

waterMAP – Case Studies

Local Government and Open Space

City of Boroondara - Sportsgrounds: Smart Water Fund

- The City of Boroondara manages 3 sportsgrounds and was awarded a grant to implement an innovative water saving technique involving Fyfoam
- Fyfoam is a revolutionary foam product made from organic chemical materials, and is inserted into the root zone of the grass where it absorbs nutrients and moisture from rain and irrigation sprinklers, and releases the water slowly back into the soil
- Fyfoam breaks down over 10 years into naturally occurring chemical elements and grass roots gradually grow through the foam over this time and take over its role, leading to thicker and deeper roots that are able to withstand more wear and tear
- The process reduces the need for irrigation and fertilisers and helps the grass to grow during periods of drought
- The Council is using Fyfoam in conjunction with planting warm-season grasses like cooch to continue to reduce their reliance on irrigation
- Estimated reduction in water consumption of 30%, or 3.8 ML of water per year, per sports ground

State Netball Hockey Centre - Sporting Facilities: Smart Water Fund

- Victoria's State Netball Hockey Centre required around 24 ML of drinking quality water every year to maintain the centre's two synthetic wet hockey pitches to international standards and was awarded a grant to research and introduce a recycled water harvesting scheme allowing for the irrigation of pitches with recycled water from a range of sources
- The scheme allows rainwater collected from pitch areas and roofing to be stored in four 45kL underground tanks which is treated before use
- Overflow from the tanks irrigates the centre's native plants, while the bulk of the water irrigates the hockey pitches
- The centre has created the first hockey facility with a water recycling system of this kind in the world
- The recycled water system will save 19 of the 24 ML the centre uses each year on the pitches, reducing its use of drinking quality water by 80%

Gisborne Junior Soccer Club - Sporting Facilities: Smart Water Fund

- The current fields have reached their capacity as a safe playing surface, so the club has found a solution to use recycled water supplied from their local water authority
- It has also utilised a new sub-surface irrigation system that will be installed to:
 - improve surface quality and durability
 - improve the level of grip and reduce soil compaction levels
 - increase player safety by reducing the risk of player injury
 - provide a useable playing surface all year round
- The irrigation system will reduce water consumption by up to 40% and will make use of recycled water rather than high quality drinking water
- Initial water savings estimated from this project are 2 to 3 ML per year (the equivalent of one Olympic-sized swimming pool) with this figure expected to rise to 10 to 12 ML when new stages of the precinct are completed and the same technology adopted

Heatherdale Tennis Club - Sporting Facilities: Smart Water Fund

- The extensive watering requirements of maintaining red porous tennis courts, such as en-tout-cas courts, has prompted the club to tackle the challenge of identifying and implementing a new surface that had the same characteristics as red porous but requires less water to maintain
- Save 325 kL drinking quality water per year per court as well as protect the nearby sensitive Heatherdale creek system from muddy run-off
- an alternative surface that produced the same playing conditions as traditional red porous courts, yet needed no water to maintain was found in an innovative Australian product called "Classic Clay"
- As this surface requires no water-based maintenance, it causes significantly less turbid water run-off so that less contaminants enter the drainage and creek systems
- The club expects to save 2600 kL of water a year, reducing their annual water consumption from 3510 kL to around 900 kL

Victorian Golf Association - Turf Managers: Smart Water Fund

- The Victorian Golf Association (VGA) represents more than 340 golf courses across Victoria and is currently trying to identify a new set of grass varieties that are more water efficient than those currently used
- A grant was awarded to the VGA to assist in conducting evaluation trials on a range of drought and salt tolerant grasses that can either be irrigated with less water or recycled water
- The results delivered through trialing salt tolerant grasses and the use of less water, or recycled water will assist in accelerating both acceptance and adoption of recycled water usage, and in reducing water lost through current irrigation practices
- This will reduce the amount of water used to irrigate golf courses, as well as reducing the costs associated with maintaining courses

Frankston City Council - Aquatic Centres: Smart Water Fund

- The Frankston City Council was able to implement a range of water saving techniques identified as part of an extensive water audit conducted across two aquatic centre sites
- The project involved the introduction of rainwater collection systems, incorporating treatment technologies such as “first flush” and UV treatment
- The systems were complemented by various water saving initiatives including:
 - installation of thermal pool blankets
 - rainwater collection tanks to supply toilet flush cisterns
 - flow regulators on tapware
 - timer push-button taps in showers and handwash basin taps
 - dual flush cisterns in toilets
 - repair and replacement of leaking taps and toilets
 - installation of rain sensors and timer systems for irrigation
 - water efficient landscaping using indigenous plants
 - An education program to encourage staff and the community to embrace the changes
- Expected water savings across the two centres is 16 ML /yr which equates to over 50% and \$18,000 per annum
- Other benefits include reduced energy use and sewage disposal

Warringah Aquatic Centre: Sydney water

- Warringah Aquatic centre has reduced water consumption by approximately 18% (2.7 ML per year) from the following initiatives:
 - installed flow restrictors in showers and hand basins
 - fitted dual-flush toilets in high usage areas
 - installed sensors to control urinal flushing
 - implemented a rigorous maintenance program to minimise leaks
 - encouraged changes in cleaning practices among contracted cleaning staff
- Initial capital outlay of \$5,200
- Water savings of 2.7 ML per year and cost savings of \$4,600 per year
- Payback: 1.3 years
- The centre is also investigating the feasibility of installing rainwater tanks to collect water from roofing, which could potentially be used as pool make-up water

Mildura Rural City Council - Landfill Complex: Smart Water Fund

- The Mildura Rural City Council uses a significant amount of water for suppressing dust at the Mildura Landfill Complex
- The project aims to access stormwater from an existing adjacent wetland, via the overflow channel, as a substitute for drinking water, for dust suppressant purposes
- Stormwater will be treated with iodine and pumped into storage tanks with a capacity of 90kL which can then be accessed by water tankers to wet down the road network within the landfill complex
- The volume of stormwater accessed will be approximately 6 ML of water per year saving the equivalent potable water supply, and \$3500 per year
- Other environmental considerations include the use of solar power to supply energy to the pumps operation
- The project demonstrates the benefits of harvesting fit for purpose stormwater, using it for a specific purpose that does not require the use of potable water

Manningham City Council - Sporting Facilities: Stormwater and Urban Water Conservation Fund

- The Council will harvest stormwater from the roof of the basketball gymnasium, store and reticulate water to the building (using automatic pressure pumps for toilets) and for irrigation of the oval
- Total project cost of \$43,000 with a water saving of 2.54ML per year

Altona Leisure Centre - Stormwater and Urban Water Conservation Fund

- Hobsons Bay City Council has implemented stormwater capture from the roof and landscape of the leisure centre which is stored in existing disused lap pool, chlorinated and used as top up for the swimming pools
- The collected water has lower chemical concentrations, total dissolved solids and salts and so has a positive impact on the water chemistry
- Also installed Waterwise fixtures such as 3 star showerheads and dual flush toilets
- Upgrade also involves the use of heat exchangers used to withdraw heat from water being backwashed to the air-conditioning system
- Total project cost of \$65,000 with a water saving of 7.9ML (3.44ML from stormwater substitution and 4.5ML through water conservation)

Sandringham Yacht Club - Sporting Facilities: Stormwater and Urban Water Conservation Fund

- Stormwater from roof captured for irrigation and washdown of facilities
- Water sensitive urban design including landscape swales, bioretention drainage and pollutant traps as well as education and promotion
- Total project cost of \$235,000 with a corresponding water saving of 2ML per year (stormwater substituting potable water)

Maribyrnong City Council - Open Space: Stormwater and Urban Water Conservation Fund

- Installed stormwater harvesting and reuse system (diverted from stormwater pipe), treatment in wetland system, storing underground and reuse irrigating park

Frankston City Council Depot: Stormwater and Urban Water Conservation Fund

- Rainwater captured, stored and used for vehicle washing, street sweeping, toilet flushing complemented by education, promotion and communication of the benefits
- Water quality and trade waste improvements
- Total project cost of \$100,000 and water saving of 1.1ML

To find out further details of these projects and more, look at the case studies and fact sheets at the internet sites listed below:

South East Water

<http://www.southeastwater.com.au/solutionsfor/business/Pages/CaseStudies.aspx>

City West Water

http://www.citywestwater.com.au/business/water_and_resource_efficiency_publications.htm

Yarra Valley Water

<http://www.yvw.com.au/yvw/YourBusiness/WaterConservation/CaseStudies.htm>

Smart Water Fund

<http://www.smartwater.com.au/mainf.asp>

Stormwater and Urban Water Conservation Fund

<http://www.dse.vic.gov.au/DSE/wcmn202.nsf/LinkView/92C773A9748FD0BECA256FE1001CBE34CFB32E3D98756185CA256FDD00136E16>

Sydney Water

<http://www.sydneywater.com.au/SavingWater/InYourBusiness/FactSheets.cfm>

Federal Government Department of Environment and Water Resources

<http://www.environment.gov.au/settlements/industry/corporate/eecp/location.html>

Report prepared 5 September 2007 by Brigid Adams.