

IPOS – Irrigation Efficiency Reporting

The IPOS – Irrigation Efficiency Reporting Model has been developed to assist irrigation managers, predominantly Councils and Schools, to monitor the turf grass water requirement and report on the efficiency of irrigation water usage. This is increasingly important as the cost of mains water has increased over 200% in the last 10 years with a significant impact on the cost of water irrigate sports turf.

SA Water mains water cost increase 2016 - 2018						
Year	2006/07	2008/09	2011/12	2012/13	2014/15	2018/19
Cost (\$/kL)	1.09	1.38	2.75	3.45	3.32	3.37
Variance (\$)		0.29	1.66	2.36	2.23	2.28
variance (%)		27%	152%	217%	205%	209%
Variance 2006 - 2018 (\$)						2.28
Variance 2006 - 2018 (%)						209%

Mains water cost (Adelaide) - local football oval (16,000m ²)					
Year	Irrigation requirement (kL/ha)	Area (ha)	Total Water requirement (kL)	Water Cost (\$/kL)	Total Cost (\$)
2006	4,500	1.6	7,200	\$ 1.09	\$ 7,848
2018	4,500	1.6	7,200	\$ 3.37	\$ 24,264
Variance 2006 - 2014 (\$)					\$ 16,416
Variance 2006 - 2014 (%)					209%

The reporting system is based on the Code of Practice – Irrigated Public Open Space and consists of a series of interactive models that are linked to provide the critical data required to monitor and report on irrigation water usage and efficiency. The models which make up the reporting system are;

- Irrigation Requirement Model
- Climatic Variance Model
- Water Usage Model
- Irrigation Efficiency Model

Using both long term average and current climatic data (Eto & rainfall), accessed from the Bureau of Meteorology, the budget and actual irrigation requirement is calculated for each month. Actual water usage is then accessed from water meter readings and the water usage for the month is compared to the irrigation requirement. From this data the Irrigation Efficiency Index is calculated which indicates either high or low water usage for the month and year to date. The irrigation manager is able to investigate the variance and take steps to manage irrigation efficiency throughout the season. Reporting is at a summary level for all sites and also at an individual site level, whereby a detailed water usage report for is available for each site. All data and reports are stored on the secure IPOS online system that can be accessed anytime, from anywhere.



IPOS – Irrigation Efficiency Reporting

Year to Date Irrigation Efficiency Summary

Year: Location:

Location	Year	Water Supply	TQVS Class	Area (ha)	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	YTD Total Water Use (kL)	YTD Actual Irrig Req. (kL)	YTD ASR (kL)	YTD Bore (kL)	YTD Mains (kL)	YTD Reclaimed (kL)	Details
* Total All Sites *	2015/16		0	13.09	0.95	1.02	1.07	1.16	1.16	1.15	1.15	1.13	1.13	1.13	80,598	71,074	0	43,444	37,154	0	
Bryce Oval	2015/16	Bore	2	2.01	0.99	1.08	1.11	1.54	1.44	1.35	1.34	1.29	1.29	1.29	16,352	12,630	0	16,352	0	0	
Mitcham Oval	2015/16	Mains	3	1.90	0.73	1.06	0.99	1.06	1.12	1.06	1.07	1.05	1.05	1.05	10,124	9,676	0	0	10,124	0	
Port Simpson Oval	2015/16	Mains	2	1.70	0.90	0.89	0.88	0.98	0.98	1.13	1.13	1.11	1.11	1.11	11,810	10,682	0	0	11,810	0	
Mawson Oval	2015/16	Bore	3	1.67	1.42	1.40	1.34	1.31	1.35	1.30	1.28	1.26	1.30	1.31	11,178	8,504	0	11,178	0	0	
Notting Hill Oval	2015/16	Bore	3	1.50	0.32	0.60	0.75	0.89	0.93	0.96	0.98	0.93	0.93	0.93	7,138	7,637	0	7,138	0	0	
Aldridge Oval	2015/16	Mains	3	1.46	1.17	0.98	1.29	1.11	1.14	1.10	1.10	1.09	1.09	1.09	8,075	7,434	0	0	8,075	0	
Moffat Oval	2015/16	Mains	3	1.45	0.76	0.77	0.87	0.91	0.89	0.93	0.95	0.94	0.97	0.97	7,145	7,383	0	0	7,145	0	
Purina Oval	2015/16	Bore	3	1.40	1.29	1.32	1.36	1.35	1.32	1.27	1.25	1.23	1.23	8,776	7,128	0	8,776	0	0		

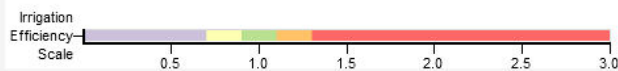
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Total All Sites

Year	Area (ha)	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	YTD Total Water Use (kL)	YTD Actual Irrig Req. (kL)	YTD ASR (kL)	YTD Bore (kL)	YTD Mains (kL)	YTD Reclaimed (kL)	Details
2015/16	13.09	0.95	1.02	1.07	1.16	1.16	1.15	1.15	1.13	1.13	1.13	80,598	71,074	0	43,444	37,154	0	
2014/15	13.09	0.99	0.83	0.97	1.05	1.00	1.00	1.06	1.09	1.09	1.09	74,103	67,942	0	37,906	36,197	0	

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chart by amCharts.com

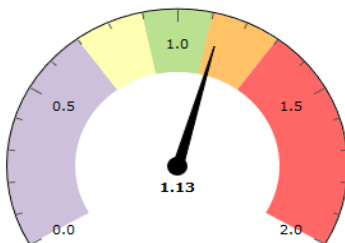


Irrigation Efficiency Index Irrigation Efficiency

< 0.70	Poor Efficiency - Under use
0.70 - 0.89	Medium Efficiency - Under use
0.90 - 1.10	Desirable - High Efficiency
1.11 - 1.30	Medium Efficiency - Over use
> 1.30	Poor Efficiency - Over use

Year to Date Irrigation Efficiency

JS chart by amCharts

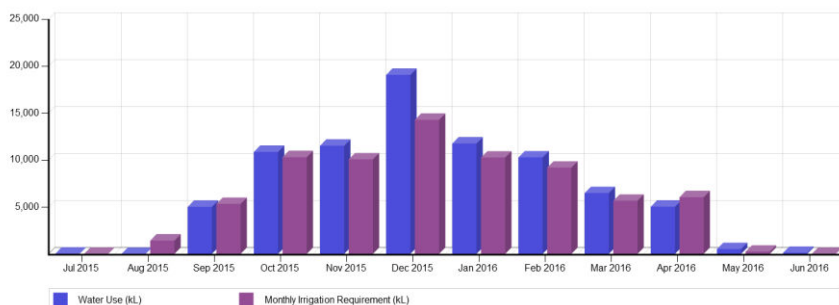


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Monthly Water Use vs Actual Irrigation Requirement

chart by amCharts.com



Year to Date Water Use vs Actual Irrigation Requirement

chart by amCharts.com

