



Liquid Assets

Issue 08 2010



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LIMITED

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Autumn 2010



Wastewater solution for Australian Vinyls



Westfield's water wisdom a winner



Mobil's smart approach to trade waste



Tollman pressure cleans its way to water savings



Anne Barker
Managing Director
City West Water

Sustainable water

As a business dedicated to the sustainable use of water, it is rewarding to see so many of our customers accept the challenge of investing to minimise their drinking water use. The prolonged drought necessitated meaningful action by the community to ensure we maintained adequate supplies, and I am pleased to say that so many of our business customers rose to the task.



Sofitel's five star water saving



Moonee Valley racing to water savings



ManheimFowles takes a shine to water conservation



Toyota drives staff to Target155



'Keepers' protecting our Yarra

use the only way forward

The level of technicality of the solutions has been as varied as the types of industries they've served – some measures undertaken were ground breaking in their use of previously unproven technology, while others have applied basic upgrades to deliver substantial benefits.

A testament to the close relationship we have with many of our non-residential customers was the start of works on the water treatment facility at our Altona Treatment Plant.

Once operational by the end of the year, the plant will produce up to 9 billion litres of water each year for use by Qenos, Koorngal and Sanctuary Lakes Golf courses, and recreational sports ovals. In addition, an expansion of the Werribee Employment Precinct will also see an extra 300 million litres of recycled water produced each year.

These projects, and supply augmentations such as the recently commissioned Sugarloaf Pipeline, do not lessen in any way the

continued importance of water use efficiency as a key business consideration. City West Water's involvement in this space is only set to expand in the future.

It gives me great pleasure to present the latest issue of Liquid Assets. In its short history, we've covered nearly 100 stories about our business customers leading the way in water conservation and waste minimisation and we look forward to bringing you many more stories in the coming years.

Wastewater solution f

At a glance

- A \$5.5 million wastewater recycling plant that allows water to be reused in the production process
- Water consumption has been reduced by 70 per cent



An on-site water recycling plant at Australian Vinyls is set to provide the dual benefit of reducing water use and cutting the volume of trade waste.

Australian Vinyls' Laverton North plant produces vinyl resin for use in a multitude of manufactured goods including PVC pipes, electric cable insulation, floor coverings and packaging.

As with many chemical manufacturing operations, high quality water is a key component necessary to ensure the quality of resin produced. For each tonne of PVC produced, 4500 litres of water

is needed, down from 6700 litres less than a decade ago.

While Australian Vinyls has long been championing water conservation, and has already

For Australian Vinyls



reduced its water use by one-third since the 1990s, the company was determined to take water efficiency to a new level.

With a funding grant of \$1.8 million from the Victorian Government, Australian Vinyls invested a further \$3.7 million in an on-site wastewater treatment plant that allows water to be reused in the production process.

Australian Vinyls General Manager, David Cooper, said the water recycling plant is testament to the company's commitment to reducing reliance on Melbourne's valuable water supplies.

"The investment in this recycling plant makes both economic and environmental sense. It allows us to grow our business with reduced risk of water constraints and reduces water used in the process of making Australian-made vinyl products," Mr Cooper said.

"We have invested heavily in water conservation in recent years, and

while the necessary technology to recover water from a PVC production process like ours had not yet been developed anywhere in the world, we were keen to investigate the viability of this innovative way of saving water."

The treatment plant utilises microfiltration membrane technology and reverse osmosis to remove solids from the wastewater. The first stage of the three stage process removes larger sticky suspended solids through a combination of strainers and hydrocyclones (which use centrifugal force to separate matter suspended in liquids). Next, microfiltration removes smaller suspended particles and solids, which is then followed by reverse osmosis to remove dissolved solids.

Australian Vinyls conducted a pilot plant evaluation of the technology and processes with the support of a REWARDS grant of \$110,000 through the partnership between the Plastics and Chemicals

Industries Association and EPA Victoria. Once the pilot proved successful, the full-scale water recycling plant was designed and built by the company's engineers.

The end result is high quality water, fit for use in the manufacturing process. The treatment plant is set to save 325 million litres of water each year, reducing water used on the site by a staggering 50 per cent. From a trade waste perspective, outputs are set to be reduced by the same amount – 325 million litres – down by 70 per cent.

Australian Vinyls' water recycling plant is a ground breaking development in the treatment and reuse of water used in chemical manufacture, and is set to help other industries reduce water use and trade waste outputs for the benefit of the broader community.

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Westfield's water wisdom **a winner**

A mainstay of shopping in Melbourne's north west has come in for a water-saving upgrade and helped to save millions of litres of water each year.

Serving as a local community hub in the north western suburbs for over 33 years, Westfield Airport West Shopping Centre records annual customer patronage of almost 7 million.

With that level of foot traffic passing through each year, more than 160 retailers selling everything from food to furry animals, and water needed for maintenance and fire service testing, the centre added up a considerable annual water tally.

For that reason, Airport West worked with City West Water to identify simple ways to reduce their water use while maintaining the centre's amenities and meeting operational requirements.

Centre Manager, Ed Neilan, said that as a cornerstone of the local community, he was pleased to see the centre contribute to the broader community's water saving effort.

"We're pleased to be part of the community when it comes to saving water – and by promoting our water saving efforts, we hope to encourage shoppers to continue water saving in their own homes," Mr Neilan said.

"Given the volumes we were using, water was emerging as a significant business input, so by implementing some simple measures we were able to cut our usage and reduce our water costs."

Westfield's first step was to upgrade all public water devices on the site – single flush toilets were replaced with dual flush models, urinals were converted to low flush units and restrictor valves were placed on wash basins and within individual retailers.

From there, they looked overhead and identified a major source of water use – fire service testing. In order to meet public

safety requirements, the centre is required to test its fire service at regular intervals to ensure it operates effectively. By reducing the testing frequency from weekly to monthly, it has reduced the water used for fire service testing by 75 per cent alone.

Mr Neilan said that with the upgrade to Airport West's amenities and the changes to fire service testing it helped reduce the centre's water use by 9 million litres a year.

"While we've dedicated considerable resources to reducing our water use through various initiatives, upgrades to amenities and changing the way we test our fire-sprinkler system, we're already enjoying the benefits of lower water usage and disposal costs."

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At a glance

- An upgrade of the centre's amenities, including toilets, sinks and washbasins
- A change to monthly testing of fire services has reduced water used for testing by 75 per cent



Mobil's smart approach to trade waste

An extension to its existing 'lagoon' treatment system has helped Mobil significantly improve wastewater quality.





Increasingly stringent environmental standards are changing the way refineries treat and manage waste.

As part of its commitment to environmental improvement, Mobil's Altona refinery undertook a major upgrade of its lagoon wastewater treatment system, which has helped create a safe and effective means of wastewater treatment.

As one of 6000 trade waste customers in City West Water's service area, Mobil works hard to manage and minimise the volume and contaminant levels of trade waste discharges.

The existing lagoon system was extended in length from one leg to three legs. This increases the waste residence time, allowing for greater extraction of contaminants through organic and chemical processes.

The upgrade includes additional aerators at the lagoon outlet and weirs between the legs. This results in lower contaminant levels in trade waste discharges, including hydrocarbons, sulphides, heavy metals and also pH correction. And, it reduces the risk of overflows during periods of heavy rain, ensuring that excess water does not result in unnecessary discharges into the sewer system.

The final active leg of the lagoon has also been modified to enable it to be used for firewater,

thus reducing the demand for drinking water.

For many businesses, the financial viability of investing in waste minimisation continues to increase. Increased costs for trade waste over the next five years will see trade waste emerge as a growing cost for many businesses.

Mobil's investment in wastewater treatment ensures the site's compliance with trade waste guidelines, which help guarantee the safety of the sewer system for the broader community.

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At a glance

- An extension of the lagoon system enables further on-site treatment of wastewater
- The upgrade has resulted in a dramatic reduction in trade waste discharges



Tollman

pressure cleans its way to water savings

Committed to increasing efficiency, Tollman's chemical manufacturing facility in Laverton North devised a new method of preparing blending tanks and reactors, resulting in an innovative water saving project.

As a major chemical manufacturer, Tollman formulates, blends, packages and distributes chemicals for a range of industries including agriculture, mining, paper, building/construction, cement and recycling throughout Australia.

With a high turnover of different chemical products in each vessel on the site each week, clean up between batches required vast amounts of water and energy. The process involved filling 24,000 litre reactors and up to 80,000 litre storage tanks with water and cleaning agents and then boiling out the water to clean them.

This method posed several problems. In addition to consuming large volumes of water and creating long down time, cleaning required high amounts of energy to heat the water. At the end of the process, the water and cleaning agents were then discharged into the sewer system.

Having already installed a system to recycle vacuum pump seal water

and a hot box to reduce steam requirements, Tollman was keen to do even more to save water and energy, while reducing their trade waste discharge.

After consultation with City West Water, studying other business examples and researching suppliers, Tollman decided to trial a new 'Clean in Place' system to reduce their use of wash water. City West Water contributed \$5500 funding to the pilot.

The system consists of portable orbital high pressure cleaning nozzles – situated inside the cleaning tanks – and a high pressure pump and setup that eliminate the need to completely fill the tanks with water and boil them out.

Arash Khorasani, Business Strategist, said Tollman is committed to environmentally friendly business practices and the Clean in Place system had helped Tollman slash water and energy use.



At a glance

- A new orbital pressure cleaning system cuts water use for cleaning by 93 per cent
- The new system helps save one terajoule of natural gas, as well as trade waste outputs

“Like any business, we’re always looking for new ways to increase efficiency in our operations, and the Clean in Place system allowed us to achieve that with relative ease,” Mr Khorasani said.

“The numbers speak for themselves – we’ve cut our water use from an average of 15,000 litres of water per wash to less than 1000 litres, and from an energy perspective, we’ve cut our greenhouse gas emissions by about 54 tonnes of CO₂ equivalent per year which is the equivalent of 900,000 black balloons.”

As a result of the new system, the water savings achieved to date have been enormous for the chemical manufacturer – about 4 million litres per year, or approximately a third of the site’s total water use. Trade waste discharge has also been reduced accordingly.

Reducing the amount of water

used for each tank wash has also had flow on benefits. Now, only a fraction of the energy and chemicals are required to achieve the same temperature and chemical concentration in the wash water and the ‘down time’ of the vessels are much less.

The reduction in energy use has resulted in Tollman using one terajoule per year less natural gas in their boiler. As an added benefit, the reduction in chemical use has seen total dissolved solids entering the sewer from Tollman’s operations reduced significantly.

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Sofitel's five star water saving

The Sofitel Werribee Park Mansion Hotel and Spa, housed in one of Melbourne's most iconic buildings, has led the way in making hotel accommodation water friendly.

Originally the centrepiece of a 93,000 hectare pastoral empire, the 60 room Werribee Mansion was the largest private residence ever built in Victoria. Designed to pay homage to the grand country estates of England in the late nineteenth century, the majestic Italianate mansion is one the best examples of this type of architecture in Australia.

During its 125 year history, through various uses that include a private residence, a college, and a seminary, water conservation had not been a major consideration. This changed remarkably when the property became the Sofitel Werribee Park Mansion Hotel and Spa.

After nearly a decade of successful operation, the ongoing drought threatened to impact the experience the hotel could offer its guests. As a result, the hotel embarked upon an ambitious plan to reduce drinking water use while maintaining hotel standards, which included upgrading facilities to improve water efficiency and environmental sustainability.

General Manager, John Dickson, said the hotel is committed to

ongoing water conservation, while ensuring the highest quality guest experience.

"We are committed to making our hotel more water-efficient and the measures we have put in place are just the start of creating a more environmentally sustainable business in the future."

"We have been able to achieve a remarkable feat in the hotel industry – maintaining our standard in terms of hotel experience while making significant reductions in the volume of water we use on site."

Mr Dickson explained that the hotel's water consumption goes beyond guest water, with facilities including laundries, swimming pools, garden irrigation and restaurants all adding to the hotel's water usage.

"At Werribee Mansion, we installed a number of measures that have helped us dramatically reduce our water use, and for the most part, the impact on our guests' stay has been kept to an absolute minimum."

The hotel's water saving initiatives comprised a number of specific measures, including installing two 25,000 litre water tanks at the front of the property to collect recycled

water, and an upgrade to the existing rainwater tanks which collect water from the roof for use in the pond area.

The hotel swimming pool now collects its 'backwash' water, which is then used in the newly lined pond area. The pond would otherwise remain empty under current water restrictions.

Inside the hotel, taps were upgraded, and kitchen wash areas had low-flow spray nozzles installed. In the guest rooms, old inefficient showerheads were replaced with new three-star models that can cut water use by more than half.

The water conservation upgrade at Werribee Park Mansion Hotel and Spa has already started delivering returns. Water use has been reduced by nearly 1 million litres of water per year, and the gardens and grounds of the hotel remain in optimum condition. More importantly, there has been little if any impact on the experience of the thousands of guests who use the hotel each year.

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At a glance

- Installation of tanks to collect rainwater and recycled water to maintain gardens
- Upgrade of water devices across hotel, including showerheads, taps and toilets



Moonee Valley rac

As home to Australia's iconic Tatts Cox Plate horserace each year, Moonee Valley Racing Club set itself a challenge to reduce its water use, while maintaining more than 30,000 square metres of racetrack during a drought.

As the Spring Racing Carnival descends upon Melbourne each year, Moonee Valley Racing Club goes to great lengths to ensure the racetrack and surrounding grounds are in pristine condition as the eyes of the country, and across the world, hone in on Moonee Valley for the Tatts Cox Plate.

Moonee Valley has long been at the forefront of water conservation, and over many years has implemented a number of sustainable measures to maintain its racetrack in times of drought.

Moonee Valley's water conservation efforts date back to 1993, long before the current water shortage took effect. When the racetrack was reconstructed, work was undertaken to partially harvest stormwater runoff from the racecourse through several underground drainage networks that empty into the racecourse dam. To ensure water is used most efficiently for irrigation, underground moisture sensors and a state of the art computerised irrigation system were installed.

Despite these efforts Moonee Valley remained heavily reliant on drinking water for racetrack irrigation, and was listed as one of City West Water's top 100 water users.

Partnering with City West Water and an external consultant, Moonee Valley developed its Water Management Plan to consider all possible alternative and sustainable water resources available for

racetrack irrigation. The most viable method to reduce or eliminate drinking water use was to increase the stormwater harvesting activities.

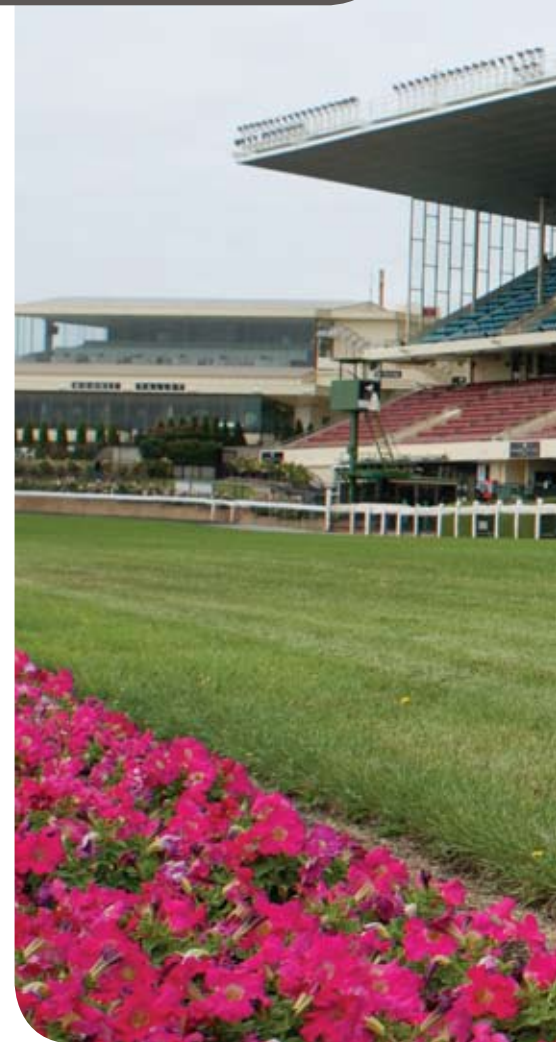
Brian Masters, Moonee Valley Manager – Operations, said that when the racetrack was reconstructed in 1993, work was undertaken to partially harvest stormwater runoff from rooftops, hard surfaces and surrounding streets into a drainage system under the racecourse.

"We began taking steps to reduce our water consumption more than 15 years ago, but the technology available at the time didn't allow us to realise the full water saving potential," Mr Masters said.

In 2009, with a \$178,000 funding grant from City West Water, the Club embarked on a \$345,000 project to further reduce its reliance on drinking water.

The project made use of advances in technology not available when initial stormwater harvesting was implemented. A Gross Pollution Trap (GPT) was installed upstream of the main underground diversion pits in the underground stormwater network.

"The GPT traps rubbish and sediment in a series of chambers for later disposal, and by doing so, we no longer need to allow initial rainfall to flush the drainage network before actual harvesting commences, enabling total



capture of stormwater runoff," Mr Masters said.

"And, by removing 4500 cubic metres of soil from the dam and reshaping the sides, the storage capacity of the dam has increased to a capacity of 23.5 million litres."

Finally, as a precaution against the dam ever reaching capacity and

ing to water savings



- Installation of gross pollution trap to maximise use of expanded on-site stormwater collection dam
- Water consumption has dropped by 36 million litres per year

At a glance

discharging onto the track in the future, weir gates have been installed at key diversion points to allow re-diversion through part of the drainage network that empties into Moonee Ponds Creek.

Since the project was completed in July 2009, it is estimated that the project has saved a staggering 36 million litres of water.

Subject to seasonality, it is estimated that Moonee Valley will be able to collect and store sufficient stormwater to fulfil racetrack irrigation requirements in all but the driest of years.

With the increasing cost of drinking water, the project has considerable economic benefits to the Moonee Valley Racing Club; a reduced

reliance on Melbourne's drinking water supply as well as the added community environmental benefit of removing rubbish from any water discharged into the Moonee Ponds Creek system.

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ManheimFowles takes a shine to **water** **conservation**



Preparing thousands of vehicles in pristine condition for sale each week presented a challenge for ManheimFowles that has resulted in some award winning water saving measures.

ManheimFowles provides a total logistics solution for automotive remarketing – receiving, preparing and selling used vehicles for a variety of clients including governments, vehicle manufacturers and importers, lease and rental companies, insurers and financial institutions.

As Australia's largest automotive auctioneer group, ManheimFowles used considerable volumes of water preparing vehicles for sale at large scale auctions. More than 100,000 vehicles move through the company's Melbourne site alone each year.

As part of an organisation-wide commitment to reduce water consumption, ManheimFowles implemented a number of measures

with the sole aim of slashing water used to wash vehicles.

The flagship of the water saving initiative is a sophisticated water recycling unit and rainwater harvesting system with a 455,000 litre storage capacity, which included a \$15,000 funding grant from City West Water.

Rainwater is collected off the company's expansive Salvage and Detailing shed roof, and then stored in nine 50,000 litre tanks for use in the vehicle wash down area. Vehicles are washed using only high-pressure cleaners, which helps keep water use to a minimum.

The water saving does not stop there though, with the water then treated in the on-site treatment

facility and then reused for further vehicle washing.

Rhonda Bailey, Facilities Manager, said that with the rainwater harvesting and recycling plant operating, the company's vehicle detailing area now operates on 100 per cent harvested and recycled water.

"We've switched off the mains supply and turned the water pressure and volume back up in our Detailing and Rectification wash bays which has made our detailing staff happier – allowing us to increase pressure on the guns so that grime comes off much more easily."

"When you consider that our Detailing and Rectification teams at



- A rainwater harvesting system with a 455,000 litre capacity is used for all vehicle washing
- A treatment facility allows rainwater to be reused for further vehicle washing

At a glance

Altona clean more than 50,000 vehicles each year, you could also argue that water conservation has also contributed to increased productivity.”

“Turning off the mains supply makes us one of the cleanest and greenest sites in the industry – and we’ve slashed our water use by 73 per

cent in the two years since the measures were put in place.”

In recognition of ManheimFowles’s commitment to water saving, the company beat more than 700 entries to win the ‘Overall Award for Excellence’ in the 2009 National Savewater! Awards for their achievements in the area of water

conservation. The company was also the winner of the ‘Large Business Award’ topping off an outstanding night for the company.

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Toyota drives staff to

On top of Toyota's remarkable water saving measures at its Altona manufacturing plant, Toyota employees have taken up the challenge to do their bit for the Target 155 personal water use target.

The Australian arm of the world's largest automotive manufacturer has been at the forefront of water conservation in heavy manufacturing for many years. Through implementation of a series of water conservation measures, Toyota has slashed water consumption per vehicle by 48 percent in the past 10 years.

Initiatives such as reusing reverse osmosis backwash for process rinses have saved 9 million litres of fresh water each year – the equivalent of 160 people achieving their 155 litre per day target everyday for a year.

With the manufacturing plant achieving huge gains in water efficiency, the company put the challenge to its employees to embrace water conservation in a similar manner.

With the launch of the Target 155 personal water use campaign in November 2008, Toyota saw a great opportunity to encourage its workforce to do their bit for Melbourne's water saving effort.

Within weeks, Toyota had established the 'Target 155 Club' and put the challenge to employees to keep their daily water use below 155 litres of water per person.

Membership of the Target 155 Club was simple – employees had to bring in their bill showing their daily water use and identify the number of people in the home. Employees were given a badge to identify

themselves as a Target 155 supporter and were recognised on tracking boards around the plant.

As an added bonus, Target 155 members who obtained the 155 litre target went into a monthly draw for a prize voucher, sponsored by City West Water, and an end-of-year prize.

Continuing the theme of sustainability, City West Water and Toyota developed an interactive training program that focused on water, energy and sustainability in the home and was presented to employees as part of a site wide environmental training program

More than 200 employees signed up to the Target 155 Club, with one employee keeping water use to a staggering 47 litres of water per day!

Water saving tips include:

- Short showers – keeping showers to 4 minutes using a shower timer – *Darren Olsen (left)*
- Installing a water efficient showerhead and collecting shower water for reuse on the garden – *George David (right)*
- Installing water saving devices on appliances to reduce water consumption – *Heather Chestney (centre)*

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Target 155

- A staff incentive program to encourage water conservation in the home
- More than 200 employees participated, with one employee recording daily water use of 47 litres

At a glance



'Keepers' protecting

While the Yarra River's run through Melbourne attracts little attention from the majority of the community, a small group of people have come together to protect the city's major waterway.



our Yarra

- A community group that serves to monitor and protect the Yarra River system
- Group acts as an advocate in light of reduced rainfall and increased water demands

At a glance

The Yarra River is one of Melbourne's most important landmarks. As it weaves its way from the upper reaches of the Yarra Valley and meanders through the metropolitan area, emptying into Port Phillip Bay, the Yarra provides a picturesque backdrop to the CBD precinct.

Look closer though, and the Yarra's health is under constant threat from continued drought, water extraction, pollution and the scourge of many large cities – garbage.

For this reason, in 2004 a group of Melburnians concerned about our river formed the Yarra Riverkeeper Association, and joined the growing and successful Waterkeeper movement of 180 community groups around the world that are caring for their local waterways.

The international Waterkeeper movement came to Australia through the joint efforts of the Australian Conservation Foundation, Environment Victoria and the Myer Foundation who saw it as a valuable grassroots model for community engagement.

The aim of the Yarra Riverkeeper Association is to protect and restore the Yarra and its tributaries for current and future generations. They monitor the ecology, health and changes to the river, educate the community and industry through presentations, publications, river tours and displays, and liaise closely with the many relevant authorities on river care matters.

Over five years of operation, Yarra Riverkeepers has earned the reputation of being the pre-eminent advocate of the Yarra River.

Ian Penrose, 'Riverkeeper' spokesperson said the organisation is giving the river a 'voice' because it cannot speak for itself.

"The fact is, the Yarra River is Melbourne's lifeblood – its flowing water and rich river banks were key reasons why our city was founded here, and today's residents and industry are no less dependent on the river. It is not widely appreciated that the Yarra is a main source of our water supply, and given the huge impact that water extraction has on the river, all households and industrial water users share a responsibility to look after it," said Mr Penrose.

"The Yarra is more than just our source of water or a valuable place for recreation; it is one of the city's most important natural assets and is home to many wonderful native plants and animals.

"Sadly though, the health of much of the Yarra is poor. Record low river flows, water pollution, degradation of the banks and wetlands, and pest species are all taking a significant toll, and drastic action is needed to secure a healthy future for our river."

Using the Yarra Riverkeeper's boat, Projects Officer Rod Ingham regularly patrols the lower reaches of the river, monitoring changes –

both positive and negative – and informing the authorities and other river stakeholders. He is frequently seen on the river, chatting to river users and sharing stories and information.

Mr Penrose says the key issues for the Yarra's health are water quality, the volume and pattern of water flows, loss of vegetation and pest species.

"Low flows and damage to riverbank areas are the most challenging, where the solutions are difficult while dry weather persists and the city continues to grow," he says.

"Low rainfall in recent years has created enormous tension between Melbourne's high demand for water and what the river needs for environmental health – the volume of water that flowed down the Yarra in 2009 was only 17 per cent of its natural average."

The Yarra Riverkeepers' program for 2010 includes continued river patrols and river health monitoring, on-water inspection tours for community and business leaders, an expanded program of talks and presentations to relevant stakeholders. Businesses and individuals interested in taking part in the program are invited to do so on the contact details below.

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Partnering with Students for ideas

City West Water is expanding a program of partnering with universities to foster greater research and development of resource efficiency for businesses.

For many non-residential customers, juggling competing priorities across their business and allocating resources to water conservation and trade waste reduction initiatives often proves difficult. For this reason, City West Water has developed an innovative program to bring businesses together with engineering and science students who are hungry for practical experience.

The Cleaner Production Student Development program links students with some of our business customers. Students work to identify ways for the business to save water and reduce trade waste in their operations.

Once the students have been briefed by the customer about their operations, where water is used and trade waste generated, they embark upon detailed research projects and feasibility analyses to develop solutions for more efficient water use and/or trade waste reduction.

Customers that supported the 2009 program came from a variety of industry sectors including health, construction, food manufacturing and processing, and local government. The students came from RMIT University's Schools of chemical, environmental, and civil engineering, RMIT University's School of applied and social science, and Victoria University's school of civil engineering.

Upon completion of the research projects and feasibility studies, the students presented their findings at a forum November last year which is attended by City West Water, the businesses involved in the program, EPA Victoria, and Sustainability Victoria.

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The projects presented in 2009 were:

ROYAL VICTORIAN EYE AND EAR HOSPITAL

The students investigated potential water saving initiatives and recommended:

- installing free check meters
- fitting aerators to taps
- replacing existing showerheads and toilets
- installing a rainwater harvesting system
- upgrading sterilisers
- initiating a staff/patient water efficiency campaign

HANSON CONCRETE GROUP

The student researched the use of Class A recycled water in concrete. The investigation found that the workability, slump, compressive and tensile strength of concrete was relatively unchanged using an 80% blend of Class A recycled water from the Western Treatment Plant and drinking water

MAKMUR ENTERPRISES ASIAN FOOD MANUFACTURING

The students investigated ways to reduce water use and recommended:

- rainwater harvesting
- cooling tower blowdown reverse osmosis
- the use of trigger nozzles, water broom and a water pressure reducer for wash-down
- installing temperature and continuous blowdown control for the boiler

CITY WEST WATER ALTONA TREATMENT PLANT

This Masters student assessed the potential pre-treatment for reverse osmosis concentrate (a by-product of the ATP recycling plant currently under construction) by a UV-based advanced oxidation process prior to tertiary biological treatment, before disposal to the bay

BAIADA POULTRY AND TANON PET FOODS

This student explored stormwater harvesting at Tanon Pet Foods and water recycling at Baiada Poultry

MACQUARIE'S PROPERTY PORTFOLIO - CARBON AND WATER ROADMAPS

To save water the students recommended:

- replacing basins with 3-star rated taps that release water at three litres per minute equating to a 63% water reduction
- replacing showers with 3-star rated showers that release water at nine litres per minute equating to a 53% reduction in water used for showers
- replicating water saving urinals on all floors not already retrofitted

COOGEE METHANOL, ENSIGN - SPOTLESS LAUNDRY

This project demonstrated potential industry water recovery using membrane distillation and waste heat

CITY WEST WATER

This student assessed several options to divert stormwater to City West Water's Altona Treatment Plant for desalination and recycling to industry.

COUNCILS IN CITY WEST WATER AREA

The students considered several SMART irrigation options for council sportsgrounds and developed an irrigation scheduling model. They found:

- water restrictions have encouraged ground managers to be better informed about irrigation practises
- the irrigation scheduling model developed proves further savings can be made

CITY WEST WATER

The students investigated alternative water supply options at Point Cook using Aquacycle

Business for the Environment Breakfast



City West Water's second Business for the Environment Breakfast was held at the Park Hyatt Hotel on 21 October 2009 as part of a National Water Week program of events.

Hosted by Channel 10 weatherman Mike Larkin, the breakfast was attended by nearly 150 of City West Water's non-residential customers from a range of industries, and included a panel discussion about the imperative of water conservation as an ongoing business consideration.

The panel discussion began with Anne Barker, Managing Director, City West Water, who detailed our commitment to assisting business customers in becoming more sustainable in their water use. David Waldren, General Manager, Carlton Brewery Project – Grocon, then provided an overview of the challenges involved in sustainable building design. Jon Ward, Manager Environmental Policy – Toyota Motor Corporation Australia detailed the automotive manufacturer's role in pioneering hybrid technology and bringing it into the mainstream. Finally, Tony Arnel, Building and Plumbing Industry Commissioner provided insight into the increasing role that the plumbing and building industry is playing in the adoption of sustainable practices in domestic and commercial building applications.

With so many industrial and commercial users gathered together, the event provided a fantastic networking opportunity and the chance to share water conservation ideas. With the event such a success, City West Water will be staging a third Business Breakfast in October to coincide with National Water Week 2010. Details will be communicated in the coming months.

HOW City West Water Can Help You Save Water

City West Water has a comprehensive Water Conservation and Cleaner Production Solutions Program which is dedicated to improving water and resource efficiency amongst our commercial and industrial water customers.

We have a team of water industry specialists who can help identify opportunities that reduce potable water consumption, as well as costs for wastewater, trade waste and sewer outputs.

Importantly, City West Water can provide co-funding for water efficiency initiatives which can often help projects become financially viable. Our involvement doesn't end there though – we'll work with you to determine the most effective and best suited water efficiency measure for your business. We also provide ongoing support from concept to implementation, and we'll even help you to track progress and measure success.

Almost every business can become more water efficient – call or email us now.

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Please note that City West Water does not endorse any of the products or services offered by the service providers mentioned in this publication. It is strongly recommended that you undertake normal diligence enquiries to select appropriate service providers. Estimates of financial savings in this publication are based on City West Water's charges as at July 2009 (\$1.3987/kL for non-residential water usage and \$1.4153/kL for non-residential sewer disposal discharge). Savings are indicative only.

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