Institute for Sustainable Futures

UTS UNIVERSITY OF TECHNOLOGY, SYDNEY

Australian Water Recycling Centre of Excellence

WILLUNGA

Private water distribution company delivering pressurised treated water from SA Water's Christies Beach Wastewater Treatment Plant to irrigators in the McLaren Vale wine region.

CAPACITY
5.8 GL/yr

CLASS OF WATER
Tertiary treated effluent for restricted irrigation use

TYPE
Physical primary treatment, followed by an activated sludge secondary treatment process, followed by disinfection via chlorination.

USAGE
Irrigation

Willunga Basin Water Company Case Study

Sewage recycling provides certainty for expanding wine region

The Willunga Basin case study demonstrates that a private recycled water operation can successfully meet business, customer and water security objectives. An enabling context and strong drivers assisted in getting the scheme up and running, and astute business management – combined with a strong customer and community service focus – has underpinned continued growth.

Core to the scheme's success has been the 'win-win' arrangement negotiated between Willunga Basin Water and SA Water, whereby Willunga Basin Water source treated wastewater and SA Water avoid discharging significant volumes to Gulf St Vincent. At a regional level, the scheme has been fundamental to the success of McLaren Vale as a premier Australian wine growing and tourism region.

This study is funded by the Australian Water Recycling Centre of Excellence under the Commonwealth's Water for the Future Initiative

ABOUT THE AUTHORS
The Institute for Sustainable Futures (ISF) is a flagship research institute at the University of Technology, Sydney. ISF's mission is to create change toward sustainable futures through independent, project-based research with government, industry and community. For further information visit www.isf.uts.edu.au

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ABOUT THE PROJECT

This national collaborative research project entitled "Building industry capability to make recycled water investment decisions" sought to fill significant gaps in the Australian water sector's knowledge by investigating and reporting on actual costs, benefits and risks of water recycling **as they are experienced in practice.**

This project was undertaken with the support of the Australian Water Recycling Centre of Excellence by the Institute for Sustainable Futures (ISF) at the University of Technology Sydney (UTS), in collaboration with 12 partner organisations representing diverse interests, roles and responsibilities in water recycling. ISF is grateful for the generous cash and in-kind support from these partners: UTS, Sydney Water Corporation, Yarra Valley Water, Ku-ring-gai Council, NSW Office of Water, Lend Lease, Independent Pricing and Regulatory Tribunal (IPART), QLD Department Environment & Resource Management, Siemens, WJP Solutions, Sydney Coastal Councils Group, and Water Services Association of Australia (WSAA).

ISF also wishes to acknowledge the generous contributions of the project's research participants – approximately 80 key informants from our 12 project partners and 30 other participating organisations.

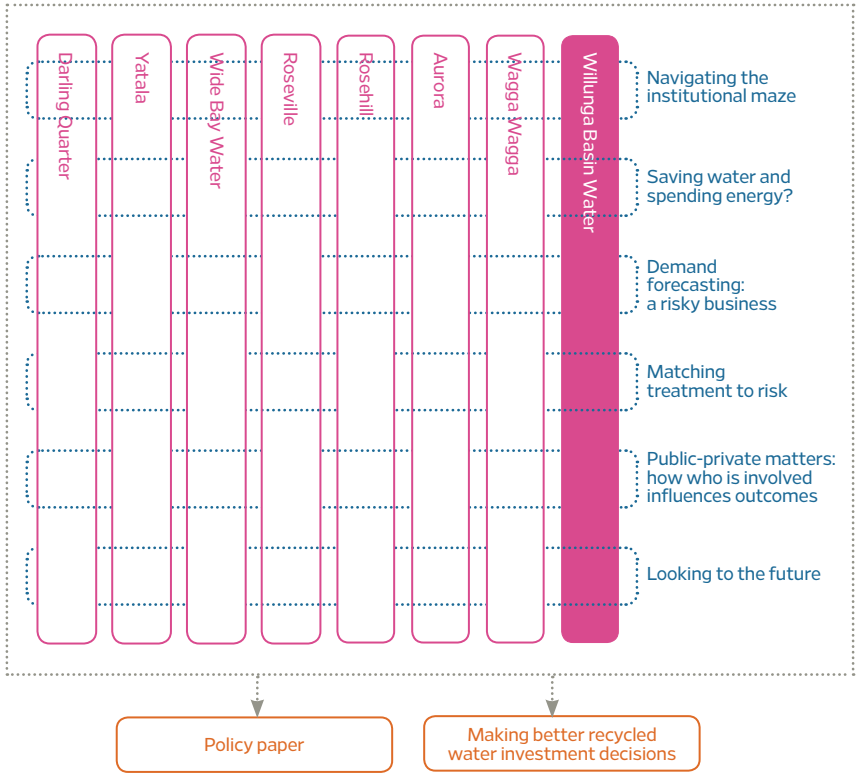
Eight diverse water recycling schemes from across Australia were selected for detailed investigation via a participatory process with project partners. The depth of the case studies is complemented by six papers exploring cross-cutting themes that emerged from the detailed case studies, complemented by insights from outside the water sector.

For each case study and theme, data collection included semi-structured interviews with representatives of all key parties (e.g., regulators, owners/investors, operators, customers, etc) and document review. These inputs were analysed and documented in a case study narrative. In accordance with UTS ethics processes, research participants agreed to participate, and provided feedback on drafts and permission to release outputs. The specific details of the case studies and themes were then integrated into two synthesis documents targeting two distinct groups: policy makers and investors/planners.

The outcomes of the project include this paper and are documented in a suite of practical, accessible resources:

- 8 Case Studies
- 6 Cross-cutting Themes
- Policy Paper, and
- Investment Guide.

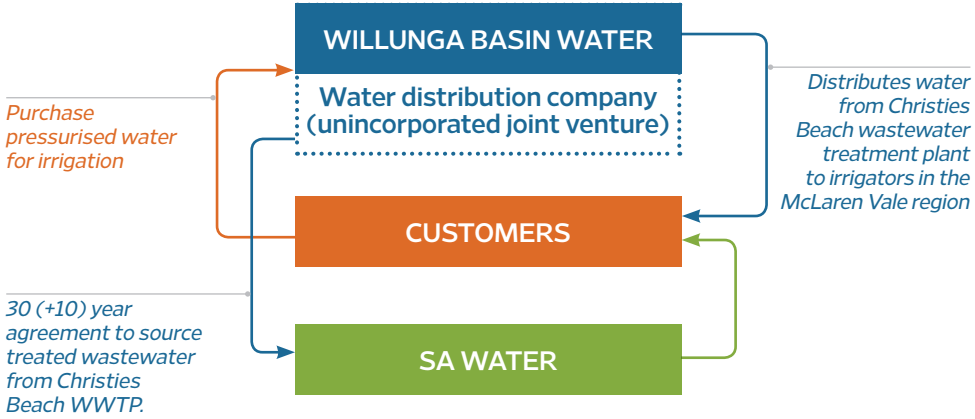
For more information about the project, and to access the other resources visit www.waterrecyclinginvestment.com



The scheme: facts and figures

- The scheme was built and is owned by Willunga Basin Water (WBW), an unincorporated joint venture registered in 1997. WBW was established as a distribution company, taking water from the SA Water Christies Beach wastewater treatment plant and supplying it to irrigators in the McLaren Vale wine growing region.
- WBW was initiated by a group of 15 investors. All of the shareholders are also irrigators who purchase water from the scheme, so had multiple drivers to invest.
- WBW and SA Water signed a 30 year agreement (with an optional 10 year extension) allowing WBW to source treated water from Christies Beach (initially at no charge) for distribution to irrigators. The state government endorsed the scheme, seeing benefits associated with avoiding discharge of treated wastewater to Gulf St Vincent, and fulfilling policy objectives to work with the private sector on innovative projects to supply non-potable water to agriculture.
- Initial costs of establishing the company and distribution network were $7 million, borne by WBW investors.
- The scheme commenced operating in August 1999 and has grown considerably since then. The initial customer base of 15 has grown to over 180.
- Water is now sourced from three locations: Christies Beach, Aldinga and Willunga. Currently, WBW is contracted to supply 5.8 GL of water each year to irrigators across the basin, more than double the 2.1 GL contracted when the scheme commenced operation. An additional identified demand of approximately 2 GL/yr has been identified, flagging continued expansion.
- The scheme now consists of 7 pump stations, 6 storage facilities and over 120km of pipeline. Storage facilities at Aldinga and Willunga hold 750 ML and 324 ML respectively.
- Demand is highly variable on an annual basis, with vignerons requiring irrigation water for approximately 4 months each year. As such, the biggest constraint on expansion of the Willunga network is storage capacity.
- Customers pay a once-only access fee of $7,260 per ML and a delivery charge of $0.95 or $1.25 per kL depending on the customer's location. All customer contracts are to 2038. The price is estimated to be approximately 50% cheaper than that of potable water, though this comparison is largely irrelevant given that for many customers the choice is WBW water or no water (with potable water not available at required volumes).
- The water quality from Christies Beach is high, with all water disinfected using either chlorine or UV. It compares favourably to groundwater (which irrigators were previously using) in terms of salinity. WBW provides no additional treatment, however each customer filters the water onsite (using sand or disc filters) prior to irrigating vines.
- A key benefit of the system for customers is the fact that the water is pressurised, meaning water can be used immediately without the need for onsite storage.

Scheme main stakeholders



Scheme timeline

Mid 1990s
Irrigators in the Willunga Basin region experiencing water scarcity and increasing regulation of groundwater began to discuss the possibility of irrigating with recycled water.

1997
Willunga Basin Water Company registered as an unincorporated joint venture.

1998
Following an approach from WBW proposing the recycling scheme, SA Water issued a request for tender to take water from the Christies Beach treatment plant. WBW was the sole tenderer.

1999
The scheme commenced operation.

2000-13
Construction of storage facilities by SA Water and the City of Onkaparinga has enabled expansion of the WBW network through permitted use arrangements. The network now supplies almost 200 irrigation customers.

The short story

The scheme was made possible by an enabling context and strong drivers.

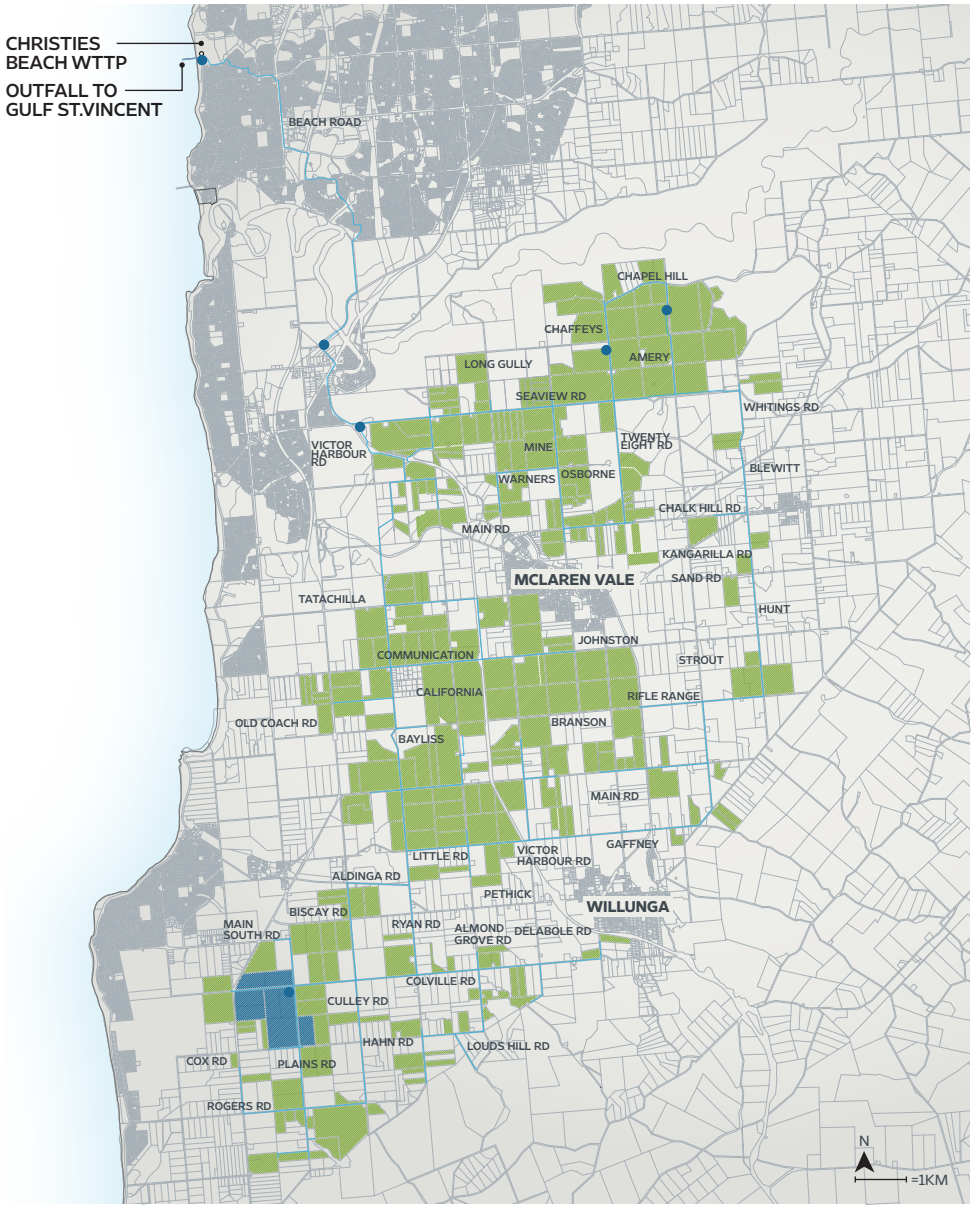
The Willunga Basin recycling scheme was conceptualised in the mid-1990s at a time when irrigators were looking for alternatives to increasingly scarce (and increasingly regulated) groundwater. Land was available to expand grape production, but the absence of a secure water supply was holding investors back. Pollution in Gulf St Vincent was also emerging as a state issue. The proposal to divert treated wastewater, thereby reducing discharge to the Gulf, and use it for productive irrigation was seen as a win-win for irrigation and the environment.

A dedicated champion created momentum for the scheme, and amongst the wine growing community there were those with business experience and the capacity to turn an idea into a successful enterprise. Thirteen local growers and two organisations from outside the wine industry invested the $7 million start-up capital required to develop the distribution network. SA Water came on board having been approached by the Willunga community (and responding to government water security and public-private partnership drivers at the time), agreeing to provide a secure supply of treated wastewater for 40 years.

The business model works

The Willunga Basin Water business model has been successful. It has grown significantly since 1999 when 17 customers signed on, now supplying 180 local irrigators. The shareholders, board and executive have experienced only minimal changes over the 14 years the organisation has been operating, enabling consistency of approach and short-term decision-making that aligns with the long term business vision. The fact that those involved are members of the local community, and also predominately vignerons and WBW customers, means the business is driven by a strong local agenda. As such, the company balances traditional business drivers with a community service ethos. At present, although new customers tend to be higher cost, the board

The Willunga Basin Water Company Network



views it as their social responsibility to continue to expand until all local demand has been met. Costs are recouped through a system of access fees (a take-or-pay amount of $7,260 per ML) and delivery fees (charged differentially depending on distance). Aspects of the scheme's expansion have also benefited from government investment in the area. While WBW has never received any direct government subsidies, the scheme has benefited from federal, state, and local government investment in the area.

Customer experiences have been largely positive, and the scheme has provided them with highly valued water security

For customers, the scheme underpins the success of their wine businesses. While there was some initial hesitation related to concerns about water quality, these were quickly allayed once the benefits (and high quality of water) became clear, and more and more customers signed on. Technically the scheme has operated well, providing reliable supply to customers with only occasional hiccups. Although customers perceive the costs as high compared with historic groundwater costs, they see the investment as essential, with water security bringing business security.

Some customers are experiencing additional benefits from the 'green credentials' associated with their use of recycled water, promoting their sustainability credentials with marketing representatives. This is particularly the case for organic and biodynamic growers operating in the Basin, which as a whole is gaining a reputation as a 'green wine' region.

The scheme has facilitated regional growth and resilience

Benefits of the WBW scheme extend beyond the individual customers serviced, with the success of the McLaren Vale wine region underpinned by the availability of a secure, reliable water supply. Water availability has kept growers in business and facilitated the development of land that would otherwise not have been possible. Development of the wine industry has benefited the region more broadly, with vignerons and government representatives alike asserting the importance of McLaren Vale for flow-on industries such as tourism.

Willunga Basin Water is one of three regional water players, and cooperation has brought mutual benefits

Water management in the region is managed through a 'triangular' arrangement, involving Willunga Basin Water, the City of Onkaparinga and SA Water. All play various roles in water recycling as suppliers, distributors and/or water users. WBW sources water from both SA Water and (to a lesser extent) from City of Onkaparinga. WBW lease Willunga Storages from from the City of Onkaparinga, and as part of this arrangement deliver around 100ML each year of pressurised water into the City of Onkaparinga network to supply irrigation water for a golf course, two reserves and a local school. The three players have also worked together towards regional water security, particularly through the City of Onkaparinga's Water Proofing the South initiative. While WBW has never received direct financial support from either state or federal governments, the collaboration with SA Water and City of Onkaparinga has facilitated investment (including from government grants) in expansion of the WBW network. This arrangement has brought benefits for each player and the region more broadly.

Drivers: a win-win situation for irrigators and the environment

Pressure on groundwater and increasing regulation meant that irrigators were looking for alternative water sources.

> "Without water we haven't got a business."

A key driver for the Willunga Basin scheme was water scarcity, in particular a diminishing supply of increasingly saline groundwater. Irrigators reliant on groundwater were facing regulation in the form of capping and licensing. Prospective growers (in a context of growth in the wine industry) were faced with the alternatives of purchasing scarce groundwater or using mains water, both of which were considered prohibitively expensive.

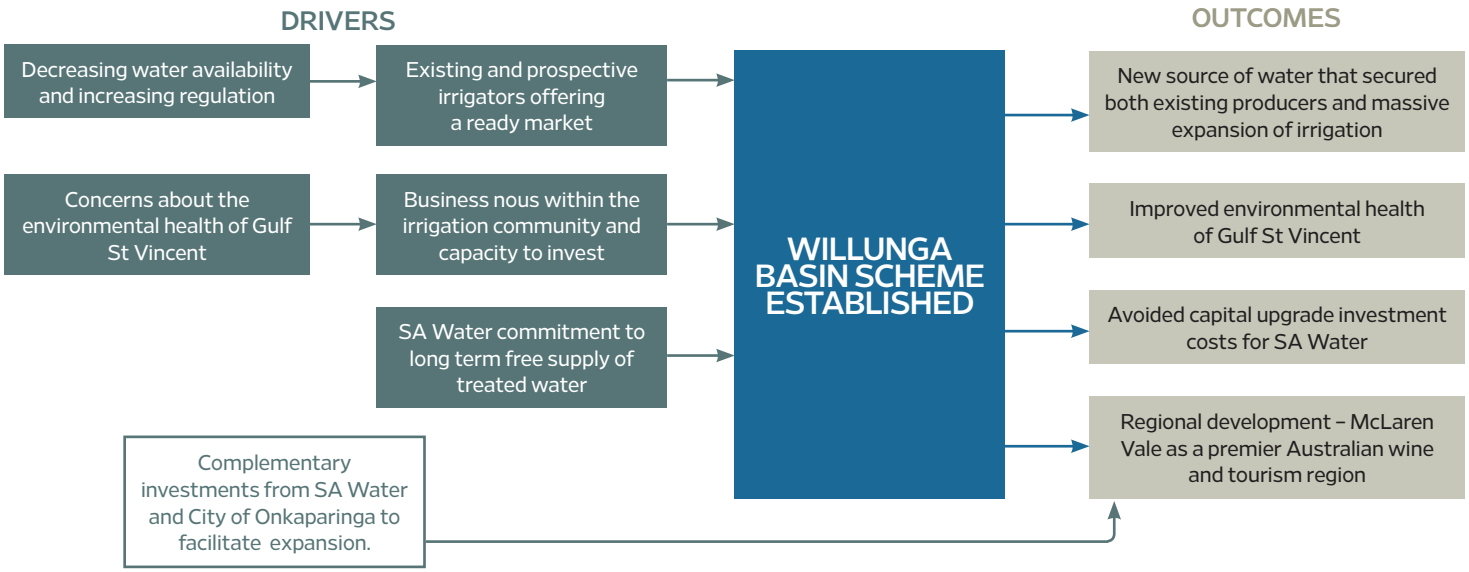
"In [the late 90s] the groundwater was being proclaimed and then regulated. It was obvious that there wouldn't be enough water allocated to continue as we were practising at the time. So we needed more water full stop, it had to come from somewhere. The options were...we could buy more groundwater or we could start using mains water."

A possible source of water was available in close proximity to irrigation demand

Geographically, the proposed scheme made sense, with Christies Beach wastewater treatment plant (WWTP) located only 10km from Willunga Basin. The quality of water available from Christies Beach WWTP was acceptable for irrigation in terms of nutrient content, and compared favourably with groundwater from a salinity perspective. The anticipated costs of transporting water from Christies Beach were considered acceptable for initial investors, the majority of whom were also growers seeking a secure water supply.

"You've got 8 or 10GL at the Christies Beach Plant, which is a big plant. It services a quarter of a million people. It's only about 10km north of the Willunga Basin."

A successful scheme: Drivers and outcomes



The scheme turned 'waste' water into a valuable resource, which was good for irrigators and for the environment.
Local vignerons (as well as prospective growers) had land available, but no water to grow grapes. At the same time, pollution in Gulf St Vincent was emerging a big issue. Diverting wastewater to irrigation rather than discharging to the Gulf was seen by the wine growing community and government agencies as offering significant potential benefit for both irrigators and the environment, while also contributing to regional water security and development of the wine industry.

"It's a win-win...providing farmers and the southern area with an industry [and] stopping discharge to the Gulf."

"Willunga Basin saw an opportunity and SA Water were fairly happy to do something other than discharge [the wastewater] to the Gulf."

A dedicated champion created momentum for the scheme, and amongst the wine growing community there were those with business experience and the capacity to turn an idea into a successful enterprise.
The scheme was promoted by a local champion, providing critical momentum during early days. While this champion is no longer involved in the company, his vision and determination was seen as catalytic by those involved.

Once the seed for the idea was sown, a small group of growers with strong business experience were instrumental in translating the concept into reality. While none had direct experience in managing a water distribution company, their business skills proved invaluable in terms of designing the business model, establishing governance arrangements and securing investors to contribute the required $7 million start-up costs.

Initial investors perceived financial risks, with no precedents to follow and limited experience in the water industry. Ultimately however, for investors who were also growers, the need for water (and assumed demand from other vignerons) outweighed the perceived risks.

"Looking back we all consider it as investment, but it was actually venture capital. It was an unknown thing. There weren't examples of it being done successfully, especially viably and commercially. So that was a big thing in our board room – 'what is the risk?'...but it got addressed very easily because we needed the water and the other options were horrible."

The Willunga Basin business model has been highly successful

Fifteen local investors contributed start-up capital, enabling the scheme to get off the ground and shaping the ongoing business model.
WBW was started by a group of (primarily) vignerons, who were interested in developing a successful enterprise and in securing water for their vines. So they had multiple reasons to contribute. While it was challenging to secure the start-up capital, the venture has paid off for investors, and since commencement the business has operated successfully in both operational and financial terms.

The business is governed by a board and executive. The executive (3 of the shareholders) meet every 2-3 weeks and the board meets monthly. Those on the board and executive are both shareholders and significant customers in volumetric terms. While participation in governance of WBW has meant considerable time investment (in addition to running wine businesses), those involved have found the experience fulfilling.

"We had financial challenges, we had to raise $7 million from a group of people which was very substantial for a bunch of locals... But since then it's been pretty easy. It's self-funded."

"It's been a really exciting project to be associated with."

Over the 14 years the company has been running there have been minimal changes in the business management approach, and the 15 original shareholders remain in their WBW roles today. Continuity has helped to keep the company strong, allowing consistency in decision making and providing a foundation for growth.

WBW is successful in both delivering reliable water to customers and providing financial return to investors. Growth has presented challenges, with bigger management roles and increased risk of technical hiccups. Yet the board feels a responsibility to grow WBW until all demand in the community has been met (discussed further below). And the majority of shareholders see their 'dividends' in both financial returns and in their own water security, so maximising profit is not their sole driver.

WBW were able to secure a long term supply agreement with SA Water, giving them security and enabling them to build a strong customer base

Negotiations between WBW and SA Water during the establishment phase resulted in a 30 year agreement (with an optional 10 year extension), under which WBW takes 5.5 GL of water/year from Christies Beach treatment plant (which has a total annual treated volume of 10 GL). Under the terms of the agreement, WBW source water at no charge for the first period of the contract before reverting to a yet to be determined cost. Securing a reliable supply of water for 30-40 years helped WBW investors feel confident they could make the business work, building and growing the irrigation customer base. For SA Water, the opportunity to significantly reduce their discharge of wastewater to the Gulf was appealing, and without plans (at that time) to enter the recycled distribution business themselves, they were happy to agree to a long term arrangement.

"Willunga Basin did well to lock in a 40 year agreement...[B]ecause there was significant investment by Willunga Basin they wanted to protect their asset so that's how they did that."

The company balances traditional business drivers with a strong community service ethos

While the business model is for-profit, shareholders are also members of the local Willunga community, and bring this role to their business management approach including balancing profits with growth and a sense of community duty. Although new customers tend to be higher cost (as they are smaller and often more distant) the sense of wanting to meet community expectations and offer an equitable and inclusive service is driving continued expansion of the scheme. This is seen by the board as more important than maximising short-term profits.

"The [eight year drought] was not only a motivation for us to expand for commercial purposes, but because we would have been real bastards not to have done it."

The short-term plan for dealing with increasing costs is to increase the sale price of water, though WBW are very conscious of managing price increases with reference to what the local market will accept, seeing their responsibility to the community not just to make water available, but to do so at an affordable price.

"It's a funny organisation in that it's not one hundred per cent commercial. We live in a small community and water is a very precious resource. Mains water is not a viable option... So there's always been and still is... community pressure [to meet demand]".

"From now on it's not getting cheaper for us to put new customers on, it's getting more expensive because we've got water from three different effluent plants...Off peak you're taking it, putting it in storage, then pumping it out again and that's where the expense is. So new customers are getting more expensive than initial customers."

The business is run as a tight ship, with personal connections and trust underpinning customer relations. The business is run as a tight ship. Office and network operations are managed by 2 long-term permanent staff and a few casual contractors. The small number of staff keeps costs manageable, and has further benefits in ensuring a 'personal touch' approach to customer relations. WBW also see this model as differentiating them from other water service providers.

"I'm the face out there, and [my colleague is] the face in here...together we've got a relationship with people....[customers] must have confidence in the person that's out there spruiking it...trust is an essential part of the business."

A system of access and delivery fees provides certainty of supply to customers and security of income for WBW. When WBW was established, the price of water was calculated to cover the running the organisation, reflecting the cost of transporting water at high pressure to customers across the Willunga basin (given the availability of water at no charge from Christies Beach plant).

The model is based on a system of access and delivery fees. For delivery fees, customers are charged an access fee for a set volume they have purchased at a delivered flow rate. The access fee of $7,260 per ML is charged when a customer signs up with WBW, and paid over a 6 year period. Customers pay the access fee for their agreed volume whether or not they use their full quota, giving WBW security of income.

The water is delivered at the agreed flow rate (managed electronically) over the time the water is required, typically a 100 day period between November and March. The delivery charge is $0.95 or $1.25 per kilolitre depending on where the customer is located. The customer contract sets the price/kilolitre annually, with price increases tied to CPI.

Considering access and delivery fees together, WBW estimates that the price works out to be 50% cheaper than potable water. While this is an interesting benchmark for customers, it is in practical terms a moot point, given that potable water would not be available to irrigators at the volumes they typically require. So for many customers, the choice is in essence WBW water or no water.

WBW has not received any direct government funding, but the scheme has benefited from government investment in the local area. WBW is proud to be self-sustaining financially, having never received government grants or subsidies.

"It's self-funded. We have never received any government money."

However WBW have benefited from government investment, which has played an important role in facilitating expansion of the scheme. Both SA Water and Onkaparinga City Council have used federal government grants and their own funds to support the construction of additional storage facilities (discussed further below). Similarly, customers have used grant funding to the value of $2 million - provided to subsidise growers in moving off mains water - to cover access fees associated with purchasing water from WBW.

Customer experiences have been positive

Initial scepticism from some growers turned to support once the benefits became clear

Early concerns did exist for some growers, with hesitation attributed to uncertainties around water quality (with concerns about the impacts of nutrients on grapes) and natural wariness of a completely different approach to irrigation. However with practical examples of success, hesitation turned to enthusiasm and more and more customers signed onto the scheme. Uncertainties about the impact of recycled water on grapes have been laid to rest, following more than a decade of successful growing and a number of research studies monitoring impacts of the water on soil, plants and fruit.

"I guess everyone was a bit sceptical to start with as far as the nutrient side of things, but when people realise that had no effect, it just sort of ramped up."

"There was negativity to start with, [because it was] something new. But you don't hear those people anymore, because they're all on it."

Technically the scheme has operated well, providing reliable supply to customers with only occasional hiccups

For almost 14 years of operation, the WBW scheme has provided a secure and generally reliable supply of water. The full-time operations manager has oversight of the whole system and significant expertise in its specific requirements.

"It's just like the mains water. We turn it on. We don't worry about it too much."

There were some hiccups in the early days of the scheme, for example blocked filters, and occasional problems still arise including power outages. Power outages are described by WBW as the 'Achilles heel' of the system, with hot summer months bringing both peak demand and increased risk of blackouts.

However both customers and WBW portray these challenges as typical of any water business, and no more significant than issues that arise with use of bore water. Problems are managed quickly and with a personal touch, which is appreciated by customers and a point of pride for WBW.

"They can call [us] up...and we're locals, we're just here. They can actually talk to someone, they like that...everybody's got our mobile numbers."

Water security brings business security, and this makes the perceived 'high costs' acceptable

Customers highly value the guaranteed water provided by the scheme. Acknowledging that water is essential to the success of their businesses, and given constraints associated with groundwater and potable water, they see WBW as contributing greatly to the continuity and success of their operations.

> "The recycled water...gives us a guarantee in dry years like this year, where we can actually apply more water and we will still get a decent crop, and we can hit our targets... The security means a lot for business, there's a big advantage."

Compared to historic arrangements when most irrigators were using groundwater, growers view the cost of purchasing water from WBW as high. Yet they see the investment as a necessary one, and ultimately worthwhile for the security it gives them. The worth is reinforced because of the nature of wine as a high value-add crop, with investment in irrigation water bringing good returns.

> "Water wasn't really a cost before...it has now become a significant cost but when you weigh it up, what are we going to do? Are we going to not irrigate?"

> "So at the end of the day it's going to give us long term viability as a business..."

Customers also recognise that WBW is cheaper than mains water, so for vineyards that were previously relying on mains supply use of recycled water represents a significant cost saving. This is particularly over a longer time frame, taking upfront access fees into account.

> "Of course there is the capital [access] cost which is significant but after that it is cheaper than mains water. So it's cost effective in that way."

Some customers are benefiting from the 'green credentials' associated with their use of recycled water

For some vignerons, the use of recycled water adds marketing value to their product, with ecological responsibility an increasingly powerful selling point. While growers aren't (yet) promoting the use of recycled water on wine labels, they talk about the WBW scheme when engaging with marketing representatives, presenting an image of environmental responsibility and sustainability. There are also flow on benefits for McLaren Vale and surrounding areas more widely, which has a growing reputation as a 'green' wine region.

> "Now you find that the community's bragging because they're sustainable."

> "We are getting a reputation for sustainability that that's where [the Willunga Basin scheme] fits in really well."

As part of this, the number of organic and biodynamic vineyards is increasing. For these businesses, use of recycled water fits well with their sustainability ethic without compromising their organic certification.

> "Everybody who's growing organically is using our water, everybody."

The scheme has facilitated regional development

The Willunga Basin scheme has underpinned the success of the McLaren Vale wine region, with water availability facilitating investment

In making available a secure and reliable water supply, the Willunga Basin scheme has been instrumental in sustaining and growing the McLaren Vale premium wine region. It enabled growers struggling with groundwater allocations to stay in business, and made it possible for new and emerging players in the industry to develop previously un-irrigated land. The scheme has meant that growers can make investment decisions that take account of the costs of water, but aren't constrained by its scarcity. The region has flourished in the 14 years since the water recycling scheme commenced, with estimates of the current bulk value of wine produced by the region in the vicinity of $200 million per year.

"[The scheme] gave us the opportunity to develop more land...there was a demand for fruit and there was no water... for example we have developed a 50 or 60 hectare vineyard purely on this water which we couldn't have developed before."

Development of the wine industry has benefited the region more broadly

Flow-on benefits from the success of the wine industry include increased tourism and employment. While no studies have been undertaken to quantify the value of the wine industry to the region, it is widely recognised that the industry - facilitated by the Willunga Basin scheme - has underpinned considerable regional development (and prevented decline) and stimulated the growth of tourism. Customers, WBW and government agencies alike acknowledge the contribution of the scheme to the success of McLaren Vale.

"McLaren Vale wouldn't exist the way it does if it wasn't for Christies Beach water and for the way Willunga Basin have delivered it. There just weren't the groundwater resources there to keep their vines going."

"Without [the water] we wouldn't have the vineyards...the area wouldn't have developed at all."

"It's bringing more business, it's increasing the value of the land and increasing the value of McLaren Vale."

The bigger water cooperation picture – three regional players, a journey of negotiations and many mutual benefits

Willunga Basin Water, SA Water and City of Onkaparinga Council all play roles in regional water recycling

The Willunga Basin region sits within an area under the jurisdiction of three water service providers: SA Water, the City of Onkaparinga and Willunga Basin Water. Each play different and complementary roles in the region, including in water recycling. WBW sources water from both SA Water and (to a lesser extent) fromCity of Onkaparinga. As part of the arrangement with City of Onkaparinga WBW delivers around 100ML each year of pressurised water into the City of Onkaparinga network to supply irrigation water for a golf course, two reserves and a local school. This 'triangular arrangement' has brought benefits for the region in terms of water security, and has facilitated the continued growth of the WBW scheme (discussed below).

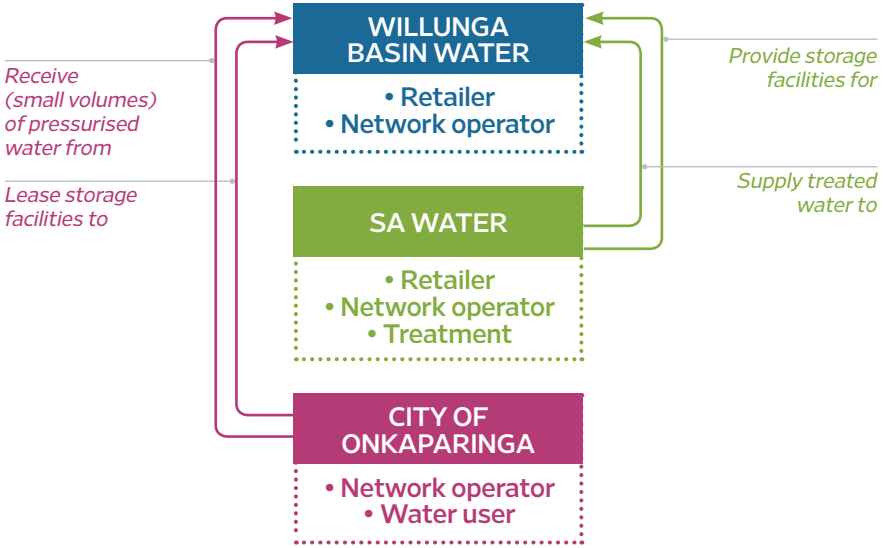
SA Water and City of Onkaparinga also both have schemes that supply recycled water direct to customers. City of Onkaparinga sets prices for recycled storm water at 20% cheaper than potable and recycled wastewater at 30% cheaper than potable. They have developed business cases for recycling schemes based on that premise, taking into account capital and assumed operational costs as well as anticipated revenue.

Investments from SA Water and City of Onkaparinga have supported growth of the Willunga Basin scheme, and subsidies for one player benefit others

While WBW has never received direct government funding, they have benefited from investments made by SA Water and the City of Onkaparinga, which have delivered on respective individual agency objectives and also contributed to regional water security. The three organisations have worked together as part of the City of Onkaparinga's 'Water Proofing the South' initiative (Stage 1), investing federal government grant funding ($34.5 million) and considerable agency funds ($139m from SA Water and $3.9m from City of Onkaparinga) in water infrastructure including storage facilities to enable expansion of the WBW network. As part of this, WBW provided $6.8 million for network expansion as a contribution to regional water security.

> "You could argue that they were done because of Willunga Basin Water to make sure they have enough water, but you could also say that they were done so that SA Water could send more [waste]water to beneficial use."

Relationship between WBW, SA Water and Onkaparinga City Council



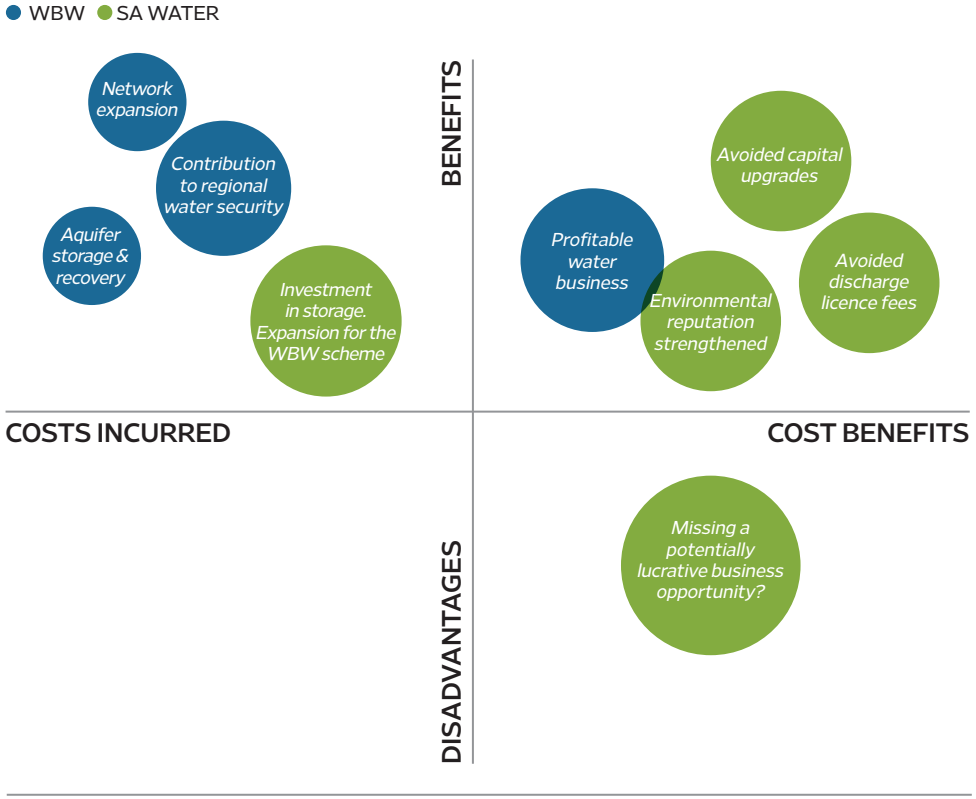
Stage 1 of 'Water Proofing the South' activities included increasing storage at Willunga Storage Lagoons (174 ML) and Aldinga Wastewater Treatment Plant (1000 ML) to allow water produced in winter to be stored then used in summer for irrigation. In another collaborative initiative, since 2009, SA Water and WBW have also worked together on an aquifer storage and recovery scheme at Aldinga offering additional storage capacity of up to 400ML water/year.

There are different perspectives on the value of wastewater, but ultimately all parties see themselves as benefiting from the Willunga Basin scheme

The relationship between the three water providers in the region is shaped in part by different perspectives on the value of wastewater. From WBW's perspective, they are providing a valuable service for SA Water (and to a lesser extent the City of Onkaparinga), taking a waste product and preventing potentially environmentally harmful discharge. SA Water's perspective is mixed. On one hand, by not distributing and selling the water themselves they are missing a potentially lucrative business opportunity. On the other, SA Water benefits from the removal of their waste at no cost in a number of ways: they save in the order of more than $100,000/year in avoided annual licence fees associated with discharging treated wastewater into the Gulf; their environmental reputation is strengthened; and they are more readily able to comply with both forthcoming discharge targets established by the Adelaide Coastal Water Quality Improvement plan (which could require significant capital upgrades) and load based targets recently attached to wastewater treatment plant licence conditions.

Overall, the three organisations - SA Water, City of Onkaparinga and WBW - see themselves as playing complementary roles. And for all three, optimising roles to meet both agency and broader social and environmental objectives makes sense in terms of regional outcomes.

Regional collaboration: costs and benefits for WBW and SA Water



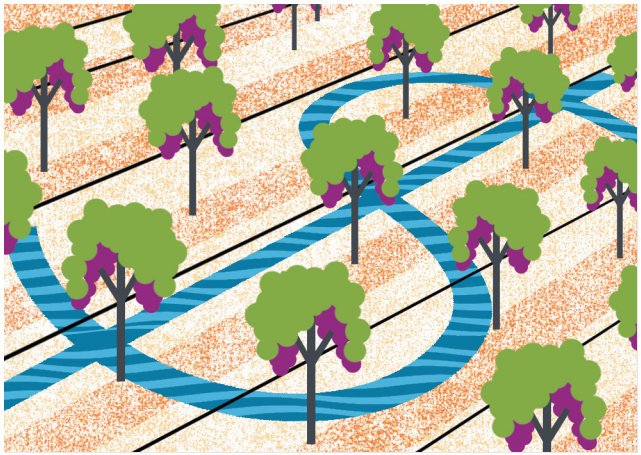
"The provider that's best placed to do something should be the provider that does it...the future for me is to see where the demands are, marry up the sources to those demands and then look at the provider with the best interest, the best capability to service those demands."

Lessons for the future

A private recycled water business can be financially viable
With no precedent and limited experience, establishing WBW was seen as a risky investment. Its success and continued growth prove that this kind of business can be viable without direct subsidisation. A ready market combined with good business sense have been critical ingredients.

Meeting the interests of different water agencies strengthens the business case for recycled water
When it was established, the WBW scheme met the interests of local investors/irrigators (water security) and SA Water (reduced discharge to the Gulf). The consequent availability of a reliable supply of water at no cost strengthened the WBW business case.

A business that meets multiple interests for shareholders is well-placed to succeed
The fact that the majority of shareholders are also growers has been important. As members of the local viticulture community, business investors understand customer needs and have a strong commitment to ensuring the business meets community - as well as financial - imperatives.



The significance of water security for local economic development cannot be underestimated
Before the WBW scheme was conceptualised, decreasing water availability and quality was threatening existing irrigation systems and limiting regional growth. The existence of a reliable supply of recycled water has been instrumental in local economic development and establishing McLaren Vale as one of Australia's premier wine regions.

There are many ways in which public investment can benefit private schemes
While WBW has never received government subsidies, in accessing government assets (in the form of storage facilities) WBW has leveraged government investments to facilitate network expansion. These arrangements have been mutually beneficial, with WBW, SA Water and the City of Onkaparinga playing complementary roles in regional water security.