



Water Efficiency Action Plan



Name:	City of South Perth
Address:	Cnr Sandgate St and South Tce, South Perth WA 6151
Date:	28 September 2016



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1. Introduction

Water Corporation and the Department of Water launched the Waterwise Council Program in 2009 to build a cooperative working relationship with local governments to improve water use efficiency in local government and their communities.

Criteria to become a Waterwise Council

The Waterwise Council Program is free to join and is open to all councils within Western Australia. To be endorsed as a Waterwise Council, a council must fulfil the following steps:

- Criteria 1:** Sign a MOU to participate in the Waterwise Council Program.
- Criteria 2:** Review council water consumption and create a water efficiency action plan (WEAP) for potable and non-potable water sources for all council operations and the community.
- Criteria 3:** Ensure appropriate staff complete Waterwise training.
- Criteria 4:** No breaches of groundwater licence terms or conditions set by the Department of Water, and no breaches of scheme water usage issued by Water Corporation in the past 12 months (This includes permanent water efficiency measures).
- Criteria 5:** Report annually to retain endorsement.

Objectives

The objectives of the Water Efficiency Action Plan (WEAP) are to:

- Assess current water use across council operations and the community
- Identify inefficiencies and potential water savings
- Set goals and benchmarks to improve water use
- Prepare an action plan and implement water efficiency actions to progress towards set targets
- Provide a process for annual reporting on implementation of water efficiency actions

This plan will be valid for a period of 5 years and will form the basis of annual reporting requirements.

Methodology

The Water Efficiency Action Plan is broken into the following steps:

- Background
- Collection of background information and water use data
- Development of water management goals and benchmarks
- Setting water efficiency targets
- Table of actions
- Management endorsement

2. Background

The City of South Perth is an inner-city metropolitan local government authority located about four kilometres south of the Perth CBD. It covers 1,983 hectares and encompasses the suburbs of Como, Karawara, Kensington, Manning, Salter Point, South Perth and Waterford.

Major features include the Swan and Canning Rivers, Sir James Mitchell Park, Perth Zoo, Royal Perth Golf Club, Collier Park Golf Course, as well as the Mends Street, Angelo Street and Preston Street precincts, and the Waterford Plaza Shopping Complex.

The population of City of South Perth was an estimated 46,244 residents in 2015¹. The majority of residents work in professional, scientific and technical services. On a daily basis, the City accommodates around 10,000 employees from small to medium sized businesses, specialised service providers and educational institutions. The City is preparing for significant and sustained growth during the next 20 years. The Western Australian Department of Planning estimates the City will accommodate an additional 6,000 dwellings by 2031, representing a 30 per cent increase.

The City has an average annual rainfall of 728.1 mm, mainly in the winter months. Trending declines in rainfall in the South-West due to climate change and subsequent water shortages are a concern for the City.

The City extracts groundwater for irrigation purposes from various local bores under licence from the Department of Water. These bores extract water from both deep (Leederville) and shallow (Superficial) aquifers. The City is licensed to extract a total of 1,459,587 kL of groundwater per annum. Drinking water is supplied by the Water Corporation.

¹ Source: <http://profile.id.com.au/south-perth/population-estimate> (accessed 30/08/2016).

2.1 Existing Water Efficiency Programs

The City recognises the effects of the drying climate and for nine years was committed to improving the City's and the community's water management through participating in the International Council for Local Environmental Initiatives (ICLEI) Water Campaign™. The City joined Water Campaign™ in August 2004 and completed Milestone 5 of the five milestone framework in 2013. Under ICLEI Water Campaign™, the City reduced its corporate scheme water use by 50% below 2002/2003 levels by 2012, a year earlier than expected. Community scheme water use increased by 5.1% from 2002/2003 levels, due to an increase in population size of 12.5%. Residential per capita scheme water use decreased by 4.2%, while non-residential community water use decreased by 12.2%.

The City's Water Action Plan (WAP) was produced in June 2009 as part of Milestone 3 of the ICLEI Water Campaign™ framework to outline strategic water management within the City's corporate and community sectors. The WAP set out the approach that the City could take to reduce scheme and ground water consumption, improve water quality and contribute to significant cost savings.

Since 2013, the City has progressed its water conservation and water quality objectives through the implementation of a variety of policies, plans and strategies (see 3.3 below).

The ICLEI Water Campaign™ was linked to criteria for Waterwise Council endorsement under the Water Corporation's Waterwise Council Program. In 2012, the City was endorsed as a Waterwise Council and plans to continue participating in this program and maintain and build on its Waterwise Council Status to gain Gold Waterwise Council recognition. This level of recognition requires councils to demonstrate significant progress towards best practice water efficiency that is above and beyond the minimum endorsement requirements.

2.2 Relationship to Strategic Documents

This Water Efficiency Action Plan (WEAP) is a component of the City of South Perth's Water Management Plan 2016-2021 that is going to be finalized by December 2016.

The WEAP and the Water Management Plan align with the City of South Perth's *Corporate Business Plan 2015-2019* and *Strategic Community Plan 2015 – 2025* through the strategic direction "Enhance and develop public open spaces and manage impacts on the City's built and natural environment" and the strategic objectives and initiatives:

- 2.2 Foster and promote sustainable water, waste management and energy management practices.
 - 2.2.1 Implement, review and monitor the Water Action Plan
 - 2.2.3 Upgrade the City's parks, reserves and streetscapes irrigation network to enable more sustainable water use
 - 2.2.4 Implement Water Sensitive Urban Design principles in conjunction with new parks, streetscapes and drainage designs where feasible
- 2.4 Improve the amenity of our streetscapes (residential and commercial) and public open spaces while maximising their environmental benefits.
- 3.3 Review and establish contemporary sustainable buildings, land use and best practice environmental design standards.

Other strategic documents and policies that align with the Water Efficiency Action Plan include:

- Policy P203 Ground Water Management
- Policy P302 General Design Guidelines for Residential Development
- Policy P354 Stormwater Drainage Requirements for Proposed Buildings
- Policy P350.1 Sustainable Design
- Policy P208 Ecologically Sustainable Building Design
- Policy P351.14 Cygnia Cove Residential Design Guidelines
- Policy P211 Water Sensitive Urban Design (WSUD)
- Water Sensitive Urban Design Guidelines 2012
- Public Open Space Strategy 2012
- Green Plan 2002
- South Perth Foreshore Strategy and Management Plan 2015
- Kwinana-Freeway Foreshore Management Plan 2014
- Mount Henry Peninsula Foreshore Management Plan 2004
- Salter Point and Waterford Foreshore Management Plan 2000

3. Water Use Inventories

3.1 Corporate Potable Water Use Inventory

3.1.1 Historical Corporate Potable Water Use

The City of South Perth's corporate potable water use has been on a slightly decreasing trend since 2007/2008, with peaks in 2012/2013 and 2014/2015. The decrease in water use from 2007/2008 may be attributed to the efforts made by the City to reduce water use since developing its Water Action Plan (WAP) in 2009. Water audits have been conducted at the Civic Centre (2011), Manning Library (2012), Garden Street Park (2013) and Operations Centre (2014), resulting in some water savings at these facilities.

The water use spike in 2014/2015 can be mainly attributed to a 9,000kL increase in water use at Collier Park Retirement Village, into which the City is commencing investigations, and the construction of the new Manning Community Hub facility.

The cost of water has increased dramatically relative to water use, from \$0.81 per kL in 2007/2008 to almost triple at \$2.08 in 2014/2015.

Table 1: City of South Perth Historical Corporate Potable Water Use and Cost from 2005/2006 to 2014/2015

	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015
Annual water use (kL)	82,729	74,773	64,161	57,591	54,989	63,165	49,073	67,596
Daily Water use (kL/day)	227	205	176	158	151	173	134	185
Cost	\$67,134	\$68,549	\$69,877	\$76,827	\$89,832	\$118,093	\$99,694	\$140,486
Cost of water per kL	\$0.81	\$0.92	\$1.09	\$1.33	\$1.63	\$1.87	\$2.03	\$2.08

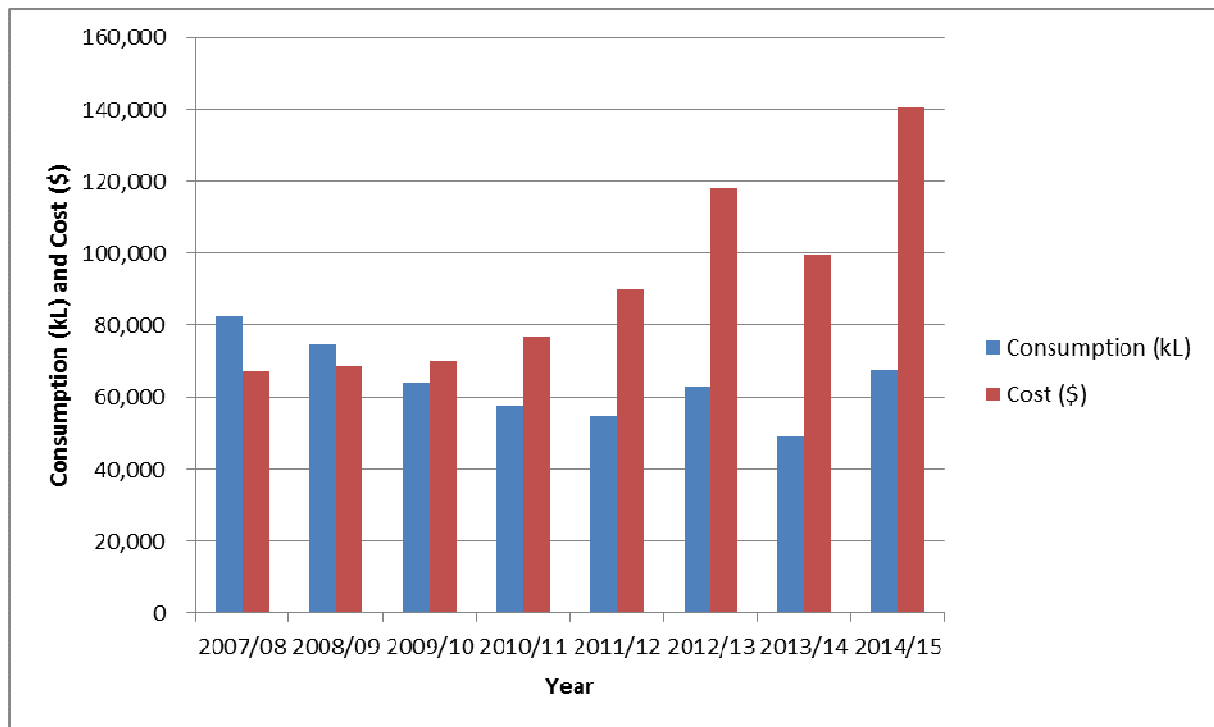


Figure 1: City of South Perth Historical Corporate Potable Water Use and Cost from 2005/2006 to 2014/2015

3.1.2 Corporate Potable Water Use by Facility Type in 2014/2015

Figure 2 below shows the City’s Water Consumption by Facility Type in 2014/2015. “Gardens and Planter Boxes” including Traffic Management Measures (TMMs), road verges and roundabouts, was the highest using facility type, consuming 27% of the City’s total potable water consumption.

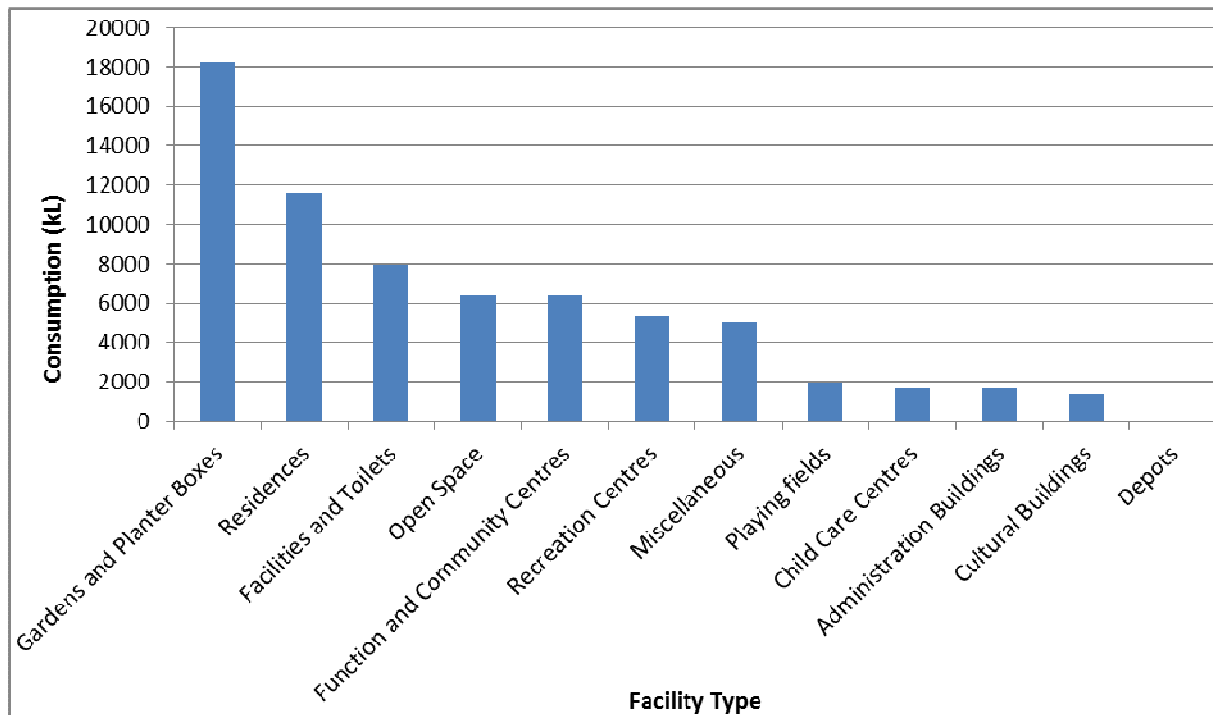


Figure 2: City of South Perth's Water Consumption by Facility Type in 2014/2015

3.1.3 Top Potable Water Using Sites in 2014/2015

City of South Perth's single highest water using facility in 2014/2015 was Collier Park Retirement Village, using 11,599 kL or 17% of the City's total water consumption.

Other top water using facilities were the Boatshed Café/Toilets/Sir James Mitchell Park, Judd Road Verge, Collier Park Golf Course, Civic Administration Offices, Operations Centre, Lady Gowrie child care, South Perth Bridge Club and Manning Library. Combined, the top 20 sites used 56% of the City's total water consumption in 2014/2015.

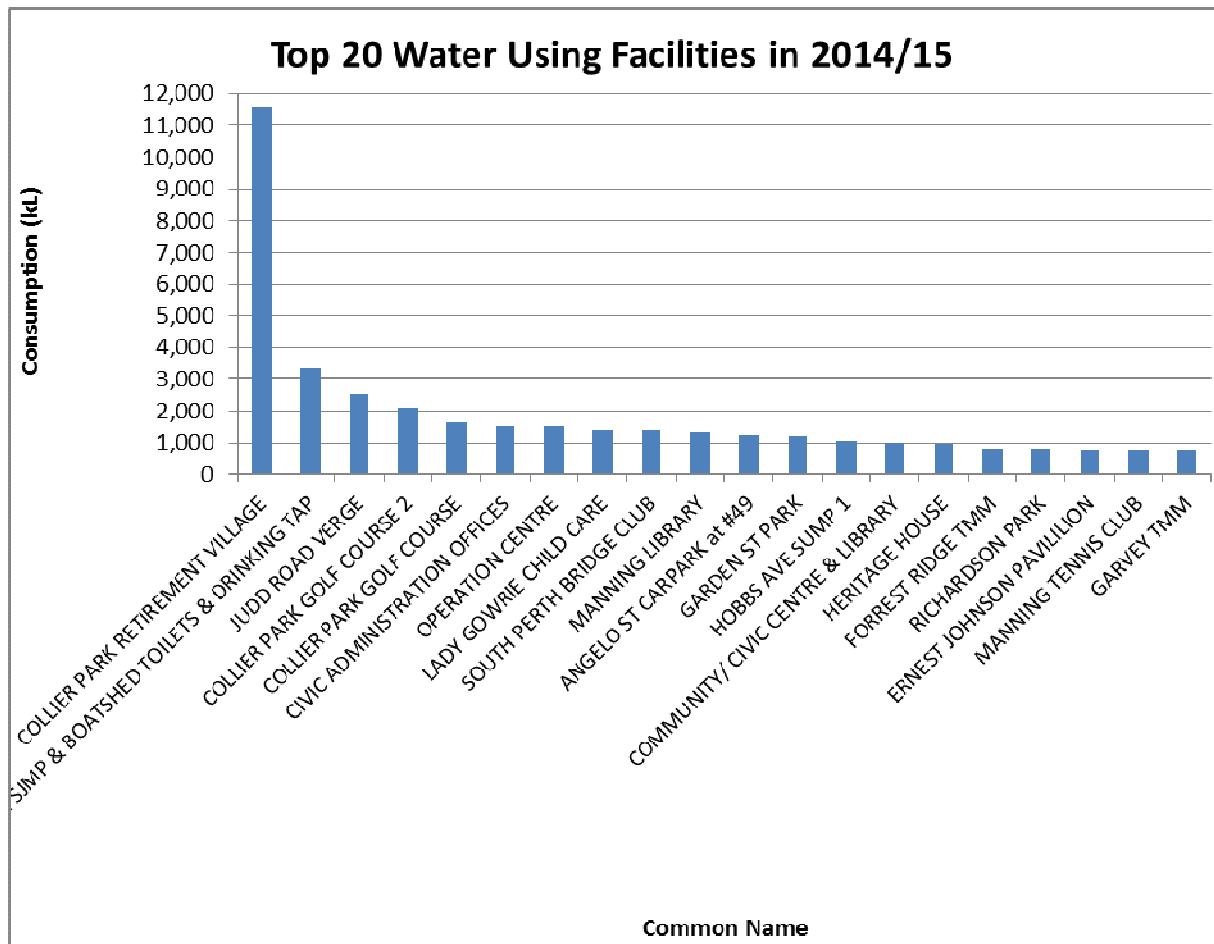


Figure 3: City of South Perth’s Top 20 Potable Water Using Sites in 2014/2015

3.1.4 Historical Potable Water Use for Top 5 Water Using Sites

Table 2: City of South Perth Historical Potable Water Use for Top 5 Water Using Sites

Site Name	2010/2011 (kL)	2011/2012 (kL)	2012/2013 (kL)	2013/2014 (kL)	2014/2015 (kL)
Collier Park Retirement Village	3,599	3,453	4,385	2,413	11,559
Boat Shed Café, SJMP, Boatshed Toilets and Drinking Tap	3,234	3,106	1,980	1,686	3,353
Judd Road Verge	0	0	990	1,615	2,535
Collier Park Golf Course 2 (maintenance shed, wash down bay, 2 x toilet blocks)	528	1,869	3,029	1,516	2,108
Collier Park Golf Course – (clubhouse, kiosk, clubroom toilets)	2,708	2,079	3,455	4 *suspected data error	1,645
Civic Administration Offices	1,803	1,879	1,140	1,107	1,521

Changes in Water use

Collier Park Retirement Village

Water use in 2014/2015 is much higher than typical, and the City is commencing investigations into water use at this facility immediately. A large water leak is suspected.

Boat Shed Café

In 2012/2013 and 2013/2014, the toilet block was controlled by the Café, and only open during Café Hours, which may explain reduced usage in that time period. The toilet block is now controlled by the City and is open for increased hours.

Judd Road Verge

An entry statement was established at this site in 2012/2013 and maintenance of these gardens is managed by a contractor. The City is to investigate irrigation at the site.

Collier Park Golf Course maintenance shed

A leak was detected and repaired in 2014/2015.

Civic Administration Building

Water use was low in 2012/2013 and 2013/2014 as renovations were being undertaken and the Community Hall was not operational.

3.2 Historical Corporate Non-Potable Water Use

The City uses groundwater for irrigation of active reserves, and topping up of lakes (including at Sir James Mitchell Park and Collier Park Golf Course). The City is licensed to extract a total of 1,459,587 kL of groundwater per annum on 3 separate licenses. The City was over allocation in 2012/2013, 2013/2014, and 2015/2016, mainly due to the irrigation requirements of Collier Park Golf Course and the establishment of Carnaby's Cockatoo Sanctuary areas.

The City is undertaking measures to reduce groundwater irrigation requirements in particular at Collier Park Golf Course, including upgrades of the irrigation system to improve uniformity and give greater control of individual sprinklers, and turf maintenance practices incorporating the use of more soil wetting agents. When parks are upgraded, turf areas are being replaced with water efficient gardens to reduce irrigation requirements.

The City is also working closely with the Department of Water to review its license allocation.

Table 3: City of South Perth's Historical Corporate Non-Potable Water Use

License	Allocation (kL)	2012/2013 (kL)	2014/2014 (kL)	2014/2015 (kL)	2015/2016 (kL)
License #50708 All sites except CPGC, Bill Greydon Reserve and SJMP	802,587	761,205	752,066	761,878	774,046
License #86636 Bill Greydon Reserve	N/A	39,964	42,462	37,523	44,852
License #86636 Collier Park Golf Course	432,000	512,821 *additional allocation for new turf	474,961	434,996	475,171
License #50709 Sir James Mitchell Park	225,000	184,035	210,378	145,843	202,686
Total annual groundwater use (kL)	1,459,587	1,498,025	1,479,867	1,380,240	1,496,755
Total daily groundwater use (kL/day)	3,999	4,104	4,054	3,781	4,101

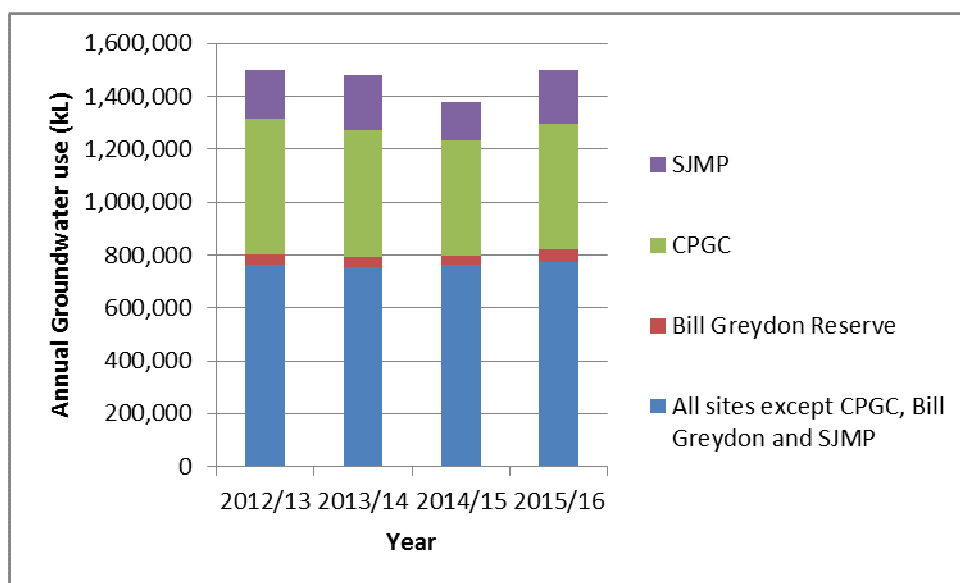


Figure 4: City of South Perth's Historical Corporate Non-Potable Water Use

Table 4: Historical Corporate Non-Potable Water Use for the Top 5 Water Using Sites

Site Name	2012/2013	2013/2014	2014/2015	2015/2016
Collier Park Golf Course	512,821	474,961	434,996	475,171
Sir James Mitchell Park	184,035	210,378	145,843	202,686
George Burnett & Lake Gillon	151,673	131,024	138,176	141,756
Richardson Park	40,022	40,644	56,465	87,975
Ernest Johnson Oval & Civic Centre	71,658	60,416	54,435	74,177

Changes in Water use

Collier Park Golf Course

Groundwater use in 2012/2013 at Collier Park Golf Course was high as the Course underwent a large construction phase. The City was granted an extra allocation for the new turf. Groundwater use in 2014/2015 was low due to summer rainfall allowing the irrigation to be turned off for nearly 4 weeks. 2015/2016 was again higher due to no rainfall and high temperatures over summer resulting in turf areas requiring additional irrigation to keep them playable despite additional wetting agents being applied, and new Carnaby's Cockatoo Sanctuary areas also needing to be watered. Issues with meters recording excess flow were also detected in 2015/2016.

The City is continuing using more wetting agents to improve the water holding capacity in the root zone and there for reducing irrigation run times. The City is also investigating issues with water meters.

Richardson Park

Increase in water use in 2015/2016 will be investigated.

Ernst Johnson Oval & Civic Centre

Water use in 2011/2012 was high due to turf renovations. Water use was again higher in 2015/2016 due to faulty valves (which have since been repaired) leading to over-irrigation.

3.3 Community Potable Water Use Inventory

Community Potable Water use has remained relatively steady since 2007/2008 (see Figure 5 below), despite a population increase of 11.9%. Expressed per capita, total community water use has decreased 11.4% from 123 kL per capita in 2007/2008 to 109 kL per capita in 2014/2015 and residential water use has decreased 11.1% from 108 kL per capita in 2007/2008 to 96 kL per capita in 2014/2015 (see Figure 6 below).

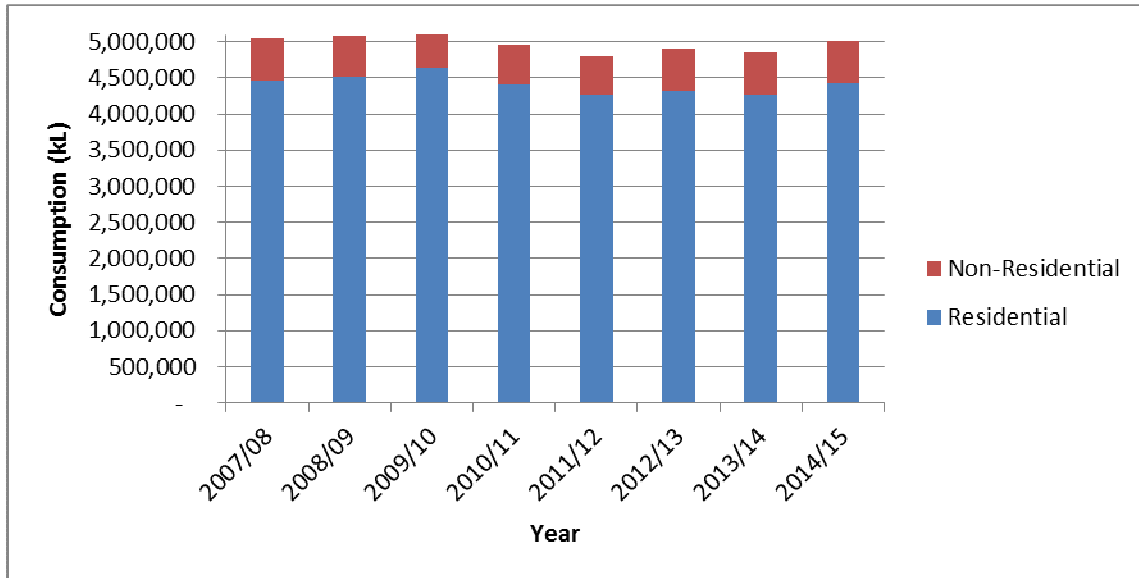


Figure 5: City of South Perth's Historical Community Potable Water Use

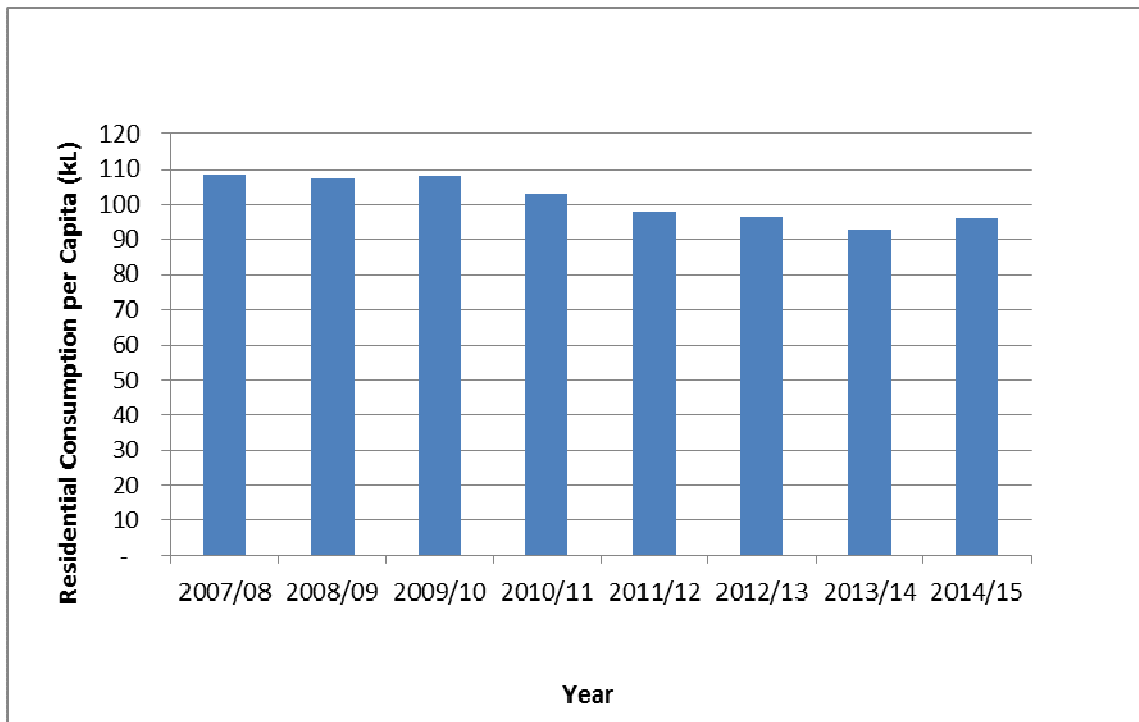


Figure 6: City of South Perth's Historical Residential Community Potable Water Use Expressed per Capita

City of South Perth’s community potable water use comprises 68% low density residential, 20% high density residential and 12% non-residential (see Figure 7 below). As community water use is predominately residential, a household campaign may have the most influence on community water use.

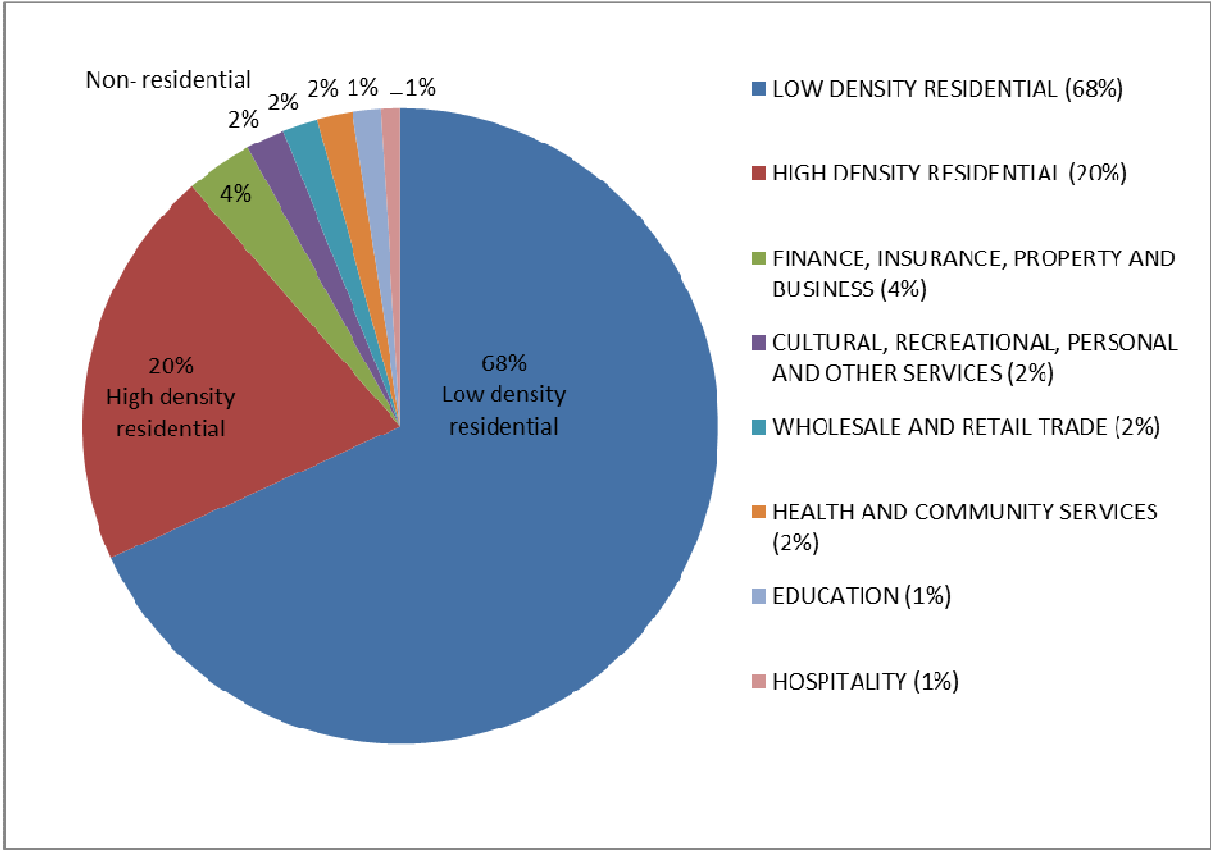


Figure 7: City of South Perth’s Community Potable Water Use by Sector in 2014/2015

4. Water Efficiency Goals

4.1 Corporate Water Efficiency Goal

To maintain corporate potable water consumption at or below 2014/2015 levels (67,596kL) by 2020/2021.

This goal takes into consideration the expected population growth in the City, increase facility usage, and the opening of new facilities including the Manning Community Hub.

4.2 Community Water Efficiency Goal

To maintain total community water consumption at or below 2014/2015 levels (109 kL per capita) by 2020/2021.

This goal aligns with Department of Water's goal to reduce community water consumption by 15% from 2007/2008 to 125 kL per capita by 2030.

5. Table of Actions

Please note Waterwise Council Program compulsory actions are indicated by a “✓”. An additional 5 actions per annum are required to be completed to be considered for Gold Waterwise Council Status.

Water Category	Ref #	Compulsory WWC action	Action	What may this action include (not limited to)	Officer(s) Responsible	Secondary Officer(s) Responsible	Priority	Status of Action (Complete; In progress; Not started; Ongoing; Standard Practice)	Proposed Completion Date	What has been done? (Detailed update on where this action is up to).	Evidence (What evidence is required and where is it held/who manages it).
Facilities	1.1	✓	Conduct a water audit on each of the council's top water using sites.		Building and Asset Coordinator	City Environment Coordinator	High	Ongoing	Annually	Water audits have been conducted at the Civic Centre (2011), Olive/Garden Street Park (2014), Manning Library (2013) and Operations Centre (2014). Collier Park Retirement Village has been identified as a priority site for an audit in 2016. Sites are prioritised based on water inventories and Planet Footprint data.	Water Audit reports.
Facilities	1.2	✓	Commit to implementing the most viable recommendations for water audits undertaken.	Consideration of installation of rainwater tanks, greywater systems, composting toilets, Waterwise appliances and fixtures, recycling water from vehicle wash down bay at operations Centre, undertake sustainable water management campaign to educate community and staff.	Building and Asset Coordinator; Reticulation Supervisor; Parks Maintenance Supervisor; Collier Park Golf Course Superintendent	Collier Park Retirement Village Coordinator	High	Ongoing	One year after water audit	Majority of recommendations from the Manning Library audit have not been implemented as this facility will be moving to the Manning Hub, however a major outdoor tap leak has been rectified. Upgrades at this site may be implemented when there is a new tenant in the building. Installation of a new meter (compatible with data logger) at the Operations Centre workshop has been recommended. Reticulation schedules were reprogrammed at Olive/Garden Street reserve to establish water efficiencies. Operations 50% of operations centre audit recommendations were implemented (eg. installation of waterless urinals, water efficient shower heads and tap aerators).	Photographs, invoices or specifications on installed devices.
Facilities	1.3		Continue to install water efficient fixtures during Renovation works/building upgrades.	Minimum 3 star WELS rated appliances and fixtures waterless urinals.	Building and Asset Coordinator		High	Ongoing	Annually	4 star WELS rated appliances are selected as standard practice. Waterless urinals have been installed at various locations: 2010/11 Installation of 3 waterless urinals at the Collier Golf Course; 3 waterless urinals were installed in the Operations Centre in 2016; Up to 6 waterless urinals will be installed at WCG Thomas Pavilion in Nov 2016.	Photographs, invoices or specifications on installed devices.
Facilities	1.4	✓	Procurement processes incorporate consideration 3 star or greater WELS rated fixtures.		Building and Asset Coordinator	Tenders and Contracts Officer	High	Standard Practice	Ongoing	The City has a Sustainable Procurement Policy. 4 star WELS rated appliances are selected as standard practice.	Sustainable Procurement Policy.

Water Category	Ref #	Compulsory WWC action	Action	What may this action include (not limited to)	Officer(s) Responsible	Secondary Officer(s) Responsible	Priority	Status of Action (Complete; In progress; Not started; Ongoing; Standard Practice)	Proposed Completion Date	What has been done? (Detailed update on where this action is up to).	Evidence (What evidence is required and where is it held/who manages it).
Monitoring	1.5		Investigate corporate facilities and sites where water use is unusually high.	Monitoring water use with a data logger or smart metering device to determine water use patterns. Purchase of a data logger. Installing sub meters. Conducting an annual water inventory. Monitoring data through Planet Footprint and investigating changes.	Building and Asset Coordinator Reticulation Supervisor; Parks Maintenance Supervisor; Collier Park Golf Course Superintendent	Natural Resources Management Officer	High	Ongoing	Annually or as required	The City has 3 or 4 smart metering devices that are used on sites where water use requires investigation. An annual water inventory is conducted based on data from Planet Footprint and Water Corporation and anomalies are investigated.	Water inventory, data logging reports.
Facilities	1.6		Undertake an inventory of the water using fixtures at all facilities including the number of fixtures, type and flow rate.		Building and Asset Coordinator		Med-High	Ongoing	Update annually		Copy of inventory report.
Landscape and Irrigation Design	2.1	✓	Upgrade median strips and garden areas to reduce or eliminate the requirement for irrigation. Landscaping plans to include low water use plants (local natives), hydrozoning and soil amendments/wetting agents.		Streetscapes Maintenance Supervisor; Collier Park Golf Course Superintendent; Parks Maintenance Supervisor		High	Ongoing	Annually	In 2012/13 19,572 m2 of turf from median islands along Manning Rd was removed and replaced with mulch. 6-7 other sites are upgraded every year based on identified priority. Landscaping using Waterwise/native species is designed by the City's Landscape Design Officer. Carparks etc, are moving to non-irrigated gardens. Sir James Mitchell Park complete. Carnaby's Sanctuary areas are being established at CPGC, irrigation will be switched off in future. Additionally the CPGC entry statement has been identified as site where turf area could be reduced.	
Public Open Space (POS)	2.2		Continue the use of turf maintenance practices that lead to water conservation outcomes such as the application of wetting agents including Terracottem gel, use of soil amendments, turf renovations (vertimowing and aeration), rye seeding to stabilise turf.		Collier Park Golf Course Superintendent; Parks Maintenance Supervisor		High	Ongoing	Annually	Rye seeding is done annually to stabilise turf and reduce need for new turf. Terracottem has been found to dramatically reduce water consumption in establishment of new turf. Active reserves vertimowed as required, aeration twice per year. Soil wetting agents applied by boom spray. CPGC conducts coring twice per year and vertimowing as required. Terracottem and granular wetting agents are used in establishment of new plants.	
Alternative Water Sources	2.11		Consider the feasibility of utilising alternative water sources such as stormwater, greywater, rainwater and recycled wastewater.	Stormwater harvesting for irrigation	Reticulation Supervisor	Works and Services Coordinator; Infrastructure Projects Coordinator; Building and	Low	Not started	Jun-21		


Water Category	Ref #	Compulsory WWC action	Action	What may this action include (not limited to)	Officer(s) Responsible	Secondary Officer(s) Responsible	Priority	Status of Action (Complete; In progress; Not started; Ongoing; Standard Practice)	Proposed Completion Date	What has been done? (Detailed update on where this action is up to).	Evidence (What evidence is required and where is it held/who manages it).
						Asset Coordinator					
Irrigation	3.1	✓	Meter all bores - install a water meter to the standards detailed in the Department of Water Guidelines for water meter installation 2009, on all non-scheme water sources to measure both water flow rate and cumulative volume.		Reticulation Supervisor		High	Complete	N/A	Done.	Groundwater licence report spreadsheet.
Irrigation	3.2	✓	Meters (and any sub-meters) are read on a regular basis and recorded.		Reticulation Supervisor; Collier Park Golf Course Superintendent		High	Ongoing	Ongoing	The City uses a Rainman System for irrigation of Parks and most Open Space. Meter readings are recorded every 3 weeks. Meters at CPGC are read weekly.	Groundwater licence report spreadsheet.
Irrigation	3.3	✓	Continue to implement system maintenance and audit schedule. Keep replacement and repair parts consistent and available to maintain irrigation system performance.		Reticulation Supervisor		High	Ongoing	Ongoing	Irrigation systems for Active Reserves are tested weekly. Passive reserves are tested fortnight. Irrigation systems for small garden areas are tested every 3 weeks.	Maintenance schedule.
Irrigation	3.4	✓	Leak detection is included in inspections and reported on or repaired if a leak is observed.		Reticulation Supervisor	Collier Park Golf Course Superintendent; Parks Maintenance Supervisor; Streetscapes Maintenance Supervisor	High	Ongoing	Ongoing	Leaks are repaired if detected during irrigation testing.	
Irrigation	3.5	✓	Create/maintain a water budget for council open spaces. Each irrigated area of irrigated parkland to have base annual water budget. Scheduling should be adjusted on a monthly basis and tracked against the water budget.		Reticulation Supervisor	Collier Park Golf Course Superintendent; Parks Maintenance Supervisor; Streetscapes Maintenance Supervisor	High	Ongoing	Ongoing	Scheme water irrigated sites (some gardens and streetscapes) are operated on a Uni Controlled (not central Rainman system). They run Tues and Thurs nights Oct-April. Maintenance crews record and adjust scheduling manually. John keeps these records. Richard keeps spreadsheet for meter readings and use of water for groundwater irrigated sites, adjusted accordingly. 3 days per week in summer, 1 day per week in winter. Central System shuts off irrigation when 6mm of rainfall has been detected by weather station. CPGC: Fairways/greens are prioritised, catch cups and hand-held soil moisture probe used to help determine irrigation requirements.	

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Irrigation	3.6	✓	Audit of irrigation system to identify poorly performing irrigation hardware, and progressively upgrade any substandard systems.		Reticulation Supervisor; Collier Park Golf Course Superintendent	Parks Maintenance Supervisor; Streetscapes Maintenance Supervisor	High	Ongoing	Annually	The City has a replacement program for Irrigation Systems. Landscaping is upgraded at the same time. Irrigation at CPGC is currently being upgraded to allow more uniformity and more control of individual sprinklers	
Irrigation	3.7		Develop and implement a groundwater monitoring program as part of the City's Sustainable Groundwater Abstraction Strategy.		Reticulation Supervisor	Collier Park Golf Course Superintendent; Parks Maintenance Supervisor; Streetscapes Maintenance Supervisor	Medium	Implementation: Ongoing	Annually		
Irrigation	3.8		Monitor soil moisture to help determine irrigation requirements of turf areas.		Reticulation Supervisor; Collier Park Golf Course Superintendent;	Parks Maintenance Supervisor; Streetscapes Maintenance Supervisor	High	Ongoing	Ongoing	7 probes in use at Active Reserves. Handheld probe also used at CPGC to inform hand-watering requirements	
Staff engagement	4.1	✓	Adequate processes in place to achieve Waterwise behavioural change within council.	Leak reporting process established Water conservation signage in staff facilities to engage and inform staff, visitors and contractors, combined with information provided on Intranet and eNEWS Participate in Switch Your Thinking Program including Switched on Staff sessions. Water management team meetings held on a regular basis.	City Environment Coordinator		High	Ongoing	Annually	Staff can report leaks/maintenance issues through the LAGAN system. Signage (stickers) to be reinstalled in staff facilities at Civic Centre and Operations Centre. Participation in Switch Your Thinking to be investigated.	Photographs
Staff training	4.2	✓	Appropriate staff have completed Water Corporation Waterwise training and are provided with opportunities to maintain professional development in sustainable water management.	Water Corporation's Water Auditing for Non-Residential Buildings and Water Efficient Landscape and Irrigation online training courses. Basic WSUD training.	Building and Asset Coordinator; Parks Operations Coordinator; Collier Park Golf Course Superintendent		High	Ongoing	As required	All relevant staff are provided with opportunity to undertake online Water Corporation training. Water Corp water auditing training has been undertaken by Morris Simmons, Gil Masters, and Yulia Volobueva. To do training: Deanne (Building Maintenance), Adele Scarfone and new Building and Asset Coordinator. Peter Beach, Paul Cook and John Hackett (CPGC) have undertaken Water Efficient Landscaping and Irrigation Course. Additional training requirements/professional development opportunities determined during	List of staff who have completed online training.

Water Category	Ref #	Compulsory WWC action	Action	What may this action include (not limited to)	Officer(s) Responsible	Secondary Officer(s) Responsible	Priority	Status of Action (Complete; In progress; Not started; Ongoing; Standard Practice)	Proposed Completion Date	What has been done? (Detailed update on where this action is up to).	Evidence (What evidence is required and where is it held/who manages it).
										Performance Review process.	
Community Engagement	5.1	✓	Engage with household and business ratepayers and promote water efficiency.	Encourage the use of mulch, water wise plants and other water efficient landscaping techniques and waterwise appliances through demonstration gardens, educational workshops, etc. Provide info on available rebates.	City Environment Coordinator	Streetscapes Maintenance Supervisor;	High	Ongoing	Annually	The City has an ongoing 'Mulch to Residents' program. 2-3 Living Smart and Great Gardens Workshops are hosted per year. In 2010/2011 the City established demonstration Waterwise native gardens in various locations throughout the City. Could also promote water efficiency practices in Peninsula Newsletter.	
Community Engagement	5.2		Support Waterwise verges and provide information to ratepayers on how to design and maintain a Waterwise verge.		Parks Operations Coordinator; Streetscapes Maintenance Supervisor		Low	Ongoing	Annually	The City updated its verge policy in 2011 with an increased Waterwise and sustainability focus. The City has a Greening Our Streets: Street Verge Landscape Guidelines booklet, including a plant species list for local native verge gardens. The City offered verge makeover program in 2011-2012 to the local residents to retrofit their verges with Waterwise landscaping, but this was not considered viable in that format.	Verge Landscaping Guidelines.
Community Engagement	5.3	✓	Engage with local schools on water efficiency and sustainability programs.	Consider encouraging schools to participate in the Waterwise Schools program. Engage directly with schools the City is already involved with including Manning PS, Curtin PS and Kensington PS.	City Environment Coordinator	Natural Resources Management Officer	High	Ongoing	Annually	The City participates in the Millennium Kids "Schools Nurturing Nature" annual education program.	
Community Engagement	5.4	✓	Provide information on the installation and local regulation of greywater systems and rainwater tanks where appropriate.	Develop or adopt an information sheet on greywater systems and rainwater tanks.	Coordinator Environmental Health Services	City Environment Coordinator	High	Ongoing	Annually	Approvals information provided on website.	Website link.
Planning	6.2		Develop and implement planning controls that support the use of water efficient landscaping techniques, garden designs and fixtures by developers.		Senior Strategic Project Planner		High	Complete. Implementation: Ongoing	Implementation: Ongoing	Policy P350.01 requires a Green Star Rating for large buildings.	Copy of Policy.
Water Sensitive Urban Design (WSUD)	7.1	✓	Develop a Local Planning Policy to implement water sensitive urban design in new land developments.		Senior Strategic Project Planner		High	Complete	Complete	Non-enforceable guidelines (See action 7.2 below).	Copy of Guidelines.

Water Category	Ref #	Compulsory WWC action	Action	What may this action include (not limited to)	Officer(s) Responsible	Secondary Officer(s) Responsible	Priority	Status of Action (Complete; In progress; Not started; Ongoing; Standard Practice)	Proposed Completion Date	What has been done? (Detailed update on where this action is up to).	Evidence (What evidence is required and where is it held/who manages it).
Water Sensitive Urban Design (WSUD)	7.2		Run an information session for relevant staff to inform them about the City's WSUD guidelines and their role in implementing these guidelines.		City Environment Coordinator	Infrastructure Projects Coordinator	High	Not started	Jun-21		
Water Sensitive Urban Design (WSUD)	7.3		Conduct a feasibility study to determine whether the City's land and drainage features are able to incorporate WSUD features.	Further changes to McDougall Lake inlets to reduce nutrient input or improve water quality through increased aquatic vegetation.	Infrastructure Projects Coordinator; Works and Services Coordinator		High	Not started	Jun-21	This action is reflected in the City's Integrated Catchment Management Plan (ICMP), and assists with determining the appropriate WSUD features that can be utilised to achieve best catchment management outcomes.	
Water Sensitive Urban Design (WSUD)	7.4		Incorporate water sensitive urban design techniques into management practices when upgrading the catchment (e.g. permeable paving, bio-retention swales, pipe-less streets and rain gardens).	Onsite detention; Stormwater Infiltration systems; Bio-retention swales; Grass or reed swale drains; Broken or flush kerbing; Permeable paving materials; Nutrient intervention installation.	Infrastructure Projects Coordinator; Works and Services Coordinator		High	Ongoing	Annually		
Water Sensitive Urban Design (WSUD)	7.5		Restore a drainage channel and the City's waterways to a living stream where practical.	Increasing vegetation around lakes –SJMP Lake Douglas or Bodkin Park lakes	City Environment Coordinator; Natural Resources Management Officer		Medium	Ongoing	Annually		Photos and Articles.

6. Management endorsement and Water Corporation and Department of Water acceptance

Endorsement of Water Efficiency Action Plan			
City of South Perth:			
a)	Will implement the water saving measures stated in Section 6 of the Water Efficiency Action Plan and ensure employees and contractors assist in implementing actions.		
b)	Acknowledges that the Water Corporation and / or Department of Water may comment on the WEAP and/or request additional information relating to the WEAP.		
c)	Acknowledges that the Water Corporation and Department of Water will monitor the WEAP and failure to meet requirements of the program may result in the withdrawal of Waterwise endorsement.		
d)	Will submit an annual report, in accordance with Section 5 (Action Plan), detailing progress made on the WEAP in order to maintain endorsement as a Waterwise Council.		
Name	Geoff Glass		
Position	Chief Executive Officer		
Signature		Date	5/10/16
Water Corporation and Department of Water Acceptance of WEAP			
Water Corporation and Department of Water has reviewed and accepted the WEAP. With acceptance of this WEAP City of South Perth will be eligible for endorsement as a Waterwise Council.			
Water Corporation:			
Name			
Position			
Signature		Date	
Department of Water:			
Name			
Position			
Signature		Date	
Document Number			



Government of Western Australia
Department of Water



Please post or email your submission to:

Waterwise Councils Program

Strategic Relations Management

Water Corporation

PO Box 100

Leederville 6902

water.efficiency@watercorporation.com.au

7. Appendix

Gold Waterwise Council Status

To apply for Gold Waterwise Council recognition requires councils to demonstrate significant progress towards best practice water efficiency that is above and beyond the minimum endorsement requirements. A minimum of 5 further actions per annum is required to be considered for Gold Council Status. Actions are to be listed in the Water Efficiency Table of Actions (Section 5).

The following is a list of actions that demonstrate innovation and best practice techniques to improve water efficiency in facilities and in public open space. Please note that consideration is not limited to the actions outlined below.

Facilities:

- Use of technology to actively monitor water, e.g. use of data loggers or smart metering applications.
- 5-Star WELS rated Water efficient devices, fixtures and fittings are installed in any new council facilities or retrofitted in existing facilities.
- Council owned facilities are participating in Waterwise programs e.g. Waterwise Golf Course or Waterwise Aquatic Centre program.
- Training – staff have completed training above and beyond the minimum required.
- Alternate water sources are used to supply facilities.
- Switch to a non-potable water source (rainwater, greywater or a bore) for irrigation of garden and landscape areas.

Public Open Space:

- Develop contingency plans to reduce irrigated areas (by priority) during times of extreme weather conditions.
- Use of technology to actively monitor water use, e.g. central controlled irrigation systems with weather control, soil moisture sensors.

- Evidence of best practice irrigation techniques such as:
 - Maintaining sprinkler lower quarter distribution uniformity (DU) of greater than 75% for the top water using site, and on any new designs.
 - Upgrade irrigation infrastructure - move towards best practice for irrigation systems.
 - Employ cultivation techniques such as aeration, soil wetting agents, soil amendment, vertical mowing, and spiking to reduce compaction and allow penetration. Estimate the water holding capacity of the soil from sample cores.
 - Develop fertiliser application plan that is based on water, soil and / or tissue samples that doesn't promote excess growth.
- Alternative water supply developed.

Community actions

- Support waterwise verges and provide information to ratepayers on how to design and maintain a waterwise verge.
- Encourage local community and business to utilise Waterwise Specialists.
- Support and promote innovative projects that create awareness of water efficiency principles and practices, e.g. demonstration homes. Waterwise garden open days etc.
- Programs to encourage water efficiency e.g. native plant subsidy or giveaways, waterwise garden competitions, offer a rebate program on water efficient products, offer free mulch to residents etc.
- Provide grants / support for sporting clubs and / or schools to support water efficiency initiatives.

Waterwise Council of the Year (Platinum Waterwise Council)

A Waterwise Council of the Year will be announced annually at the Waterwise Council Forum. Platinum recognition is awarded to a council demonstrating innovation and best practice techniques to improve water efficiency in facilities and in public open space.

In order to be eligible for this award a council must be an endorsed (or eligible for) Gold Waterwise Council and address the following as part of the annual re-endorsement process:

- How your council has contributed towards the efficient and sustainable use of water, focussing on the past year?
- Provide an estimate of the total volume of water your council was responsible for saving each year (from baseline year).
- Evidence of work undertaken in the community or in council operations to reduce water use over the last year.
- Evidence of work undertaken that could be employed by other councils to reduce water use.