

IPOS e-Bulletin

Issue 46 – April 2017

Irrigation management technology

The latest technology assisting irrigation management

We often receive enquiries from customers about the latest technology available to assist irrigation management. This article brings together some of the technology we are observing at schools and councils in this space. Central control systems, soil moisture and rain sensors, smart metering, flow control instrumentation, advanced weather stations, pressure sensors, nutrient monitoring technology and improved sprinkler types are a few examples of recent innovations.

The different technologies can be broadly grouped according to:

- **improved irrigation efficiency application**
- **monitoring of environment conditions including weather and soil**
- **monitoring of system function**
- **monitoring of water use**
- **control of system operation**

Improved irrigation efficiency application is enhanced through new methods of irrigating. A good example is the availability of a moving multi-stream spray as a method for the distribution of water. The delivery of water in multiple streams results in a greater distance of coverage for the same flow rate. These systems are used on small scale areas and are more effective than fixed nozzle sprays.

Improved weather stations that collect evapotranspiration (ET) and rainfall data have helped with the **monitoring of environment conditions including weather and soil**. Soil moisture sensors, rain sensors and salinity probes are other examples. The Bureau of Meteorology (BOM) has developed ET forecasts that can assist with predicting future irrigation requirements.

Different types of sensors fitted to irrigation systems can measure anomalies in pressure and flow rates to help **monitor system function**. Flow and pressure sensors, strategically positioned throughout an irrigation

network, allow irrigation systems to automatically shut down when faulty valves, pipe breaks or missing sprinklers become an issue.

Smart metering is also popular and an expanding method of **monitoring water use**. Smart meters provide the operator with data that helps increase their capacity to deliver high efficiency. Some great outcomes have been observed with SA Water's smart metering product and can be viewed on our [website](#).

Control of system operation has been improved through central control systems and evapotranspiration (ET) controllers, also known as smart controllers. Central control provides operators with remote scheduling, reducing labour demands. Smart controllers can use climate data to calculate irrigation run times and schedule events based on ET and effective rainfall.

For more information refer to page 73 of the [IPOS Code of Practice](#).

Tip of the Month

Reminder to adjust your irrigation schedule to the climate conditions

Irrigation scheduling can be avoided in the event of significant rain events, such as the large falls observed recently in Adelaide. If your irrigation system doesn't have a rain sensor, follow the Bureau of Meteorology weather forecasts and try to postpone irrigating when heavy rain is forecasted.



How full are our reservoirs?

Use our interactive map to find out daily data and more

Our reservoirs are our primary water storage areas. They supply homes and businesses across South Australia. The reservoirs don't just fill with rain, we can also use them as storage for River Murray water to help meet customer demand.

At full capacity, our reservoirs can hold almost 200,000 megalitres (ML) of water. This equates to just under a year's supply for metropolitan Adelaide.

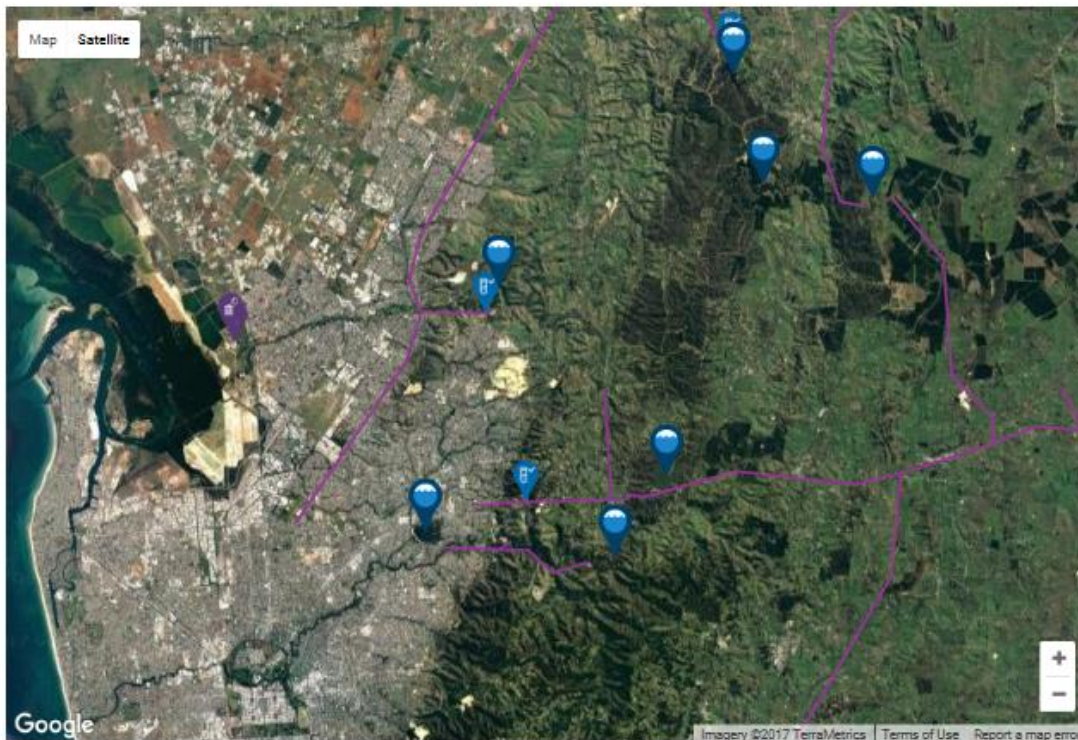
We capture daily information about each of our reservoirs in the Mount Lofty Ranges catchment area. At the end of March, the reservoirs were at 68% capacity compared to the same time last year when they were at 47% of capacity.

For more information, view our interactive [webpage](#).

Daily consumption level



Total Reservoirs level



Key



Book your attendance at this Sports Turf Association SA Event

Event at Sacred Heart College April 19 2017

Date - Wed 19th April

Venue – New Gym / Conference Centre adjacent the Main Oval at Sacred Heart College, Scarborough St Somerton Park

8.00 am - Welcome and STA update.

8.15 am – Paul Morgan, SHC Grounds Manager, to address the group and detail turf management at SHC

8.45 – 10.00am – Inspection of turf and facilities at SHC

10.00 – 10.20 – Morning tea in new centre.

10.20 – 10.50 – Darren Ray, BoM, presentation and discussion in relation to recent and forecast weather patterns and impact on sports turf.

10.50 – 11.20 – Jenny Awbery, DEWNR, presentation and discussion on ground water allocations and licencing for the Adelaide Ground Water region.

11.30 Close.

STASA Event 2017
***Wednesday 19th April**

Inspect the grounds and new gymnasium complex at Sacred Heart College one of Adelaide's finest private schools.

Plus

Darren Ray, Senior Climatologist BoM, will explain our extraordinary weather over the past 6 months and what we have to look forward to over the autumn / winter period.

Jenny Awbery, Senior Policy Officer, Water Allocation, Natural Resources Adelaide Mt Lofty Ranges, will provide an update on the water allocation planning and licencing for the Adelaide Plains Groundwater Region.

Scarborough St. Somerton Park
From 8.00 am – 11.30am
Morning Tea Provided.

RSVP by Thursday 13th April to
tim.wurst@maxima.com.au / 0403 186 016
or gcharlton@ipos.net.au / 0431 836 400

Sponsors: BAILEYS, MOW MASTER, TURF, IPOS, maxima, KGB, GLOW, PGG Wrightson Seeds, TurfKeeper, NEUTROG, NUTURF, Greene EDEN, METROPOLITAN MACHINERY PTY LTD, Toro Australia

Please RSVP by Thursday 13 April to: tim.wurst@maxima.com.au / 0403 186 016 or gcharlton@ipos.net.au / 0431 836 400

March Irrigation requirement overview

Bureau of Meteorology (BoM)

Station	TQVS 1 (kL/Ha)		TQVS 2 (kL/Ha)		TQVS 3 (kL/Ha)		TQVS 4 (kL/Ha)	
	AIR	BIR	AIR	BIR	AIR	BIR	AIR	BIR
Adelaide Airport - 023034	1385	1242	875	691	672	553	530	415
Kent Town - 023090	916	1088	451	587	335	461	219	336
Mount Crawford - 023763	1333	1124	765	606	623	476	481	347
Noarlunga - 023885	1325	1205	772	667	634	532	496	398
Parafield - 023013	1385	1278	801	710	656	568	510	427

AIR is the 'Actual Irrigation Requirement' which is based on the current climate data.

BIR is the 'Base Irrigation Requirement' which is based on historical climate averages.

Station	Rainfall (mm)		Eto (mm)	
	Current	Long term	Current	Long term
Adelaide Airport - 023034	6	22	163	157
Kent Town - 023090	39	26	133	143
Mount Crawford - 023763	14	28	162	148
Noarlunga - 023885	9	22	158	154
Parafield - 023013	12	23	167	162

Disclaimer:

SA Water's Business Relations Group provides recommendations and suggestions only. It is advised that further investigations are detailed studies are completed before any projects are implemented. All applicable standards & guidelines (Australian, EU, AQUIS, HACCP, Australian Drinking Water Quality Guidelines et.c) should be adhered to, and care should be taken to ensure water and wastewater minimisation programs do not negatively impact health or processing operations.