

Town Planning

Engineering

Project Management



Meadowbrooke Lifestyle Estate – Sustainability Outcomes & Implementation Plan

December 2014

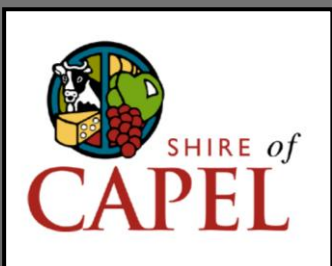


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1.0 INTRODUCTION

This 'Sustainability Outcomes and Implementation Plan' has been prepared to support the Application for Planning Consent for a proposed lifestyle village development at Lot 201 Turner Street, Boyanup. The Plan has also been prepared to meet the provisions of the Shire of Capel Town Planning Scheme No.7 relating to the subject land.

Preston Green Pty Ltd proposes to develop the site to accommodate a fully serviced residential lifestyle estate (i.e. for aged 55 years and over) together with a range of ancillary uses and community facilities.

The development of Meadowbrooke Lifestyle Estate will address the strategic initiatives promoted by the Shire of Capel for the Boyanup Townsite while also achieving two key Western Australian Planning Commission objectives being greater:

1. housing choice and lifestyle opportunities for the ageing population; and
2. affordability.

The Western Australian State Sustainability Strategy (Government of WA, 2003) defines sustainability as *"meeting the needs of current and future generations through an integration of environmental protection, social advancement and economic prosperity."*

The Sustainability Outcomes and Implementation Plan is guided by Council's stated vision of *"a community of diverse lifestyle experiences accommodating progressive growth, sharing in prosperity and valuing the unique environment"*.

The Shire of Capel has produced its own overarching sustainability strategy that focuses on reducing environmental impacts in the areas of energy, transport, water, waste and carbon.

The strategy provides some useful background information in relation to activities carried out by the Shire to date, their current status, sets targets for future improvements and outlines actions that Council intends to take to achieve the targets.

Council's document, "Sustainability Strategy 2013-2018" is focused on steps Council can take to improve sustainability in the Shire, while the subject 'Sustainability Outcomes and Implementation Plan' is focused specifically on Meadowbrooke Lifestyle Estate and the sustainability incentives proposed by this development.

The initiatives proposed in this 'Sustainability Outcomes and Implementation Plan' have also been derived to respond to the foundation principles of the State Sustainability Strategy.

2.0 BACKGROUND INFORMATION

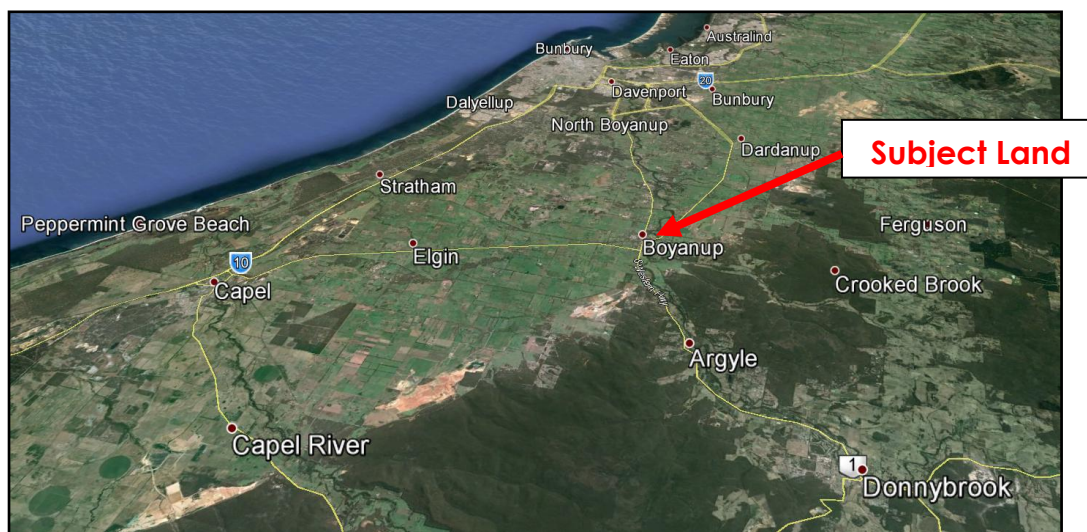
2.1 Location & Property Details

The subject land lies within the municipality of the Shire of Capel at the northern end of the Boyanup Townsite (refer **Figures 1 & 2**). The Preston River and associated foreshore area borders the land to the north and north-east.

The land is situated on the South Western Highway 21.4 kilometres by road from Bunbury and 16.4 and 19.2 kilometres from Donnybrook and Capel, respectively. Consequently, this high level of connectivity results in the land being well located to not only the Boyanup town centre but also other towns and the Bunbury Regional Centre.

The land is described as Lot 201 Turner Street, Boyanup and comprises an area of 9.0568 hectares. The land is owned by Preston Green Pty Ltd.

Figure 1
Regional Context



Source: Google Earth

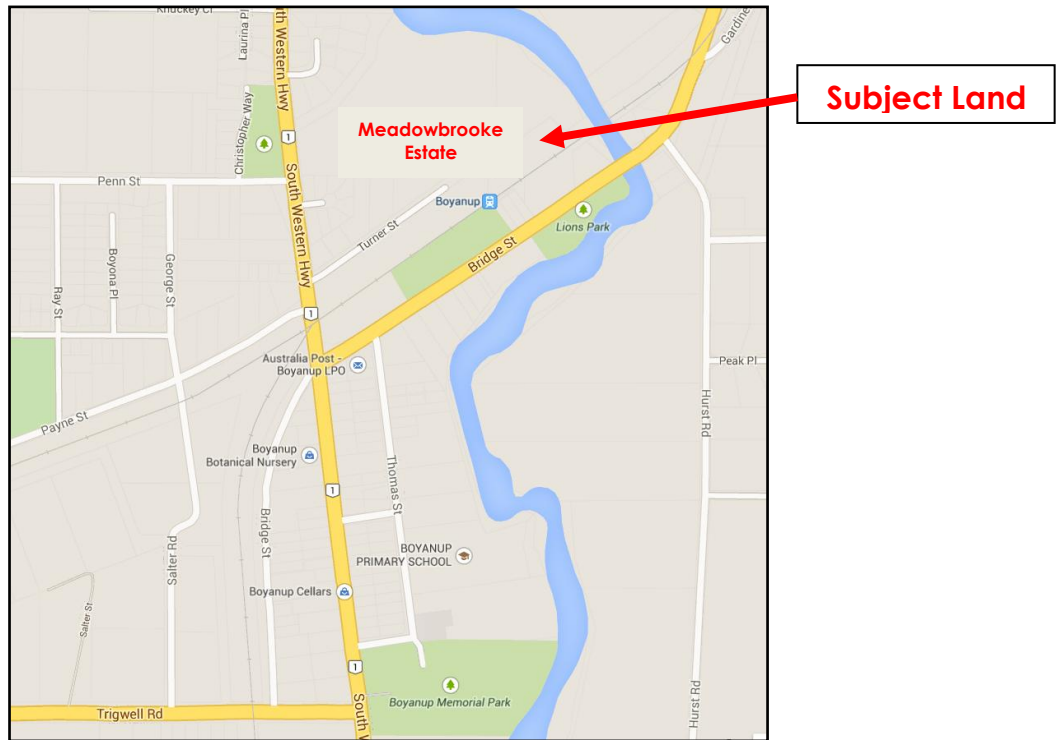
2.2 Site Characteristics

The subject land fronts South Western Highway but is accessed via Turner Street. Turner Street connects with the South Western Highway (an Important Regional Road) at its western end which, in turn, connects with Bunbury to the north-west and Donnybrook to the south-east.

The subject land is characterised by its distinctive change in elevation, existing development, proximity to the Preston River and vegetation. The land's setting adjacent to the Preston River, the extensive central lawn area and proximity to farming land results in the property retaining an attractive and unique semi-rural character notwithstanding its location within the Boyanup Townsite.

The land rises from a height of 29m AHD at the edge of the man-made pond rising to a height of approximately 36m AHD along the southern boundary.

Figure 2
Location Map



Source: Google Maps

The majority of the land has been cleared with a number of introduced species (eucalypts and olive trees) having been planted along the slope which divides the higher portions of the land from the lower northern central section. The land does not contain any significant remnant vegetation. Remnant vegetation is situated within the foreshore reserve which adjoins the Preston River and this provides an attractive backdrop to the property (refer to **Figure 3 – Aerial Photograph**).

Figure 2
Location Map



Source: www.nearmap.com

The Preston River and foreshore area adjoins the subject land along its northern and eastern boundaries. Further to the north and east land is predominantly used for rural purposes.

To the south-east the land adjoins a railway reserve containing the Capel Men's Shed, a disused railway line and the South West Rail and Heritage Centre.

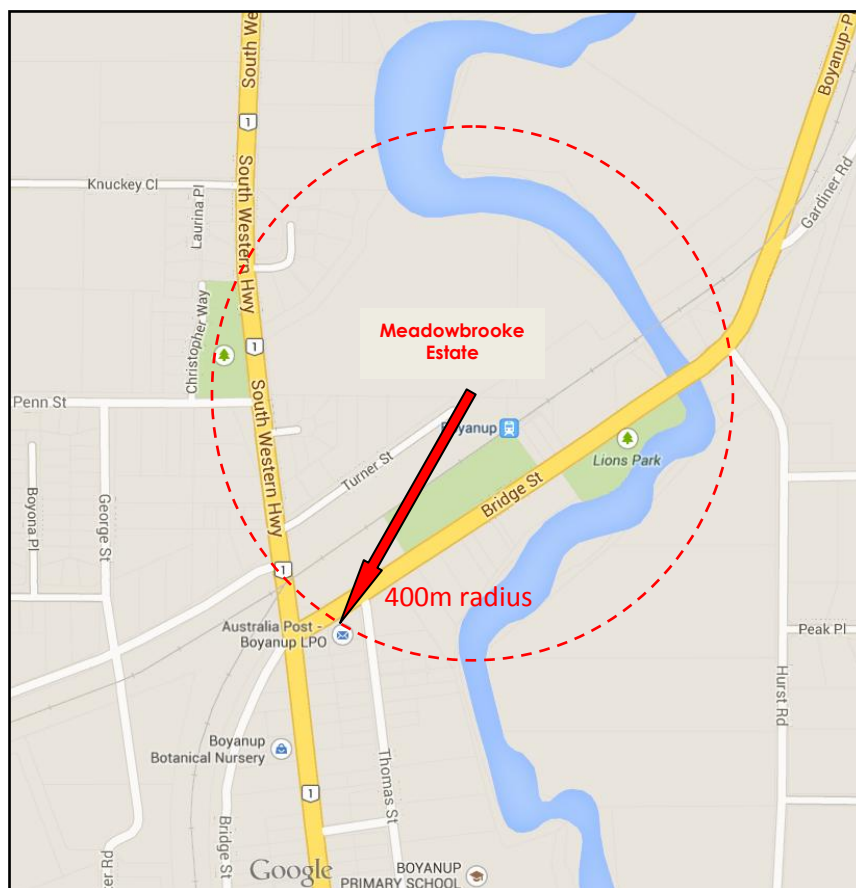
To the north-west the land adjoins a drainage reserve further to the north of which lies residential development.

Along its southern boundary the subject land adjoins a reserve currently occupied by the Boyanup Volunteer Bush Fire Brigade. A St John's Ambulance depot is proposed to be developed on the reserve in the near future. It is understood that a police station is also planned to be built on the reserve in the future. To the west of the reserve, the subject land adjoins residential lots which front Turner Street.

To the west the land lies adjacent to the South Western Highway further to the west of which is residential development.

The land lies approximately 200 metres from the Bull and Bush Tavern situated on Bridge Street, 400 metres from the local post office (also on Bridge Street and approximately 480 metres from the local general store (refer to **Figure 4**).

Figure 4
Proximity to Post Office



Source: Google Maps

3.0 KEY SUSTAINABILITY INITIATIVES

The initiatives outlined in this Plan have been established so that the Meadowbrook Lifestyle Estate is capable of achieving the seven foundation principles of the WA State Sustainability Strategy (2003), being:

- 1) Long term economic health (sustainability recognises the needs of current and future generations for long term economic health, innovation, diversity and productivity of the earth);
- 2) Equity and human rights (sustainability recognises that an environment needs to be created where all people can express their full potential and lead productive lives and that significant gaps in sufficiency, safety and opportunity endanger the earth);
- 3) Biodiversity and ecological integrity (sustainability recognises that all life has intrinsic value and is interconnected, and that biodiversity and ecological integrity are part of the irreplaceable life support system upon which earth depends);
- 4) Settlement efficiency and quality of life (sustainability recognises that settlements need to reduce their ecological footprint while they simultaneously improve their quality of life);
- 5) Community, regions, sense of place and heritage (sustainability recognises the significance and diversity of community and regions for the management of the earth, and the critical importance of 'sense of place' and heritage in any plans for the future);
- 6) Net benefit from development (sustainability means that all development, and particularly development involving extraction of non-renewable resources, should strive to provide net environmental, social and economic benefit for future generations); and
- 7) Common good from planning (sustainability recognises that planning for the common good requires equitable distribution of public resources so that ecosystem functions are maintained and a shared resource is available to all).

Achieving the above principles results in settlements, that, reduce the ecological footprint and enhance quality of life at the same time.

The Meadowbrooke Lifestyle Estate aims to create a development that supports the foundation principles of the State Sustainability Strategy through identifying priority objectives for sustainability.

The priority areas of focus for the sustainability initiatives for Meadowbrooke Lifestyle Estate are:

1. Lifestyle Diversity & Affordability;
2. Water Use & Efficiency;
3. Water Quality Management; and,
4. Biodiversity.

4.0 LIFESTYLE DIVERSITY AND AFFORDABILITY

Meadowbrooke Lifestyle Estate will afford residents the following benefits:

1. affordability and sustainability;
2. lifestyle and housing choices;
3. a secure village atmosphere;
4. via the land-lease model, the potential to free up existing equity;
5. reduce maintenance requirements;
6. provide a range of resort style facilities in a single location;
7. cater for 'lock and leave' lifestyle options; and,
8. a village aimed at active, fit and healthy residents who are looking for an alternative to the traditional retirement village/aged care living.

The target market are clients who have or are considering retirement, downsizing, owning their own first "brand new" home or achieving a "Tree Change" experience and/or a "Lock and Leave" premise in or around the Bunbury and Boyanup LGA.

4.1 Proximity to Town

The Meadowbrooke Lifestyle Estate lies approximately 200 metres from the Bull and Bush Tavern situated on Bridge Street, 400 metres from the local post office (also on Bridge Street and approximately 480 metres from the local general store. Pedestrian pathways will provide connection to Turner Street, South Western Highway and the river foreshore. These connections will enable linkages to the Town Centre and provide for greater community integration opportunities.

This close proximity provides opportunities for future residents to utilise non-vehicular transport.

The provision of a communal bus from the initial stage of the village will also assist in providing greater accessibility for residents.

4.2 Rural & Bushland Landscapes

The residents of Meadowbrooke Lifestyle Estate as well as the local Boyanup community access the foreshore area via the "River Ramble" walk trail which encourages people to access the river and enjoy the amenity of the Preston River.

Pedestrian access to recreational areas is of high importance to residents and visitors of the foreshore area however this must be managed in such a way as to preserve the ecological integrity of the area.

This will be achieved by facilitating appropriate access to recreational areas and restricting access that results in the degradation of natural areas. Paths should comply with Australian Standards AS2156.2-2001 Walking Tracks – Infrastructure Design. (Bio Diverse Solutions, 2014 Lot 200 Turner St, Foreshore Management Plan)

Disabled access should be provided wherever possible and should facilitate the independent use of people with a range of disabilities including physical disabilities, hearing and vision impairment. Disabled access should comply with the relevant Australian Standards.

4.3 Affordability

Modular housing as proposed by McGrath Homes in conjunction with Meadowbrooke Lifestyle Estate provides an affordable option when compared with more conventional housing types.

Affordability of the Meadowbrooke Lifestyle product goes beyond the housing style and includes different approaches to land tenure, whereby the residents will own their own home and lease the land. The lease of the land agreement is to be for 60 years or for the term of the residents' home ownership.

The land-lease model enables residents to release the equity that they have established in their homes by offering an affordable housing and lifestyle choice in a secure community based development. In doing so, the model also provides the opportunity for down-sizing as well as reducing maintenance requirements and costs.

4.4 Climate Responsive Design and Energy

Meadowbrooke Lifestyle Estate will aim to reduce consumption of non-renewable resources via climate responsive design, efficient use of energy and water and increased use of renewable energy.

McGrath Homes are the designated builders of the modular homes. McGrath Homes is committed to minimising the impact of its operations on the environment and to the overall reduction of waste that is disposed of through dumping at landfill sites. This will be done by implementing management practices and building techniques that control the impact on the surrounding environment and reduce waste.

Although McGrath homes recognise that waste is best reduced or avoided at the point of production or generation, they also recognise the need for strategies for re-using and recycling those wastes. Inevitably some waste will need to be disposed of to landfill, but this is recognised as a last resort which needs to be carried out in an environmentally effective and efficient manner.

In keeping with the development principle of McGrath Homes in minimising the impact on the environment and the overall reduction of waste, the developers are also recycling and re-modelling some of the existing buildings rather than demolishing and rebuilding. The existing caretaker's house, function room/kitchen/office and motel units will be remodelled into a community centre, family centre and short stay accommodation units for visiting guests.

4.5 Sustainability Initiatives

Dwellings shall be sited and planned to best achieve passive solar benefits. Planning and Building licence applications for dwellings shall demonstrate that the design has given regard to this requirement.

Water conservation strategies relating to the home and garden shall be used to assist in reducing water use and water costs for the occupants. The development shall use a Water Management programme for building construction and all gardens shall utilize Water Wise garden principles. A water storage tank shall be installed with each dwelling.

Consideration of dwelling orientation and appropriate appliance and lighting options can reduce high energy consumption. The dwellings shall use inverter split system reverse cycle air conditioning and LED lighting where practicable.

Hot water systems will be positioned as close as possible to the area of most use.

Consideration will be given to the installation of photovoltaic or renewable energy systems. This includes on the rooves of the Club House, Family Centre and Motel Units.

Consideration will also be given to the use of solar panels within open space areas that will assist in running BBQ facilities and or street lighting.

Homeowners should be encouraged to sign up for "EasyGreen" or "NaturalPower" packages on offer by Synergy. When they choose to purchase EasyGreen or NaturalPower, Synergy will use their premiums to purchase renewable energy certificates (RECs) from nationally accredited GreenPower™ renewable energy sources. The RECs purchased will match the amount of residents' EasyGreen or NaturalPower contribution.

The developers will be providing an enclosed swimming pool area to reduce heat loss. Solar pool heating will be investigated.

5.0 WATER USE AND EFFICIENCY

5.1 Reduce Demand

The demand for scheme water can be reduced by simple measures such as encouraging home owners to use water wise appliances and fittings, planting of garden areas and Public Open Space areas with water wise native plants and general awareness programs about reducing overall water usage.

5.2 Rainwater Harvesting

Rainwater will be encouraged to be harvested via roof top collection and captured in tanks for re-use inside and outside of the dwelling.

5.3 Sustainability Initiatives

The sustainability initiatives to be promoted within the development include:

- Providing each house with a rainwater tank.
- Dishwashers, washing machines, toilets, shower heads, taps etc where possible fitted with high WELS water rating.
- Landscape Master Plan to address water-wise principles, including indigenous vegetation and recommendations regarding irrigation and other watering regimes.



6.0 WATER QUALITY MANAGEMENT

6.1 Household & POS Nutrient Management

Householders will be encouraged to plant nutrient wise gardens that require little to no fertilising, or if necessary, use only low water soluble fertilisers. This limits the amount of nutrients that enter the groundwater.

6.2 Swales & Bio-retention units

The village layout is focussed around a central 'green' corridor incorporating the man-made pond, proposed bio-retention basin, village green and landscaped areas. As far as possible strong visual linkages are achieved with the surrounding open space areas with a high level of permeability for pedestrians.

6.3 Sustainability Initiatives

The Sustainability initiatives to be promoted in relation to Water Quality management include:

- Providing water wise landscaping.
- Landscaping of communal areas and the front gardens of individual dwellings will be installed by the developer and will be maintained in accordance with the best water wise garden principles.

7.0 BIODIVERSITY

Biodiversity is identified as one of the key priority areas of sustainability within the Meadowbrooke Lifestyle Estate development.

The ecological functioning of the Preston River foreshore area is paramount to providing an attractive and unique development and where possible, the natural biodiversity of the area should be enhanced.

7.1 Foreshore Management

The foreshore area (Lot 200) which adjoins the subject land, is quite degraded. The foreshore area includes introduced trees, ornamental plants and landscaped grassed areas. Revegetation is recommended to restore the river foreshore area, generate ecological linkages and enhance the amenity area. The Foreshore Management Plan report recommends that a comprehensive weed program is carried out when revegetation strategies occur (Bio Diverse Solutions, 2014).

7.2 Household Gardens



Landscaping of front gardens should be encouraged with native species that attract birds and other fauna, assisting to provide linkages to facilitate fauna movement through the development to the foreshore area.

Planting native gardens also has the added benefit of the residents developing a personal appreciation of the environment and its natural systems. Achieving this 'sense of place' assists in the fifth foundation principle of the State Sustainability Strategy.

7.3 Community Garden

Community gardens get people involved in both gardening and the community that surrounds it. The benefits not only result in community building and engagement but also environmentally sustainable benefits result.

Community gardens act as a demonstration site for living and consuming in a sustainable manner; foster local solutions to climate change; and provide organic waste management solutions for the residents of Meadowbrook Lifestyle Estate.



As simple as providing a community garden sounds it meets a number of the fundamental principles of the State Sustainability Strategy.

7.4 Drainage Reserve & POS

As discussed in relation to household gardens, it is suggested that the drainage reserves and POS will be landscaped with local native species. This will assist in enhancing the ecological function of Meadowbrooke Lifestyle Estate.

7.5 Landscaping

The Shire of Capel has developed 'The Shire of Capel Urban Landscape Strategy' with the principal aim of the strategy being to:

"Enhance amenity, environmental, sustainability and cultural outcomes in relation to the landscaping of public spaces and development sites in urban areas."

A Landscape Master Plan is to be prepared as a condition of development approval for the proposed lifestyle village and will be the subject of a separate report. It is anticipated that the Landscape Master Plan will place a strong focus on the use of endemic native species that are water wise and low maintenance in the landscaping of the development. The landscaping plan should also investigate the use of local or recycled materials for hard landscaping structures for park and street furniture/fixtures.

7.6 Sustainability Initiatives

The sustainability initiatives to be promoted in relation to Biodiversity include:

- Provide the residents of Meadowbrooke Lifestyle Estate with a Community Garden.
- Integration of urban water management functions with POS including management of stormwater to improve water quality and reduce runoff.
- Use of hydro zoning and water wise, indigenous plants and climate appropriate turf.
- Use of durable, longer lasting local or recycled materials in hard landscaping (park/street furniture etc).
- Investigate the use of renewable water sources for irrigation purposes (e.g. water re-use, sustainable bore use etc).
- Use of sub-surface or drip irrigation systems with sensors.

8.0 SPECIFIC APPLICATION OF INITIATIVES

The following table provides a summary of the sustainability initiatives or options to be considered and/or promoted as part of the development of Meadowbrooke Lifestyle Estate and identifies where they fit within the context of the overall development.

Area	Potential sustainability initiative	Benefits	Sustainability Priority Area
Individual homes			
Home design	North facing glazed areas with eaves over	Increase heat gain in winter / improve comfort / reduce heating requirement and energy use Eaves prevent heat gain in summer	Lifestyle Diversity & Affordability
	Main living areas on north side of home	Solar heat gain to areas where it's most valuable during the day	
	Minimal glazed areas facing east and west	Reduce heat gain in summer / improve comfort / reduce cooling requirement	
	Shading over east and particularly west facing glazed areas, e.g. wide eaves / verandah	As above	
Building materials	'Eco' building materials, e.g. plantation timber, products made from recycled materials	Various environmental benefits	Lifestyle Diversity & Affordability
	Building materials with lower embodied energy	Avoid materials with high embodied energy, e.g. solid bricks, concrete, tiles	
Home hot water	Solar with gas booster	Lowest GHG emissions	Lifestyle Diversity & Affordability
	High efficiency gas	Similar GHG emissions to electric boost solar & heat pump	
	Electric heat pump	Similar GHG emissions to electric boost solar & gas Avoids need for reticulated gas	

Home cooking	Gas hot plate / stove	Lower GHG emissions compared to electric	Lifestyle Diversity & Affordability
Home heating / cooling	High efficiency reverse cycle (split systems)	Lower GHG emissions compared to panel, fan or oil heaters which may be used otherwise High star rated models can use about 20% less energy than low star rated models Can provide heating and cooling	Lifestyle Diversity & Affordability
Home power	PV solar power	Reduce GHG emissions Lower electricity bills for residents	Lifestyle Diversity & Affordability
Home lighting	LED lighting	Lower energy use – valuable for lights on a lot of the time Longer life – less maintenance	Lifestyle Diversity & Affordability
	CFLs & other fluoros	Lower energy use compared to halogen Cheaper than LED	
	Glazed areas & possibly skylights for natural lighting	Reduce energy use & GHG emissions	
Appliances & fixtures	Dishwashers, washing machines, fridges, TVs, etc with high energy star rating	Reduce GHG emissions Reduce ongoing energy bills High energy star rated appliances can use 20-50% less energy than low start rated ones	Water Use & Efficiency
	Dishwashers, washing machines, toilets, shower heads, taps with high WELS water rating	Reduce water use High WELS rated appliances & fixtures can use up to 50% less water than low start rated ones	
Water supply	Rain water tank to supply water for toilets	Reduce water use If up on stand to provide some pressure could avoid need for booster pump if used for toilet only	Water Use & Efficiency

Waste	3 bins in homes to encourage dry & organic recycling	Increase recycling, reduce waste going to landfill Reduce GHG emissions	Biodiversity
Education	Provide education materials & information sessions on how to save energy, water & reduce waste Maybe even run an ongoing 'Green Village' education program	Reduces energy & water use & waste Reduces bills for residents	Biodiversity
Common area buildings and facilities			
Common use buildings	Similar measures as above, e.g. building design, 'eco' building materials, hot water, lighting, appliances, etc		Lifestyle Diversity & Affordability
Internal lighting & air-conditioning	Timer or sensor controls to automatically turn equipment on or off and prevent it being left on when not required	Reduce energy use and associated GHG emissions	Lifestyle Diversity & Affordability
Power supply	PV solar power	Reduce GHG emissions Cost effective against current power prices	Lifestyle Diversity & Affordability
Reticulated gas		Allows use of gas hot water systems & cook tops, which have lower GHG emissions than electric alternatives	Lifestyle Diversity & Affordability
External lighting	LED street lights, security & external lights	Lower energy use - especially for lights that are on a lot of the time Longer life – less maintenance	Lifestyle Diversity & Affordability
	CFL & other fluoro street lights, security & external lights	Lower energy use compared to incandescent - especially for lights that are on a lot of the time	
	Timer or sensor controls to automatically turn lights on or off as required	Reduce energy use and associated GHG emissions	

Swimming pool	Solar pool heating with gas or electric heat pump boosting	Reduce energy use and GHG emissions	Lifestyle Diversity & Affordability
	Enclose swimming pool area to reduce heat loss and if possible have large north facing glazing for heat gain in winter	Reduce energy use for heating and associated GHG emissions	
Waste	Use third bin system for organic wastes	Substantial GHG reductions compared to putting organic wastes into the general rubbish bin Could also use to dispose of some garden wastes from grounds	Biodiversity
Education	Provide information sessions or materials for staff on how to save energy & water & reduce waste in common facilities	Reduce GHG emissions, water use & waste	All priority areas
Grounds			
Water supply for irrigation	Grey water collection from homes and onsite treatment plant	Recycle water Overcome problem of fully allocated ground water in East Bunbury area	Water Quality Management
	Collect storm water in lake and use for irrigation in summer	Recycle water Overcome problem of fully allocated ground water in East Bunbury area	
Landscaping	Soil preparation for garden beds	Reduce water use Improve plant health	Biodiversity
	Mulching of garden beds	As above	
	Use native and other water wise plants	Reduce water use	
	Use paving, aggregate and maybe even artificial turf instead of lawn	No watering requirement & less maintenance	
	Shade trees	Reduce 'urban island heat	

		effect' Aesthetic benefits for residents	
	Timing of landscaping works	Best done in cooler, wet months for successful establishment without intensive early maintenance	
Irrigation system	Use controller with water saving features and sensors	Reduce water use, better control of irrigation	Biodiversity
	Use sub-surface or drip irrigation systems	Less wastage compared to sprinklers	
Food/Community Garden	Veggie gardens, fruit trees, chooks	Produce food onsite and avoid GHG emissions and other impacts associated with production and transport Generate activities for residents	Biodiversity
Land care	Re-vegetate area next to river using local species	Plants absorb CO2 from atmosphere Provide habitat and food sources for local fauna Community benefits for walkway	Biodiversity
Storm water disposal	GPTs, rain gardens, constructed wetland, etc	Reduce pollutants from entering river such as rubbish, nutrients & sediment	Water Quality Management
Education	Provide information sessions or materials for garden staff on how to save water for irrigation	Reduce water use	All Priority areas