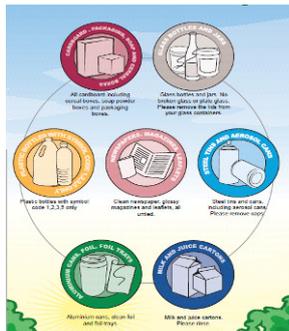




Sustainability Strategy 2013 – 2018



Endorsed by Council 17 July 2013

1. INTRODUCTION

This strategy outlines the Shire of Capel's sustainability agenda over the next five years. The strategy is guided by the Council's vision *"a community of diverse lifestyle experiences accommodating progressive growth, sharing in prosperity and valuing the unique environment"*.

The strategy focuses on reducing environmental impacts in the areas of energy, transport, water, waste and carbon. The strategy provides some background on activities carried out to date, current status, sets targets for future improvements and outlines actions that Council intends to take to achieve the targets.

The actions proposed in the strategy include those which enable Council to reduce its own environmental impacts and those which help local residents, businesses and organisations to reduce their environmental impacts. The actions generally represent additional steps Council can take to improve sustainability in the Shire, beyond standard activities or activities are mandated by State or Federal Government requirements.

The strategy is not intended to cover adaptation to climate change or natural resource management. Council regards these as important issues and has other policies and programs in place to address them.

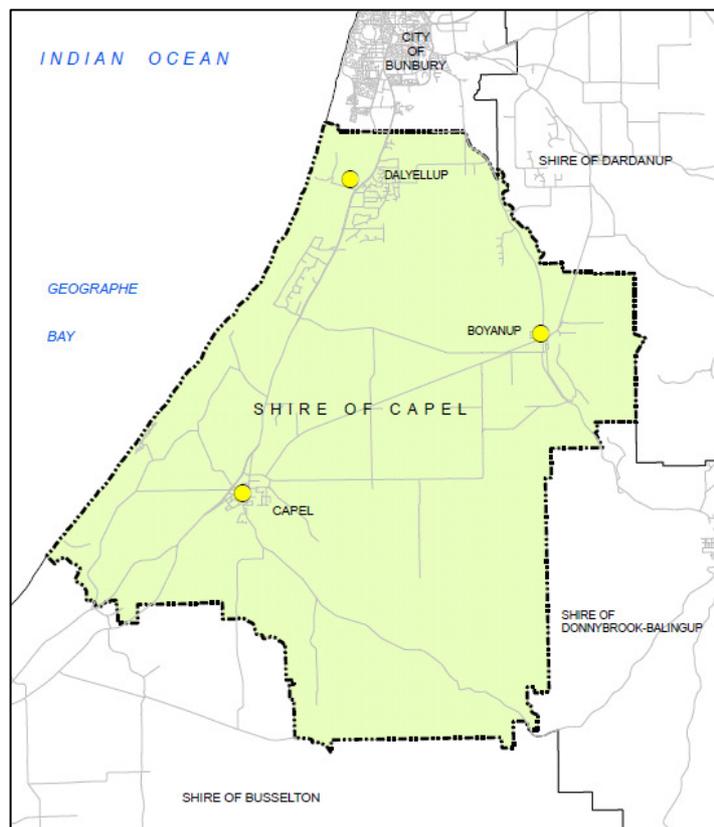
2. BACKGROUND

The Shire of Capel

The Shire of Capel is situated about 200km south of Perth. It covers an area of 554km², includes 29km of coastline and extends about 20km inland.

The Shire includes a mix of town sites, semi-rural settlements, beach side developments and rural properties.

The Shire's population was estimated at 16,614 as of 30 June 2012. It's one of the fastest growing regions in WA with a doubling of the population over the past 10 years.



Council operates a range of facilities and provides various services including:

- Main administration office
- Five community centres, which typically incorporate libraries, child health clinics, playgroups, meeting rooms, halls and/or kitchens
- Three sporting pavilions
- A kindergarten and infant health centre
- A works depot
- Various public toilet and shower blocks
- Aged care homes
- 768Ha of parks, gardens and reserves
- Fire stations and standpipes
- 560km of roads
- Street lighting
- Waste collection services
- A waste transfer station
- A Home and Community Care service.

Council had 87 FTE staff in 2011/12, up from 78 in 2010/11. Rates of \$7m were levied from 6,800 properties in 2011/12.

Sustainability Activities

Council has developed a range of policies and strategies and taken various actions to reduce its environmental impacts and encourage sustainability in the local community including:

- Introducing an Urban Landscape Strategy to guide and assess landscaping for new parks and reserves, road verges and multi-residential, commercial and industrial developments in urban areas. This strategy includes requirements for the selection of water wise plants, the retention of remnant vegetation, reduced areas of turf, soil conditioning and water and energy efficient equipment.
- Allocating 1% of rates revenue to fund climate change initiatives including projects to reduce greenhouse gas emissions and adapt to climate change.
- Installing 5kW and 10kW solar power systems at the Capel and Dalyellup Community Centres.
- Requiring display homes in a Display Home Centre Precinct in Dalyellup to incorporate sustainability features such as rainwater tanks, water efficient appliances, low water use landscaping and solar hot water systems.



Display homes and street landscaping in the Dalyellup Display Home Centre Precinct

- Purchasing green power to meet 20-30% of electricity used in council facilities.
- Installing 35kL rain water tanks, water efficient appliances, waste water alternative treatment units, heat pump hot water systems and timers or movement sensors for lighting and exhaust fans at the Capel and Dalyellup Sports Pavilions and designing the buildings to use natural ventilation and lighting.
- Retrofitting street lights in Roe and West Roads in Capel with energy efficient compact fluorescent lamps.
- Becoming a member of the Water Corporation's Waterwise Council Program and progressing through stages 1-5 of the International Council for Local Environmental Initiatives' (ICLEI) Water Program.
- Introducing a vehicle purchasing procedure which includes selection of vehicles based on fuel efficiency - 10L/100km or less and Green Vehicle Guide rating.
- Installing water efficient appliances such as waterless urinals, dual flush toilets, tap aerators, low flow shower heads and timer taps in Council buildings.
- Distributing information on saving energy and water and reducing waste in the home through Council public buildings and at public events like CapelFest.
- Working with the Water Corporation and developers to promote water efficiency in Dalyellup through a water wise gardening workshop, water wise garden competition, reset your retic programs and sustainable living expo.
- Adopting a sustainable purchasing policy whereby purchasing decisions consider the necessity, energy and water efficiency, use of recycled materials in and ultimate disposal of products.
- Closing the Capel rubbish tip and building a new waste transfer station that includes recycling facilities for green waste, scrap metals, batteries, hazardous household waste, electronic wastes, paper and cardboard, plastics and plastic drums.
- Re-vegetating 3Ha of land at the old rubbish tip site.
- Installing a 135kL rainwater tank serving the Capel Community Centre and Shire Administration Office.

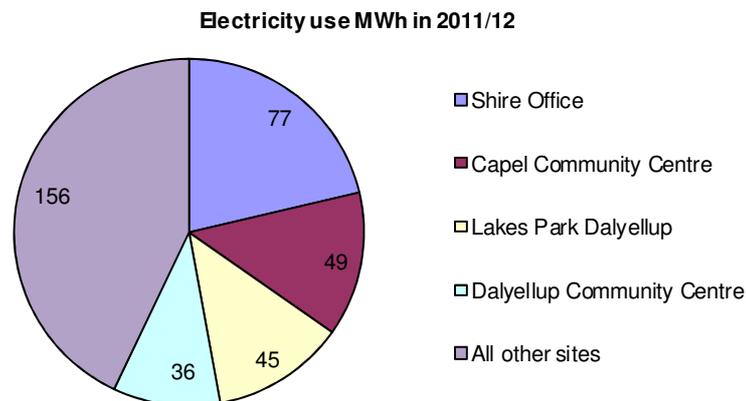
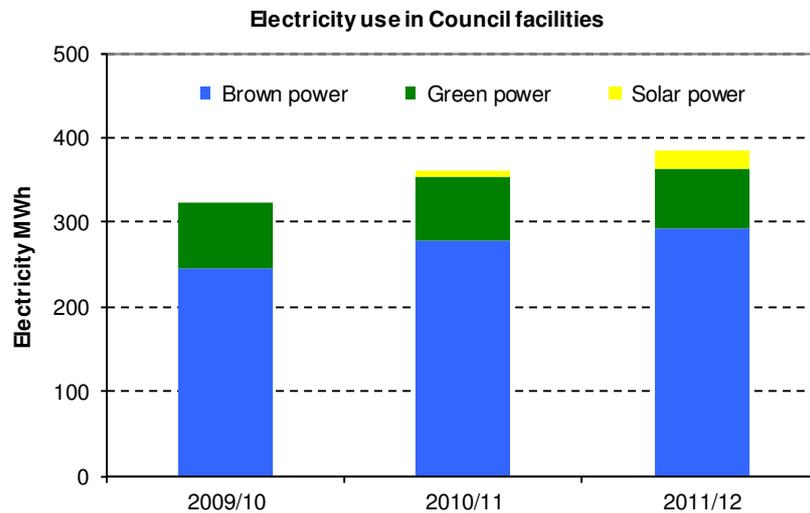


Rain water tank and solar power system at the Capel and Dalyellup Community Centres

Energy

In 2011/12 384 MWh of electricity was consumed across Council facilities including:

- 292 MWh of coal and gas fired electricity (brown power)
- 72 MWh of green power
- 20 MWh of solar power.



The greenhouse gases emitted through the generation of the coal and gas fired electricity used by Council in 2011/12 was 239 tonnes CO_{2e} (scope 2 emissions - for more information see Appendix A). Based on a Shire population of 16,614 at 30 June 2012, these greenhouse gas emissions equate to 14.4kg CO_{2e} per capita.

Apart from installing solar power systems and purchasing green power for some facilities, in 2012 Council also conducted energy audits of the main administration office and five community centres. Many of the proposed energy actions in the Action Plan included in this report are based on the recommendations of these audits.

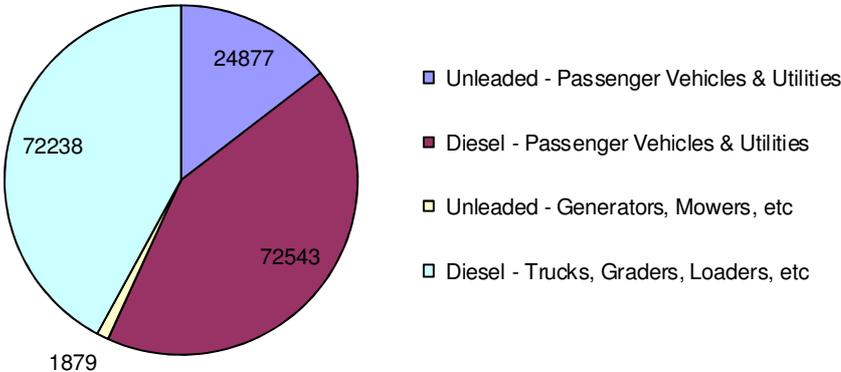
Like many other local governments, the Shire of Capel contracts Western Power to provide street lighting services. There are currently 1647 streetlights in the Shire which are estimated to consume 792 MWh of electricity and result in 649 tonnes of CO_{2e} (scope 2 emissions) being emitted each year.

There are limited opportunities for reducing energy use for street lighting. Hours of operation could be reduced, although this could create safety issues. There’s also an option to install more efficient street lights but the cost is currently quite high compared to the savings that would be achieved.

Transport

During 2011/12 fuel consumption in Shire vehicles, including passenger cars, utilities, trucks and machinery, comprised 26,756 litres of unleaded petrol and 144,781 litres of diesel. Greenhouse gases emitted through the combustion of these fuels totaled 451 tonnes CO_{2e} (scope 1 emissions). Based on a Council FTE staff level of 87 at 30 June 2012, these greenhouse gas emissions equate to 5.2 tonnes CO_{2e} per FTE.

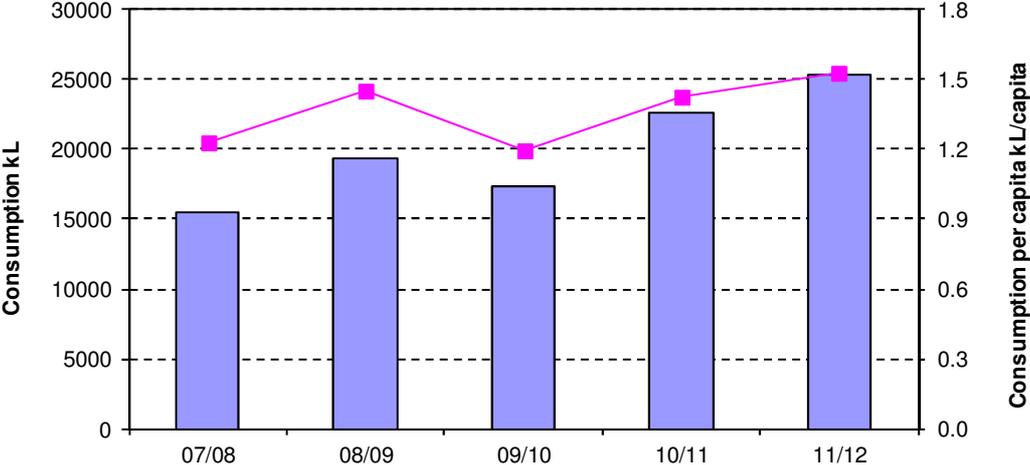
Fuel use litres by type & purpose 2011/12



Water

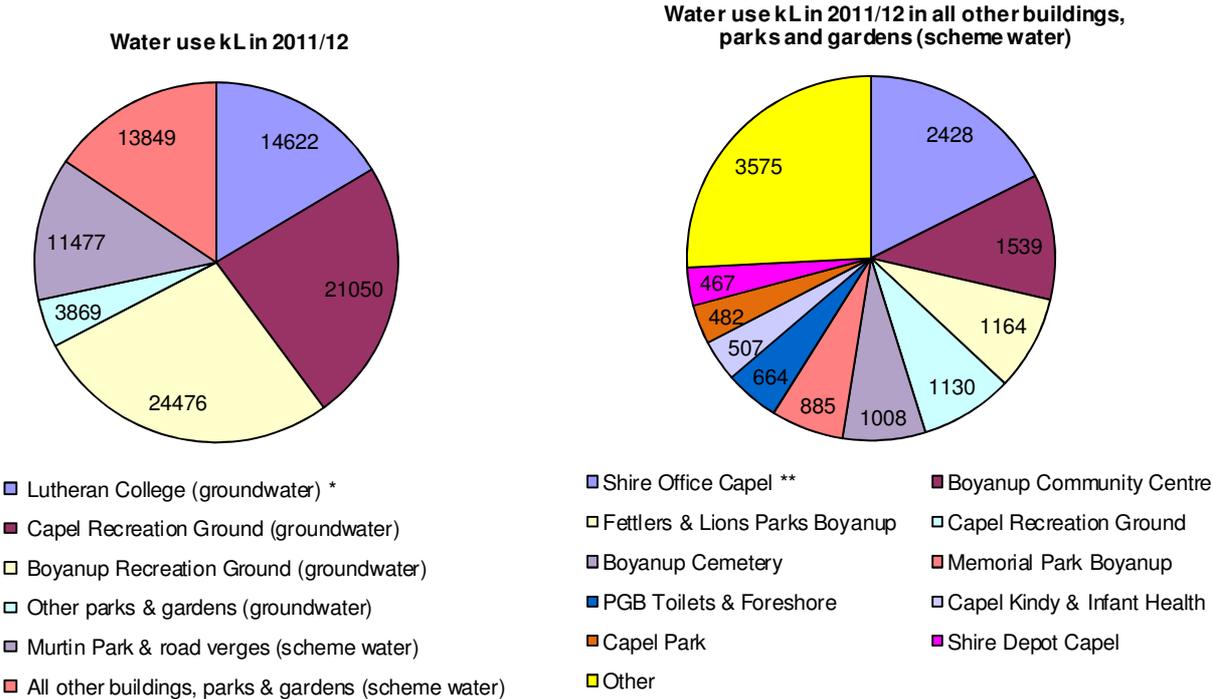
During 2011/12 25,326kL of scheme water and 63,953kL of ground water were consumed at Shire facilities. Ground water use includes 50% of total water use at Lutheran College oval which is under a shared use arrangement with Council. Based on a Shire population of 16,614 at 30 June 2012, Council scheme water consumption equates to 1.52kL per capita. Based on an area of 8.2Ha of main public open space (POS) being irrigated in 2011/12, Council ground water consumption equates to 7,335kL per Ha.

Scheme water use in Shire facilities



Annual scheme water consumption remained fairly steady until 2010/11 when Council took over operation of Murtin Park in Dalyellup. The water source for irrigation of this park is meant to be changed over to lakes water, ground water or treated waste water. Scheme water consumption in 2011/12 at all Council facilities other than Murtin Park was 13,849kL.

Data on water consumption at different Council facilities shows that by far the most amount of water is used in irrigating ovals, parks and gardens. This is demonstrated by the quantity of water used at ovals and parks and also by seasonal variations in water use at buildings with associated gardens.



* The Shire of Capel has a shared use arrangement for the sports ovals at Lutheran College and so only 50% of total ground water use is attributed to Council for public use of the oval

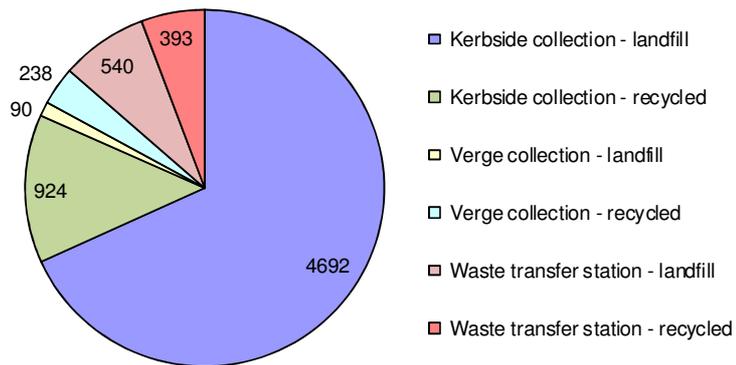
** Water use at the Shire Office is typically around 700kL per year but was higher in 2011/12 due to the use of water for construction being carried out along Forrest Road

Waste

Council provides a weekly kerbside general waste collection service and a fortnightly kerbside recycling waste collection service for most households in the Shire. It also provides six monthly verge collections of green waste and annual verge collections of hard waste. Council operates a waste transfer station where Shire residents can drop off general, recycling and green wastes. At times Council runs waste reduction programs for plastic drums, waste oil, electronic waste and hazardous household chemicals.

In 2011/12 an estimated 6,881 tonnes of municipal waste were collected through kerbside collections, verge collections and from the waste transfer station. About 1,555 tonnes of this waste (23%) were recycled, with the remainder going to landfill.

Tonnes of waste collected in 2011/12



An audit of kerbside waste collection from 167 households across the Shire was carried out in 2010. The audit found that around 30% of the general waste stream was organics, 22% was green waste and a further 20% was recyclable. The audit also found that contamination of the recyclable waste stream was relatively low at about 9%.

The Shire of Capel is a member of the Wellington Waste Working Group (WWWG), a collection of six local governments in the Greater Bunbury region. The Group formed to combine waste management services and make changes to waste and resource recovery practices. The most significant change is the proposed introduction of a third bin for organic food and garden wastes and development of a composting facility to recycle this waste. The Group has employed a Waste Education Officer to educate residents about reducing waste, improving recycling and the introduction of a third bin.

Carbon

Activities in energy, transport, water and waste can all impact on greenhouse gas emissions. However, in this Strategy activities are grouped within these areas to make it easier to set targets and develop specific actions. There are activities outside these areas that can also reduce greenhouse gas emissions such as carbon farming.

The Australian Government’s 2012 Clean Energy Future policy changes the way greenhouse is treated in Australia, by establishing new charges and obligations for emitters and creating new opportunities for carbon farming and trading. There may be opportunities created as a result this policy that Council could take advantage of in the future.

3. COUNCIL'S KEY PRIORITIES AND TARGETS

Priority area	Aims	Targets
Sustainability	Reduce the Shire's environmental impact and environmental impacts of the broader community. Report and promote sustainability achievements and provide leadership through progressive actions.	<ul style="list-style-type: none"> Publish Annual Sustainability Report on sustainability outcomes and achievements
Energy	Reduce fossil fuel based energy use in Shire facilities through energy efficiency measures, renewable energy systems and green energy supplies. Implement programs to help the community reduce their energy use.	<ul style="list-style-type: none"> Reduce or offset¹ CO₂ emissions from energy use in Council facilities per capita by 10% by 2014/15 and 20% by 2017/18 compared to 2011/12 levels (excl. street lighting)
Transport	Reduce petrol and diesel use in Shire vehicles by using vehicles wisely, buying more efficient vehicles, using green fuels or offsetting transport greenhouse emissions. Promote sustainable transport options to the local community and improve infrastructure for walking and cycling.	<ul style="list-style-type: none"> Reduce or offset¹ CO₂ emissions from fuel use in Council vehicles per FTE² by 10% by 2014/15 and 20% by 2017/18 compared to 2011/12 levels
Water	Reduce scheme and ground water use in Shire buildings and parks through water efficiency measures and using alternative sources such as rainwater or recycled water. Implement or participate in programs to help the community reduce their water use.	<ul style="list-style-type: none"> Reduce scheme water use in Council facilities per capita by 5% by 2014/15 and 10% by 2017/18 compared to 2011/12 levels³ Reduce ground water use by 2.5% per Ha of main POS by 2014/15 and 5% by 2017/18 compared to 2011/12 levels Maintain Waterwise Council endorsement
Waste	Reduce waste generated and sent to landfill from Shire operations by using less materials and improve recycling. Help the community to reduce their waste and improve recycling rates.	<ul style="list-style-type: none"> 30% of Shire's municipal waste to be recovered, recycled and/or diverted from landfill by 2014/15 and 50% by 2019/20⁴
Carbon	Reduce or offset greenhouse gas emissions other than through energy, transport, water and waste actions.	<ul style="list-style-type: none"> Plant 5,000 trees (additional to business as usual) by 2017/18

¹ Priority will be given to projects that reduce rather than offset the Shire's CO₂ emissions

² FTE means a full time equivalent staff member

³ Council previously set a target under the ICLEI program to reduce scheme water use per capita by 15% by 2014/15 compared to a 2003/04 baseline of 1.85kL/capita – the new target exceeds this as water use of 1.52kL/capita in 2011/12 was 18% lower than 2003/04 water use

⁴ This target is consistent with the WA Waste Authority's targets for major regional centres

4. ACTION PLAN TO ACHIEVE AIMS AND TARGETS

The following action plan describes a series of activities that Council proposes to carry out to achieve its aims and targets in the different priority areas. Actions that apply broadly across energy, transport, water, waste and carbon are listed under a heading of sustainability rather than individually in each area.

The action plan includes activities such as data collection and reporting that are ongoing over the 2012/13 to 2017/18 period. For the 2012/13 and 2013/14 financial years in particular a number of specific projects are proposed. The action plan also includes some more general activities such as assessments of facilities, investigations of opportunities and conducting trial projects which could lead to the development of new actions.

The action plan includes activities that Council staff will carry out themselves and activities where Council will engage contractors to provide goods or services. For actions that involve external costs to pay contractors, the estimated costs are totalled for each financial year for budgeting purposes.

Many of the proposed actions will lead to direct reductions in energy or water consumption, waste production or greenhouse gas emissions. These savings are identified where they can be estimated with reasonable accuracy. Some actions such as community awareness and education programs will provide benefits but as these are usually difficult to quantify.

Actions that are mandated by State or Federal Government regulations or requirements are generally not included in the action plan. These include activities such as assessing building applications to ensure new buildings comply with minimum energy efficiency requirements. The action plan is really aimed at additional steps the Shire of Capel can take to reduce its environmental impact and help the local community reduce their environmental impact.

Implementation of the proposed actions will be subject to budget availability, including grants that may be obtained through State or Federal Government programs. Changes in Council priorities, technologies and State or Federal Government policies may also affect the viability of proposed actions. At the end of each financial year the action plan in this Sustainability Strategy will be reviewed and updated accordingly.

SHIRE OF CAPEL SUSTAINABILITY ACTION PLAN – JUNE 2013

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Sustainability						
Council, Shire residents, general public, other government agencies and other organisations	Complete an annual Sustainability Report on: <ul style="list-style-type: none"> energy, water, waste and CO₂ emission reductions against targets and objectives sustainability initiatives implemented by Council each year 	Ongoing	Internal	Shire	Annual report	
Shire residents, general public, other government agencies and other organisations	Promote sustainability initiatives implemented by Council through Council publications and website, local media, displays at public buildings and local events, etc	Ongoing	Internal	Shire		
Council, other government agencies and other organisations	Work with other organisations to develop and implement new sustainability policies and initiatives in the Shire, in the South West and across WA	Ongoing	Internal	Shire		
Shire residents, businesses and other organisations	Develop and provide information on ways that the local community can save energy, fuel and water, reduce waste, improve recycling and lower CO ₂ emissions through Council publications, website, displays at public buildings, etc	Ongoing	Internal	Shire		Use existing Council brochures and publications from other government agencies that provide good information already

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Shire residents, businesses and other organisations	Develop and implement a sustainability promotion program where Council actively targets different groups and promotes relevant sustainability initiatives to them, e.g. through displays in shopping centres (residents), presentations at Chamber of Commerce meetings (businesses), etc	2013/14 - 2017/18	Internal	Shire		Pro-active promotion and education program
New Council buildings and facilities	Design new buildings and facilities to incorporate energy and water efficiency features and use materials with lower environmental impacts	Ongoing	Internal	Shire	TBA for each new facility	
Future developments and new buildings	Encourage, assist or require developers and builders to address energy, water, transport, waste, greenhouse and other environmental impacts of their developments or buildings	Ongoing	Internal	Shire		E.g. All new developments to have LED streetlights, water wise irrigation controllers, etc
Energy						
Council facilities	Collect and analyse data on energy use in Council facilities during each financial year	Ongoing	Internal	Shire		Report in annual Sustainability Report
Street lighting (Western Power and Shire owned)	Collect data on energy use for street lighting during each financial year	Ongoing	Internal	Shire		Report in annual Sustainability Report
Shire Administration Office	Trial project involving the replacement of 26 existing fluorescent tubes with LED tubes and assessing outcomes	2012/13 Completed	\$2000	Shire	\$500 1.0t CO ₂	Recommend trial before doing broader lamp replacements

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Boyanup, Capel and Dalyellup Sports Pavilions, Shire Depot, Senior Citizens, Elgin and Hugh Kilpatrick Halls, Capel Kindy/IHC	Energy audits of eight facilities including assessment of existing energy use and equipment and recommendations for opportunities to save energy	2012/13 Completed	\$7800	Shire	Audit reports	
Shire Administration Office	Replace frequently used T8 fluorescent tubes with LED tubes in areas of the building that will be retained	2012/13 Completed	\$6500	Shire	\$2000 4.4t CO ₂	Identified in energy audit
Planet Footprint	Provides a service to report on Council electricity, fuel and water use	2012/13 Completed	\$8000		Report	
Sites with higher bills or significant off-peak usage	Analyse electricity costs for sites under different tariffs and change tariffs where savings can be made	2012/13 - 2013/14	\$900 - 12/13 \$200 - 13/14	Shire Shire	\$3000 12/13 \$6000 13/14	Changing tariffs provides cost savings but doesn't reduce electricity use
Sites supplied with Natural Power	Investigate value of Synergy's Natural Power compared to other green power or CO ₂ offset products and change products if greater benefits can be obtained per \$ spent	2012/13 - 2013/14	Internal	Shire		
Dalyellup Community Centre, Boyanup Bowling Club, Boyanup Football Club & Capel Bowling Club	Replace existing hot water systems (HWS) with solar HWS	2013/14	\$15000 TBC through energy audits	\$3000 Shire \$12000 LGEEP	\$300 Shire \$700 Clubs 2.3t CO ₂	LGEEP funding approved, requires project to be completed by June 2014 Project also delays HWS replacement & associated costs

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Dalyellup Community Centre	Investigate time based controls for ducted air-conditioners and implement if viable	2013/14	\$1500	Shire	\$2000 6.2t CO ₂	Identified in energy audit
Capel Community Centre	Implement best energy saving projects identified in energy audit to help ensure annual consumption <50MWh and change tariff from P11 to R1	2013/14	\$6500	Shire	\$5000 4.5t CO ₂	Save energy and enable lower cost tariff to be selected which provides greatest \$ savings
Shire staff	Awareness campaign about switching off and controlling equipment to reduce energy use, costs and environmental impact	2013/14	Internal	Shire		Mainly targeting lights, air-conditioners, computers and printers
Shire Administration Office	Install a 10kW solar power system	2013/14	\$26000	\$19000 Shire \$7000 STCs	\$4400 energy 11.0t CO ₂	Subject to possible roof replacement Identified in energy audit
Six sites audited in 2011/12 and eight sites audited in 2012/13	Continue to implement best projects identified in audits, i.e. those that provide quickest payback, are practical to implement and are accepted by staff and public	2013/14	TBA	Shire Grant programs	TBA	
Street lighting	Investigate potential for replacing Western Power and Council managed streetlights with more efficient ones or reducing operating times but only where peoples' safety is not affected	2013/14	Internal	Shire	Assessment report	At present Western Power streetlight replacement is expensive compared to cost savings achieved

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Shire Community Centres, Halls and Sports Pavilions and users of these facilities	Awareness campaign on switching off and controlling equipment to save energy, e.g. through clear signage and instructions and communication with regular users	2013/14	Internal	Shire		
Other Council buildings or sites not already audited	Assess energy consumption and electrical equipment used in other buildings, including those operated by other organisations where Council pays the electricity bills, and identify opportunities for reducing energy use	2013/14	Internal	Shire	Assessment reports	Including St Johns Centre, HACC office, Boyanup Aged Care, toilet blocks, waste transfer station, etc
Boyanup, Gelorup and PGB Community Centres and other sites with higher energy use	Install solar power systems around 1-2kW on each building, subject to monitoring power use in each building and estimating excess energy exported to the grid (with no buyback) for different size PV systems	2014/15	TBA	Shire STCs	TBA	Many buildings have highly fluctuating energy use which doesn't match PV output very well
Street lighting	Implement viable options for replacing streetlights with more efficient ones or reducing operating times	2014/15	TBA	Shire Grant programs	TBA	
Six sites audited in 2011/12, eight sites audited in 2012/13 and other sites assessed in 2013/14	Review energy efficiency projects identified in energy audits and energy assessments and continue to implement projects that are practically and financially viable	2014/15	TBA	Shire Grant programs	TBA	Prioritise projects based mainly on best payback

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
All Shire facilities and streetlights	Review progress to date and additional opportunities for saving energy and develop an action plan for new projects going forward	2014/15	Internal	Shire	Action plan for future activities	
Transport						
Shire vehicles	Collect and analyse data on fuel use in Shire vehicles during each financial year	Ongoing	Internal	Shire		Report in annual Sustainability Report
Electric vehicle users	Investigate opportunity for building an electric vehicle recharging station as part of the Capel Civic Precinct Master Plan	2012/13 – 2014/15	Internal	Shire		<i>Development of Capel Civic Precinct Master Plan is already underway</i>
Shire staff	Awareness campaign about using Shire vehicles wisely to reduce environmental impacts and costs	2013/14	Internal	Shire		E.g. good driving practices, better planning for fewer trips, etc
Shire vehicles	Investigate opportunities for reducing or offsetting transport CO ₂ emissions e.g. through buying more efficient vehicles, planting trees as carbon offsets or buying carbon offsets, and develop an action plan accordingly	2013/14	Internal	Shire	Assessment report and action plan	Include consideration of other issues such as vehicle suitability, service costs, warranties, safety and resale value
Shire vehicles	Implement action plan for reducing fuel use and CO ₂ emissions in Shire vehicles	2014/15 - 2017/18	\$1300pa	Shire	45.0t CO ₂ offset	Estimated cost is based on cost to purchase carbon offsets to offset 10% of current transport CO ₂ emissions

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Sustainable transport infrastructure	Construct footpaths and other infrastructure to encourage walking and cycling as an alternative to driving, where of greatest benefit to the community and subject to annual budget	2013/14 - 2017/18	TBA	Shire of Capel Grant programs	TBA	As per Council's footpath strategy and budget allocation
Water						
Shire facilities	Collect and analyse data on scheme and ground water use during each financial year	Ongoing	Internal	Shire		Report in annual Sustainability Report
Water Corporation	Report on water consumption and water initiatives to Water Corporation to maintain Waterwise Council status	Ongoing	Internal	Shire	Report	
Shire ovals, parks and gardens	Periodic checks of irrigation hardware including checking for damaged equipment or leaks, bore meter readings, water pressure and water distribution and replacing or fixing any broken equipment	Ongoing	Internal	Shire		Part of existing inspection and maintenance program
Capel Oval, Murtin Park and Boyanup Community Centre	Audit water use in irrigation systems at these sites, including water use history, watering cycles, soil type and plant requirements and identify options to reduce water use for irrigation, e.g. installing better controllers with rain or moisture sensors	2012/13 Completed	\$5000	Shire	Audit reports	Audit irrigation at three representative sites, i.e. sports oval, park and garden around a building
Shire staff	One or more staff attend training in water wise irrigation	2012/13 Completed	\$1000	Shire		

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
POS in Dalyellup	Investigate and progress opportunity to use waste water from Bunbury treatment plant for irrigating POS in Dalyellup	2012/13 – 2013/14	Internal	Shire	Assessment report	
Murtin Park	Reprogram controller to reduce irrigation of native garden areas and cap unnecessary sprinklers for mature trees	2013/14	\$500	Shire	\$2000	
Capel Oval, Murtin Park and Boyanup Community Centre	Implement viable options recommended in irrigation water audits or trial the best option identified at one site and evaluate the results before extending to other sites	2013/14	TBA	Shire	TBA	
Council POS & Parks staff	Review and further develop guidelines and processes for staff to use to manage water use for irrigating POS including seasonal water budgets, monitoring, maintenance, etc	2013/14	TBA	Shire	TBA	
Council POS - irrigation controllers	Investigate the value of standardising irrigation controllers and sensors so that all controllers have waterwise and centralised control capabilities and if feasible develop a policy for ongoing replacement of existing controllers	2013/14	TBA	Shire	TBA	Standardising controllers will provide improved opportunities to save water and save time and cost through centralized control
Council buildings including main office, community centres, halls, toilets, etc	Assess water appliances and fittings in all buildings (excluding irrigation systems) to check that good practices are followed and identify any additional opportunities to reduce water use including installing rain water tanks to supply water to toilets	2013/14	Internal	Shire	Assessment report	Water saving fixtures have already been installed in many Council buildings

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Council buildings	Implement any low cost options identified in assessments that provide reasonable savings, e.g. tap aerators, low flow shower heads, dual-flush cisterns, rain water tanks, etc	2013/14	TBA	Shire	TBA	
Shire residents in particular areas e.g. Dalyellup	Work with Water Corporation and developers to run water wise programs for residents, e.g. like the reset your retic program	2013/14	TBA	Shire	TBA	
Shire staff	One or more staff attend training in water wise irrigation	2013/14	\$1000	Shire		
Other existing Council POS with significant water use for irrigation	Assess irrigation systems at these sites based on irrigation water audits of three initial sites, including identifying opportunities for reducing water use	2013/14 - 2014/15	Internal	Shire	Assessment reports	
Other existing Council POS	Implement opportunities to reduce water use for irrigation based on assessment reports	2013/14 – 2014/15	TBA	Shire	TBA	
POS in new developments	Investigate more specific requirements in relevant Shire policies for irrigation of new POS (including road verges) and revise policies accordingly	2013/14 - 2014/15	Internal	Shire		E.g. irrigation systems to include particular controllers and sensors
Council buildings	Implement other practical and relatively low cost options identified in assessments of water appliances and fittings in each building	2014/15	TBA	Shire	TBA	
All Shire facilities	Review progress to date and additional opportunities for saving water and develop an action plan for new projects going forward	2014/15	Internal	Shire	Action plan for future activities	

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Waste						
Department of Environment and Conservation	Collect and collate data on waste quantities generated by Shire residents each financial year for DEC Annual Waste Census	Ongoing	Internal	Shire	Report	Report in annual Sustainability Report
Shire residents	Educate residents about reducing waste, improving recycling and using a third organics bin by helping to fund a Waste Education Officer working across the WWWG region	Ongoing	\$19500 pa	Shire		Officer engaged October 2012
Shire residents	Inform residents about recycling opportunities through flyers distributed annually for kerbside recycling and organics and verge hard waste collections	Ongoing	\$5000 pa	Shire		
Shire staff and new products and services	Strengthen adoption of the Shire's sustainable purchasing policy to ensure greater use of products made from recycled materials and products and services with lower environmental impacts	Ongoing	Internal	Shire		Shire policy 10.13
Shire buildings and staff	Review consumption and waste practices and raise awareness to reduce consumption and waste and improve recycling in the office	2013/14	Internal	Shire		
Shire residents	Introduce a third household bin for organic waste, pick up service and facility to compost the waste in conjunction with the five other Shires in the WWWG	2013/14	TBA capital and ongoing	Shire	1620t waste recycled 2270t CO ₂	

Target group, facility, site or service	Action	Timeframe	Estimated costs	Potential funding sources	Expected annual savings or outcomes	Notes
Other Council buildings and facilities, relevant staff and regular users	Review waste practices and recycling infrastructure at these sites and where feasible implement procedures, raise awareness and install infrastructure to reduce waste and improve recycling	2013/14 – 2014/15	Internal	Shire		
Waste transfer station	Investigate and develop opportunities for introducing additional recycling programs for materials not currently recycled, e.g. TVs	2013/14 - 2014/15	Internal	Shire		
Shire residents	Carry out an audit of waste streams and quantities in kerbside collections partly to determine success of third organics bin	2014/15	TBA	Shire		
All Shire facilities	Review progress to date, investigate additional opportunities for reducing waste and develop an action plan for new projects going forward	2014/15	Internal	Shire	Action plan for future activities	
Carbon						
Local farmers and large land holders	Investigate and promote local carbon farming opportunities, e.g. through revegetation of marginal land or manure management for dairy cattle, including investigating options for Council to fund local revegetation projects in return for carbon credits	2013/14	Internal	Shire		Opportunities created through Federal Government's Clean Energy Future policy
Land managed by Council	Plant 5000 trees and shrubs using local species to offset CO ₂ , enhance biodiversity, protect waterways and enhance aesthetics of some areas	2013/14 - 2017/18	\$25,000	Shire Grant programs Volunteers	1200t CO ₂ offset TBC	Opportunity to offset Council emissions and achieve other benefits

Appendix A – Calculations of Greenhouse Emissions

The methods used for calculating greenhouse gas emissions are based on the *Australian National Greenhouse Accounts – National Greenhouse Accounts Factors* published by the Australian Government in July 2012.

For electricity supplied via the South West grid in WA a scope 2 emissions factor of 0.82 kg CO_{2e} / kWh is used. This emissions factor is based on greenhouse gases emitted through the combustion of coal or gas in power stations and does not include emissions resulting from mining and processing the fuel or from energy losses in transmission and distribution lines.

For the combustion of fuels in vehicles scope 1 emissions factors of 2.29 kg CO_{2e} / litre and 2.69 kg CO_{2e} / litre are used for petrol and diesel respectively. These emissions factors are based on greenhouse gases emitted through the combustion of the fuel in vehicles and do not include emissions resulting from mining and processing the fuel.

The use of a scope 2 emissions factor for electricity and scope 1 emissions factors for fuel is consistent with reporting obligations for liable Australian corporations under the Australian Government's National Greenhouse and Energy Reporting Scheme.

An estimated 1,620 tonnes of wet organic waste will be collected from Shire residents each year using the third bin. This estimate is based on a total of 4,330 tonnes of kerbside general waste being collected from residents (as per DEC 2011/12 report), comprising 30% and 23% of food and green wastes respectively (as per 2010 kerbside waste audit) and an estimated 70% participation rate.

If the 1,620 tonnes of organic waste continue to go to a landfill site with no methane recovery the greenhouse gas emissions are estimated to be 2,550 tonnes CO_{2e}. If the waste is diverted to composting the greenhouse gas emissions are estimated to be 280 tonnes CO_{2e}. This will result in a reduction in emissions of about 2,270 tonnes CO_{2e} for each year the organic waste is diverted from landfill. As the population of the Shire continues to grow, the greenhouse savings resulting from the introduction of third bin will also increase. Calculations of waste emissions have been performed as per section 4.2 and Appendix 4 of the *Australian National Greenhouse Accounts*.