

Get NSW Back in Front



NEW WATER FOR SYDNEY

RECYCLED WATER TO SECURE
SYDNEY'S WATER FUTURE



THE NATIONALS

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Water conservation and management is the defining challenge of our time. Ensuring Sydney has an available and affordable water supply is central to the future prosperity of our economy and maintaining our quality of life.

A NSW Liberal/Nationals Coalition Government will take strong and decisive action to guarantee Sydney's future environmental, industrial, and drinking water supplies through the construction of a \$949 million world's best quality purified water recycling system for Sydney.

This is the low cost, environmentally-conscious and responsible way to drought proof Sydney. It will produce almost twice as much drinking water for Sydney at half the cost of Labor's \$1.9 billion desalination plant.

Our water recycling plan for Sydney involves the construction of a world-class membrane and reverse osmosis water recycling system primarily to substitute for drinking water in industry and urban parks and gardens, with the option to 'flick the switch' and use this purified recycled water to supplement Sydney's drinking water supplies if necessary.

This infrastructure will provide the capacity to produce up to 86 billion litres (235 mega litres per day) of new, safe, clean, high quality purified drinking water each year – almost twice the output of Labor's desalination plant for half the cost.

As a first priority we will use this new purified recycled water to take the strain off the existing drinking water supply in our dams by substituting it for water currently used for agriculture, industry and environmental flows in the Hawkesbury-Nepean River.

In the event that it does not rain in Sydney and dam levels continue to fall, we will 'flick the switch' on the water recycling system to divert this new purified recycled water supply for blending into the Sydney drinking water system at low dilution via Prospect Reservoir.

This will occur only if dam levels fall below 20 per cent. When dam levels are above 20 per cent all purified recycled water produced will be used for industrial purposes and to also significantly increase environmental flows down the Hawkesbury-Nepean River.

This is a plan that deals with all contingencies. By investing in a water-recycling system that produces purified recycled water to drinking standard, we can use this water for industrial purposes and environmental flows, or for drinking purposes if required.

The people of NSW now have a clear choice – a NSW Liberal/Nationals Government that will take strong and decisive action to solve Sydney's water crisis, or a tired Labor Government that has pressed the panic button after twelve years of inaction and is now intent on pursuing an expensive and environmentally damaging desalination plant.

THE NSW LIBERAL/NATIONALS PLAN TO SECURE NEW WATER FOR SYDNEY

Sydney uses around 528¹ billion litres of water each year, and there is demand for around 200 billion litres of recycled water for industrial use, agricultural use and environmental flows in the Sydney basin².

The NSW Liberal/Nationals Coalition's first priority is to replace drinking-quality water currently being used by industrial, agricultural and environmental purposes with the highest standard of new, safe, clean, high quality purified recycled water.

In Government we will commit \$949 million towards the construction of a large-scale water-recycling system. This system will incorporate world-class membrane and reverse osmosis technology and will include the infrastructure necessary to augment Sydney's water supply with new, high standard, drinking quality, purified recycled water if the need arises.

As a first priority we will use this new purified recycled water to take the strain off the existing drinking water supply in our dams by substituting it for water currently used for agriculture, industry and environmental flows in the Hawkesbury-Nepean River.

In the event that it does not rain in Sydney and dams levels continue to fall, we will 'flick the switch' on the water recycling system to divert this new purified recycled water supply to augment Sydney's drinking water supply.

Our plan will provide up to 86 billion litres of new, safe, clean, high quality purified recycled drinking water each year, and can be on line within 18 to 24 months. All recycled water will be treated by a membrane and reverse osmosis process that meets stringent NSW Health standards.

This plan will also reduce the volume of water being discharged through Sydney's ocean outfalls by up to 66 billion litres. This is almost equivalent to the combined current volumes discharged from the Bondi and Cronulla ocean outfalls³.

This is a major step in phasing out the outdated process of dumping once-used wastewater into the ocean.

¹ Sydney Water Annual Report 2005/06, page 4.

² Based on the Metropolitan Water Plan 2006 and demand for environmental flows.

³ Coastal Sewage Treatment Plants operated by Sydney Water, Cronulla: 54 ML/day = 19.71 GL/year; Bondi: 130 ML/day = 47.45 GL/year, Available: <http://www.sydneywater.com.au/OurSystemsAndOperations/WastewaterTreatmentPlants/Coastal.cfm>

Project 1: Recycling South West Sydney Inland Treatment Plants

The NSW Liberal/Nationals Coalition will invest \$450 million into a recycling scheme that links the West Camden, Glenfield, Liverpool and Fairfield inland treatment plants.

Wastewater from these Western Sydney inland treatment plants normally flows out to the ocean through the Malabar ocean outfall.

This project will use the existing and unused water infrastructure to transfer the wastewater from the four inland treatment plants to Liverpool, where it will be treated using a membrane and reverse osmosis treatment plant to produce new safe, high-standard, drinking-quality purified recycled water.

Reverse osmosis is the process whereby water is forced, at high pressure, through very fine membranes. This process:

- Removes the vast majority of dissolved chemicals.
- Removes any remaining micro-organisms, organic materials such as pharmaceuticals, and inorganic chemicals such as salt.
- Produces water that is of a much higher level of purity than our current drinking water⁴.

Our priority will be to use this purified recycled water to substitute the potable water currently being used for industry and agricultural needs. This project will also include connecting the Liverpool treatment plant to the Hawkesbury-Nepean River through a 16 kilometre return flow pipe so excess water can be used to significantly boost environmental flows.

To prepare for all contingencies, especially if the drought continues, we will build the infrastructure to blend new, safe, high-standard, drinking-quality purified recycled water into the existing water supply at the Prospect treatment plant. Water will be transferred from Liverpool to Prospect along the existing Upper Canal easement.

We will limit the rate of dilution of purified recycled water added to the existing water supply to a maximum of ten per cent at Prospect. This is in stark comparison to Peter Beattie's water recycling proposal for Brisbane that has no limit⁵.

As a final barrier, all new, safe, high-standard, drinking-quality purified recycled water from Prospect Reservoir will go through Sydney Water's existing final treatment processes, including the use of chlorine filtration, before entering Sydney's water supply.

This project can be online within 18 months to 24 months and has the potential to increase Sydney's drinking water supplies by up to 53 billion litres a year, while at the same time increasing environmental flows by an additional 13 billion litres a year.

⁴ Queensland Water Commission, Multi-barrier treatment, available <http://www.qwc.qld.gov.au/Multi-barrier+treatment#4>

⁵ Queensland Water Commission, Recycled Water FAQs, available at <http://www.qwc.qld.gov.au/FAQs++Recycled+Water>

Project 2: Recycling North West Sydney Inland Treatment Plants

In addition to recycling water from western Sydney inland treatment plants, we will also upgrade and recycle the output of individual inland treatment plants in the city's north west.

This can be achieved within 18 to 24 months and will significantly increase the water available for industry, agriculture and environment flows, taking pressure off existing drinking water supplies in Warragamba Dam.

Sydney's inland treatment plants are close to sources of demand, such as industry, agriculture and the degraded Hawkesbury-Nepean river system. Their proximity will avoid additional expensive infrastructure and pumping costs.

Combined with the increased environmental flows resulting from Project 1, and an upgrade of the North Richmond Water Filtration Plant, upgrading these inland treatment plants in north west Sydney will provide the capacity to increase Sydney's drinking water supply by up to an additional 33 billion litres per year if required, while at the same time protecting environmental flows.

Labor has made a small start on the process of recycling water at Sydney's inland treatment plants with its Replacement Flows Projects, which will connect the Penrith, St Marys and Quakers Hill inland treatment plants.

Recycled water from these plants will eventually be discharged into the Hawkesbury-Nepean River below Penrith Weir. This will recycle 18 billion litres for environmental flows.

The NSW Liberal/Nationals Coalition will invest an additional \$250 million to significantly expand this project. In addition to the existing Rouse Hill water recycling project, we will link the following five inland treatment plants and recycle close to their entire capacity of wastewater, almost 40 billion litres, to enable the discharge of high quality water into the Hawkesbury-Nepean River.

Discharge Volume of North West Inland Treatment Plants⁶

INLAND TREATMENT PLANT	DISCHARGE VOLUME - GL/year
Castle Hill	2.63
St Marys	12.78
Quakers Hill	11.17
Penrith	8.32
Rouse Hill	3.29
Total	38.19

⁶ Sydney Water Systems and Operations, Wastewater Treatment Plants, available at: <http://www.sydneywater.com.au/OurSystemsAndOperations/WastewaterTreatmentPlants/Inland.cfm>

The NSW Liberal/Nationals Coalition will also invest \$220 million to upgrade the capacity of the North Richmond Water Filtration plant from a traditional sand bed filter plant to a modern reverse osmosis treatment providing new, safe, high quality drinking standard purified recycled water.

Part of the upgrade process will include building the infrastructure to link the new North Richmond water filtration plant into the growing North West Growth Corridor, which currently draws from the Sydney water network.

This means if the drought continues and Sydney’s dam levels continue to fall we can quickly boost the North West sector’s water supply with purified recycled water from the Hawkesbury-Nepean river system.

The North Richmond Water Filtration plant is licensed to draw up to 18 billion litres from the Hawkesbury-Nepean River⁷.

We will upgrade the North Richmond Water Filtration Plant to draw an additional 33 billion litres of water out of the Hawkesbury-Nepean River each year, subject to at least equivalent increased levels of environmental flows. This would meet the water needs of close to 400,000 people.

To protect the local river system we will ensure that the additional water drawn from the Hawkesbury-Nepean River system does not exceed replacement environmental flows provided by the up-river inland treatment plant recycling projects.

Comparing our Recycling Strategy to Peter Beattie’s Recycling Strategy

	WIVENHOE BEATTIE PLAN	SYDNEY DEBNAM PLAN
Volume	42 GL / year	86 GL / year
Cost	\$434.8 million ⁸	\$949 million
Expected Completion Date	Late 2008 ⁹	Late 2009
Blend	No limit but 25 % target	Up to 10 %

⁷ Sydney Water, North Richmond Filtration Plant, available at <http://www.sydneywater.com.au/Publications/Factsheets/NorthRichmondFiltration.pdf>

⁸ Queensland Government, *Recycled Water Scheme*, Available: http://www.nrw.qld.gov.au/water/water_infrastructure/recycled_water.html

⁹ Queensland Water Commission

Recycling Sydney's Ocean Outfalls

Our water recycling plan for Sydney will reduce the volume of water being discharged through Sydney's ocean outfalls by up to 66 billion litres. This is almost the equivalent of the combined current volume discharged from the Bondi and Cronulla ocean outfalls¹⁰.

This is a major step in phasing out the outdated process of dumping once-used wastewater into the ocean.

Our long-term goal is to further substantially reduce the use of Sydney's ocean outfalls as a method of wastewater disposal. We must end the days of using water once and then dumping it in a poorly treated state into our oceans.

In Government we will commit \$25 million towards planning for further substantial recycling of the water that is dumped through our deep-water ocean outfalls for industrial and agricultural use.

COMPARISON OF RECYCLING OVER DESALINATION

	Labor's Desalination Plant	Coalition's Recycling Plan
Volume Yearly	45 gigalitres	86 gigalitres
Volume Daily	125 mega litres	235 mega litres
Capital Cost	\$1.9 Billion	\$0.949 Billion
Recurrent Cost of water (\$/GL)	\$ 3,000 / ML ¹¹	\$1,000 / ML
Time Frame	Minimum 26 months	18 – 24 months
When the Drought Breaks	Switched Off	Used for environmental flows and industrial recycling
Energy Consumption	Energy demand for recycling is at least two thirds lower than desalination ¹²	
Environmental Impact	Is more energy intensive to run, will destroy local marine ecology, and provides no additional environmental flows.	Increase environmental flows through the Hawkesbury-Nepean River when not used for drinking purposes, and improved health of Georges River.
International Comparison	Labor has approved the plans to build the World's Biggest desalination plant	Similar scheme to the Brisbane proposal, Singapore, Atlanta, Israel and California

¹⁰ Coastal Sewage Treatment Plants operated by Sydney Water, Cronulla: 54 ML/day = 19.71 GL/year; Bondi: 130 ML/day = 47.45 GL/year, Available: <http://www.sydneywater.com.au/OurSystemsAndOperations/WastewaterTreatmentPlants/Coastal.cfm>

¹¹ Based on Gold Coast desalination plant and reported by Greg Stolz, Brisbane Courier Mail, 'French to profit from Queensland drought', available <http://www.news.com.au/story/0,23599,21145356-2,00.html>

¹² Associate Professor Greg Leslie, quoted in <http://www.smh.com.au/news/environment/recycled-water-rejected-out-of-fear-say-critics/2007/01/29/1169919274749.html>

ENSURING INDEPENDENT EXPERT CONTROL OVER NEW WATER STANDARDS

Water quality standards and independent safeguards are legitimately a high priority for Sydney water users.

The use of purified recycled water, and its standards, should be set by experts and the community, with the government held accountable if those standards are not met.

A NSW Liberal/Nationals Coalition Government will create the toughest accountability requirements and independent evaluation process, to ensure the community drives the quality and standards they want for Sydney's water supply.

This includes:

- The appointment of an independent **Water Commissioner**, who reports directly to the Premier, to oversee the implementation of our water recycling plan as well as the delivery of the other elements of our water strategy.
- The immediate commencement of a **public survey** on the standards and water quality benchmarks expected by Sydney residents through the plan.
- The establishment of a **Water Excellence Panel (WEP)**, to be the community watchdog and standard-setter for recycled water quality. Under our plan the community and experts, not politicians, will set the ground-rules for recycling water.

The WEP will set the benchmarks the community demands (using the survey feedback), tell the Government what standards and tests recycled water should meet, and set all the ground-rules the NSW Government should meet in a new legislated **Water Quality Charter**.

The WEP would be chaired by an eminent person, and would comprise recognised scientific, water, health, agriculture, industry and sustainability experts, along with community nominees.

- Delivery of the **Water Quality Charter** to the Water Commissioner, for implementation.
- **Premier's sign-off on the Water Quality Charter** and legislating these community standards, to be met in all *NEW* Water project specifications.

TURNING THE WATER CRISIS INTO AN ENVIRONMENTAL OPPORTUNITY

This plan will produce up to 86 billion litres of new, safe, clean, high-standard, drinking-quality purified recycled water a year - twice the output of Labor's desalination plant for half the cost.

As a first priority we will use this new purified recycled water to take the strain off the existing potable water supply in our dams by substituting it for water currently used for agriculture, industry and environmental flows in the Hawkesbury-Nepean River.

This additional purified recycled water will only be used for drinking if dam levels fall below 20 per cent. When dam levels are above 20 per cent all recycled water produced will be used for industrial purposes and to also significantly increase environmental flows down the Hawkesbury-Nepean River.

If dam levels fall below 20 per cent and purified recycled water is needed to supplement Sydney's drinking water supply, we will guarantee that the volume of water drawn from the Hawkesbury-Nepean River system does not exceed the volume of environmental flows added upriver from the inland treatment plant recycling projects.

TURNING THE WATER CRISIS INTO AN ECONOMIC OPPORTUNITY

We will take action to turn our current crisis into an important economic growth opportunity for NSW. By investing in the world's best water technology, and developing new skills and capability, we will create new export capability and give industry the confidence to invest in a city with secure water supplies.

We will commit \$6.7 million to support and encourage education and research into water management. We will;

- Create a **Centre of Water Technology Excellence (CWTE)** at a major NSW university, and fund a Chair and related research projects in joint venture with the water industry, to kick start and trial innovative water projects. We will work with the Commonwealth Government and industry to jointly support this initiative.
- The NSW Coalition is aware of a number of smart water initiatives in various stages of trial in NSW and other states, which would potentially achieve capture of clean rainwater on a large scale into intermediate storages for treatment and use as drinking water, and simple ways to harness stormwater for treatment within the existing infrastructure water grid. These types of projects would be supported through the CWTE, for adoption if successful.
- Establish an interactive **Water Factory** at Homebush in Sydney's west, based on the successful Water Visitor Centre in Singapore, which attracts hundreds of thousands of visitors and international attention.
- Create a dedicated research facility at the Homebush Water Factory, including the provision of **two annual \$50,000 scholarships** for innovative urban and rural water research projects.

AFTER TWELVE YEARS LABOR HAS FAILED THE PEOPLE OF SYDNEY ON WATER

For twelve years Labor has failed to plan or act on water. As a result Sydney is facing a water crisis.

Dam levels are at low levels and falling quickly. In the absence of rain, there is less than 100 weeks of water left on current usage rates.

A Canadian conservationist recently told an International Landcare Conference that Sydney is in a race with Beijing and Mexico City to be the first international city to run dry.¹³

Despite Labor's spin, Sydney's water crisis is not a product of climate change; it is a product of twelve years of Labor's incompetence and its refusal to invest in large scale recycling and stormwater harvesting.

Instead of implementing a comprehensive long term strategy to secure Sydney's future water needs, Labor's entire water strategy is based on trying to convince the people of Sydney that the answer is an expensive desalination plant that will supply water to just a few inner Sydney suburbs, at great environmental cost.

On 6 February 2007, the NSW Government's Chair of its Independent Review Panel, Peter Cullen, confirmed what everyone knew - that if Labor had invested in large scale recycling, Sydney would not need a \$1.9 billion, energy guzzling desalination plant.¹⁴

Labor recycles press releases, not water

While Labor continues to recycle water announcements they have quietly rolled back their commitment to recycling targets and timeframes.

In April 2004, then Utilities Minister Frank Sartor made the statement,

*"Within five years, certainly 10 years, there will be no outdoor playing field or golf course that will be using potable water. It will be all reuse stuff. That's for certain."*¹⁵

Since then, Labor has done little to achieve this goal, instead rolling back its public commitments on recycling.

On 22 March 2005 Sartor said Labor would, "...be recycling up to 80 billion litres of water."¹⁶

¹³ 'Melbourne, Sydney warned of dry future', *ABC Online Water Resource*, Available:

<http://www.abc.net.au/water/stories/s1759528.htm>

¹⁴ Water wars: It's the sea or underground, *Sydney Morning Herald*, Available: <http://www.smh.com.au/news/national/water-wars-sea-or-underground/2007/02/06/1170524096332.html>

¹⁵ Former Utilities Minister Frank Sartor, *Sydney Morning Herald*, 'Now the green dam busters cop a spray', April 17 2004, <http://www.smh.com.au/articles/2004/04/16/1082055656679.html>

¹⁶ Former Utilities Minister Frank Sartor, *Hansard*, NSW Legislative Assembly, 22 March 2005

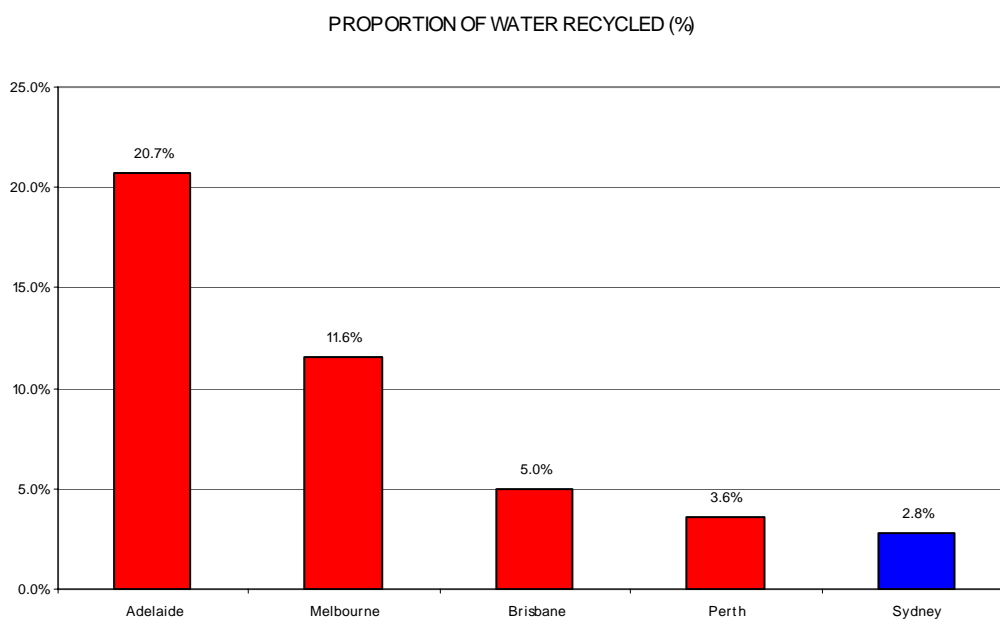
On 23 November 2005 Morris lemma reduced this target, claiming Labor would be “...increasing the use of recycled water from 15 to 70 billion litres per year by 2011.”¹⁷

On 8 February 2006: Labor pushed its target schedule out from 2011 to 2015, claiming it would recycle 70 billion litres per year by 2015.¹⁸

Labor’s real water recycling record

Compared with other Australian capital cities, Labor’s water recycling record in Sydney is appalling. Sydney Water recycles just 2.8 per cent compared to over 20 per cent in Adelaide and over 10 per cent in Melbourne.¹⁹

Figure 2: Recycling Rates In Australian Capital Cities



Desalination or desperation?

The golden rule when facing a crisis is **do not panic**. Yet after twelve years of inaction, Morris lemma disregarded his own 30 per cent trigger point of dam levels and panicked weeks before the election – giving the green light to desalination.

In April 2006 the Premier told the Daily Telegraph,

“Desalination has moved – as you are well aware – from being the first line of defence to being a defence when and if the dam levels get to 30 per cent.”²⁰

¹⁷ Premier Morris lemma, Press release, “Desalination Plant to be owned by the people of NSW”, November 23 2005

¹⁸ Premier Morris lemma, *Metropolitan Water Plan Progress Report*, 8 February 2006

¹⁹ ‘Securing Australia’s Urban Water Supplies: Opportunities and Impediments’, A discussion paper prepared for the Department of the Prime Minister and Cabinet, *Marsden Jacob Associates*, November 2006, page 31.

²⁰ Simon Benson, “Talk of Kurnell backflip not worth its salt,” Daily Telegraph, 24 April 2006.

In August 2006 Labor's Water Minister David Campbell said,

"...construction of a desalination plant will only commence in the unlikely event that critical dam levels of around 30 per cent are reached²¹."

Why did Labor abandon this plan? The truth is that Labor announced it would proceed with the desalination plant for political purposes rather than for policy reasons.

Desalination is not a solution to Sydney's water crisis

Labor's desalination plant is a knee-jerk, panicked reaction to cover up for twelve years of inaction on water and infrastructure.

- It is extremely expensive and represents bad value for money – costing at least \$1.9 billion to provide only 7 percent of Sydney's water.
- It will be extremely environmentally damaging - if Labor builds a 500 ML plant, (already approved by Frank Sartor) it will draw an amount of energy from the grid equivalent to all remaining green energy available nationally.²²
- It will have a significant negative impact on local marine ecology as aquatic flora and fauna get sucked into the intake and killed by brine at the outlet.
- It will not create one extra drop of water for environmental flows for our degraded river systems in and around Sydney.
- It will not reduce the load on Sydney's overloaded sewer systems, which flow into urban rivers, such as the Georges River.
- It will remove any incentive for Labor to invest in large scale recycling for industrial and agricultural use.

Labor is simply playing catch up after years of inaction – the Metropolitan Water Plan is designed only to get Sydney through until 2015, when we will need another new source of supply.

²¹ David Campbell, Water Utilities Estimates Committee, Hansard, 28 August 2006.

²² Simon Benson, The Daily Telegraph, 'Desal Plant to go ahead in weeks', page 1.

INDICATIVE TIMELINE

Date	NEW WATER RECYCLING PLAN	COMMUNITY OVERSIGHT	RESEARCH AND EDUCATION
May 07		Appoint Water Commissioner	
June 07	Preliminary planning for Stage 1 South Western Sydney inland treatment plant upgrade and recycling project	Establish Water Excellence Panel (WEP)	Commence selection procedure for university host of Centre of Water Technology Excellence
	Preliminary planning on Stage 2 North West Sydney inland treatment plant upgrade and recycling project	Public consultation and survey on standards and benchmarks	Commence planning for Homebush Water Factory
		WEP sets benchmarks in NEW Water Quality Charter	
August 07	Tenders Issued	Legislate NEW Water Quality Charter	Determine CWTE host
September	Preliminary planning on Stage 3 (ocean outfalls).		Issue tender for Water Factory
Jan 2008	Commence Stage 1 works		Commence construction of Water Factory
			CWTE commences
July 08	Commence Stage 2 works		Open Water Factory
Jan 09			
July 09	Stage 1 projects complete		
Dec 09	Stage 2 projects complete		

COSTING AND FUNDING

	07/08 \$M	08/09 \$M	09/10 \$M	10/11 \$M	TOTAL \$M
CAPITAL					
North West inland treatment plants	125	125			250
Upgrading North Richmond	100	100			200
Western Sydney Recycling	200	270			470
Adapting Ocean Outfalls	5	5	5	10	25
Water Factory	0.5	1.5	2	-	4
RECURRENT					
Establish CWTE Chair	0.5	-	-	-	0.5
Maintain Chair	1	1	1	1	4
2 Scholarships at Water Factory			0.1	0.1	0.2
Water Factory Operation			1	1	2

Funding for the NSW Liberal/Nationals Coalition water recycling plan for Sydney will be provided from the \$1.9 billion Labor intends to use to fund construction of their desalination plant over the next two years²³.

Our water recycling plan for Sydney is part of our overall water strategy for NSW, including rainwater tanks rebates, upgrading of dams, and the construction of regional pipelines and water grids, funded from our previously announced \$1 billion Drought Proofing NSW Water Infrastructure Fund.

We will be making further announcements on upgrading water infrastructure prior to the election.

²³ Water Minister David Campbell, quoted in 'NSW Labor to build desalination plant', retrieved from <http://www.theage.com.au/news/NATIONAL/NSW-Labor-to-build-desalination-plant/2007/02/06/1170524075137.html>