Water Efficiency Action Plan

Name:	City of Cockburn
Address:	9 Coleville Crescent, Spearwood WA 6163
Date:	24/06/2016

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 your target**
- **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 use goals and benchmarks**
- **Setting water efficiency targets**
- **Table of actions**
- **Management endorsement**

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1. Contact details

COUNCIL NAME	
Administration office address	City of Cockburn, 9 Coleville Cres, Spearwood, WA 6163
Chief Executive Officer	
Name	Stephen Cain
Telephone	9411 3444
Email	scain@cockburn.wa.gov.au
Primary Program Contact	
Name	Claire Dunn
Position	Environmental Education Officer
Telephone	94113586
Email	cdunn01@cockburn.wa.gov.au
Secondary Program Contact	
Name	Chris Beaton
Position	Environmental Manager
Telephone	94113465
Email	cbeaton@cockburn.wa.gov.au

WATER MANAGEMENT TEAM	Current Incumbent	Position
To ensure your WEAP is a success it is a good idea to establish a Water Management Team. Decide who your appropriate contact(s) are and involve key staff members who may influence or have an understanding of how water is used. Staff on the Water Management Team should also complete the free online Waterwise training provided by Water Corporation.	Claire Dunn	Environmental Education Officer (Chair)
	Chris Beaton	Environment Manager
	Lou Vieira	Parks Manager
	Mladen Thomas	Irrigation Supervisor
	Glen Williamson Brett Mcewin	Building & Facilities Project Co-Ordinator Manager Cockburn Aquatic and Recreation Centre

2. Background

2.1 Background

Cockburn is one of the largest coastal cities found in the state of Western Australia. Situated just 22km south of Perth, and 8km south of Fremantle, the City of Cockburn occupies approximately 14,800 hectares. The City is served by the Kwinana Freeway, the Roe Highway, Armadale Road, Rockingham Road, Stock Road, the Mandurah railway line and Jandakot Airport.

The City of Cockburn is a growing residential area, with substantial rural-residential areas, significant industrial areas and some commercial areas. Much of the rural land is used for market gardening and hobby farming. The industrial area includes light industry and industry associated with ship building. The City encompasses a total land area of about 170 square kilometres and including wetlands, 17klm of coastline and large areas of parks such as the Beeliar Regional Park which have been set aside for conservation. . A summary of the City's current land use breakdown is provided in Chart 1.

The current residential population of the City is approximately 110,000 people, having grown substantially over the past five years from approximately 95,000 people in 2011. The City is expected to continue growing over the next 20 years to an expected population projection of over 176,000 in around 2030 (forcast.id, 2016).

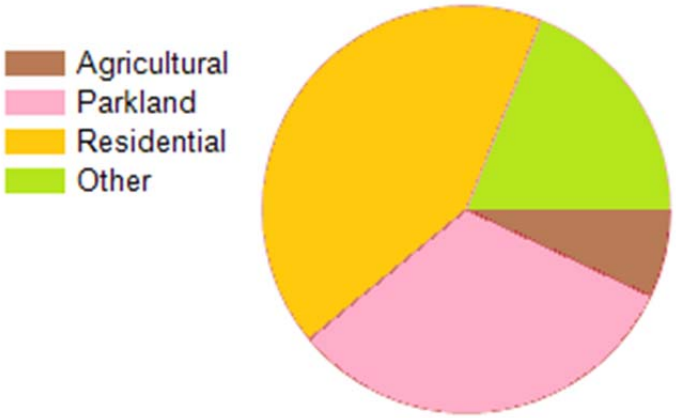

Chart 1: City of Cockburn land use

The City's climate is typically Mediterranean, having hot summers and mild winters with low annual rainfall.

Average annual rainfall recorded at the nearest Bureau of Meteorology weather station at Jandakot Aero since 1972 is 825 mm but this has declined in recent years to an average of 712 mm since 2006. The minimum annual rainfall on record was just 495 mm in 2010 and the maximum recorded was 1,148 mm in 1986.

Chart 2 presents a summary of monthly average climate data for the City and shows that the majority of rainfall occurs in winter between May and September with the driest months being December to February. Average maximum temperatures range between 17.9°C in July and 31.7°C in February, while average minimum temperatures range between 6.7°C in July and 17.1°C in February.

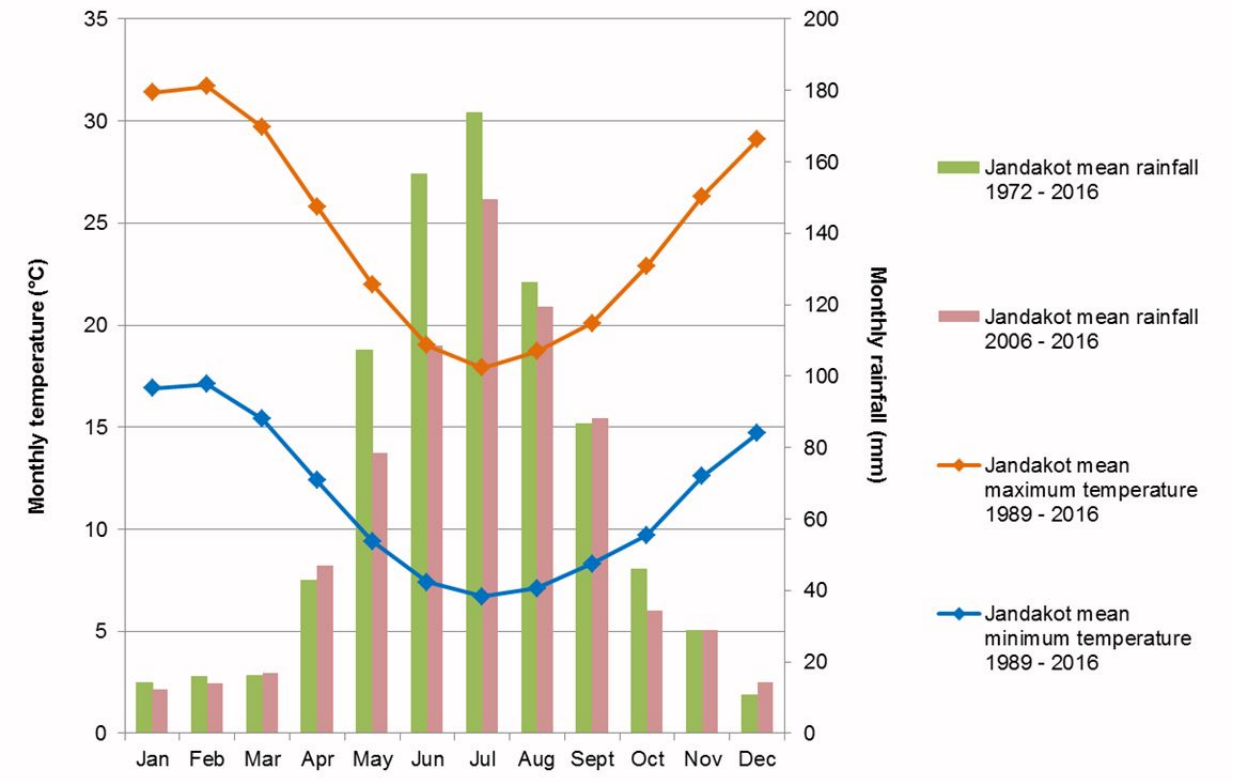

Chart 2: Local Climate (Jandakot Aero BoM, 2016)

The City of Cockburn is located on the western side of a large mound in the superficial groundwater system that is locally named 'the Jandakot mound'. This groundwater system is an important natural resource for the metropolitan region and provides water for drinking, irrigation, industry and domestic gardens as well as sustaining an extensive system of significant wetlands and wetland dependent vegetation. The Jandakot mound is a shallow groundwater system that is directly recharged by rainfall, making it vulnerable to water quality impacts from overlying land uses.

Some of the most notable wetlands in Perth are within the Beeliar wetlands chain in Cockburn including Thomsons Lake which is recognised in the Ramsar convention as a wetland of international significance.

2.2 Existing water efficiency programs

The City of Cockburn has undertaken a number of water efficiency programs in the past which have been guided by two key documents; the Local Water Action Plan 2011-2017 and the Water Conservation Plan 2013-2018. A summary of these documents and the programs they have supported is provided below.

Local Water Action Plan 2011-2017

The local water action plan stipulates five overarching targets for the City of Cockburn.

1. To improve efficiency in corporate groundwater use by reducing consumption to 10 percent below the 2007/08 Department of Water allocations per hectare by 2017/18 (6,750 kL/Ha)
2. To reduce corporate potable water consumption by 5 percent below 2007/08 levels by 2017/18 (70,824 kL/year).

3. To reduce community per capita water consumption by 5 percent below 2007/08 levels by 2017/18 (104kL/person/year)
4. To implement a minimum of 50 points worth of actions from the Water Campaign Corporate action cards by 2017/18
5. To implement a minimum of 50 points worth of actions from the Water Campaign Community action cards by 2017/18

Currently the City is experiencing a period of rapid growth with new areas such as Hammond Park being developed and older suburbs such as Hamilton Hill, and Spearwood being increased in density by brown field development. New areas have seen the establishment of substantial areas of new public open space. For target 1, the City is currently at 92% of their goal, with corporate groundwater use at 7,318kL/ha.

Data provided by the Water Corporation has shown that the City of Cockburn has achieved Target 2 with corporate potable water at 0.70kL/person/year for 2014-15.

Further to the above, the City of Cockburn community has reached Target 3 with residential community per capita consumption of 96kL/person/year.

Water Conservation Plan 2013-2018

The Water Conservation Plan 2013 – 2018 was developed to provide strategic direction in water conservation and water quality improvement initiatives within the City's public open space (POS). This Plan reviews and builds on the actions emanating from the 2007 Water Conservation – A Sustaining Strategy. The plan sets a high level goal and objective for the City:

Goal – *to provide high quality recreational and aesthetic amenity for the community of Cockburn in a manner that conserves groundwater resources*

Objective – *reduce groundwater consumption to volumes less than that allocated to the City of Cockburn by the Department of Water*

The key actions to be implemented in response to these included;

1. Ensure developers have a licenced water allocation for the POS associated with the subdivision development and the licence is transferred to the City at the expiration of the maintenance period;
2. Adopt the City of Cockburn's Irrigation Operating Strategy April 2011- April 2014 and the Hammond Road Sporting Complex Irrigation Operating Strategy Sept 2011-Sept 2014;
3. The City adopts hydrozoning principles for POS;
4. The City adopts a uniformity coefficient (CU) of >80% for all reticulated open space;
5. The City continues to implement optimum irrigating operation conditions;
6. The City adopts adaptive irrigation scheduling for all irrigation systems;
7. The City continues to monitor Groundwater Abstraction, Scheme Water Usage and standing groundwater on all production bores and report annually to the Department of Water
8. The City undertakes a comprehensive review of suitable Central Control Systems and receives a report by December 2013 on the preferred Central Control System;
9. Investment in a Weather Station in line with the preferred Central Control System;
10. The City continues to invest in Soil Monitoring Devices
11. The City completes Milestone 4 of the ICLEI campaign and commence works to achieve Milestone 5 and maintaining Waterwise Council endorsement

12. The City continues to engage with the Department of Water on the "First in First Served" policy review;
13. The City reduces its groundwater abstraction levels to achieve the City's Sustainability Action Plan 2013/14, Environment 5.1 KPI "To improve efficiency in corporate groundwater use by reducing consumption by 10 percent below the 207/08 DoW allocations per hectare by 2017/18"
14. The City continues to monitor the Port Coogee Groundwater Interception resource and consider the availability of this resource for future strategies;
15. The City continue to adopt the annual maintenance budgets;
16. The City will implement the irrigation asset renewal program outlined in the Parks and Environment Asset Management Plan and annual budget submissions.
    The City will review the Asset Management Plan and report on performance against targets through an annual report.

The City has completed a number of actions since commissioning of the plan including the review of central control systems, updated the operating strategies with endorsement for the Department of Water, additional soil monitoring devices and renewal of irrigation infrastructure. Furthermore refinement of the City's irrigation infrastructure, pump and bore specification documentation has been completed and embedded in the POS Development Guidelines ensuring compliance be developers.

2.3 Relationship to strategic documents

This Water Efficiency Action Plan adopts relevant objectives, goals, benchmarks and actions from, and thereby supersedes the following strategic documents:

- City of Cockburn Water Conservation Plan
- City of Cockburn Local Water Action Plan (2011-2017)

Whilst the primary focus of this Action Plan is water conservation, to facilitate a more streamlined process for management of local water related actions, sections 4 and 5 have been expanded to incorporate water quality goals, benchmarks and actions.

Some of the City's other key strategic documents that are related to and will support delivery of this Action Plan include:

- City of Cockburn Sustainability Strategy 2013 -2017
- City of Cockburn Local Planning Strategy
- City of Cockburn POS Development Guidelines

3. Water Use Inventories

The Corporate and Community water use inventory is used to identify priority areas for action and assist the City to track water consumption over time.

The inventory is divided into corporate and community potable and non-potable water use. The ability for the City to effect change in water use is different for each of these categories. For example; the City has sole control over the majority of corporate non-potable water use since this water use is mainly irrigation of City owned and operated public open space. Conversely, the City has only limited influence over community water use, primarily through public education campaigns and small incentive schemes.

3.1 Corporate water use inventory

3.1.1 Historical water use – potable

Table 1 and Chart 3 show the historical potable water use in City of Cockburn facilities for the past 5 years.

Potable water consumption declined during the period from 2011 to 2013 but since then has increased although consumption remained lower in 2015 than it was prior to 2013.

The City as not achieved the target of 5% reduction compared to 2007/08 water use and in fact water use in 2015 was some 6% higher than it was in 2007/08.

Table 1: Historical water use - potable

Use	2011	2012	2013	2014	2015
Annual water use (kL)	84,347	80,071	69,737	72,903	76,420
Daily Water use (kL/day)	231	219	191	200	209

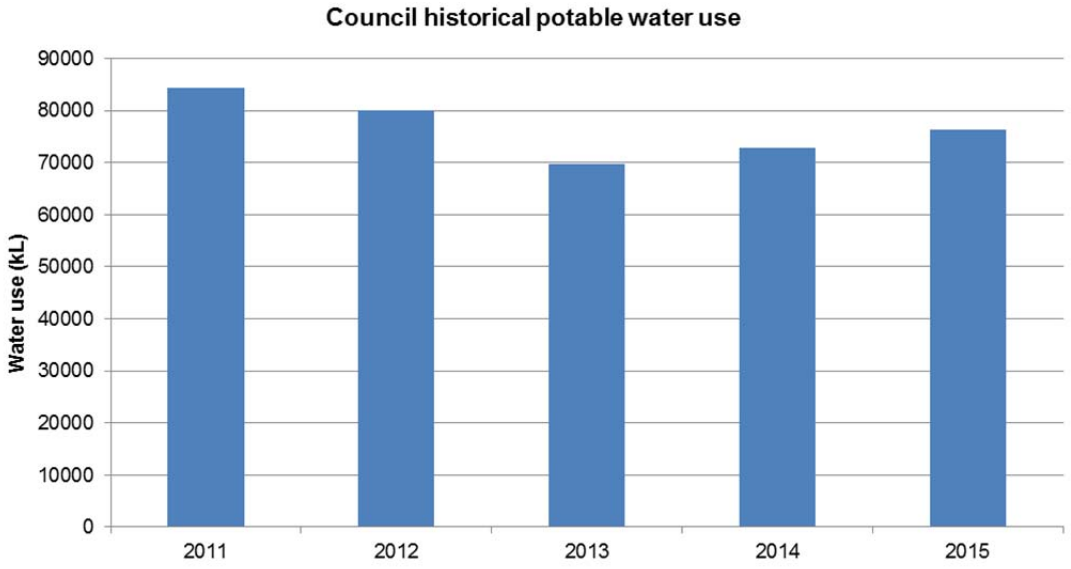

Chart 3: Council historical potable water use

Chart 4 provides a breakdown of the City's corporate water use by the specific facilities or services of the City: land and private properties, community facilities, and public open space. This chart clearly demonstrates that community facilities account for the largest proportion of water use, followed by public open spaces. The chart also identifies that the water use in community facilities is highly variable whilst others remain more consistent.

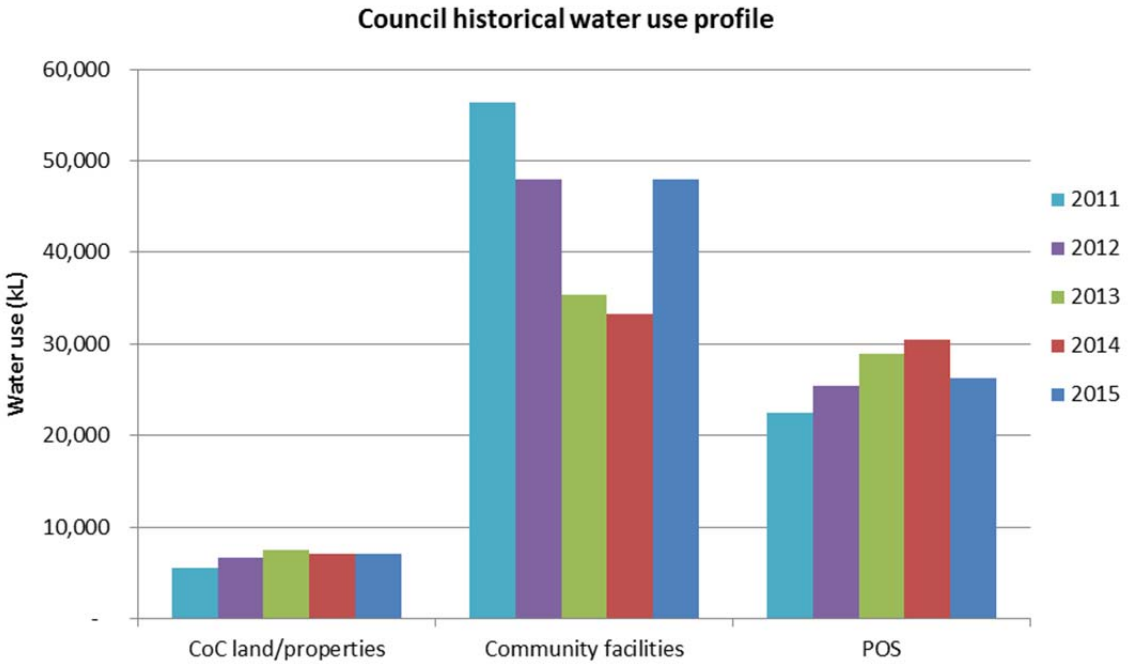

Chart 4: Water use by service area

The community facilities category includes the greatest number of venues of the three categories and includes facilities such as community centres, public halls, surf clubs and swimming pools. Water consumption in these facilities is likely to be closely linked to population and demographics with community facility use generally expected to be higher in more densely populated areas.

Table 2 provides details of potable water use at a selection of sites in the City including the top five water users in each of the past 5 years. Analysis of this data and a review of other site-specific information reveal the following notable examples:

1. The South Lake Leisure Centre saw a substantial decrease in potable water use as water audits were conducted in 2011 and refurbishments of the change room facilities undertaken, including showers and vanities having motion sensors installed and installation of waterless urinals. There has been an increase in potable water consumption from 2013 which is likely linked to an exponential increase in population. The Leisure Centre is due to be decommissioned when the new Cockburn Aquatic and Recreation Centre (ARC) is open to the public in mid-2017.

2. Coogee Surf Life Saving Club was the 4th highest consumer of potable water in 2015. Previously the club has used less than half this amount in 2014. This increase in potable water use can be attributed to the increase patronage of the Surf Club in 2015. The Club has become very popular with a substantial increase in members and new businesses associated with water activation. The facility has also proven to be very popular as a hire venue no doubts because of the expansive ocean views it provides.

3. The Naval Base Shacks has seen a steady increase in potable water consumption from 2012. The Naval Base Shacks Management Plan states the ablution blocks have a potable water supply and potable water supply for shack owners is provided through the strategic location of water taps within the reserve, with connection via a hose.

4. The City's Works Depot is a consistently high consumer of potable water and is the only non-community facility to appear in the annual top-five list (Table 2).

Significant reductions in potable water use have been noted at the following facilities:

- Harvest Lakes Community Hall
- Bowling Club Hall
- Djenark Beach

Table 2: Historical potable water use for top 5 water using sites in the past 5 years (shown in kL).

Note: values shown underlined indicate the top 5 potable water consumers of that year.

Site Name	2011	2012	2013	2014	2015
Naval Base Shacks Reserve 24308 (Cockburn Rd Henderson)	7,538	6,583	6,991	7,605	8,258
Harvest Lakes Community Centre (62 Aurora Dr Atwell)	7,577	1,617	535	525	2,593
Bowling Club Hall (300 Rockingham Rd, Spearwood)	13,574	14,505	3,662	2,276	2,015
Swimming pool (South Lake Leisure Centre, South Lake Dr)	17,543	15,185	12,928	13,533	14,513
Coogee Beach Amenities (4-6 Powell Rd Coogee)	5,727	5,603	7,734	3,515	5,155
City of Cockburn Works Depot (54 Wellard St Bibra Lake)	3,614	5,189	5,842	5,394	6,025
Djenark Beach (North Coogee)	0	198	549	3,634	1,144
Surf Club (Poore Gr Coogee)	0	1,342	625	2,396	5,959

Note: values shown in bold indicate the top 5 potable water consumers of that year.

3.1.2 Historical water use – non-potable

Non-potable water use may include groundwater, surface water storm water capture and re-use and recycled wastewater. In the City of Cockburn, the great majority of non-potable water use is groundwater.

The City's non-potable water consumption is largely used for irrigation of sports (active), recreation (passive) public open spaces and streetscapes. Additionally there are significant volumes also attributed to the top-up of ornamental lakes used for irrigation of POS as well as dust suppression at the Henderson Recovery Park.

Table 3 and Chart 5 present the past 5 years of groundwater use at City of Cockburn facilities.

Table 3: Historical water use – non potable

Use	2011-12	2012-13	2013-14	2014-15
Annual water use (kL)	1,764,695	1,731,050	2,216,261	2,291,228
Daily Water use (kL/day)	4,835	4,743	6,072	6,277

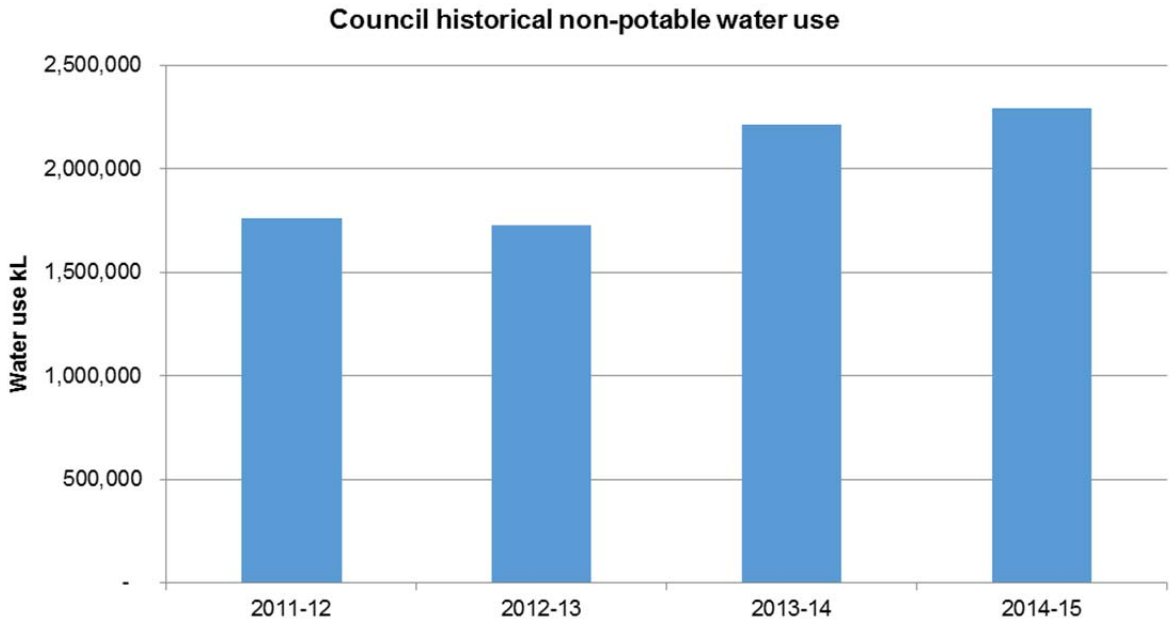

Chart 5: Historical non-potable water use

The City's groundwater use was approximately 7,318kL/ha in 2015 having increased since 2012. The majority of this abstraction was for irrigation of sports surfaces to meet the growing demand for structured sport. As has already been noted, the significant population increase within the City has led to a large number of new public open spaces, streetscapes and sporting facilities being created and handed over to the City.

Table 2 provides details of non-potable water use at a selection of sites in the City including the top five water users in each of the past 5 years, notably:

- Beeliar Lake consistently requires the largest volume of water
- The top-five sites in each year are dominated by sports (active turf) facilities
- Water use at Barrow Park has declined significantly since 2013 and is now comfortably outside the top-five users. Reduction is due to the removal of residential verge irrigation from the system

Improving the efficiency of water use in public open spaces has been the target of significant effort at the City of Cockburn through the implementation of the operating strategies, hydrozoning of POS, renewal of irrigation systems and revised standards being set for new facilities.

A comparison of site-specific irrigation demands to the Department of Water's target of 7,500 kL/hectare/year reveals that 63% of the City's sites met this target in 2015. The City's overall average consumption in 2015 was 7,318 kL/hectare/year, which is also below this target.

The City currently fails to achieve its current target of 6,750 kL/hectare/year overall although this target was met by 55% of individual sites in 2015.

Table 4: Historical non-potable water use for top 5 water using sites in the past 5 years (shown in kL).

Note: values shown underlined indicate the top 5 non-potable water consumers of that year

Site Name	2012	2013	2014	2015
Beeliar Lake (Irrigation sourced from lake serving adjacent active open space)	54,054	52,115	56,856	60,985
Anning Park: North Lake Rd, South Lakes (, Senior football)	34,557	44,564	52,220	51,676
Atwell Reserve: Brenchley Drive, Atwell (, Junior & Senior football, Junior cricket)	49,568	39,811	49,475	50,441
Davilak Oval: Lucius Road (Junior and Senior football & cricket)	37,411	32,285	46,386	45,017
Enright Reserve: Healy Drive Hamilton Hill (softball)	37,499	33,696	44,586	44,362
Barrow Park (POS,)	36,429	40,532	26,381	13,262
Botany: Botany Parade, Hammond Park (Junior football & Athletics)	41,913	37,771	41,735	42,433
Manning Park (POS)	40,871	35,933	29,044	42,887

3.2 Community water use inventory

As has been previously mentioned, the City has limited influence on the water consumption patterns of the community but continues to support the Water Corporation's water efficiency education campaigns through its own activities. Table 5 and Chart 6 present annual potable water use by the City of Cockburn community, including residents and businesses, since 2011. This information is used to assist to identify trends and set targets to reduce water.

Potable water use by the City of Cockburn community has increased substantially since 2012 consistent with a rapid growth in population of approximately 3% per year over the past 5 years. Per person potable water use has fluctuated slightly during this time and was 118 kL/person in 2015, the second highest consumption rate in the last 5 years.

Table 5: Community historical potable water use

Year	2011	2,012	2013	2014	2015
Consumption (kL)	11,488,363	11,279,713	11,643,995	11,786,099	12,558,979

Population	95,036	96,613	99,252	102,241	105,998
kL/person	120.88	116.75	117.32	115.28	118.48

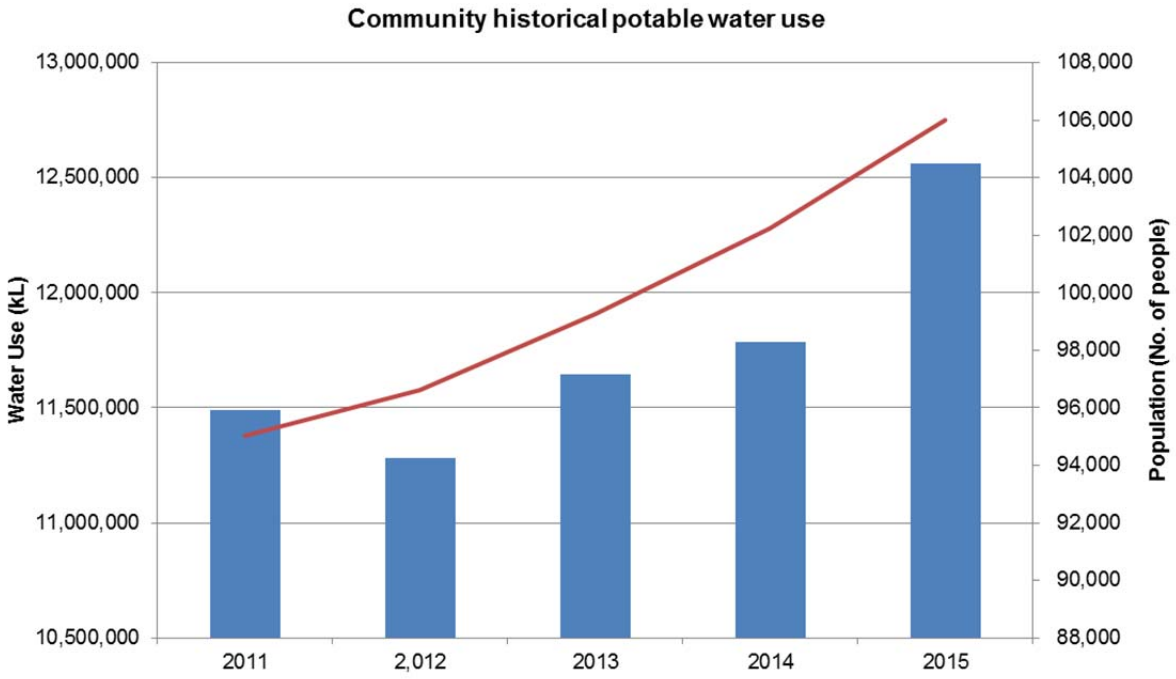

Chart 6: Historical potable water use by community

Chart 7 and Table 5 present a breakdown of potable water use by different sectors of the City of Cockburn community; commercial, education, residential and other services. This allows identification of the top water using sectors to identify trends and water saving opportunities.

Chart 7 shows that residential potable water use accounted for approximately 84% of total use in 2015, a pattern that has remained relatively consistent. Table 5 indicates that, although the total residential water use is significant, when calculated as a per person rate it was approximately 96 kL per person in 2015 which is below the Perth/Peel target of 100 kL/person/year.

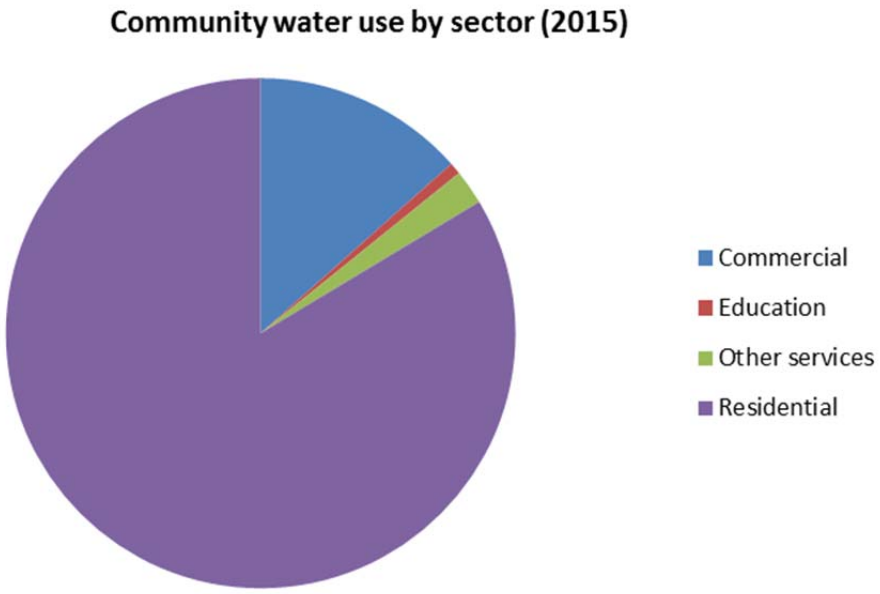

Chart 7: Community water use by sector

Table 6: Community water use by sector

Year	2011	2012	2013	2014	2015
Commercial	1,544,516	1,588,874	1,735,586	1,948,296	2,076,159
Education	85,931	71,795	87,170	83,686	89,469
Other services	252,939	237,491	230,735	223,714	220,112
Residential	9,604,977	9,381,553	9,590,504	9,530,403	10,173,239
kL/person	101.1	97.1	96.6	93.2	95.9

Commercial sector potable water use has increased substantially since 2011. Chart 8 presents a breakdown of water use in the commercial sector by business category. The chart indicates that there have been gradual increases in potable water use across the whole sector and that the finance, insurance, property and business category is the most significant water user in the City. Potable water use by the finance, insurance, property and business category has increased substantially since 2012 through the development of the Cockburn commercial Park, Australian Marine Complex, etc.

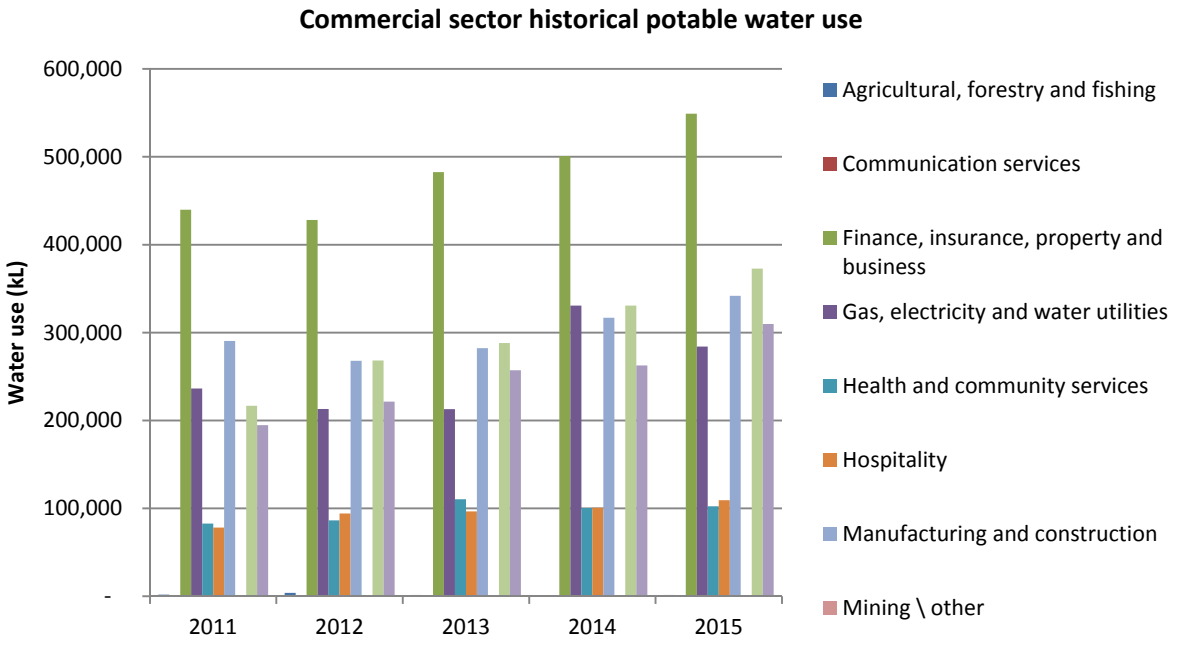

Chart 8: Commercial sector water use by business type

Table 7 presents increases in potable water use by suburb for the finance, insurance, property and business category.

The suburb with the largest use of potable water by the finance, insurance, property and business category is Bibra Lake where 274,499kL was used in 2015. The next highest use suburb was Cockburn Central with 79,841kL used in 2015.

A large proportion of water use in Bibra Lake is attributable to the Adventure World Theme Park, although the Park has made considerable water efficiency gains having halved its water use in the last 10 years and overall Bibra Lake has a modest increase in consumption of approximately 3.5%, as indicated in Table 7. This increase can be largely attributed new commercial estates such as Cockburn Commercial Park in Bibra Lake being completed and buildings constructed.

Table 7: Finance, insurance, property and business: trends from 2010-2015

Suburb	Average increase in kL 2010-2015	Rate (%) increase 2010-2015
Bibra lake	9,880.8	3.5
Cockburn Central	3,377.4	4.1
Henderson	2,251.8	2.8
Spearwood	971.4	7.1
Success	575	16.7
Aubin grove	528	16.5

Beeliar	**3,99.6**	**11.3**
South lake	**3,18.6**	**8.4**

4. Water efficiency goals and benchmarks

4.1 Water efficiency goals

The City of Cockburn has reviewed previously adopted goals for water efficiency and proposes the following updated goals in recognition that a number of the original goals have been achieved:

1. ***To improve efficiency in corporate groundwater use by reducing consumption to 6,750 kL per hectare by 2020***

2. ***To investigate and implement opportunities for alternative sources of non-potable water and limit any increase from 2016 licenced allocations of 2.8 GL/year to less than 15%***

3. ***To reduce corporate scheme water consumption by 5 percent below 2014/15 levels per head of population served (0.7 kL/person) by 2020***

4. ***To maintain per capita residential water use below 100 kL/person/year***

5. ***To influence other community sectors to reduce their water consumption by 5% below by 2020***

4.1.1 Corporate water efficiency goal

Non –potable water use

The City currently holds nine (9) groundwater licences (GWL 49535, GWL 49549, GWL 110703, GWL 62672, GWL 99188, GWL 99722, GWL 49545 GWL 181661 and GWL 151752) for irrigation of Public Open Space, Streetscapes and Community Facilities. The licenses are located in the Department of Water's Cockburn, Jandakot and Perth Groundwater areas and allow the City to draw a total of 2,799,348 kL/year.

The City has made significant progress in improving groundwater use efficiency and continues to work hard in this area although the target of 6,750 kL/hectare/year has not yet been achieved.

The City of Cockburn is expected to continue to grow and groundwater remains available for allocation within the City. It is therefore not reasonable to expect no increase in groundwater use overall and in fact non-potable demand is likely to increase by as much as 50% in the next 20 years. However, there are opportunities for alternative non-potable sources to be considered including harvesting rainwater from large buildings, stormwater from significant drainage assets and wastewater recycling.

In order to provide a driver for the City to continue implementing groundwater efficiency measures and investigate and implement alternative water sources the following goals are proposed:

1. ***To improve efficiency in corporate groundwater use by reducing consumption to 6,750 kL per hectare by 2020***

2. ***To investigate and implement opportunities for alternative sources of non-potable water and limit any increase from 2016 licenced allocations of 2.8 GL/year to less than 5% in 2020***

Potable water use

Previous targets for potable water use have aimed for absolute reductions in use compared to 2007/08. On this basis, the City has failed to achieve this target and in fact corporate potable water use has increased by 6% in 2014/15. However, during this period the population of the City has increased dramatically with the effect that there has been a significant increase in the demands placed on community facilities.

Considering the City's water use in relation to the population served provides a better measure of the water efficiency performance of the City in delivering services to the growing community. In 2007/08 the City's corporate potable water use was 0.90 kL/head of population, this has fallen to 0.70 kL/head of population in 2014/15 which is a reduction of approximately 20%.

In order to recognise the City's expected continued growth but encourage continued implementation of water efficiency measures the following goals are proposed:

3. ***To reduce corporate scheme water consumption by 5% below 2014/15 levels per head of population served (0.7 kL/person) by 2020***

4.1.2 Community water efficiency goal

The City has limited ability to influence community water use but continues to support the Water Corporation's water efficiency education campaigns through its own activities.

Potable water use by the City of Cockburn community has increased substantially since 2012 consistent with a rapid growth in population of approximately 3% per year over the past 5 years. Per person potable water use has fluctuated slightly during this time and was 118 kL/person in 2015, the second highest consumption rate in the last 5 years.

In order to recognise the City's expected continued growth and limited influence in this area but encourage continued implementation of water efficiency measures the following goals are proposed:

4. ***To maintain per capita residential water use below 100 kL/person/year***

5. ***To influence other community sectors to reduce their water consumption by 5% below 2014/15 levels by 2020***

4.2 Performance Benchmarks

Table 8 presents 2015 performance benchmarks which have been calculated for the top three potable and non-potable water using sites in the City. These benchmarks will allow water use comparisons to be made in future years to assess individual sites contribution towards achieving the City's overall water efficiency goals.

Benchmarking will be undertaken for additional sites in future where a significant change in use is identified during regular reviews of collated water use data.

Table 8: Performance benchmarks

Facility or Irrigated Area (Parkland)	Period (year)	Water Used	Performance Indicator	Benchmark	2016 / 17 Target
Potable water use sites					
Naval Base Shacks	2015	8258 kL	kL/dwelling/year (176 dwellings)	47 kL/dwelling/year	45 kL/dwelling/year
CoC Works Depot	2015	6025 kL	kL/employee/year (138 employees)	44 kL/employee/year	42 kL/employee/year
Surf Club	2015	5959 kL	kL/patron/year (2200 patrons)	3 kL/patron/year	2.5 kL/patron/year
Non-potable water use sites					
Anning Park – active turf	2015	50,411kL	kL/Ha (6 Ha)	8,402 kL/Ha	8,200 kL/Ha
Atwell Reserve– active turf	2015	51,676 kL	kL/Ha (6.1 Ha)	8,471 kL/Ha	8,200 kL/Ha
Davilak Oval – active turf	2015	45,017 kL	kL/Ha (5.9 Ha)	7,360 kL/Ha	7,200 kL/Ha

5. Table of actions

Please note that demonstrated progress towards all items in sections 1-3 is a minimum requirement to be endorsed as a Waterwise Council. Evidence to demonstrate these actions have been implemented must be submitted with your application for Waterwise endorsement. Evidence can include: photographs, a copy of a meter reading template or a copy of maintenance / operation plan or schedule etc.

Table 9: Water Efficiency and Water Quality Enhancement Actions

Corporate Water Efficiency						
Water Saving Area	**Ref**	**Action / Initiative**	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary**
Potable						
Facilities	CP-F1	Conduct a water audit on each of the council's top water using sites.	Ongoing	Ongoing	Environmental Services	Top water using sites to be audited during 2016/17. These include: Naval Base Shacks Reserve; Coogee Beach Surf Life Saving Club; Coogee Beach Amenities; City of Cockburn Works Depot and Harvest *Note: South Lake Leisure Centre excluded from audits pending the sites decommission. Data logger for new Cockburn ARC facility to be investigated following facility completion.
	CP-F2	Commit to implementing the most viable recommendations from water audits undertaken.	Ongoing	Ongoing	Environmental Services, Facilities	Council continues to look for opportunities to reduce water consumption at all facilities. Funds continue to be made available to implement initiatives via Environmental Services Water Campaign budget.

Corporate Water Efficiency						
Water Saving Area	**Ref**	**Action / Initiative**	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary**
	CP-F3	Procurement processes incorporate consideration of better than 3 star WELS rated fixtures.	Ongoing	Ongoing	Environmental Services, Facilities	Council continues to look for opportunities to reduce water consumption at all facilities. Funds continue to be made available to implement initiatives via Environmental Services Water Campaign budget.
	CP-F4	Develop a City ESD Building policy which ensures that water conservation is considered at the decision making stage for any new and upgraded facilities eg. no water features and use of appropriately rated water conservation devices.	To be completed	2017/18	Environmental Services, Facilities Maintenance.	All council buildings are constructed using best practise Environmental Sensitive Design which includes water reduction initiatives.
Education	CP-E1	Appropriate staff have completed Water Corporation water efficiency training.	Ongoing	Ongoing	Parks & Environment, Facilities Manatenance.	Staff working in areas responsible for water management are to undertake water efficiency training.
	CP-E2	Processes in place to achieve behavioural change within council, e.g. leak reporting process established and water conservation signage in staff facilities, water management team meetings held on a regular basis.	Ongoing	Ongoing	Environmental Services, Facilities Maintenance	Specific initiatives include: Leak reporting processes, water conservation issues raised regularly at operational toolbox meetings, Water Corporation educational resources displayed in wet areas of City's staff and community facilities.
Monitoring	CP-M1	Meters (and any sub-meters) are read on a regular basis and recorded.	Ongoing	Ongoing	Facilities Maintenance	Bore water meters read on a monthly basis. Scheme water meters read every two months. Staff religiously check if there are any anomalies and will investigate if so.

Corporate Water Efficiency						
Water Saving Area	**Ref**	**Action / Initiative**	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary**
	CP-M2	Leak detection is included in inspections and reported on or repaired if a leak is observed.	Ongoing	Ongoing	Facilities Maintenance	Facilities maintenance staff have procedures in place to repair leaks as soon as they are detected.
Non-potable						
Irrigation practices	CNP-I1	Continue to implement a water budget for open spaces and streetscapes. Each irrigated area to have base annual water budget. Scheduling should be adjusted on a monthly basis and tracked against the water budget.	Ongoing	Ongoing	Parks Services,	Inventory of water consumption collected monthly. Noted changes in volumes investigated and modified accordingly. Irrigation maintenance staff continue to prioritise high consuming sites to reduce water use
	CNP-I2	Continue to implement water conservation actions in new and existing open spaces	Ongoing	Ongoing	Parks Service Unit	Council staff are tasked with indentifying areas where water reduction initiatives can be implemented. Currently in the process of rolling out Central Control real-time software to high water use turf sites.
	CNP-I3	Progressively upgrade any substandard irrigation systems in accordance with the results of the irrigation system audit	Ongoing	Ongoing	Parks Service Unit	Annual capital works budgets to reflect irrigation renewal programs as indentified during audits.
	CNP-I4	Continue the installation of soil moisture measuring devices to ensure irrigation water is applied only as required	Ongoing	Ongoing	Parks Service Unit	Currently being implemented as per yearly renovation and fertilising programs
	CNP-I5	Review the City's Street Verge Improvements Policy to include information for residents on how to gain approval and funding support for waterwise verges.	In process	October 2016	Parks and , Environmental Services	Street Verge Improvements Policy currently being reviewed and the viability of a Waterwise Grant Program for verges is currently being assessed.

Corporate Water Efficiency						
Water Saving Area	**Ref**	**Action / Initiative**	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary**
Monitoring	CNP-M1	Ensure all bores are metered 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.	Ongoing	Ongoing	Parks Service Unit	All Council bores are being fitted with hydrometers to allow measurement of water use. Ensure all new POS has an approved meter in accordance with DoW requirements
Irrigation & landscape Design	CNP-LD1	Landscaping plans to include low water use plants, hydrozoning and soil amendments.	Completed (ongoing)	Ongoing	Parks	POS Landscape Guideline completed in March 2013 and continually updated with the goal of water conservation. The Guidelines : - commit to use of sustainable materials and practises - state that the use of local native plant species are preferred. Any exotic species must have low water requirements. -Require all mass planting to have 75mm depth organic mulch -do not support the use of turf for aesthetic purposes only (e.g. small areas adjacent major roads) POS Strategy also being developed which will consider Waterwise practices.

Corporate Water Efficiency						
Water Saving Area	**Ref**	**Action / Initiative**	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary**
	CNP-LD2	Develop a Local Planning Policy to implement water sensitive urban design in new land developments.	Completed (ongoing)	Ongoing	Environmental Services, Parks	Local Planning Policy - *Control Measures for Protecting Water Resources in Receiving Environments LPP5.3* *http://cockburn.wa.gov.au/documents/CouncilDoc/Policies/Policy_Statements/PlanningDevelop_Serv/LPP5.3.pdf* The policy to be reviewed annually to ensure best practice.

Community Water Efficiency						
Water Saving Area	**Ref**	**Action / Initiative**	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary**
Engagement	COM-E1	Engage with household and business ratepayers and promote water efficiency.	Ongoing	Ongoing	Environmental Services	The City continues to support community events to promote water saving techniques to local residents. The following programs have been run implemented in 15/16. Further programs are planned. Waterwise Garden Bakers Square Demonstration 2015 (110) Gardening with Sabrina Hahn 2016 (35) Garden Design Masterclass 2016 (40) Speed Date a Sustainability Expert 2015 (40) Save Water And Power ($WAP)
	COM-E2	Engage with local schools on water efficiency programs.	In Process	End 2017	Environmental Services	Councils Environmental Education Officer/s attend schools as required and promote Waterwise Schools Program Opportunities. Current partnership with Low Carbon Schools program, supporting schools to reduce water use and increase efficiency through staff workshops.
Water sources (recycling/ non potable)	COM-S1	Provide information on the installation and local regulation of greywater systems and rainwater tanks where appropriate.	Ongoing	Ongoing	Health Services	Council makes information available to residents on the re-use of greywater. This information is based on that issued by the WA Department Health.

Other	Ref	Action (Minimum 5 further actions per annum required to be considered for Gold Council Status – see Appendix)	Status	Proposed Completion Date	Department Responsible	Commentary
	COM-A1	Develop and implement planning and building controls that support the use of water efficient appliances and develop processes to ensure their ongoing implementation	To be completed	June 17	Statutory Planning	Building Design Guidelines currently being developed.
	COM-A2	Support the uptake of water audits by the residential and non-residential community to ensure targeted and effective actions. eg free household water audit program.	Completed (ongoing run annually)	Ongoing	Environmental Services	The City continues to offer free Home Energy and Water Audits to local residents and businesses.
	COM-A4	In conjunction with the Water Corporation support or promote a subsidised water efficient landscaping techniques to the residential and non-residential community to support the implementation of water efficient irrigation	In Progress	December 2016	Parks and Environment	Currently the Sustainability Grant Program provides opportunities to households or businesses to install water efficient irrigation. Conditions apply. The City is also investigating the development of a Waterwise Verge Incentive Scheme.
	COM-A5	In conjunction with the appropriate stakeholders work with specific sectors of the communities such as plumbers, nurseries, developers and schools to support water conservation and the Installation and/or retrofitting water efficient appliances	Completed (ongoing)	Ongoing	Environmental Services	Water Corporation rebate schemes are supported and promoted. The City's Sustainability Grants provide an opportunity to residents and businesses to receive funding to install water saving initiatives. Conditions apply.

6. Actions completed as identified in other superseded documents.

The following table provides completed actions from superseded water efficiency and quality documents that are not referred to in the current action sheet.

Table 10: Actions completed.

Corporate Water Efficiency					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
To allow the ongoing improvement of data collected for the Water Campaign™ inventory and therefore allow the selection of targeted and effective actions.					
	Implement processes to collect indicator information (where it was unavailable) for high consuming sites in Milestone 1 inventory.	Completed	June 2012	Environmental Services	Inventory of use collected annually. Noted changes in volumes investigated. Maintenance staff continue to prioritise high consuming sites to reduce water use
	Investigate high consuming sites with multiple uses. Install sub meters where appropriate and develop a process for recording this information in your inventory.	Ongoing	June 2012	Environmental Services	Inventory of use collected annually. Noted changes in volumes investigated. Maintenance staff continue to prioritise high consuming sites to reduce water use
	Install hydrometers to measure Council's use of groundwater	Ongoing	2016/17	Parks and Environmental Services	The majority of sites now have hydrometer installed. Few remaining sites to be targeted in 16/17.
	At Milestone 4 councils are required to calculate the savings resulting from the actions they have implemented. Where data for calculating savings resulting from implemented actions is not easily available, implement systems to record water saved through these actions.	Ongoing	Ongoing	Environmental Services and Parks	Annual inventories to be used to estimate amount of water being saved.

Corporate Water Efficiency					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
To reduce water consumption through avoiding water use (where waterless options exist) and using water efficient technology					
	Conduct a review of council's public open space to determine use by the community and possible water conservation opportunities.	Completed (ongoing)	Ongoing	Environmental Services, Parks	POS Landscape Guideline completed March 2013 and continually updated with these goals in mind. The Guidelines : - commit to use of sustainable materials and practises - state that the use of local native plant species are preferred. Any exotic species must have low water requirements. -Require all mass planting to have 75mm depth organic mulch -do not support the use of turf for aesthetic purposes only (e.g. small areas adjacent major roads) POS Stratgey also being developed which will consider Water wise practices.
	Conduct water audits on high consuming sites to determine which water conservation measures and water efficient appliances will be the most effective (eg Operations Centre, Coogee Beach Reserve, etc),	Completed (ongoing)	Completed	Environmental Services, facilities	Inventory of use collected annually. Noted changes in volumes investigated. Maintenance staff continue to prioritise high consuming sites to reduce water use
	Retrofit Council Buildings with water efficient appliances, sensor taps, timed showers, low flow showerheads, tap flow regulators, dual flush toilets, waterless urinals as appropriate (and as identified in the audits)	Completed (ongoing)	Completed	Environmental Services, Facilities	Council continues to look for opportunities to reduce water consumption at all facilities. Funds continue to be made available to implement initiatives via Environmental Services Water Campaign budget.
	In conjunction with appropriate stakeholders investigate best practice technology and design principles to minimise water use at the newly planned Operation Centre.	Ongoing	Completed	Infrastructure Services	Currently being investigated/implemented

Corporate Water Efficiency					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
	Conduct an audit of the irrigation systems servicing each piece of open space to determine the efficiency of the irrigation system (see action IP-3b)	Completed	Completed	Parks	Best practice irrigation techniques in place.
	Install an appropriate irrigation system which allows areas to be irrigated based on the actual requirements of the turf.	Completed	Not completed.	Parks	All new and upgraded systems installed are designed for optimum distribution and water conservation
	Amend soil to reduce water consumption and utilise soil moisture measuring to ensure irrigation water is applied only as required	Completed (ongoing)	Completed	Parks	Currently being implemented as per yearly renovation & fertilising programs (ongoing)
	Locate plants together that have a similar water requirement	Completed	Completed	Parks	Currently being implemented (now standard business practice) Shared root-zones with adequate mulch are encouraged. Recent examples include the Hiroshima Day plantings (Tuarts) we did at Tapper Reserve. Pictures available.
	Select and plant indigenous/local plants in new and upgraded plantations	Completed	Completed	Parks	Standard practise
	Use mulch in planting beds and street trees to maintain moisture	Completed	Completed	Parks	Standard Practise
	Select drought tolerant turf species for turf upgrade and new site establishment	Completed	Completed	Parks	Standard practise
	Develop an irrigation leak detection system	Completed	Completed	Parks	Major leak detection system has been installed on all bores.
	Develop procedures and remove blocks to dealing with irrigation leaks quickly	Completed	Completed	Parks	Practises are in place to ensure leaks are repaired as soon as detected.
	Develop procedures for identifying and dealing with building/facility leaks quickly	Completed	Completed	Facilities	Facilities maintenance staff have procedures in place to repair leaks as soon as they are detected.
To reduce water consumption at Aquatic Facilities - South Lake Leisure Centre to soon be closed. New start of the art facility being constructed at Cockburn Central which will include best practise water management techniques.					

Community Water Efficiency					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
To reduce water consumption through avoiding water use (where waterless options exist) and using water efficient technology					
	Provide scope in the Sustainability Grants Scheme for waterless and water efficient technologies in the residential and non-residential community	Completed (ongoing)	Completed	Environmental Services	The sustainability grant program has scope to assist households to take up water saving initiatives. Conditions apply. The City also provides a Free Home Energy and Water Audit Program for local residents.
	In conjunction with appropriate stakeholders deliver community workshops providing information on how to reduce water use eg Great Gardens and Days of Change Program.	Completed (run annually)	Completed	Environmental Services, Planning	The City continues to support community events to promote water saving techniques to local residents. The following programs have been run implemented in 15/16. Further programs are planned. Waterwise Garden Bakers Square Demonstration 2015 (110) Gardening with Sabrina Hahn 2016 (35) Garden Design Masterclass 2016 (40) Speed Date a Sustainability Expert 2015 (40) Save Water And Power ($WAP)
	Demonstration gardens/Water wise/Native plants in public open space to support the implementation of water efficient irrigation	Completed 2013/14 now awaiting signage	Completed	Environmental Services, Parks	The City utilises native plants in landscaping designs and POS areas.
	Review the City's Street Verge Improvements Policy to include information for residents on how to gain approval for waterwise verges	Completed - Street Verge Improvements Policy AEW1	Completed	Environmental Services, Parks	The policy has been reviwed and now contains information on verge improvements including waterwise gardens.

Corporate Water Quality					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
These actions are designed to minimise the export of gross pollutants and sediments to receiving environments.					
	Conduct a litter audit for council managed wetlands	Completed	Completed	Environmental Services	Three wetlands were identified and audited. Results were used to identify ways to reduce litter entering wetlands
	Gross litter management action: Review/monitor street sweeping and Implement best management practices	Ongoing.	Completed	Environmental Services, Engineering Services	Maintenance program for GPTs developed.
	Gross litter management action: Install appropriate litter traps in stormwater drains – in parks and wetlands	Completed	Completed	Environmental Services, Engineering Services, Parks	In all new subdivisions adjacent to wetlands where stormwater may enter the wetlands - GPTs are mandatory.
	Gross litter management action: Install appropriate litter traps in stormwater drains – require at subdivision stage	Ongoing.	Completed	Environmental Services, Engineering Services, Statutory Planning	In all new subdivisions adjacent to wetlands where stormwater may enter the wetlands - GPTs are mandatory.
	Develop and implement an ongoing maintenance schedule for gross litter traps	Ongoing.	Completed	Environmental Services, Engineering Services, Parks	Maintenance program for GPTs developed.
	Assess the amount of litter removed from water ways as a result of the above (follow up audit)	In progress.	Not completed	Environmental Services	This was investigated to determine how practical this is. It could be done on weight of material being removed but much of this will be plant material. Undertaking an audit could be very expensive and time consuming. Deemed to be too onerous.

Corporate Water Quality					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
	Review Wetland Conservation Policy to support the retention and protection riparian vegetation in wetland areas.	Ongoing.	Completed	Environmental Services	Document reviewed every 12 months. No changes required at this time.
These actions are designed to assist in developing a better understanding of and prompt action to minimise the environmental impacts of excessive nutrient loads to receiving environments.					
	Continue to implement Water Sensitive Urban Design (WSUD) as per the guidelines	Completed (Ongoing)	Completed	Engineering Services, Statutory and Strategic Planning, Parks	All development required to use best practise WSUD principles.
	Continue Staff training in WSUD	Completed (Ongoing)	Completed	Environmental Services, Engineering Services, Statutory and Strategic Planning, Parks	Staff attend training as required.

Corporate Water Quality					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
	Continue to restore drainage channels to living streams	Ongoing.	Completed	Environmental Services	Examples include living streams at: South Lake Drain (drain recontoured to redirect water through existing riparian vegetation) Yangebup Drain (drain recontoured and heavily revegetated, with settling ponds and ripples installed) Market Garden Swamp (previously grassed swale, revegetated) Caring for Country Grant applied for in May 2013 to undertake extensive living stream development using solar pumps to enhance water quality at Yangebup. Grant not successful but funding of $100,000 provided by Council for project. Design being developed. Works to commence March 2015 when dryer. Yangebup Lake Solar Powered Nutrient stripping basin completed. Second solar powered basin to be installed at Yangebup Lake in 2017. Bibra Lake drain will be assessed to determine what measure can be taken to reduce nutrients entering Bibra Lake.
	Develop and implement an ongoing maintenance schedule for drainage nutrient stripping basins.	Ongoing.	Completed	Environmental Services, Engineering Services, Parks	Bushland Maintenance Officers currently undertake maintenance of living streams.

Corporate Water Quality					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
	Implement a Street Tree Policy to support the planting of native street trees to reduce the leaf litter load	Ongoing.	Completed	Parks	Data base of all street trees in the City has been completed and placed on the City's GIS system. Currently the City plants on average 750 street trees per year. It is not practical to attempt to target trees that minimise leaf drop as all trees drop leaves. A Street Tree Master Plan is currently being developed. This will look design, replacement programs, green linkages between conservation area and appropriate species. The Master Plan will complement other programs the City has to promote tree cover such as the Native Plant Subsidy Scheme, Habitat For Homes, Landowner Biodiversity Grants and Sustainability Grants.
These actions are designed to minimise the environmental impacts of aquatic centre discharges and to examine opportunities to optimise this resource					
South Lake Leisure Centre to soon be closed. New start of the art facility being constructed at Cockburn Central which will include best practise water management techniques.					
These actions are designed to reduce and mitigate the impacts of groundwater contamination					
	Retrofit drainage design to reduce the potential of hydrocarbons entering groundwater in selected car parks around Bibra Lake	In progress	Completed	Environmental Services, Engineering	Car parks near Western Playground have recently been redesigned reducing the likelihood of hydrocarbons entering the lake in this area. No other car parks identified as potential discharge points for hydrocarbons

Community Water Quality					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
These actions are designed to minimise the environmental impacts of excessive use of herbicides and pesticides on receiving environments.					
	Implement a herbicide, pesticide and fertiliser use community education campaign (in conjunction with stakeholders)	To be completed	Completed	Environmental Services	Distributing and utilising Fertilise Wise information provided by Water Corporation.
These actions are designed to minimise the export of gross pollutants to receiving environments.					
	Conduct a community litter audit for wetland areas	Completed.	Completed	Environmental Services	Wetland Litter Audit Report Completed. Other wetlands to be targeted in future years.
	Develop an education program based on the audit to target identified litter issues.	To be completed	Completed	Environmental Services	Included as part of Environmental Education Program.
	Assess the amount of litter removed from water ways as a result of the implemented actions	To be completed	Cancelled	Environmental Services	Determined to be too onerous to complete.
These actions are designed to assist in developing a better understanding of and minimise the environmental impacts of excessive nutrient loads to receiving environments.					
	Require developers to provide an appropriate maintenance regime associated with each WSUD feature as part of their LWMP	Completed (Ongoing)	Completed	Engineering Services, Parks and Environment	Both Local Water Management Strategies and Urban Water Management Strategies include suggested maintenance programs
	Ensure open space maintenance staff are trained in the maintenance of the WSUD features after handover from the developer	Ongoing training provided	Completed	Parks	Ongoing training provided
	Continue to sponsor sessions and produce information for the community on sustainable gardening practices and ways to minimise fertiliser use in private gardens. Eg Green Gardener, Sustainable Gardening Australia, Great Gardens Program	Completed (ongoing annually)	Completed	Environmental Services	11 Free Garden Waterwise workshops (incl 8 free verge makeovers) 841 attendees since 2009. Great Gardens mega day gardens Oct 2009 (110) Great Gardens mega day synergy Oct 2009 (115) Great Gardens food Oct 2009 (75) Great Gardens food May 2010 (119)

Community Water Quality					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
					Great Gardens food sept 2010 (123) Great Gardens and energy 2011 (65) Beyond Gardens Nov 2011 (42) Beyond Gardens May 2012 (50) Beyond Gardens Dec 2012 (52) Great Gardens May 2013 (50) Beyond Garden March 2013 (40) Beyond Gardens October 2014 Sustainable Home Master Class included components of Best Practise Gardening - 2014 Waterwise Garden Bakers Square Demonstration 2015 (110) Gardening with Sabrina Hahn 2016 (35) Garden Design Masterclass 2016 (40) Speed Date a Sustainability Expert 2015 (40) Save Water And Power ($WAP) Free Home Energy and Water Audit Program: 65 visits (2009), 50 visits 2011, 100 visits in 2012 (2 rounds), 40 visits (2013/14) 43 visits (2014/15) 40 visits (2015/16 =338 in total Results from a sample of 24 household program participants indicated that over 800,000 litres of water are being saved each year as a result of the water efficient retrofits.

Community Water Quality					
	Action / Initiative	**Status**	**Proposed Completion Date**	**Department Responsible**	**Commentary (including estimated savings if known)**
These actions are designed to reduce and mitigate the impacts of groundwater contamination					
	Develop an education campaign to encourage community members to dispose of backyard chemicals appropriately	Ongoing	Completed	Environmental Services, Waste	City supports household hazards waste management program which has received funding to continue in WA
	Develop and implement an education campaign to encourage community members to dispose of oil appropriately	Future Aim.	Completed	Environmental Services, Waste	City supports household hazards waste management program which has received funding to continue in WA

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

Endorsement of Water Efficiency Action Plan			
The City of Cockburn			
a)	Will implement the water saving measures stated in Section 5 of the Water Efficiency Action Plan and ensure employees and contractors assist in implementing actions.		
c)	Acknowledges that the Water Corporation and / or Department of Water may comment on the WEAP and/or request additional information relating to the WEAP.		
d)	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.		
e)	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			
Position			
Signature		Date	
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 Cockburn: 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

APPENDIX 1

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 a 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.**