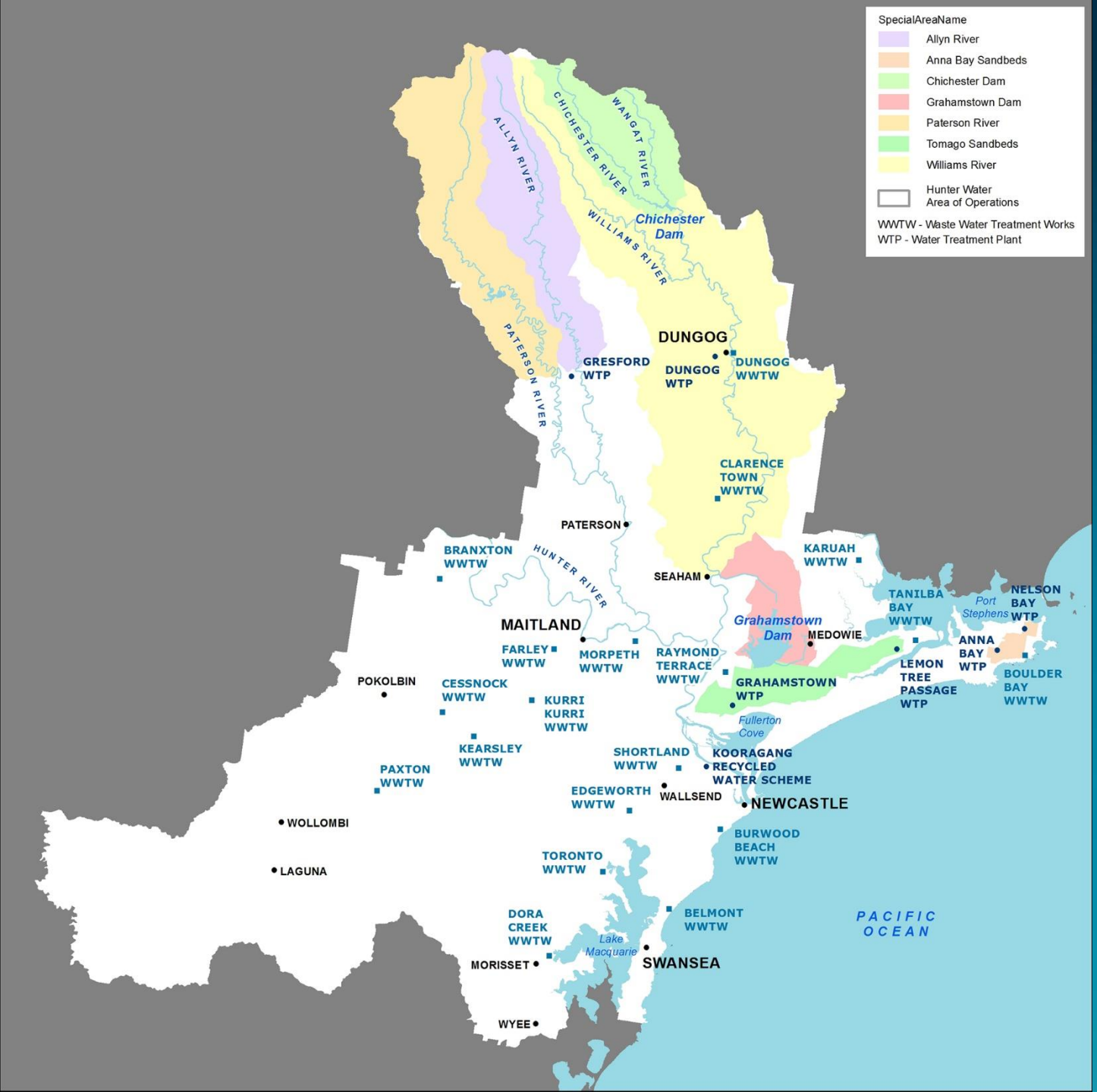
Love Water: building curiosity, resilience and sustainability in Greater Newcastle, Australia

Jim Bentley


Australia
Newcastle



Hunter Water Corporation:

- State-Owned Corporation
- 600,000 customers
- 6,671 km^2 area of operations
- 5,000+ km of water main
- Staff 456 FTE (including in-house field maintenance crew)
- AU$2.68B asset base
- AU$336m annual revenue

Newcastle:

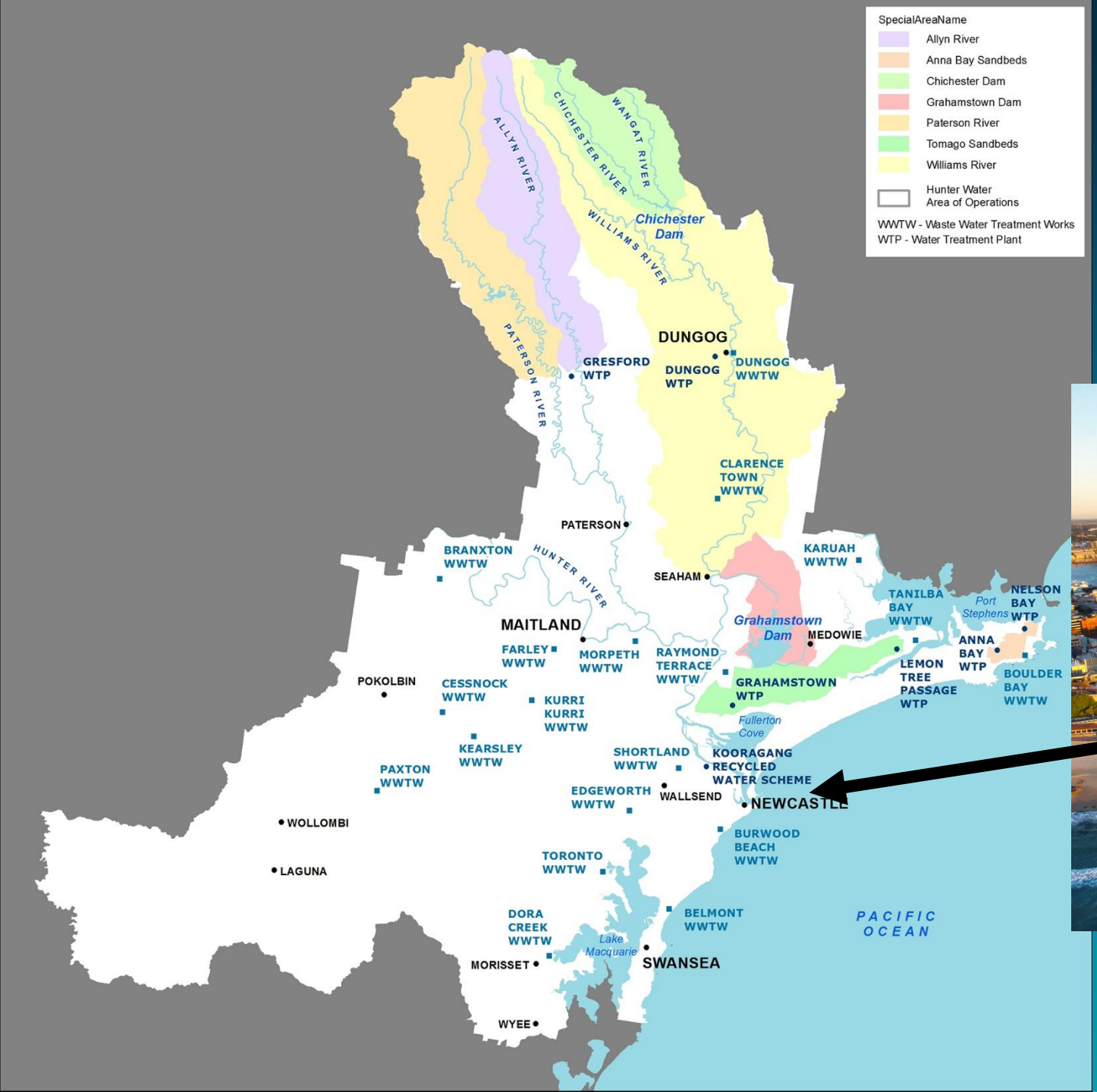
Regional Capital

Tier 2 City – 2nd largest in State of NSW after Sydney

Metro population ~300,000;

broader metropolitan region ~500,000

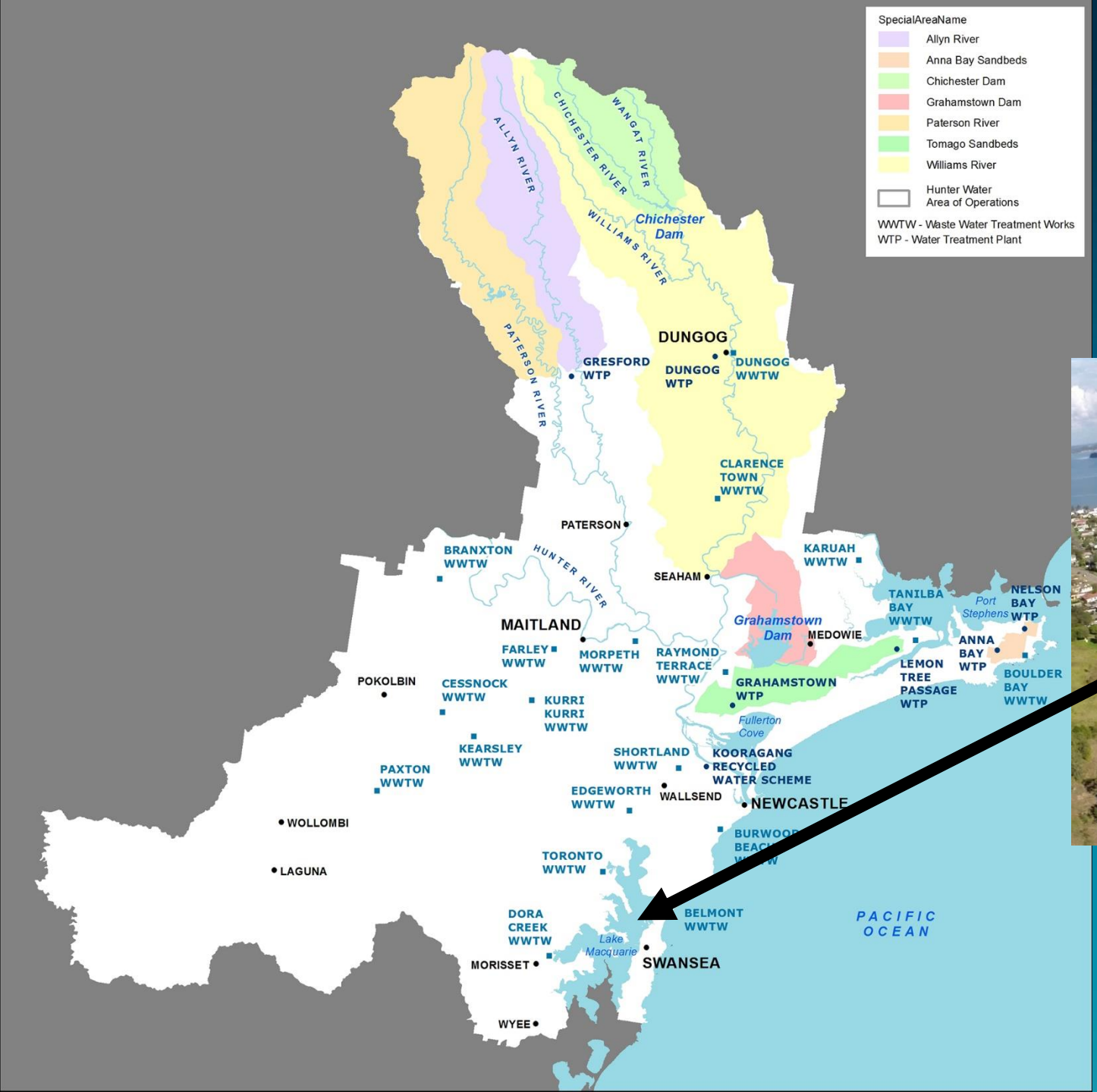
Serviced based economy: health and education

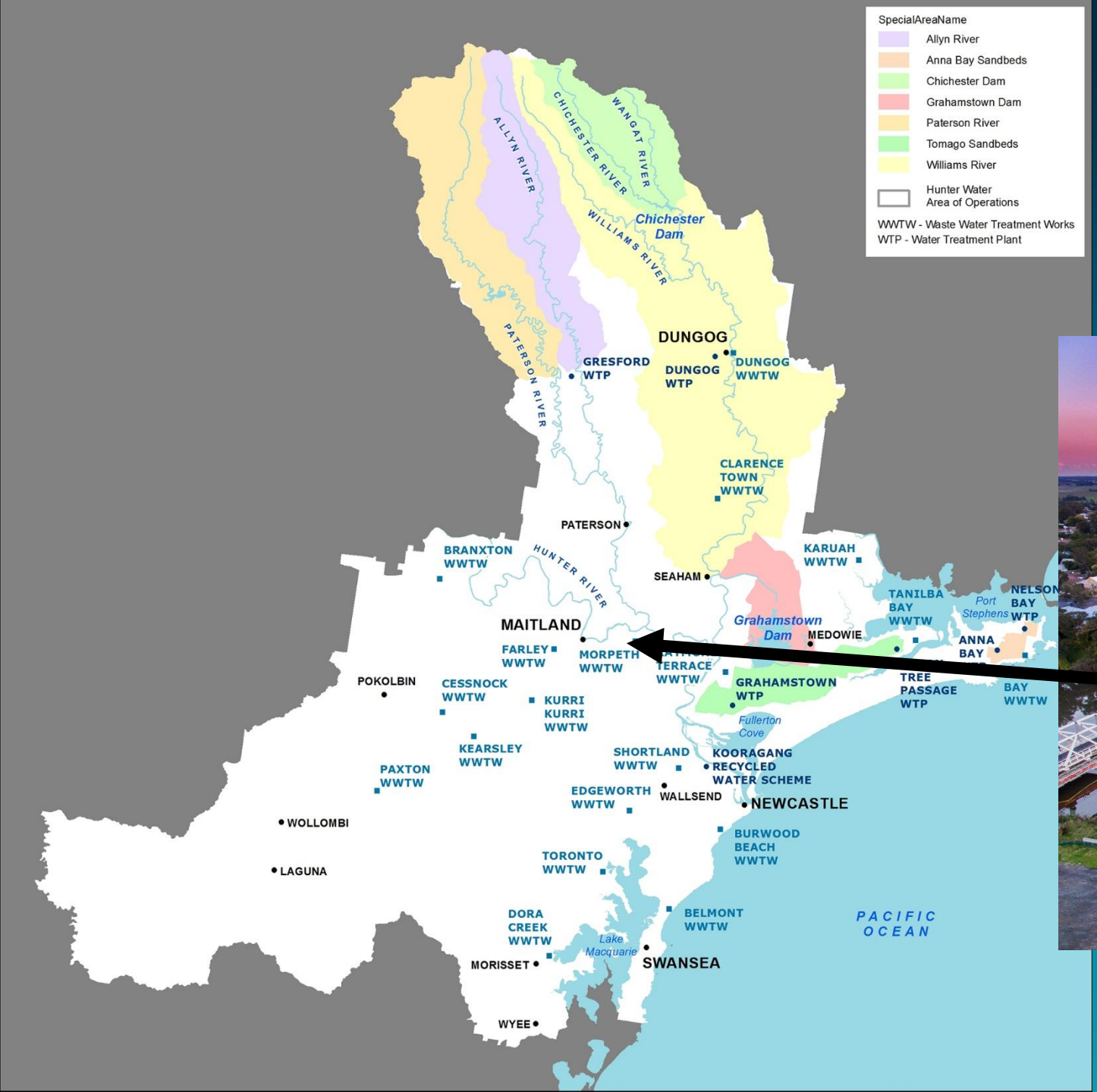


Lake Macquarie:

Suburban area with approximately 200,000 residents

Largest saltwater lake in Southern Hemisphere
(twice the size of Sydney Harbour)





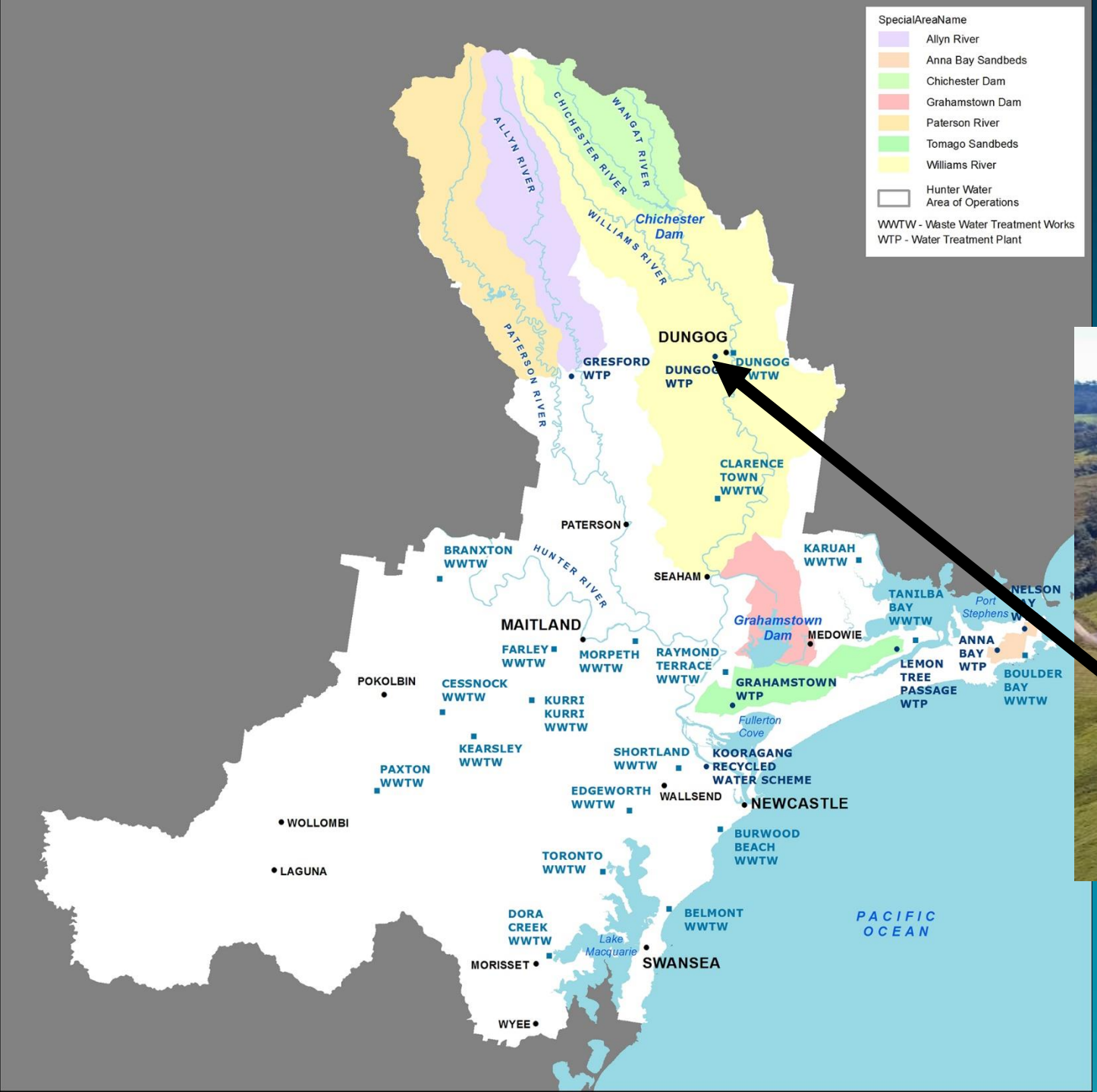
Maitland:

Large lot rural, lifestyle area

Historic townships located along the Hunter River

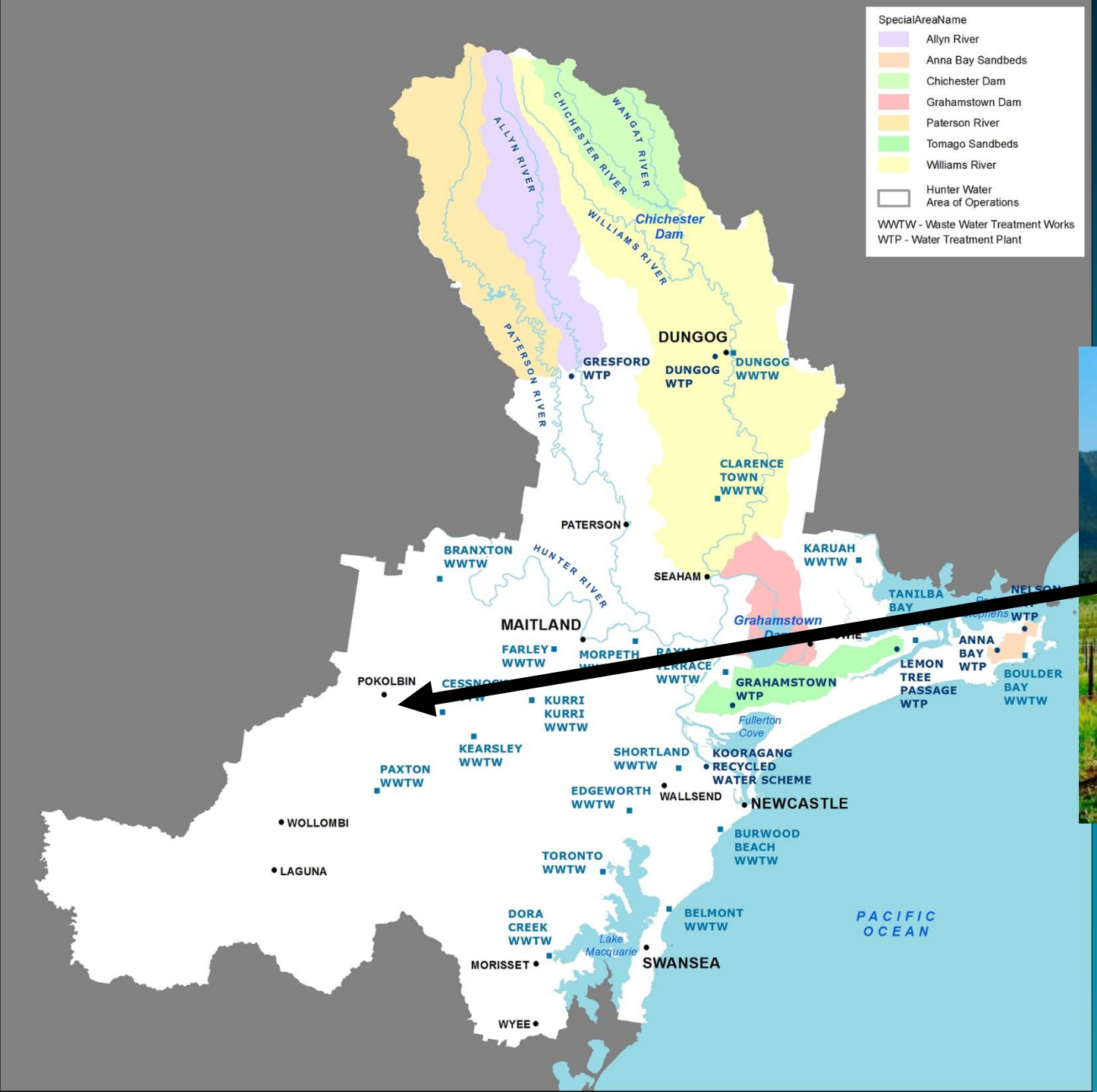
Dungog:

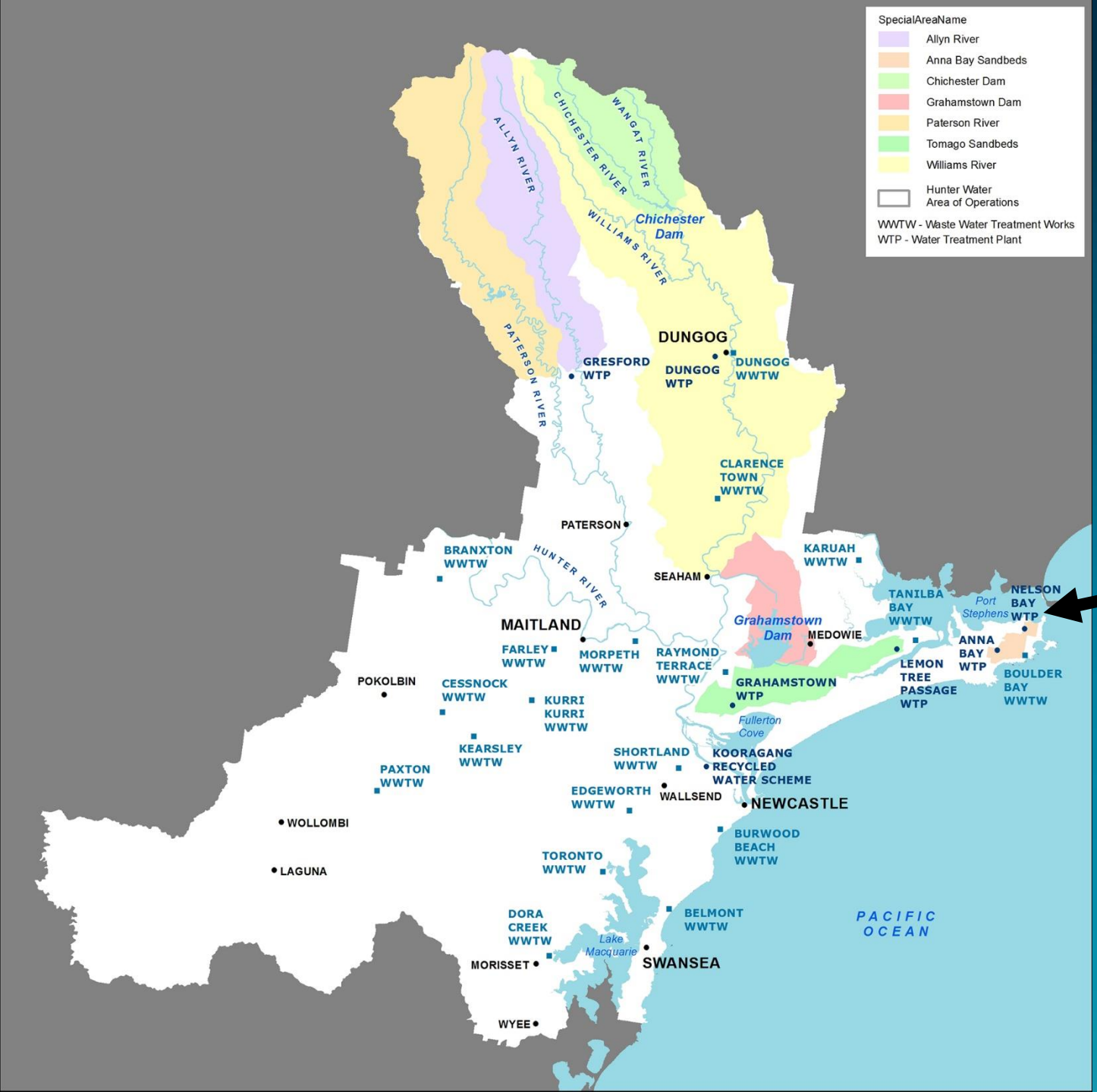
Agricultural land, location of Tillegra Dam proposal



Cessnock:

Wine Country (and coal mining and thoroughbred industries)





Port Stephens:

Rural and lifestyle area

Dedicated marine park and reserve

Customer segmentation: Hunter Water's customers

Connected provincials
9%
1.2 times NSW average
Aged 35-44, below average incomes (<$41,000), small homes, tenants or mortgaged, families and single parents with children, high water usage

Multicultural infusion
2%
78% below NSW average
Aged 35-45, below average incomes (<$80,000), high water usage, families with young children

Suburban workers
23%
2.3 times NSW average
Aged 45-54, average incomes ($65,000 - $80,000), average water usage, families with young children

Resilient battlers
35%
Aged 55-64, below average incomes ($20,800-$41,600), property owners, careful water users

Affluent families
8%
2.9% below NSW average
Aged 35-44, high incomes (>$104,000), high water usage

[CATEGORY NAME]
[PERCENTAGE]
90% below NSW average
Aged 25-39, and 55+
High incomes ($104,000-$156,000), apartment and townhouses, low water usage

Brand new lifers
8%
2.3 times greater than NSW average
Aged 35-44, high incomes ($104,000-$156,000), large homes (4+ rooms), average water usage

Affluent retirees
11%
1.9 times greater than NSW average
Aged 55-64, high incomes (>$104,000), established couples, low water usage

Vision for Greater Newcastle:

"To build the Hunter as the leading regional economy in Australia, with a vibrant metropolitan city at the heart, a biodiversity rich natural environment, thriving communities, and greater housing choice and jobs."

Hunter Water's 2017+3 Strategy

Vision:

To be a valued partner in delivering the aspirations for our region.

Purpose:

To enable the sustainable growth of the Lower Hunter and enhance liveability through the provision of affordable, high quality services.

To be a thought leader in developing a sustainable and resilient water and wastewater future

To enable good development

To provide great services to our customers, consumers and communities

To realise the benefits that being a digital utility can provide

To lead the water industry in efficiency and productivity

To be a great employer


Maintain prices in line with inflation
Aspirational Goals
Full support from customers and community
Add 10 years to decision making for source augmentation
Carbon neutral by 2030

Hunter Water 2017 Employee Engagement Survey

report: Overall Report

start: 29 May 2017
close: 18 Jun 2017
responses: 366 Complete

voice project
improving organisations by giving people a voice
www.voiceproject.com

top 5 questions % favourable

		2017 % Fav	2016 % Diff	Ind % Diff
Values & Purpose	I understand the overall purpose of Hunter Water	**96%**	+6%	
Values & Purpose	I believe in the services provided by Hunter Water	**96%**	+4%	+23%
Safety	Keeping high levels of health and safety is a priority of Hunter Water	**94%**	+1%	+18%
Teamwork	I have good working relationships with my co-workers	**93%**	-2%	+7%
Safety	Employees are aware of their work health and safety responsibilities	**92%**	+2%	+10%

top 5 questions compared to previous survey

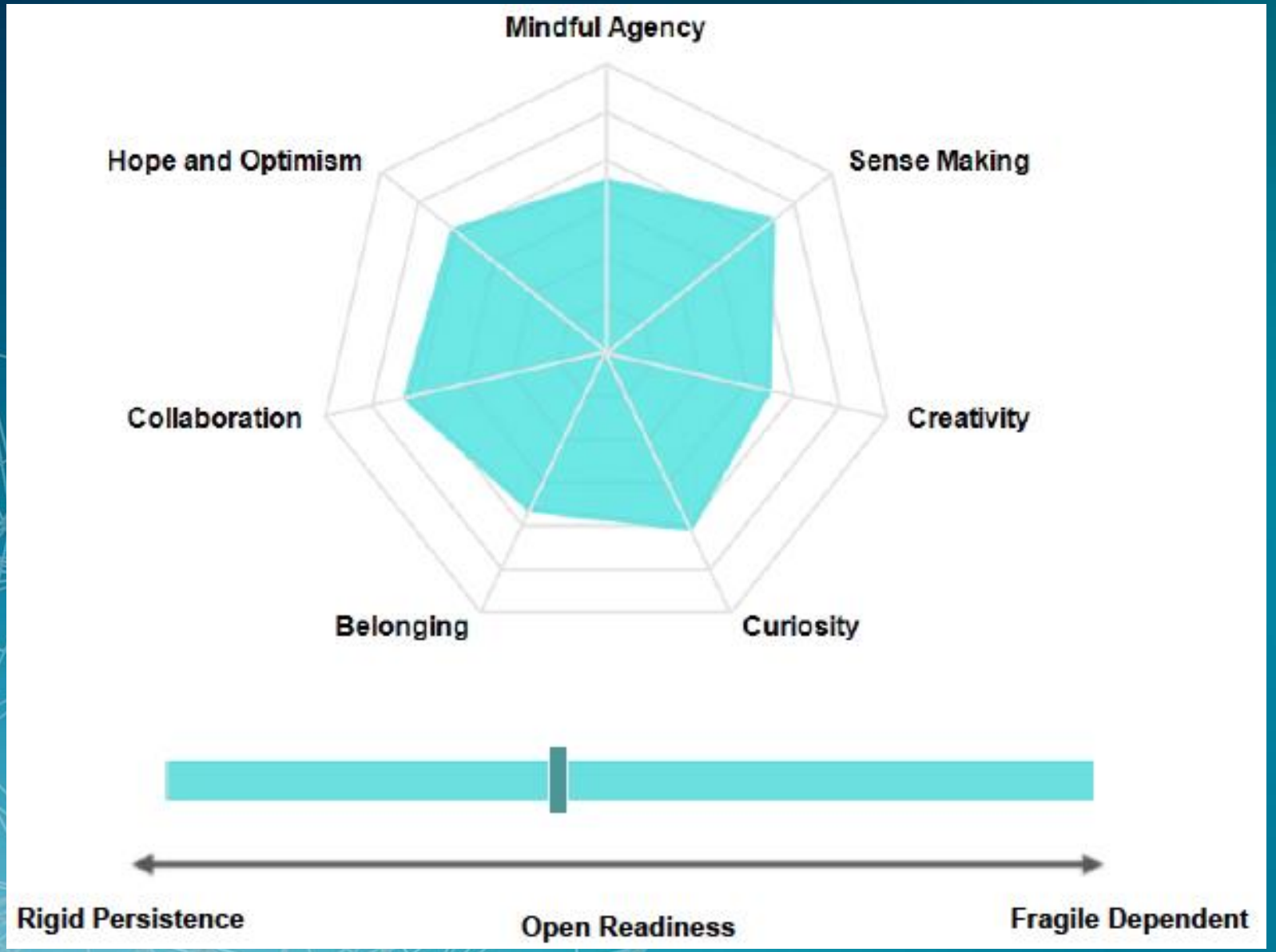
		2017 % Fav	2016 % Diff	Ind % Diff
Organisation Direction	I am aware of the vision the EMT has for the future of Hunter Water	78%	**+38%**	+32%
Senior Leadership	Senior management have communicated a clear direction for the future for Hunter Water	68%	**+34%**	
Organisation Direction	I am aware of the overall strategy the EMT has for Hunter Water	71%	**+30%**	+27%
Change & Innovation	The way Hunter Water is managed has improved over the last year	63%	**+23%**	+23%
Organisation Objectives	Hunter Water is making the necessary improvements to meet our future challenges	69%	**+15%**	

bottom 5 questions % favourable

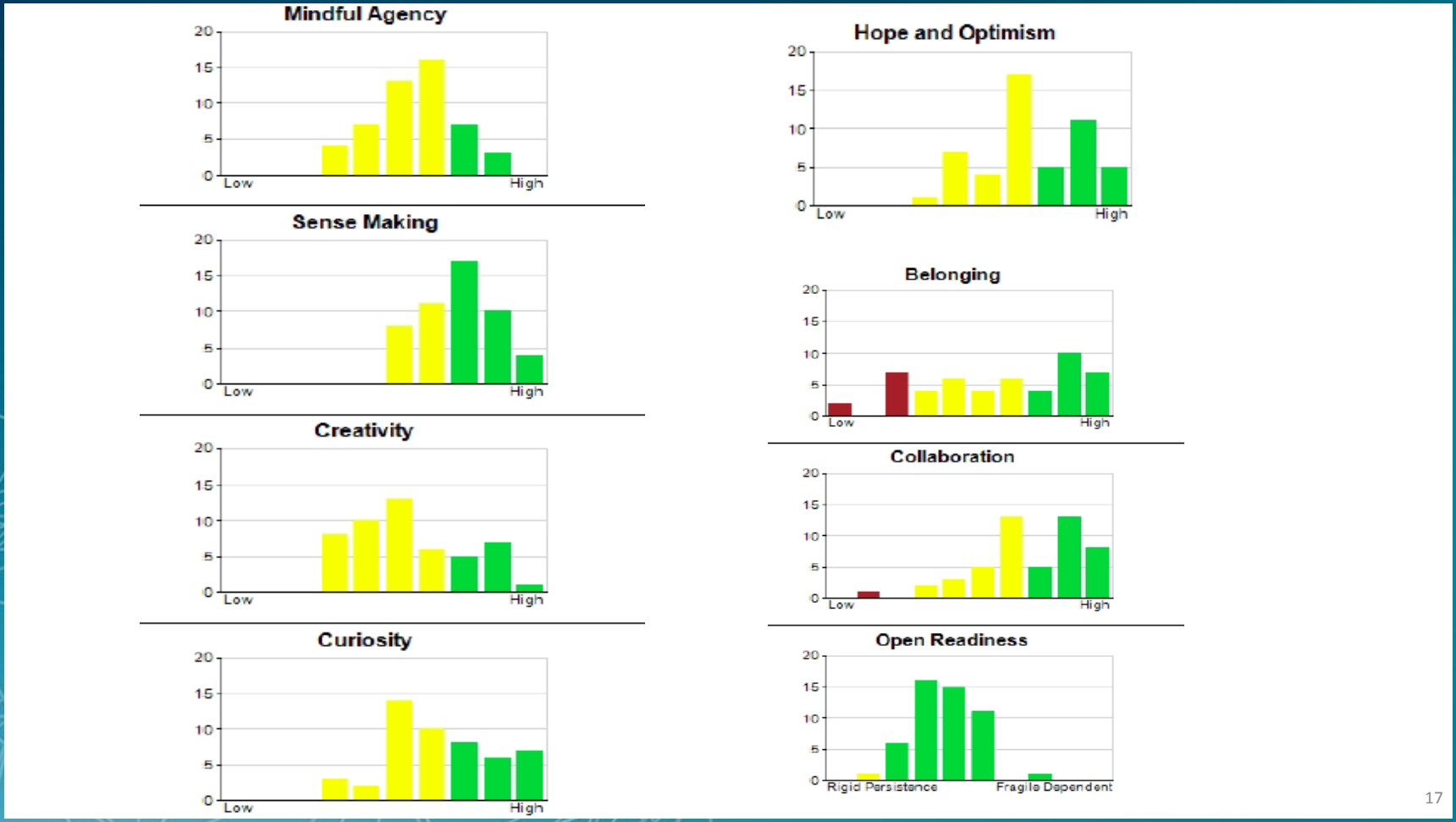
		2017 % Fav	2016 % Diff	Ind % Diff
Technology	Hunter Water makes good use of technology	**23%**	-16%	-28%
Technology	The technology used at Hunter Water is kept up-to-date	**26%**	-17%	-28%
Cross-Unit Collaboration	There is good communication across all sections of Hunter Water	**28%**	-3%	+1%
Processes	Our internal processes enable a productive work environment	**30%**	-7%	
Change & Innovation	Change is handled well at Hunter Water	**32%**	+8%	-2%

CLARA Learning Organisation Tool

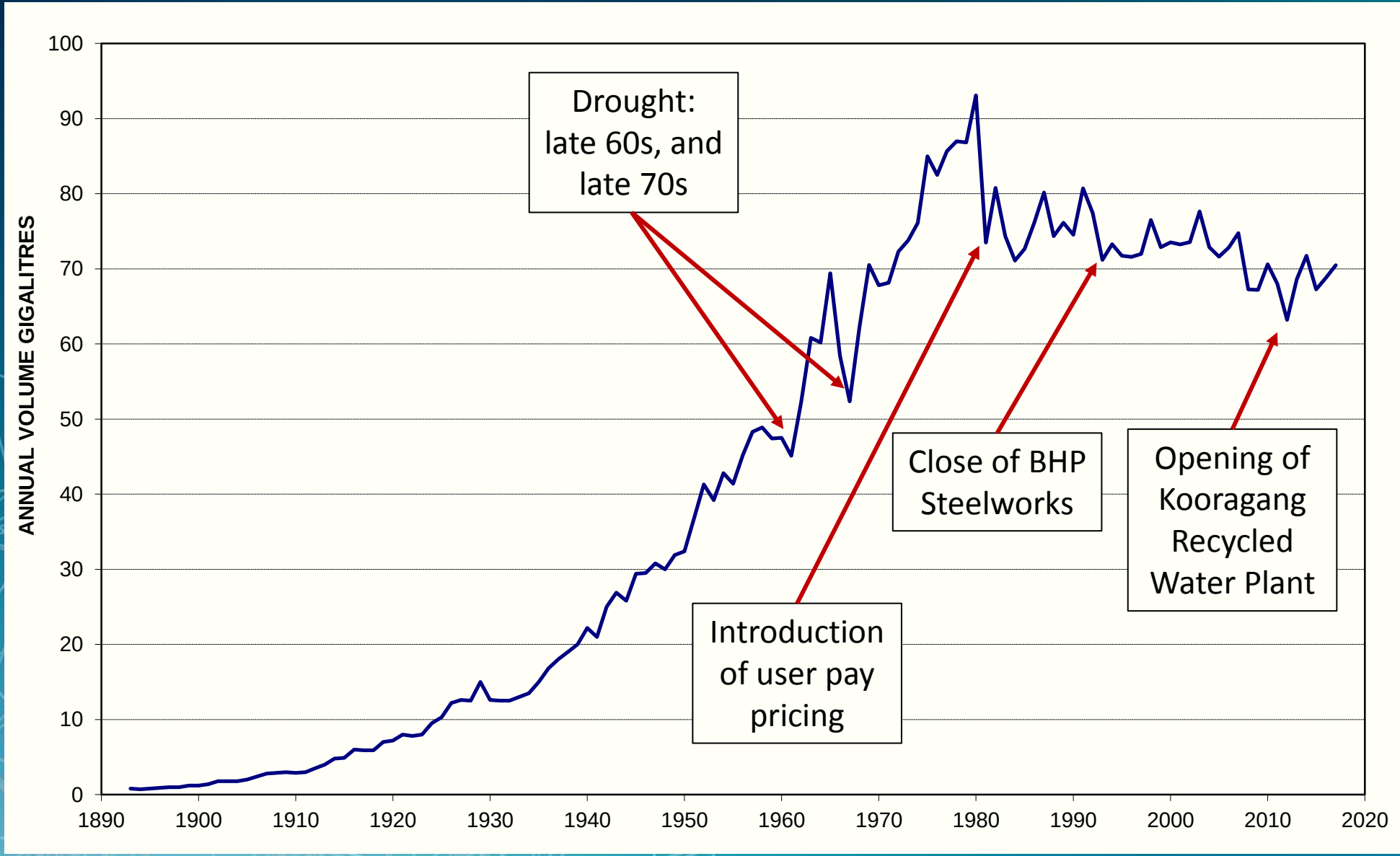
Hunter Water CLARA Results



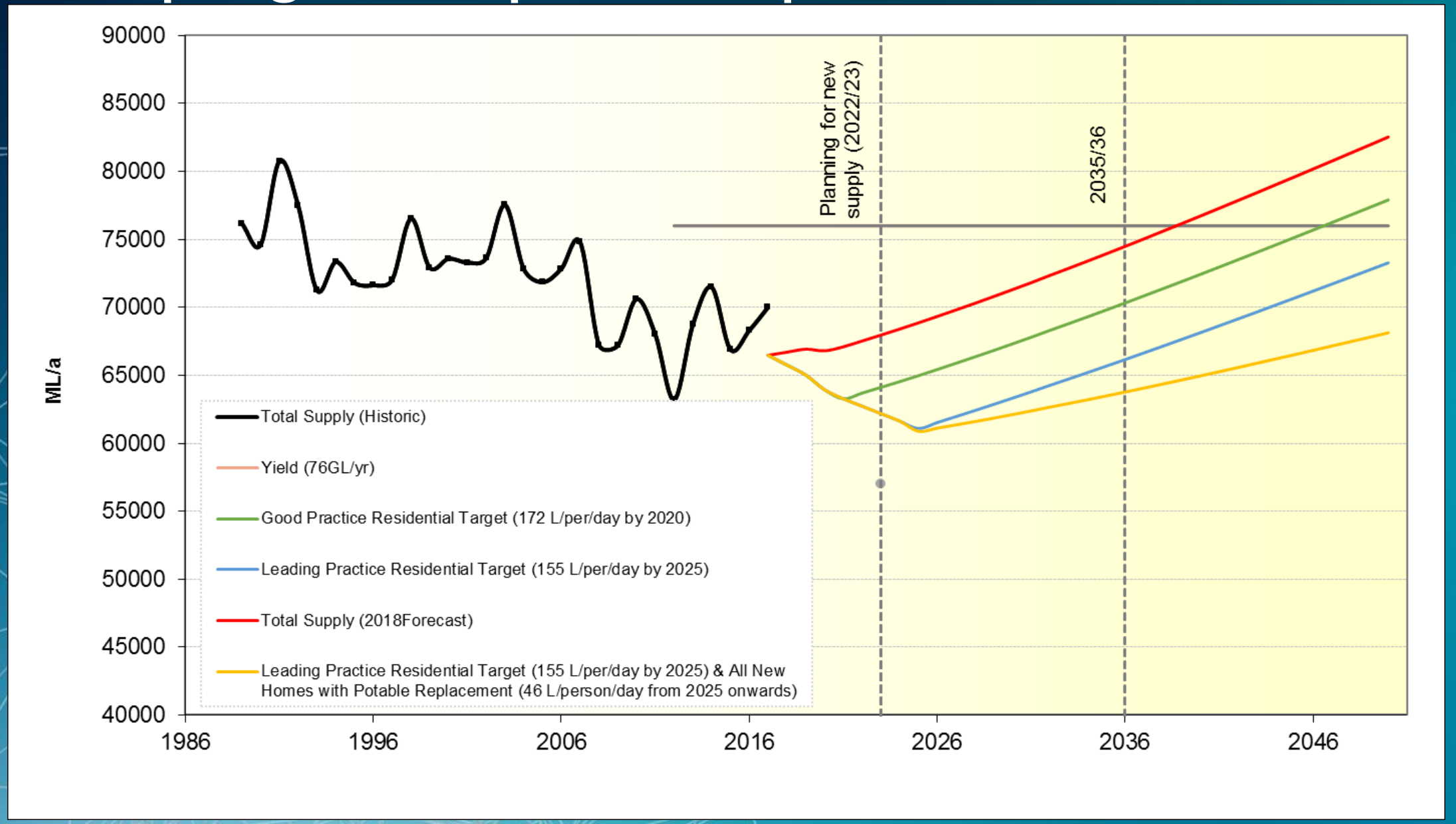
CLARA Learning Organisation Tool



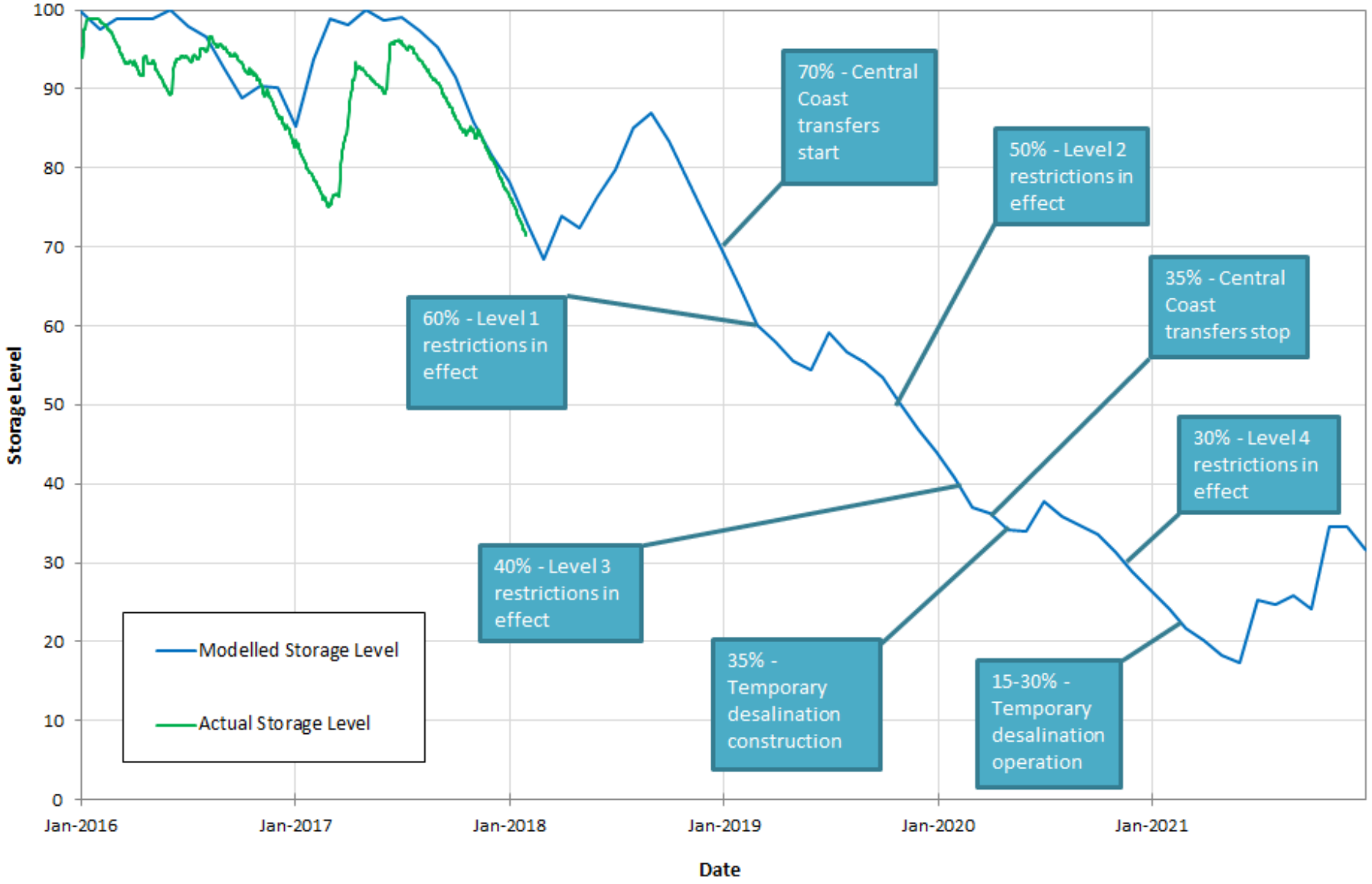
Water use across the Hunter



Keeping our options open



Modelled drought response



Tillegra Dam is a half billion-dollar mistake

There is sufficient water supply, write **Stuart White, Simon Fane** and **Monique Retamal.**

Hunter Water's consumers despite the fact that they have not had any input into the decision.

Our report demonstrates that the reasons given for the dam are unsound. The NSW Government and Hunter Water have claimed Tillegra Dam is needed to supply the

Third, the current water supply in the Lower Hunter has been shown to have high levels of drought security. Hunter Water estimates that there is only a one-in-a-million chance of supplies falling to critical levels in any given year. This means that if Tillegra Dam is being built for

Questions on Tillegra need serious answers

The true costs of the dam need discussion, writes **Tracy Norman.**

HUNTER Water managing director Kevin Young called them "myths and tall tales" surrounding the proposed Tillegra Dam in his Newcastle Business Club address and opinion piece in *The Herald* last week.

water consumption as 25 years ago.

Why does Hunter Water need to build a dam with the capacity of Sydney Harbour even if the population does rise as much as is anticipated?

Mr Young maintained that this was not a political decision because this dam had been on the books since 1952.

Then why did Hunter Water's own documentation from 2003 to 2006

Hunter dam damned from the start

PREMIER Kristina Keneally yesterday dumped the Tillegra Dam project, four years after it was announced in what critics claim was an attempt to divert voter attention from the Milton Orkopoulos scandal.

The dam was to have been built on the Williams River near Dungog.

The reversal came after a long campaign from the Greens and after years of revelations that senior bureaucrats believed the $350 million project was not necessary. It was yet another policy measure aimed at appeasing Greens or left-leaning voters in a bid to have them move back towards the State Government, with recent polls having Labor's primary vote at 23 per cent and the Greens at 17 per cent.

Ms Keneally said the refusal was based on "an unacceptable level of uncertainty about potential impacts on the environment, particularly the Hunter estuary and its internationally-recognised wetlands" and potential impacts on "licensed water users in the area, including on farmers and power stations". It also came after 97 per cent of 2600 submissions to the Planning Department opposed it.

Opposition Leader Barry O'Farrell yesterday welcomed the decision, saying he would have stopped the project in government.

• Sally Corbett (centre) in discussion with members at the No Tillegra Dam Group AGM.

Tillegra opposition consolidates

It is now more than two years since the announcement that the Tillegra Dam would be built.

Government approval has not yet been granted, and opposition to the proposed project continues unabated.

Dungog's No Tillegra Dam Group last week convened its second annual general meeting at its offices behind the Catbird Gallery in Dowling Street.

More than 20 people attended in a convivial but determined atmosphere, and re-elected Sally Corbett as president.

Vice president is Tom Boorer, secretary Bob Muscat and assistant secretary Carol Pasenow, and treasurer Robyn Meincke.

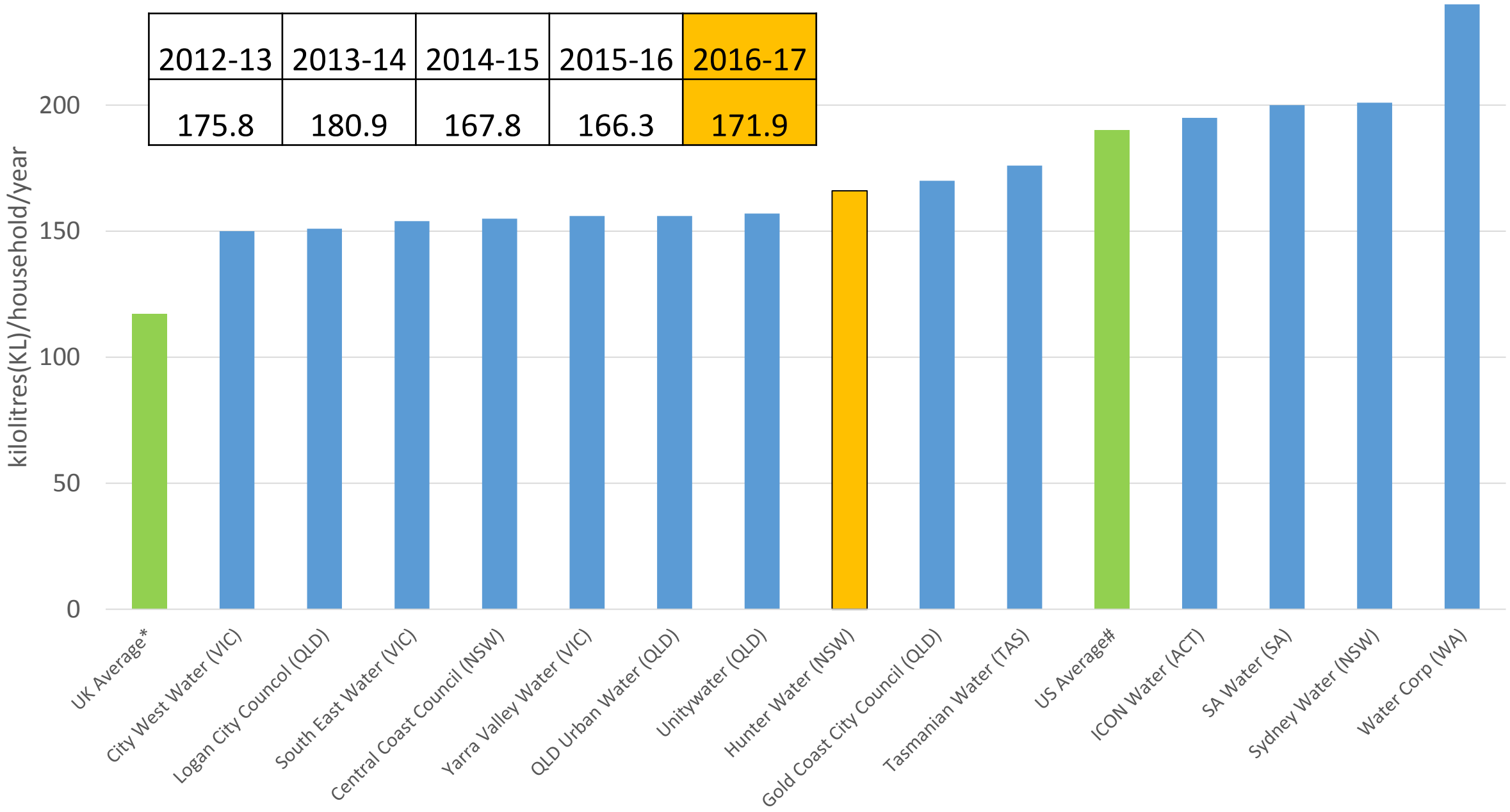
The committee has further designated individual members to assist with strategic planning, media relations, environmental analysis, IT support, administration, fund-raising and local liaison.

"It is remarkable that out of a small community there can grow an organisation with such a depth of expertise, and such a breadth of enthusiastic membership," said Sally.

"We have learned a great deal over these two years, and proven that people from very diverse backgrounds can work constructively for a common cause that deeply concerns them."

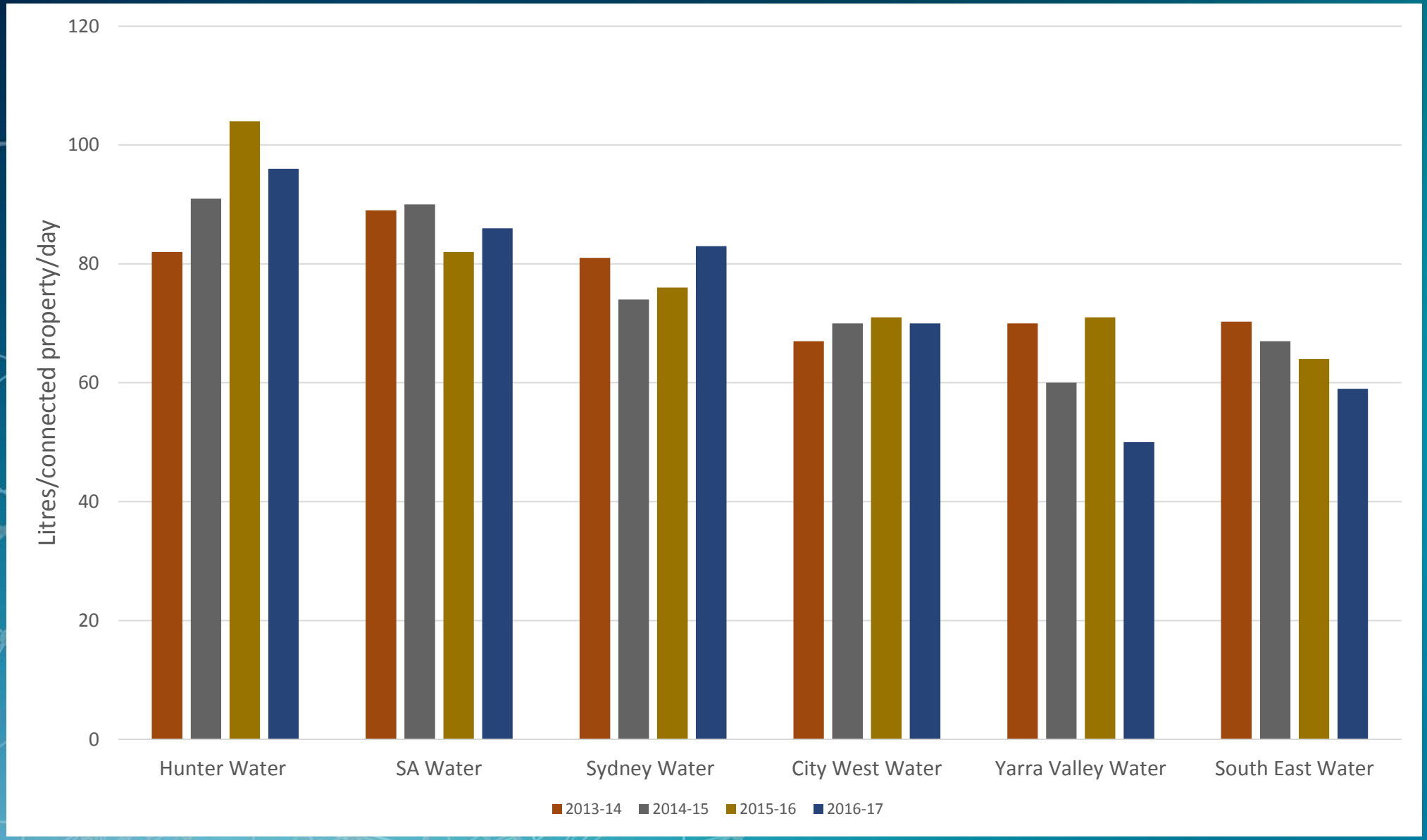
Continued on page 7

2012-13	2013-14	2014-15	2015-16	2016-17
175.8	180.9	167.8	166.3	171.9

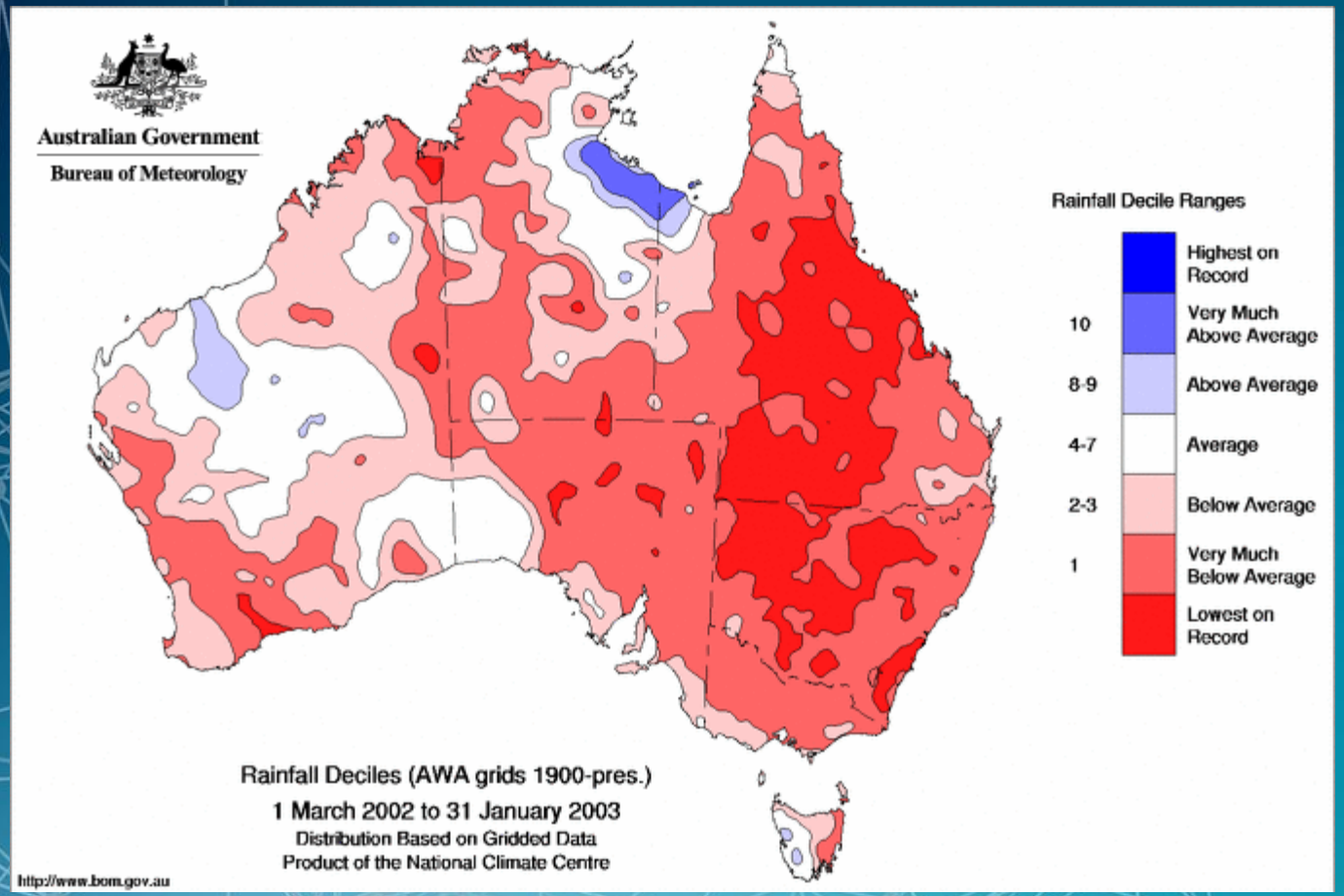


Sources: Australian Government National Performance Report 2016-17, *OFWAT 2019 Price Review, #WRF 2016 Residential End Uses of Water

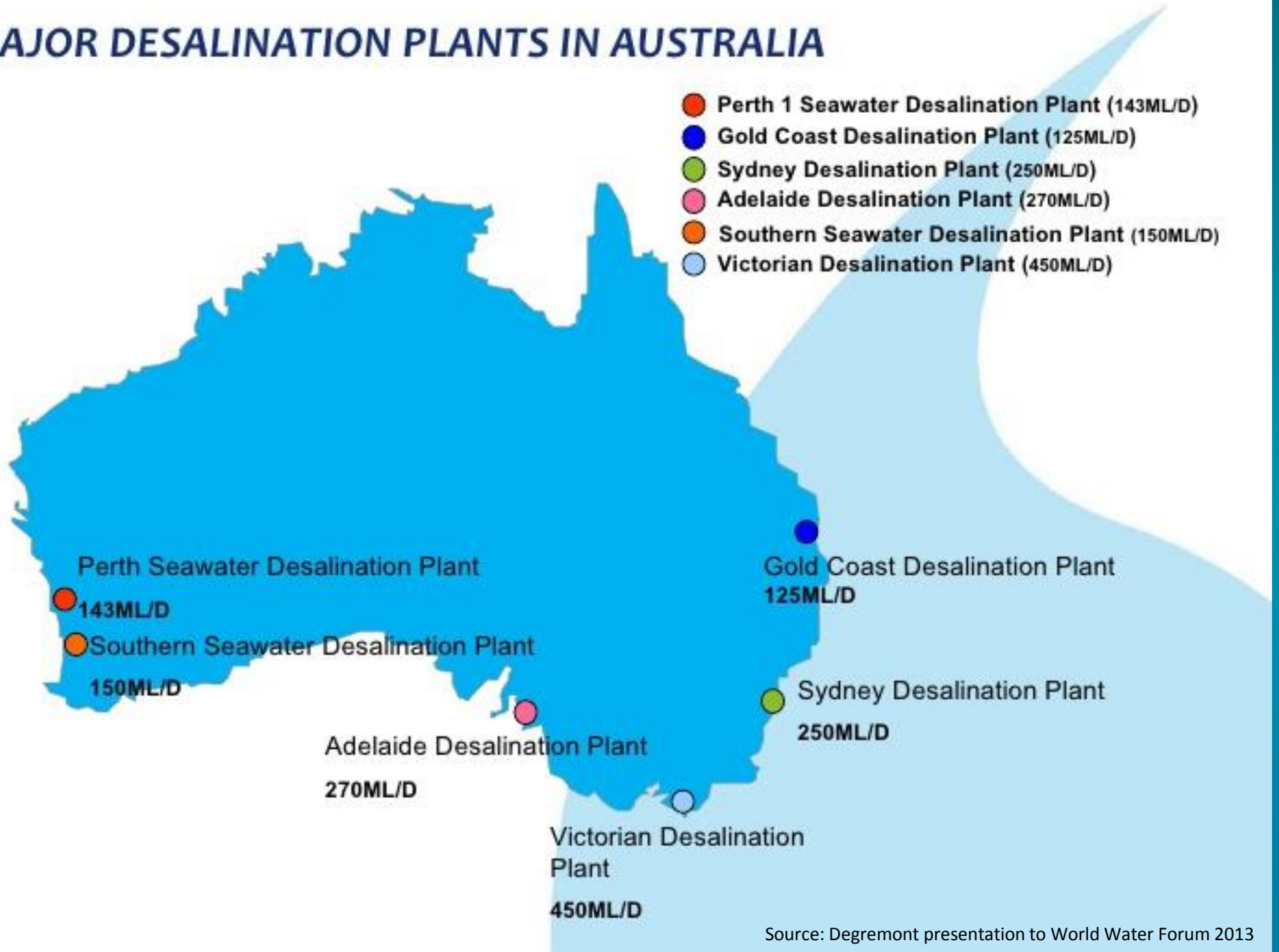
Leakage


120
100
80
60
40
20
0
Litres/connected property/day
Hunter Water
SA Water
Sydney Water
City West Water
Yarra Valley Water
South East Water
2013-14
2014-15
2015-16
2016-17

I love a sunburnt country,
A land of sweeping plains,
Of ragged mountain ranges,
*Of **droughts** and **flooding rains***
Dorothea Mackellar



MAJOR DESALINATION PLANTS IN AUSTRALIA



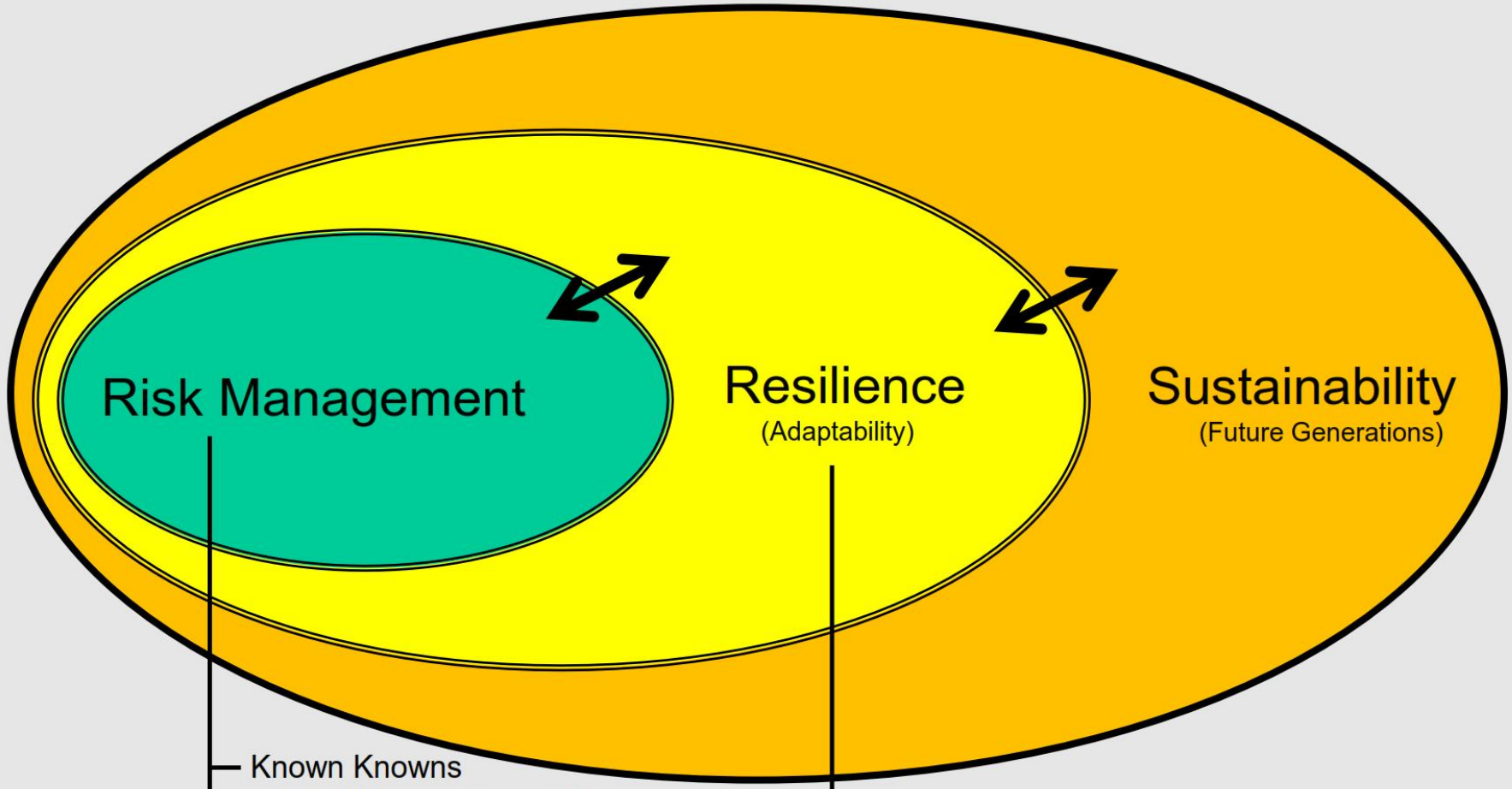
Source: Degremont presentation to World Water Forum 2013

Sustainability and Resilience

$$R = f(r, A)$$

Risk, Resilience and Sustainability …..

(Linking to Treasury's Living Standards Framework)



© The Treasury

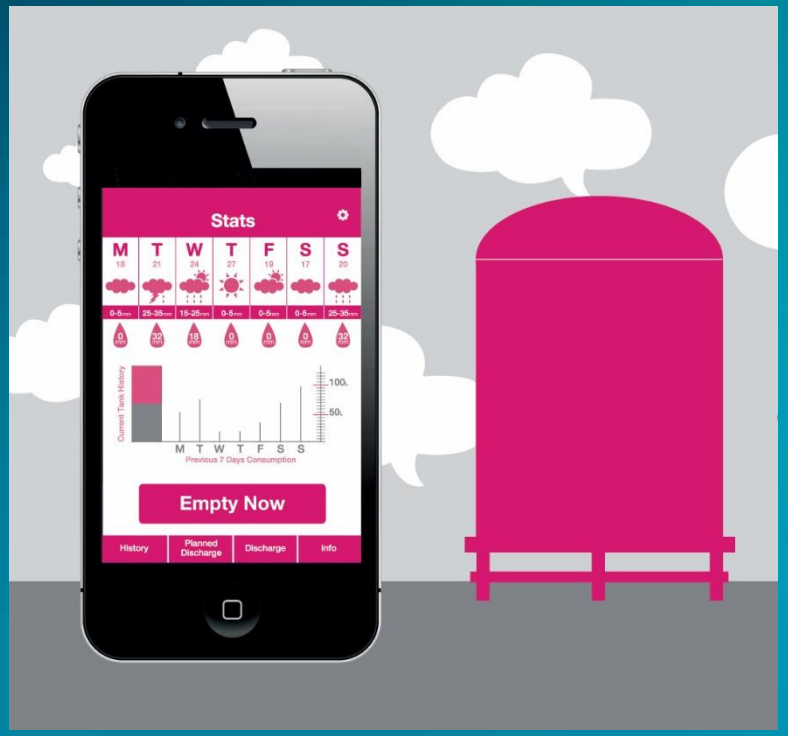
Value in keeping our options open

Changing the economics:

incremental investment
+
learning with our communities for behaviour change at scale

vs

risk reduction through increasing certainty
(which is almost certainly wrong)



Melbourne – South East Water – Smart rainwater tanks

Drawing water out of air

BY HELEN GREGORY

A PIONEERING University of Newcastle research team that has developed technology to produce drinking water from thin air is preparing to showcase its revolutionary work on the world stage.

UON's Hydro Harvest Operation team is the only Australian cohort to reach the final stage of the two-year and $1.75 million Water Abundance XPRIZE competition, which challenges teams to create a device that extracts a minimum of 2000 litres of water per day from the atmosphere using 100 percent renewable energy, at a cost of no more than two cents per litre.

Professor Behdad Moghtaderi from UON's Newcastle Institute for Energy and Resources said teams were working with the aim of delivering decentralised access to water to help solve the global water shortage crisis.

His team's low-cost, fuss-free and energy-efficient prototype is capable of converting the air's humidity into drinkable water. "We went into the competition wanting to keep the technology as simple as possible to ensure it would have worldwide applications, especially for developing countries," Professor Moghtaderi said. "Atmospheric water generators are usually based on refrigeration cycles that cool the air to below the dew point, the point at which condensation will form. We're turning that idea on its head. Our process is based on heating the air, not cooling."

TRAILBLAZERS: Clockwise from back, Dr Priscilla Tremain, Dr Andrew Maddocks, Dr Cheng Zhou, Professor Behdad Moghtaderi and Associate Professor Elham Dooroodchi. Of the initial 98 teams, only four were from Australia.

The modular and environmentally friendly technology can work anywhere without being bound to climate, which could potentially transform the future of water generation. "The first step is to use desiccant to absorb water at night," he said. "Then we use solar energy during the day to produce hot, humid air that moves over and around the desiccant. The hotter the air, the more water it's going to hold and then by cooling that hot air, we get the water back."

Prize organisers said there was more than three quadrillion gallons of untapped water in the atmosphere, or enough to meet the needs of every person for a year.

The Hydro Harvest Operation team is comprised of Professor Moghtaderi, Associate Professor Elham Doroodchi, Dr Andrew Maddocks, Dr Priscilla Tremain and Dr Cheng Zhou, working under UON's newly established Global Impact Cluster for Energy, Resources, Food and Water. Associate Professor Doroodchi said the team was "thrilled" to be selected as finalists in the competition. "It feels great to be representing our country as we have been working incredibly hard to turn our simple idea into a viable reality," she said. "Even if we don't win, we will pursue the idea to ensure greater access to water for all." They will join four teams from India, USA and the UK in the competition's finale, with the winner to be announced in August.

University of Newcastle Global Impact Cluster Energy, Resources, Food and Water research

Water from dehumidification

HUNTER WATER
HYDRATE
feel great!

WATER WISE RULES FROM 1 JULY

WATER WISE RULES APPLY FROM 1 JULY TO EVERYONE WHO USES WATER SOURCED FROM HUNTER WATER, INCLUDING RESIDENTS, BUSINESSES AND GOVERNMENT

THE RULES ARE OUTDOOR ACTIONS TO SAVE ONE BILLION LITRES OF DRINKING WATER PER YEAR AND REDUCE BILLS

WATER WISE

THREE KEY RULES

1. **All hand held hoses must have a trigger nozzle attached.**
2. **Watering with a sprinkler, irrigation system or hose is permitted any day before 10am or after 4pm. This avoids the hottest part of the day when water wastage occurs due to evaporation.**
3. **No hosing of hard surfaces such as concrete, paths and driveways. Use a broom instead.**

4PM TO 10AM

Water your lawn | Hose your garden | Irrigate | Use a sprinkler

These actions can be performed any day before 10am or after 4pm.
This avoids the heat of the day when water wastage occurs due to evaporation.

ANYTIME

Use a watering can | Wash a vehicle | Top up or fill a pool | Fill a bucket | Hoses must have a trigger nozzle | Sweep hard surfaces

These actions can be performed at any time.
Remember, hoses must always be used with a trigger nozzle, whatever the action or time of day.

EXEMPTIONS

Sports grounds | Firefighting | Rainwater or bore water

Hunter Water's supply can be used in the event of, or to prevent, an accident, health hazard, surface discolouration or environmental issue.
You can always use water to defend property from fire or test fire protection systems.
Watering systems can be used to establish new lawns and gardens for up to 14 days from installation.
Other exemptions apply. Visit hunterwater.com.au/waterwise to find out more.

love water

KIDS&KOALAS
HUNTER WATER

MEDIA RELEASE

Wednesday, 1 July 2015

$1BILLION FOR HUNTER WATER INFRASTRUCTURE

Hunter Water will invest $1.1 billion into better infrastructure during the next 10 years in the Hunter, to support the increase in the region's population to one million people by 2050.

MEDIA RELEASE

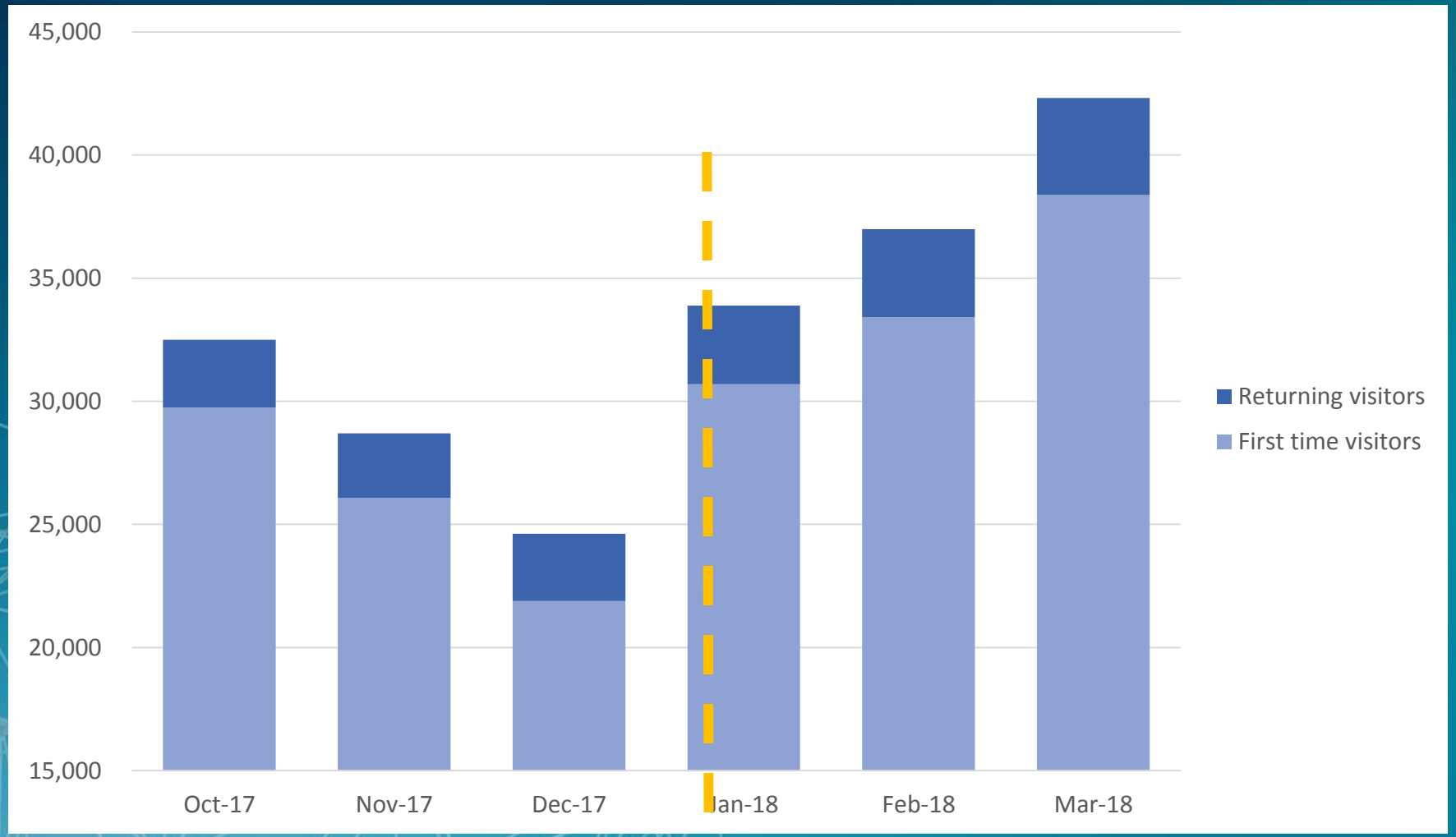
WATER TASTE TO BECOME MORE CONSISTENT

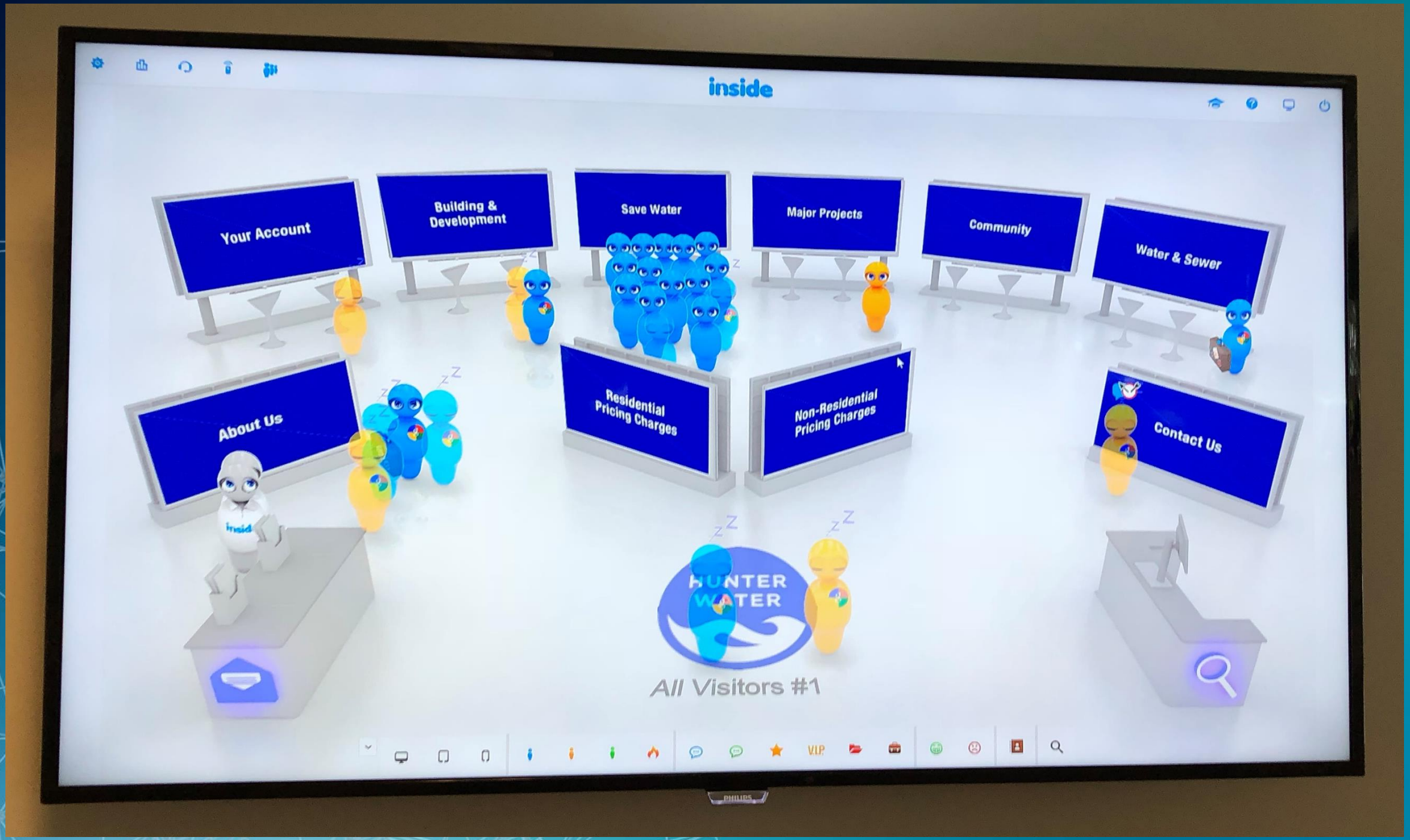
The taste of local water is set to become more consistent thanks to a Hunter Water program to gradually increase chlorine disinfection of the water supply. The changes are the result of a decade long study into the consistency of local water which regularly changes in taste and odour, especially in the warmer months of the year.

Hunter Water uses chlorine to disinfect drinking water before it enters the system to destroy disease-causing bacteria, viruses and parasites. Chlorine is an effective disinfectant and residual levels can be maintained throughout the water distribution system to guard against contamination. It is the most popular and widely used method of water disinfection in Australia.

Compliant and well-behaved

Monthly website visitors: hunterwater.com.au

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All Visitors #1
VIP

Jim Bentley
jim.bentley@hunterwater.com.au