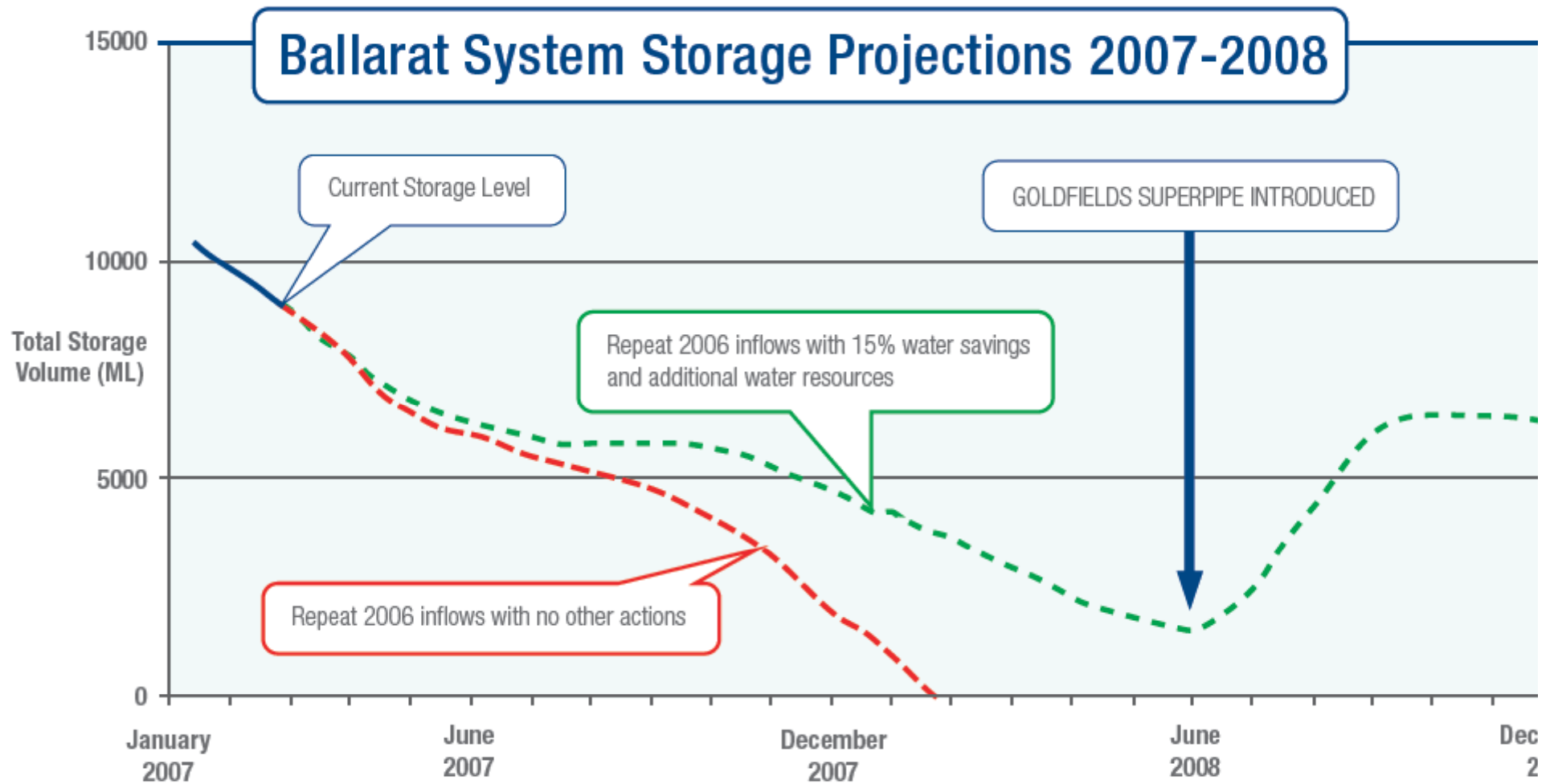
Thousands walk across dried Lake Wendouree

Thousands of people turn out for the chance to walk across Lake Wendouree.

It was billed as the 'opportunity of a lifetime' - the worst drought on record has rendered Ballarat's aquatic centrepiece Lake Wendouree into a wide brown expanse of mud and weeds, and over the Labour Day weekend the public was offered a chance to take a guided walk across the lakebed.



Ballarat Storage 2007-2008



Headlines 2008

Businesses wilt under heat of bans

Date: October 25 2008

Peter Ker

MELBOU

In recent y

But there's

Mr Rodger

The screenshot shows the top navigation bar of the Victorian Government website. It includes the title 'Our Water Our Future', the State Government of Victoria logo, and a search bar. Below the navigation bar is a main banner with a landscape image and the text 'Using & Saving Water'. A sidebar on the left lists various categories like 'Conservation', 'Home & Garden', and 'Water Restrictions'. The main content area features a large heading 'Save water. Target 155' and a sub-heading 'Save water. Target 155'. The text below explains that Target 155 was launched by the then Minister for Water, Tim Holding, on 24 November 2008. It aims to encourage Melbournians to limit their personal water consumption to under 155 litres per person per day. Two bullet points provide links for more information: 'indoors and outdoors' and 'rebates'. On the right side, there are social media icons and a 'Popular Resources' section with links to 'Target 155 booklet', 'Tracking Your Water Usage fact sheet', 'How To Read Your Meter fact sheet', and 'Ways To Save Indoors fact sheet'.

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Conservation
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Schools
Water Restrictions

Save water. Target 155

Save water. Target 155

As a result of ongoing drought, climate change and record low water storage levels, Target 155 was launched by the then Minister for Water, Tim Holding, on 24 November 2008.

Target 155 aims to encourage Melbournians to limit their personal water consumption to under 155 litres per person per day and is in place along with Stage 2 water restrictions.

- Find out more about saving water at home – [indoors and outdoors](#)
- Get help to save water through [rebates](#)

a- a+ [email icon] [print icon]

Popular Resources

- > Target 155 booklet
- > Tracking Your Water Usage fact sheet
- > How To Read Your Meter fact sheet
- > Ways To Save Indoors fact sheet

Headlines 2009

Melbourne water storage at an all-time low

Stephen McMahon and Karen Collier | [Herald Sun](#) | May 23, 2009 12:00AM |  12 comments

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 Share

WATER may need to be diverted from the Yarra and Thomson rivers to prop up Melbourne's dams, which are at record lows.

The State Government revealed it was considering prolonging the suspension of vital environmental flows into the stressed Yarra and Thomson rivers.

"While we have to see what inflows eventuate over the coming months it is important that we understand the impact of suspending some environmental flows should one of these options be needed," Water Minister Tim Holding said.

City water storages yesterday hit 26.7 per cent - a record low of just over 473 billion litres.

The weather bureau says there is only a 40-45 per cent chance of above average rainfall before the end of July.

Headlines 2010

STOCK & LAND



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Melbourne will not need piped water

PETER KER

04 Jan, 2010 08:33 AM

MELBOURNE may never need water from the controversial north-south pipeline, with a stocktake showing existing storages and minimal rainfall should easily supply the city beyond the start of the desalination plant next year.

The \$750 million pipeline was built primarily to ensure Melbourne did not run out of water before the introduction of desalination in December 2011, but the latest water statistics show the 75 billion litres due through the pipe this year are surplus to requirements.



Headlines 2011

The Courier the**courier**.com.au

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Lake Wendouree full again . . .

PATRICK NOLAN
08 Feb, 2011 01:04 AM

WHEN you think of Lake Wendouree being full again
leeches

Swimming prospects at Lake Wendouree

DELLARAM JAMALI
29 Jan, 2011 12:07 AM

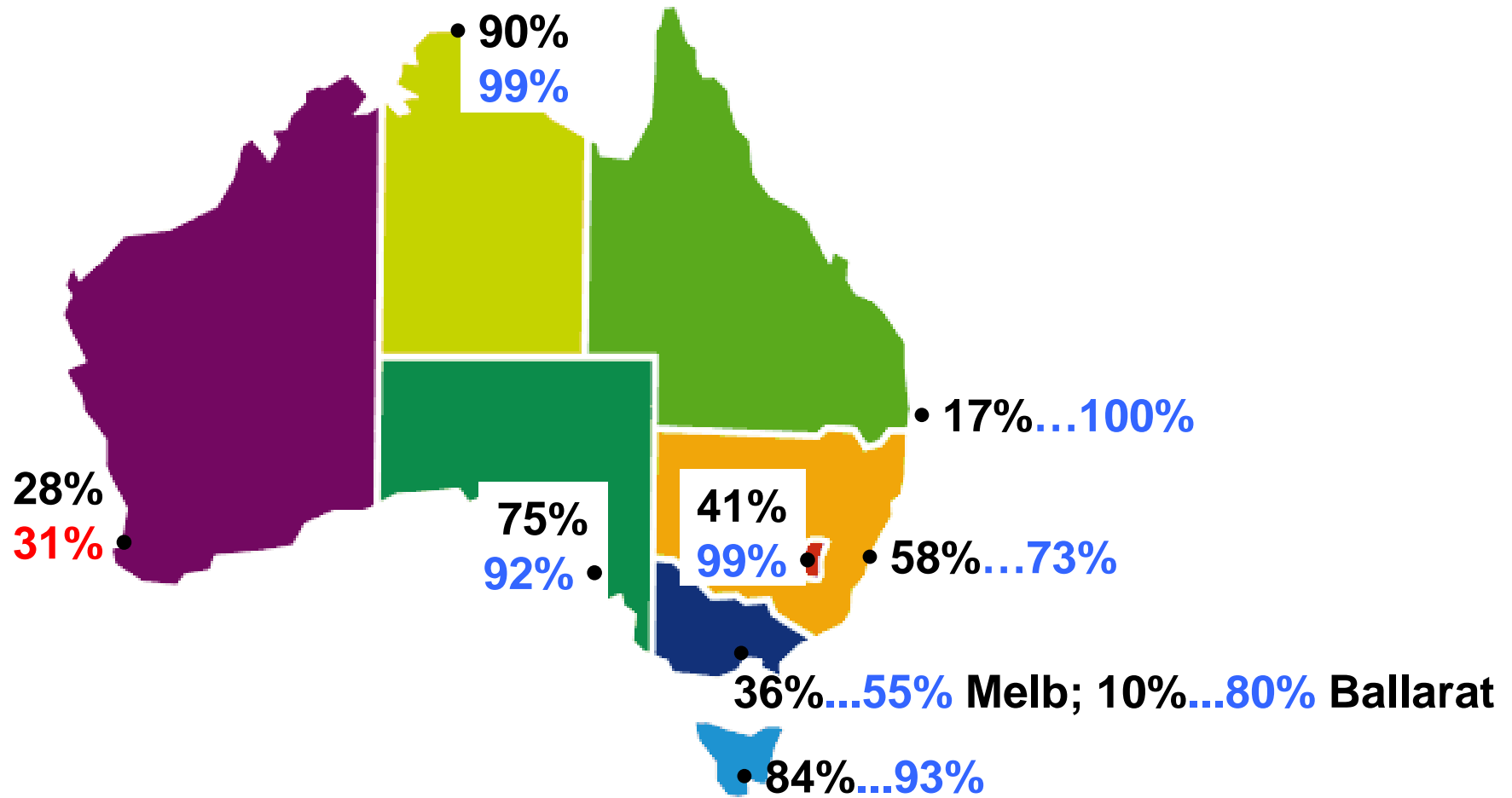
THE RETURN of swimming events to Lake Wendouree
economic benefits to the Ballarat region.



Ballarat Water Storage: Jul 1996 - Feb 2011

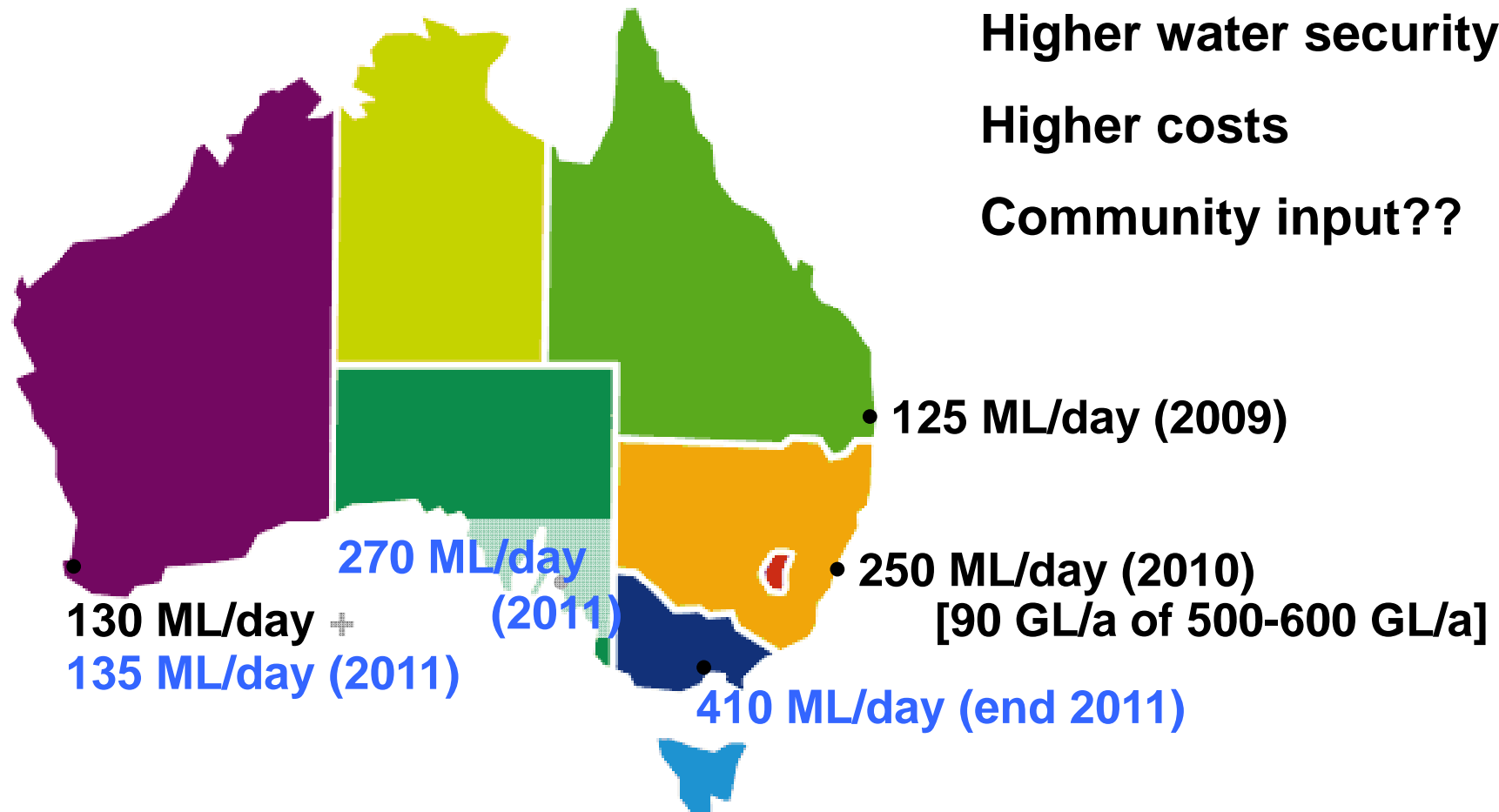


Dam levels 2007 to 2011

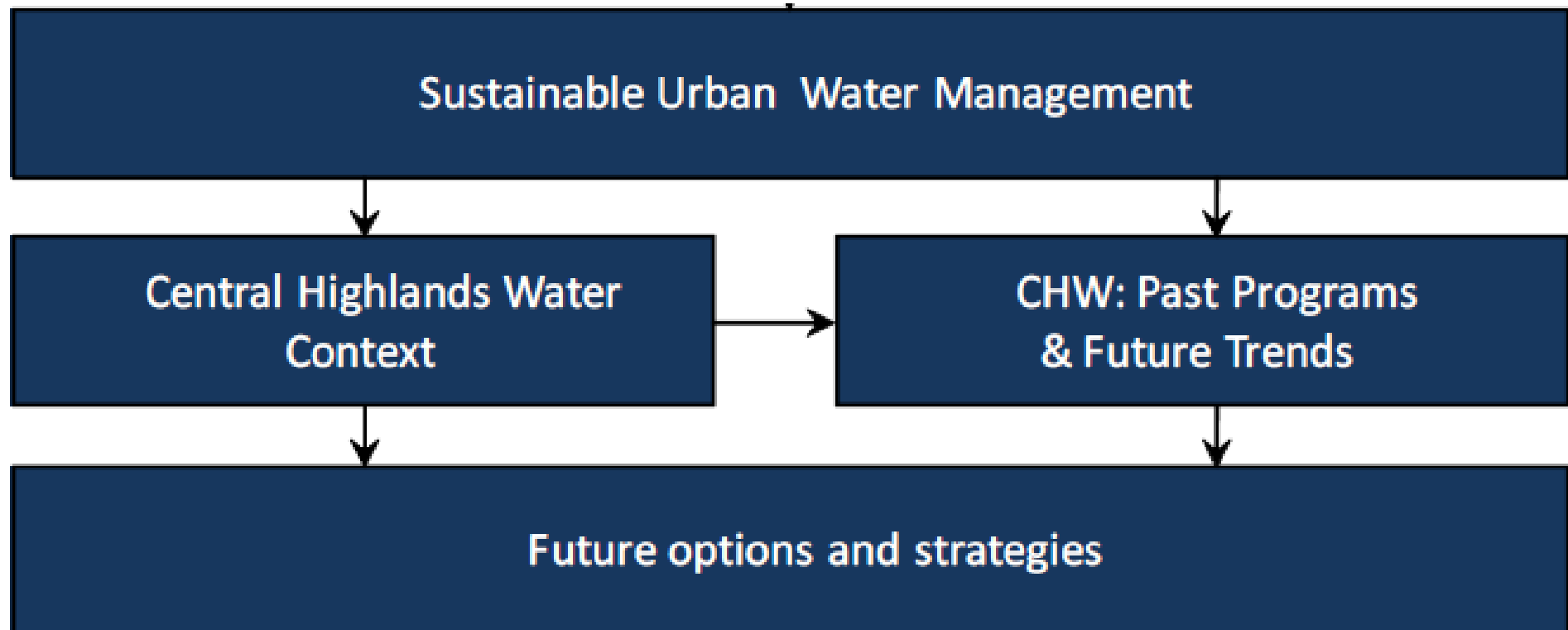


Dam levels as at 30/7/07 and 21/2/11

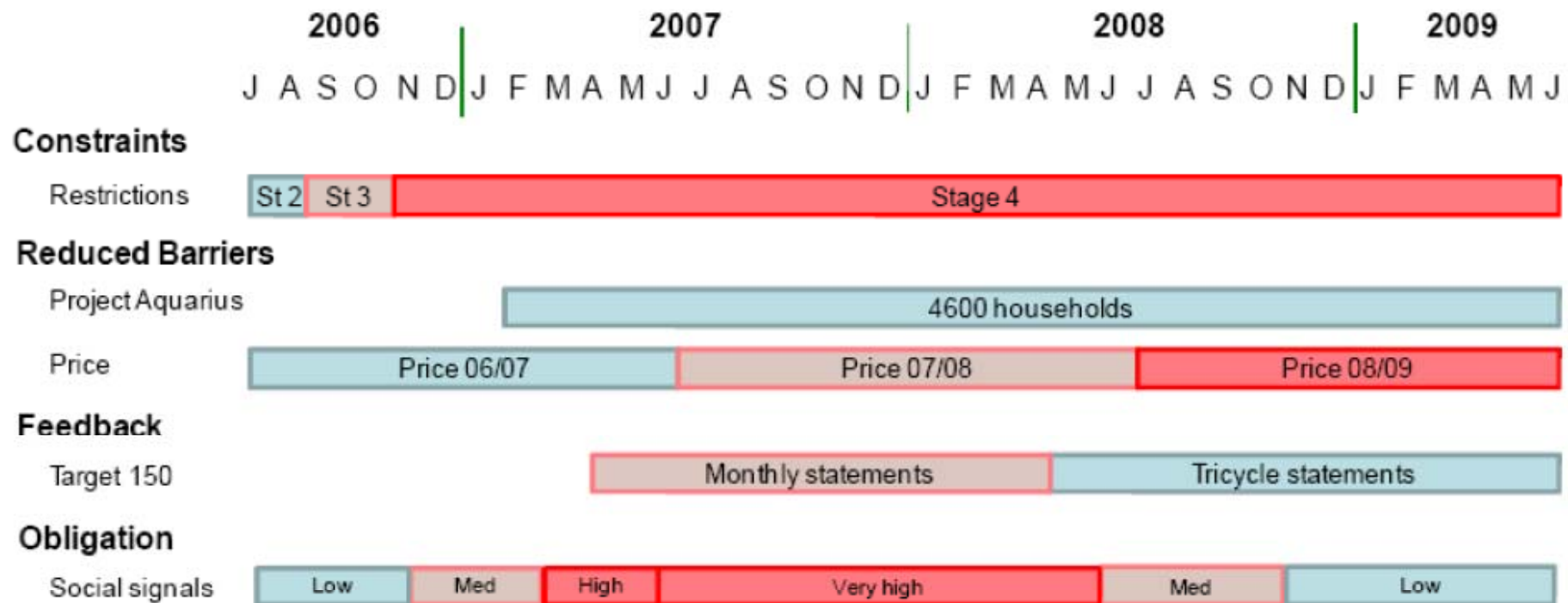
Desalination projects



Ballarat case study

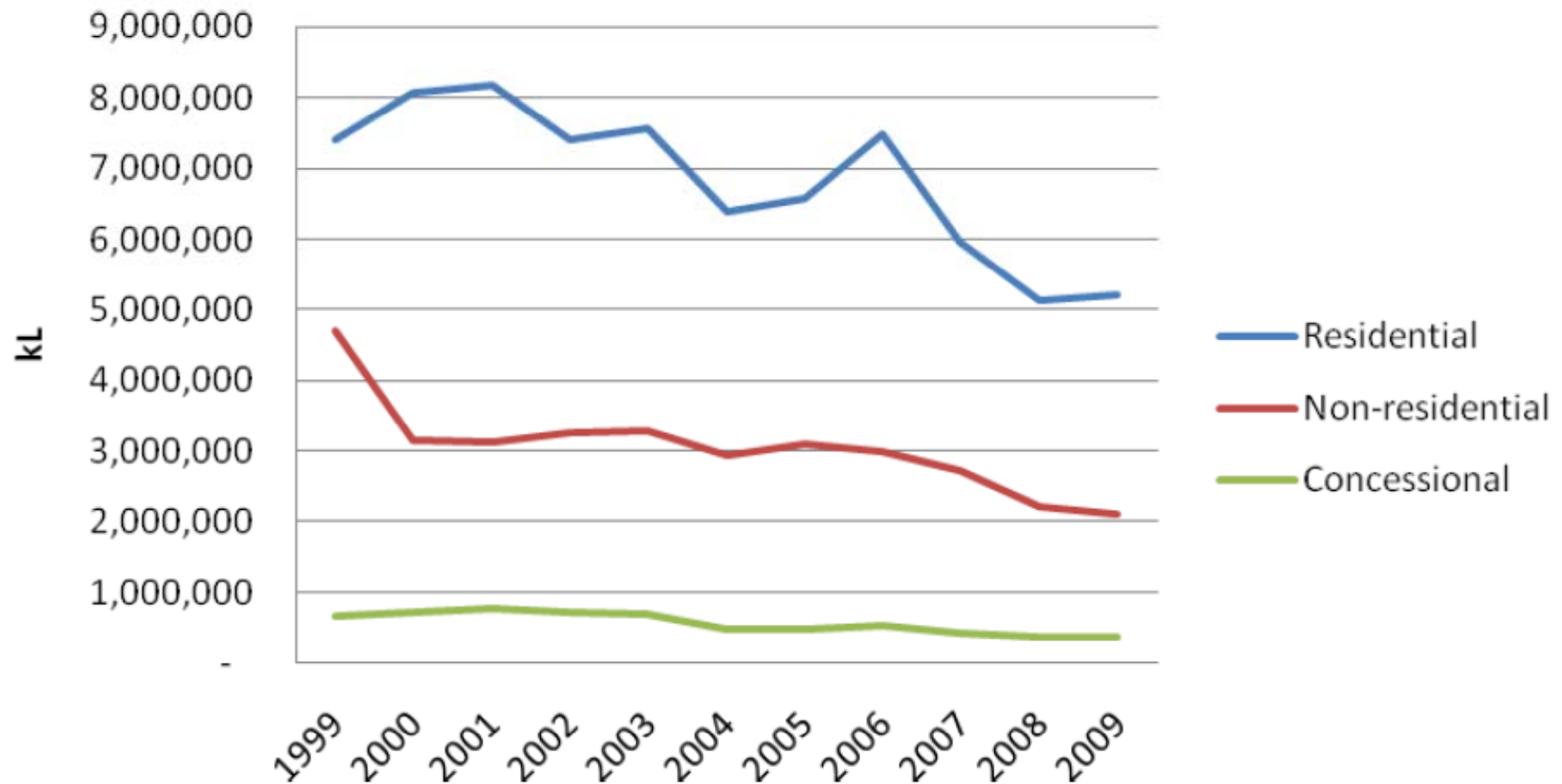


Restrictions



(Perugini D, Perugini M, (2009), *Behaviour Modelling: Analysis of behaviour change programs and influences in Ballarat*, Central Highlands Water)

Annual demand - Ballarat



Range of successful DM in place

Program	06/07	07/08	08/09	Total implemented (includes some pre-06 and post-09)	Target
Residential					786 ML[†]
Behavioural				>2000 ML	
- Restrictions	Stages 2, 3, 4	Stage 4	Stage 4	How much behaviour change will remain post-restrictions is uncertain.	
- Target-150					
- Top 100 Residential					
DSE showerhead exchange (residential)	20ML	6ML	4ML	40ML	6,300* (residential and non res)
	1,900 exchanges	540 exchanges	350 exchanges	3600 exchanges	
Project Aquarius 2 Bonus Rebate Program				Qty	
- Basket offer				158	
- Dual flush toilet				15	
- Shower head				6	
- Grey water system				1	
- Tank 1 rebate				22	
- Tank 2 rebate				29	

Range of successful DM in place

Program	06/07	07/08	08/09	Total implemented (includes some pre-06 and post-09)	Target
Residential					786 ML[†]
Project Aquarius (1, +) retrofits	65 ML 1,700 retrofits	54 ML 1,440 retrofits	51 ML 1,360 retrofits	170 ML 4,500 retrofits	90 ML
Project Aquarius 2 Toilet Retrofit Program	-	-	-	7 ML 200 toilets	7 ML 200 toilets
Non-residential	305 ML	316 ML	100 ML	800 ML	1,714[†] ML
including DSE showerhead exchange (accommodation in 08/09)			1000 swaps		
Leak reduction				1,000 ML	
TOTAL				2017^{**} ML	2,500[†] ML

*No data on water savings from rebates

[†]CRSWS 2015 estimated target; note that the actual target is calculated as a 25% reduction on the per capita usage from the average 1990s usage and will depend on the population served in 2015.

**Does not include water saved from behaviour change or Aquarius 2 Bonus rebate programs

Option ranking criteria

Score	0	1	2	3
Water Saving Potential	Negligible	Low 1-5ML/yr	Moderate 5-25ML/yr	High >25ML/yr
Greenhouse and energy savings	Negligible	Low	Medium (from water pumping)	High (Pumping plus e.g. hot water savings)
Community Reach/Impact	Negligible	Sector-specific (<20%)	Moderate (20-50%)	High (>50%)
Cost-effectiveness*	Moderate-High >\$3000/ML	Low-Moderate \$1000-\$3000/ML	Very-Low <\$1000/ML	No cost
Health risk*	Low-moderate	Low	Negligible	None

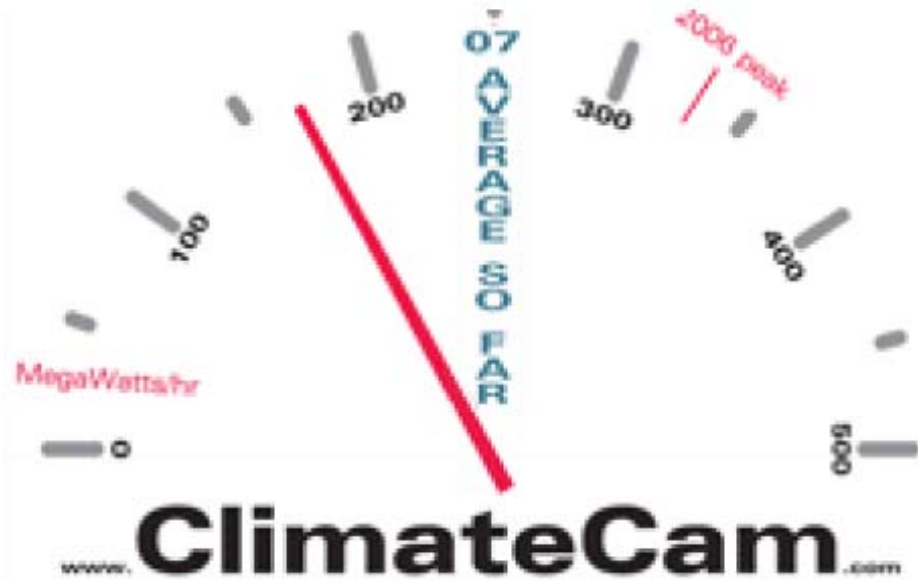
**N.B. trend for 0=Nil to 3=high is reversed for cost-effectiveness & Health Risk (to maintain the higher the number the better)*

Option ranking criteria

Option	Water Saving Potential	Unit Cost (\$/kL)	Energy & GHG savings	Community Reach	Health Risk
Ballarat water-clock and website	3	2	2	3	3
Outdoor garden program – home visits	3	1	2	2	3
Outdoor program – workshops/nurseries	2	2	2	2	3
Evaporative air conditioners	2	2	1	1	1
Accommodation: water wise information	2	2	3	2	3
Secondary schools smart meters	2	1	2	1	3
Primary schools: water saving clubs	2	3	2	2	3
Rain tank users guide and servicing	2	1	2	1	3
Additional residential retrofits – potential to target public housing and renters	3	1	3	2	3
Toilet retrofits; potential to target accommodation	3	1	2	2	2
Washing machine rebate	3	1	3	2	3
Urine diverting toilets	3	1	2	1	1
Smart metering; residential	3	1	3	2	3
Smart metering; non-residential	3	2	3	2	3
Smart growth; new developments	3	1	3	2	1

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Newcastle City Council

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Primary schools: water saving clubs	2	3	2	2	3

The Institute for Sustainable Futures would like to thank the following for their support:



Team Performance Statistics for 2010

The results show the hard work of your teams in reducing electricity use over the competition period. This is a fantastic result. The table below shows the breakdown across the teams.

	Ferncourt	Wilkins	Dulwich Hill
Total Points	7.7	7.6	7.0
Efficiency Points ²	5.53	5.59	5.58
Savings Points ³	2.15	2.06	1.38
Average daily savings ² (kWh)	2.15	2.06	1.38
Average % reduction ⁴	11	10	8
Total electricity saved ⁵ (kWh)	18925	18910	16600
Total CO ₂ -e emissions avoided (kg CO ₂ -e)	16840	16830	14770
Total \$ in electricity bills saved (\$)	\$2,840	\$2,840	\$2,490

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Ballarat Gardens Come Alive



Over \$250 of free products and services*

At sign up:

- Rain Gauge 1000
- Watering tags pack
- 5 potted colour



Choice (of either):

- Digger's Club pack
- Gardening Australia subscription

Welcome pack:

- Packet of Yates seeds

Seasonal rewards:

- Vouchers
 - Spring
 - Summer
 - Autumn
 - Winter
- Gardening Information

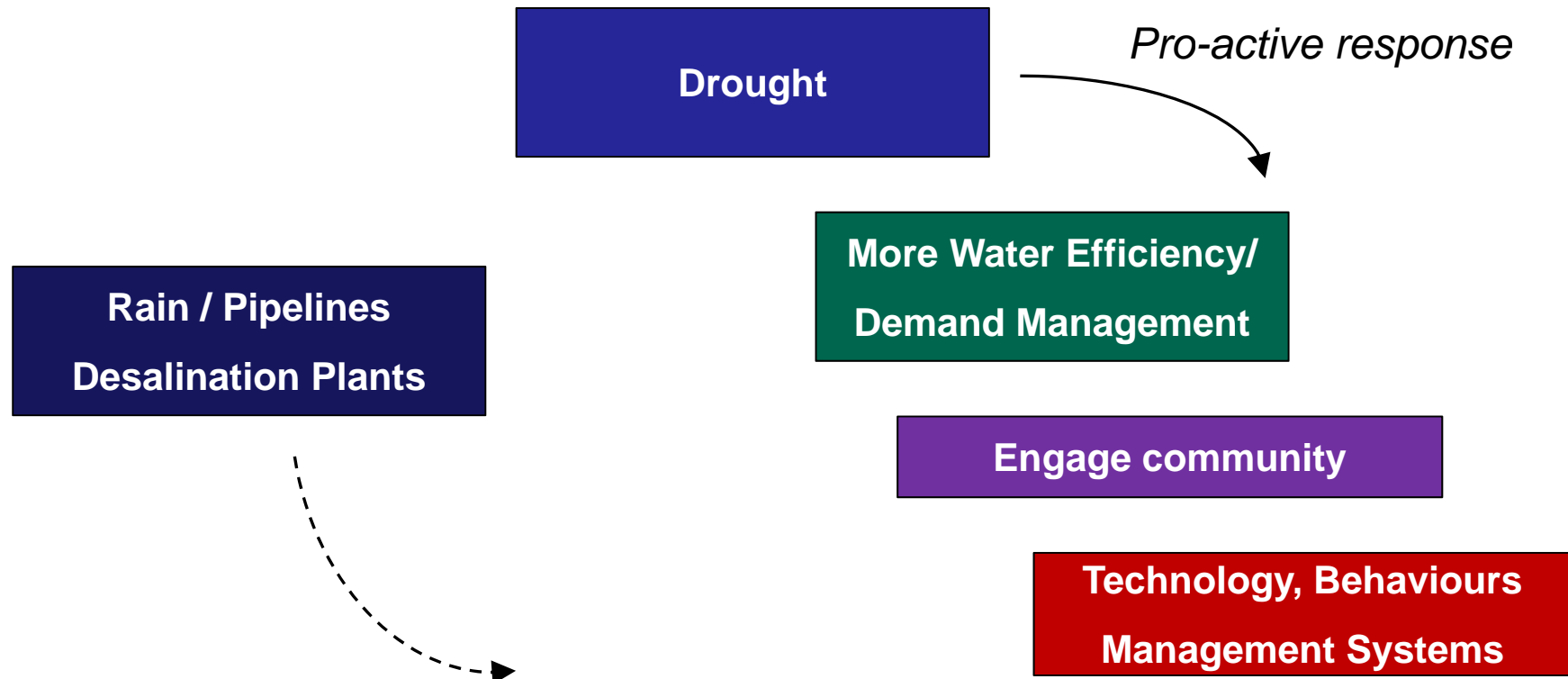
it's your choice

wellbeing, lifestyle, fun, relaxation

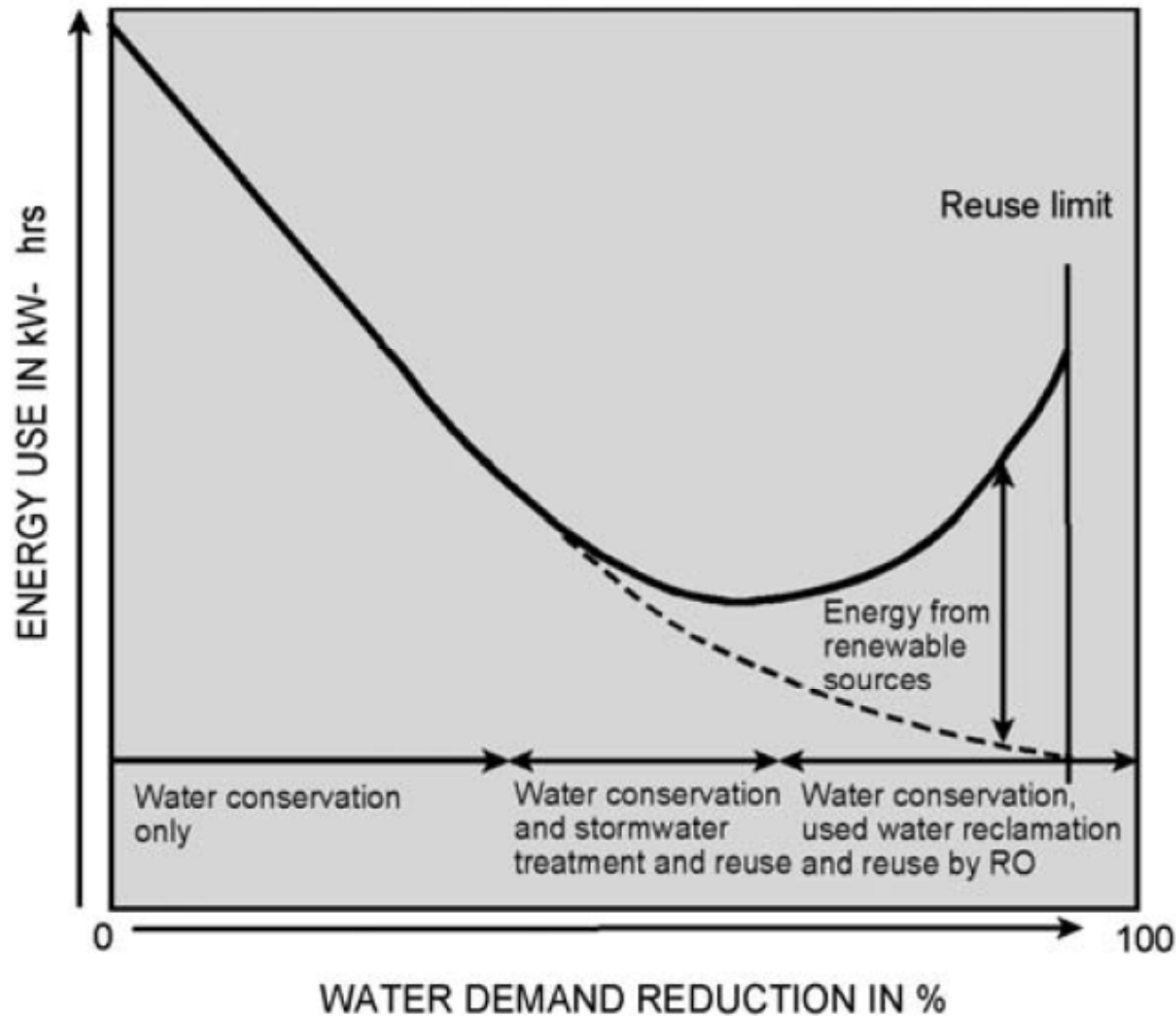
Ensuring a **sustainable** water future

For more information visit **Formosa Gardens Nursery** or **Dahlsens Ballarat** or call 5320 3100 • www.chw.net.au

Sustainable cycles?



The water-energy nexus



V. Novotny

DEMAND MANAGEMENT

No demand management..OR..too much/wrong type

Higher revenue to pay
for infrastructure

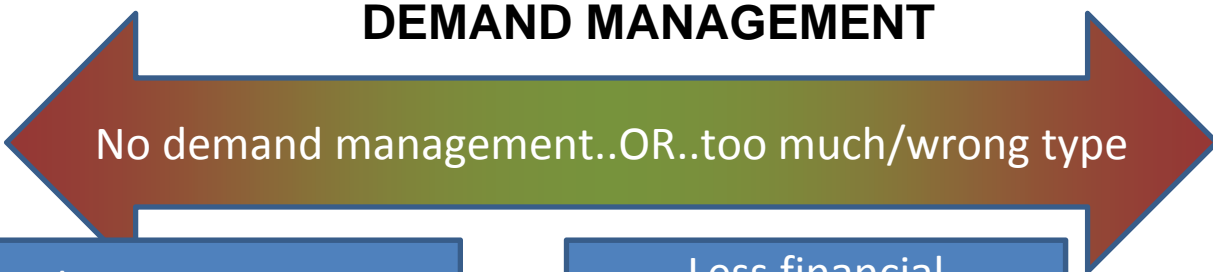
Less financial
sustainability

More fat in system for
next drought

Demand
hardening

Social / Env Impacts

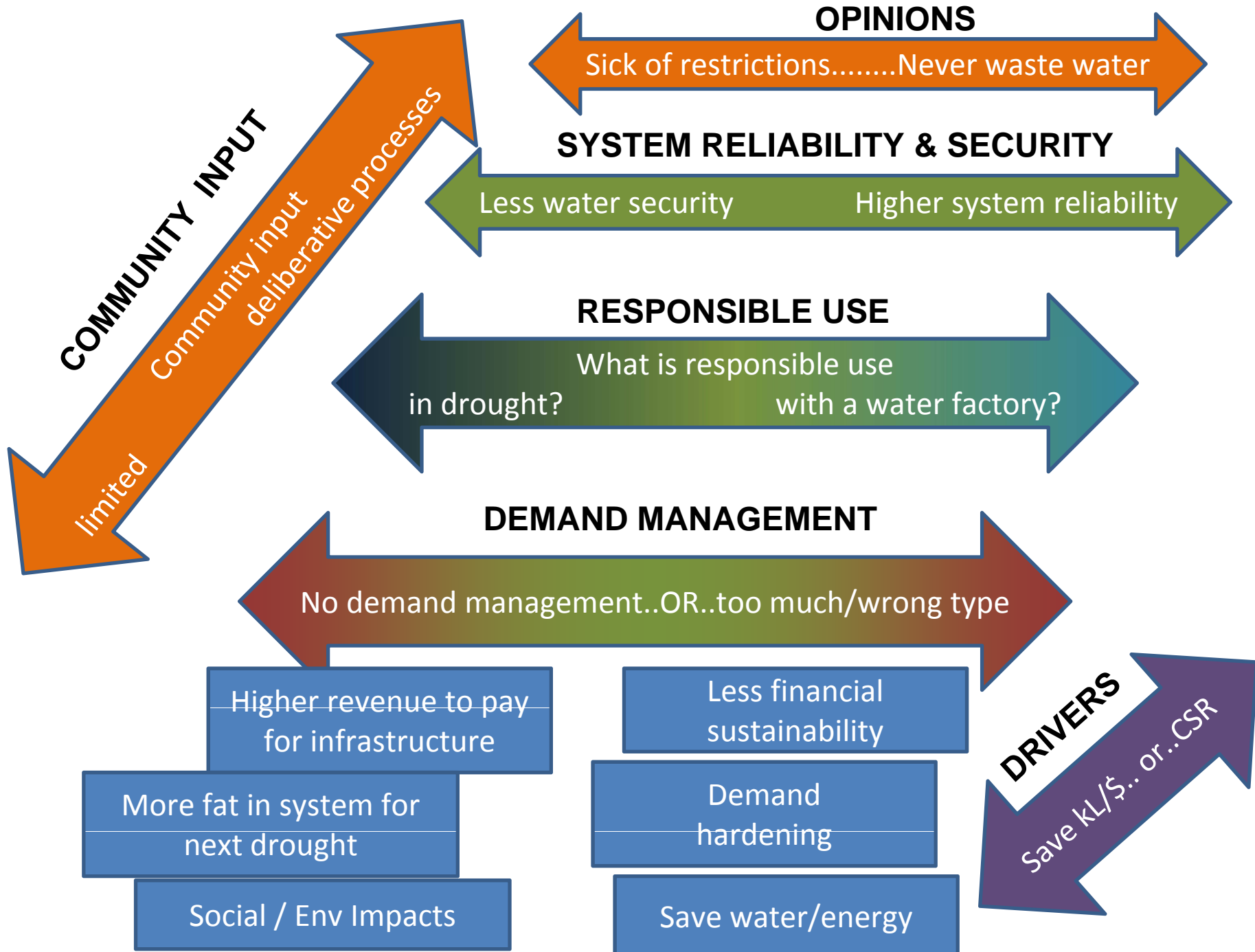
Save water/energy



- Higher revenue to pay for infrastructure
- More fat in system for next drought
- Social / Env Impacts

- Less financial sustainability
- Demand hardening
- Save water/energy





Framing a future for water efficiency

- > **2007-2011 saw radical change in context**
 - bust to boom in supply; boom to in demand management
- > **Ballarat demonstrates success of selection & implementation of new options post-scarcity**
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Framing a future for water efficiency

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 - Save energy, have a shorter shower
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How much efficiency? Which type? Why? Why now?

Contact details and further information

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