

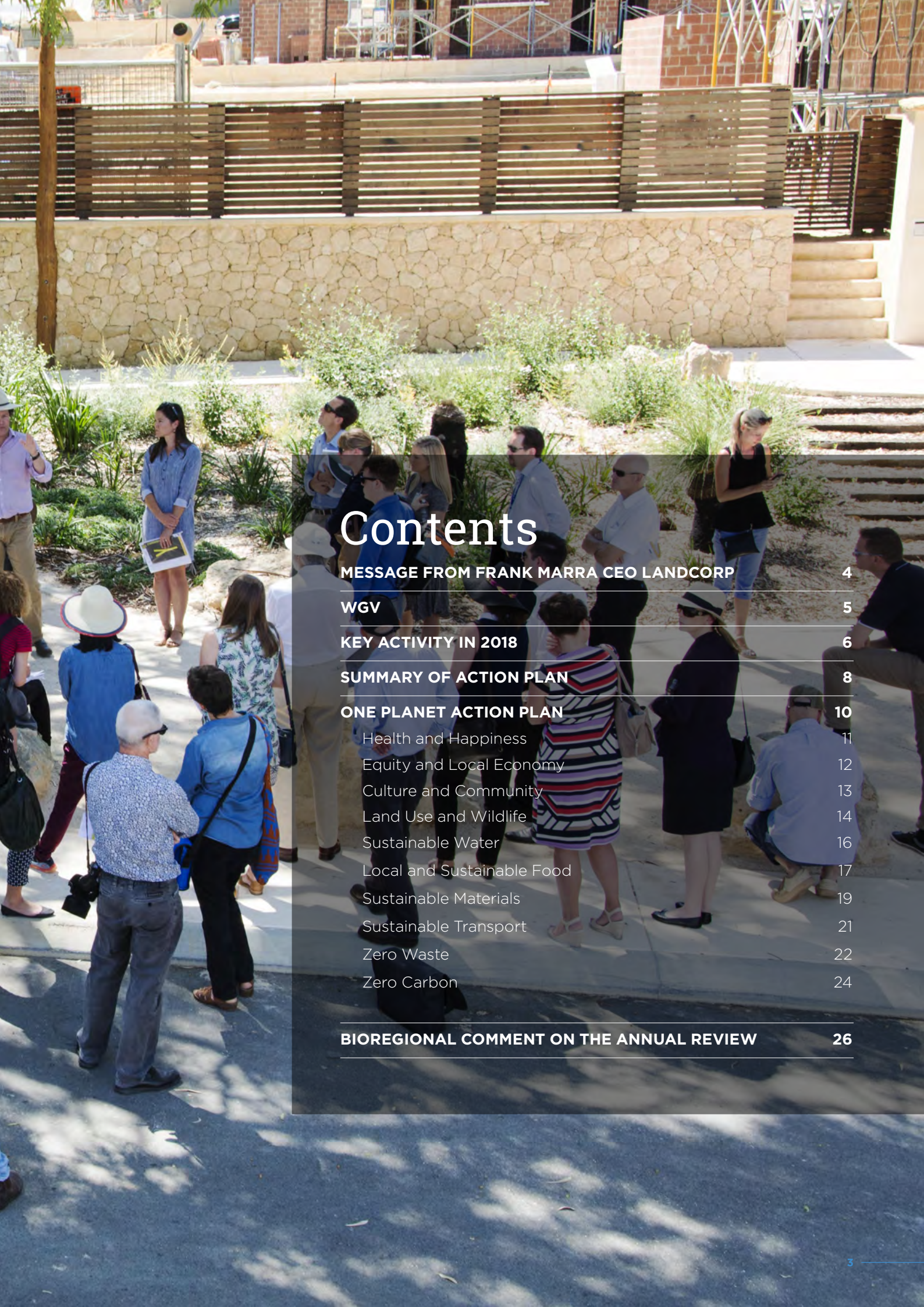


WGV

One Planet Action Plan 2018 Review







Contents

MESSAGE FROM FRANK MARRA CEO LANDCORP	4
WGV	5
KEY ACTIVITY IN 2018	6
SUMMARY OF ACTION PLAN	8
ONE PLANET ACTION PLAN	10
Health and Happiness	11
Equity and Local Economy	12
Culture and Community	13
Land Use and Wildlife	14
Sustainable Water	16
Local and Sustainable Food	17
Sustainable Materials	19
Sustainable Transport	21
Zero Waste	22
Zero Carbon	24
BIOREGIONAL COMMENT ON THE ANNUAL REVIEW	26



Message from the Chief Executive

As the land development agency responsible for delivering WGV at White Gum Valley, we have achieved a Western Australian first with the estate our State's first internationally endorsed One Planet Community.

As one of our 'Innovation Through Demonstration' projects, WGV is the focus of a four year 'living laboratory' research program with the Cooperative Research Centre for Low Carbon Living to monitor the performance of the estate's building typologies and renewable energy technologies, particularly the Gen Y Demonstration House, and to share its findings with the wider community and industry.

This review represents the third peer review of WGV's annual progress in delivering on the One Planet Action Plan and results are encouraging.

Designed to demonstrate the very best in modern, sustainable living and create a community where it is easy and affordable for people to live in a way that makes smart use of the earth's resources, we have made considerable progress since our last Review.

The Sustainable Housing for Artists and Creatives (SHAC) is now complete and fully occupied. Our Gen Y apartments, which attracted considerable interest when opened for display, have sold. All single lots have also sold and are either under construction or occupied, with five delivered by Ecovision Homes – a builder with a proven approach to sustainable construction. Evermore Apartments by Yolk Property Group, also a One Planet Community, open its doors to its first residents.

A lot has been set aside for a group of like-minded homemakers to develop housing based on the baugruppe building model whereby they become the 'developer' of their own well-designed, affordable and sustainable homes for long-term needs. This initiative has now achieved the required level of commitment to ensure it is viable.

We continue to embed the key initiatives of the One Planet framework into as many of our projects as possible to ensure our development legacy stands the test of time.



A brown and white dog is looking through white vertical slats. The dog's head is on the left side of the frame, and its body is visible through the slats. The dog has a yellow tag on its collar with the number 0180076 and the name ESPRESSO. The background is a bright, sunny outdoor setting with green foliage visible through the slats.

WGV

This boutique, residential estate has transformed the Kim Beazley Special School site and provided a diverse range of housing styles and living options, including; apartments, townhouses, maisonettes, and single dwellings, delivering more than 80 dwellings.

Sited on Stevens Street, opposite Booyeembara Park and Fremantle public and private golf courses, the two hectare site is now a residential estate which is sympathetic to the community and environmental aspirations of the surrounding suburb.

Key Activity in 2018

Project component	Type of units	2016	2017	2018
SHAC	12 x 1, 2 and 3 bedroom apartments plus 2 artist studios	Broke ground: August	<ul style="list-style-type: none"> Completed: July Opening event: August 	<ul style="list-style-type: none"> Complete
Gen-Y	3 x 1 bed Apartments	Broke ground	<ul style="list-style-type: none"> 290 visitors when open Sold April 2017 	<ul style="list-style-type: none"> Completed
Evermore	24 x 1,2 &3 bedroom apartments	Planning application made	<ul style="list-style-type: none"> Under construction 	<ul style="list-style-type: none"> First occupant: Aug Approx 15 of 24 units sold Completed in Aug
Single lots - 24 lots	Standard townhouses (20) Plus: twin maisonettes A share house and 2 compact multi-unit plots (Gen Y and Djildit)	First meetings All sold	<ul style="list-style-type: none"> 4 nearing completion 4 occupied 	<ul style="list-style-type: none"> All sold Most units are occupied or under construction 5 of them delivered by Ecovision Homes - builder with a good approach to sustainable construction approx 10 occupied
Baugruppe			<ul style="list-style-type: none"> Advertising and sales 	<ul style="list-style-type: none"> LandCorp funding balance of apartments ensuring that it will proceed
Townhouse plot - lot 11			<ul style="list-style-type: none"> Redesign and application in process 	<ul style="list-style-type: none"> New planning proposal submitted

Housing

- Six detached residential houses under construction, several nearing completion, 4 completed and occupied
- Sitewide initiatives included Community Bore hand over to the City of Fremantle

Awards and Media

- Density by Design episodes released: <https://densitybydesign.com.au>
Net Zero Energy and Beyond
Water Sensitive Urban Design



Summary of Action Plan

One Planet Principle	Headline goals and targets	2018 Status and progress
Health and Happiness	Foster a strong sense of community	On Track
	Foster a healthy community	On Track
Equity and Local Economy	Ensure a diversity of housing type and tenure	Baugruppen confirmed - expanding housing diversity
	Encourage residents to engage in fair trade and local economy programmes.	Information in the Resident's Guide
Culture and Community	Create a culture of sustainability	Several Resident Meeting's with CUSP researchers
	Create a culturally vibrant community	SHAC events
Land Use and Wildlife	Create two new habitats	Sump Park complete, green link 80 per cent complete
	Contribute to an increase in biodiversity	16 nesting boxes installed and being monitored
Sustainable Water	Reduced potable water use by 75 per cent	Average of 66 per cent reduction achieved across site
	Reduce flooding risk - 100 per cent of stormwater treated onsite	On target for 100 per cent treatment onsite
Local and Sustainable Food	Access to food growing space (100 per cent of dwellings)	All units have some access to food growing
	Edible landscaping (30 per cent of landscape trees)	30 per cent of planted trees are fruit trees of over 10 varieties
	Encourage sustainable and healthy purchasing habits	Information included in Residents Guide
Sustainable Materials	Reduced embodied energy of construction	All housing types have initiatives in this area - 1/3rd of single lots are lightweight frame
	Sustainable materials in operation	Information in the Resident's Guide
Sustainable Transport	Enable a sustainable transport carbon footprint	EV Car Share at SHAC
	Reduced private car ownership	Average less than 1.5 per unit
Zero Waste	Maximise construction waste recycling (95 per cent)	80-90 per cent achieved
	Reduction in household waste in operation (30 per cent)	No data - guidance in resident's pack
	Recycling rate of household waste (70 per cent)	All houses have excellent facilities
Zero carbon	Maximise energy efficiency (34 per cent reduction)	As built modelling shows savings in this range
	Renewable energy generation (100 per cent renewable energy)	As built modelling showing 98 per cent reduction in CO2eq emission

Fremantle Men's Shed Incorporated
2004



A project typical
of the White Gum Valley
Community Spirit...



'tooled-up' for support and
invention

One Planet Action Plan



As the land developer LandCorp will not ultimately construct the buildings, but has made every effort to make it possible for home-owners and developers to create a community where it will be possible to live a One Planet Lifestyle. The key mechanisms that LandCorp have utilised include:

Design Mechanisms

- Design Guidelines for both the single lots and the apartment sites including:
 - o Mandatory inclusions (DG-M)
 - o Suggested considerations for buildings and gardens, in guidance and free design workshops (DG-S)
- Developer brief and engagement (DE): the brief for developers of the apartment sites and LandCorp

partnerships with CUSP and ARENA on how to best achieve objectives

Incentives and guidance

- WGV Sustainability Upgrade Package (SU):
 - o Detached lots: An enlarged PV system to cover annual energy consumption, a rain tank plumbed into the house, mandatory 3rd pipe system for garden irrigation, a mature shade tree
 - o Apartments: Funding application for PV and battery system in place
- Design Workshops (DW): both group and 1-on-1 sessions with buyers

Community engagement

- Guide for Residents released
- Links to community groups provided in Residents Guide as an alternative to an intranet
- Partnership with City of Fremantle to maximise community engagement (CoF)
- Curtin University Sustainability Policy (CUSP): CRC Low Carbon Living - Living Laboratory research project, a four year monitoring and engagement project

Health and Happiness

	Goal	Target	Baseline	2018 status
HH1	Foster a strong sense of community	> 9 neighbours known by name	n/a	On track
HH2	Foster a healthy community	> 50 per cent of people taking regular exercise	n/a	On Track

Action Summary for 2018

- Curtin University researchers have held a number of meetings with residents and are designing a survey to gather data and information on the communities sustainability behaviours.

Equity and Local Economy

	Goal	Indicator	Baseline	2018 status
EQ1	Ensure a diversity of housing type and tenure	> 5 housing types > 10 per cent affordable	1-2 housing types	Cooperative Housing (SHAC), Gen-Y house, single and multi-unit self-build all completed. SHAC (12 units) and Gen-Y (3 units) affordable. GenY and SHAC are considered affordable. SHAC is government subsidised housing and GenY is sized for affordability both have shared services that further reduced running cost for residents. Evermore has 25 per cent wheelchair accessible units. Baugruppen project will include a range of 1, 2 & 3 bedroom unit sizes going ahead.
EQ2	Encourage residents to engage in fair trade and local economy programmes	Percentage of residents considering this in purchase decisions		Information on fair trade purchasing included in Residents Guide.

Key developments

While SHAC is the flagship affordable housing project at WGV (see 2017 annual review for more detail) WGV is proving highly successful at providing a diverse range of housing providing opportunities for a range of different purchasers.

The latest success is the agreement to ensure that the Baugruppen project will go ahead. Approximately 75 per cent of the required number of members had been secured this year, and now LandCorp has agreed to provide financial backing for the remaining 25 per cent, until members can be found, to ensure that the project can proceed.

Baugruppen – an affordable community approach to housing

Baugruppen is a German term that translates as “building groups”, it describes the successful European housing model whereby people come together to be the developer of their own higher density homes. With the involvement of the end users from the outset the result tends to be well-designed, more affordable and sustainable homes, designed for long-term needs. As there is no developer in the process homes can often be purchased for 20 per cent of the market value.

The concept at WGV introduces:

- “Stacked homes” with no common walls. Single storey modules accommodate one bedroom, one bedroom plus study, or two bedroom homes, double storey modules accommodate three or four bedroom homes.
- High quality internal environment - all homes feature cross ventilation, abundant natural light and generous private outdoor space.
- Shared facilities include a common room, guest suite, community gardens and outdoor living including rooftop terrace.

Culture and Community

	Goal	Target	Baseline	2018 status
CC1	Create a culture of sustainability	High levels on participation rates in sustainability related events		3 meetings with CUSP researcher Jess Breadsells pre and post occupancy research
CC2	Create a culturally vibrant community	Number of onsite cultural events per year (>5)		Monthly SHAC community Dinners, SHAC organised Halloween Event for all WGV residents events Evermore Events

Key developments

- Face book ecovillage page established
- Number of events at Monthly Community meals by SHAC, SHAC Halloween event for all residents; - Resident meetings held by researchers
- Site continues to attract many visitors but a record hasn't been kept
- Culture of sustainability - Four or more single residential houses built by one environmentally friendly building Company Many of the houses are high performance, including one built to Passive House standard

A visit to WGV – by a UK architect on holiday in Perth!

While visiting Australia, I had the opportunity to visit WGV at White Gum Valley, an innovative self-build development and One Planet Community, in the City of Fremantle, Western Australia (WA). Having spent about nine months working with Bioregional designing a One Planet Community in Chobham in Surrey, I was interested to see how the One Planet Living Principles were used to support a new and sustainable community that was well underway.

Visiting WA for the first time, it is striking how low-rise buildings and single house plots dominate the local urban grain, with the cities and suburbs merging together and sprawling along the coast. I felt LandCorp's development challenges this environment by introducing increased density, with a mix of houses and apartments which are more inclusive and integrated than other areas of the city.

There are a few stand out properties, including two homes that were built together using innovative and sustainable building materials and processes. Also those on a single residential plot that have more than one home, for example the Gen Y demonstration house incorporating three homes designed to be affordable for younger people.

The overall approach is certainly a people friendly one, cleverly mixing different home types and sizes without segregation, and creating attractive, safe and active streets supported by the green spaces throughout the site that meet the surrounding neighbourhood seamlessly.

At White Gum Valley, I believe the design standards, underpinned by the One Planet Living Principles, demonstrate how sustainable choices help to deliver real quality of a place, and I really look forward to seeing how the last pieces of the puzzle progress!

Sophie Maubon is a Project Architect at Waugh Thistleton Architects, a Shoreditch based architectural practice producing thoughtful and sustainable projects in its own neighbourhood and beyond.

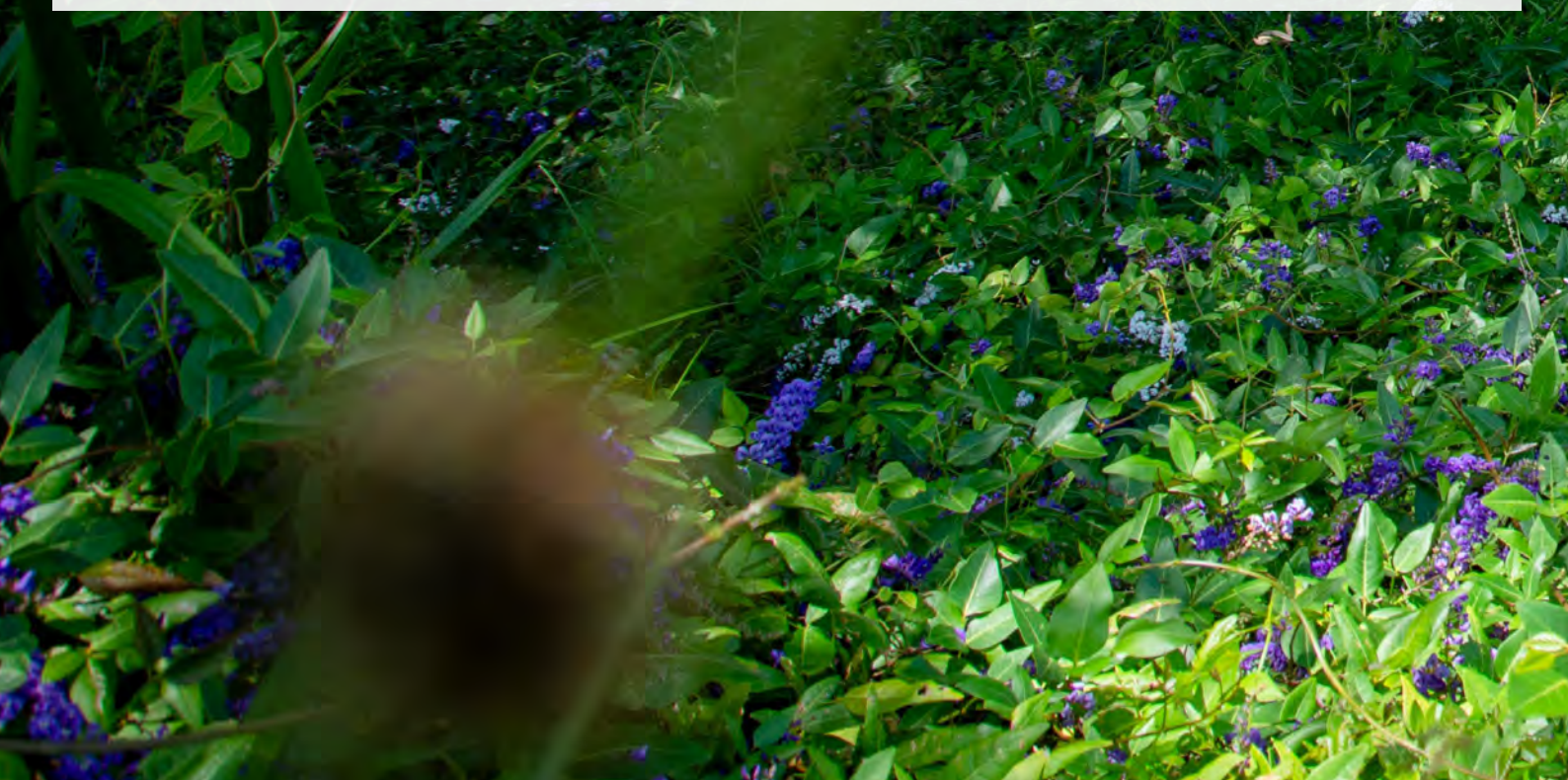
Land use and Wildlife

	Goal	Target	Baseline	2018 status
Lu1	Create a culture of sustainability	Two new habitats	Low ecological value	Sump Park complete, green link 80 per cent complete
Lu2	Contribute to an increase in biodiversity	Number of species, population of species (20 per cent and 10 per cent increase)	Brownfield site of low ecological value	16 nesting boxes installed and being monitored

Key developments

Green links and mature sump understory providing increased habitat and foraging:

- The rehabilitated storm water Sump park is complete with mature understory and semi mature upper story foraging and habitat.
- The verges are 80 per cent complete
- 16 nesting boxes installed and monitored with high occupancy rates of endemic species. Final report Due in April 2019





Sustainable Water

	Goal	Target	Baseline	2018 status
SW1	Reduced potable water use	50 l/p/day (75 per cent reduction over baseline)	200l/p/d	4 rainwater tanks installed and 8 connections to the community bore
SW2	Reduce likelihood of flooding	100 per cent of stormwater treated onsite	100 per cent onsite infiltration	Underground drainage infiltration cells and Sump Park completed

Key developments

- Rerunning the Precinx model is showing an overall reduction in water use of 32 per cent. The savings are likely to be greater than this over the longer term after gardens are established and real time data becomes available. Figures from the model show:
 - o Detached dwellings: 53kl/p/year compared to a reference case of 72
 - o Attached dwellings: 33 kl/p/year compared to a reference case of 61
 - o Multi-res: 30 kl/p/year compared to a reference case of 64
- Key installations so far:
 - o 26 houses have installed plumbed rainwater tanks with metering equivalent to 27000 Rainwater m2
 - o 28 lots are bore connected including Evermore and SHAC
 - o Almost all detached houses have installed waterwise front verge landscapes
- Stormwater:
 - o Treated through infiltration all over the site through integrated Water Sensitive Urban Design 400m2 permeable asphalt, 150m2 permeable paving (open-form paving blocks), 200m2 swale on site, plus some infiltration tree pit trials
 - o All stormwater from the site is dealt with locally via shallow infiltration galleries
 - o The revitalised stormwater sump is mainly dealing with runoff from nearby roads



Local and Sustainable Food

	Goal	Target	Baseline	2018 status
LSF1	Access to food growing space	100 per cent of households		All units have some access to food growing
LSF2	Edible landscaping	30 per cent of landscape trees edible	Nil	30 per cent of planted trees are fruit trees of over 10 varieties
LSF3	Encourage sustainable and healthy purchasing habits	High percentage of households		Information included in Residents Guide

Key developments

- SHAC and Gen-Y have food growing space
- Single units have access to food growing spaces
- Evermore has communal vegetable garden space including 8 Planter boxes. Within the building it includes generous north facing balconies that could incorporate food growing spaces
- Approximately 30 per cent of tree species are edible including both the private and mixed use lots:
 - o Species include orange, lemon, lime, mandarin species, plums, mulberry, fig, almond, apricot and various understory perennial edibles.
 - o Evermore landscape includes 13 fruit tree.





Sustainable Materials

	Goal	Target	Baseline	2018 status
SM1	Reduced embodied energy of construction	30 per cent reduction over baseline (Tonnes CO ₂ eq)		1/3rd of the single lots are using lightweight frame techniques
SM2	Sustainable materials in operation	High participation rate in key initiatives		Information in the Resident's Guide

Key developments

Accurate measurements of the embodied energy of the site are challenging, but so far each project has initiatives to reduce the embodied energy:

- Single lots: 1/3rd of the lots are using a lightweight frame and 10 of these are timber frame. On other One Planet Communities projects a shift to timber frame has helped reduce embodied energy by 30 per cent
- Djilbjit used rammed earth construction
- Evermore used 'bubble deck' to reduce concrete volume and used 30 per cent cement replacement material.





Sustainable Transport

	Goal	Target	Baseline	2018 status
ST1	Enable a sustainable transport carbon footprint	< 1 tonne co2eq/capita	3.85 Tonnes CO2 Per capita (Garnaut Report)	EV Car Share at SHAC
ST2	Reduced private car ownership	< 1 car park space per household	Unrestricted?	Approx 1.2 space per household average less than 1.5 per unit

Key developments

- Electric car share vehicle at SHAC sponsored by electricity retailer Synergy was installed. There have been teething problems with the booking and billing system but Synergy remain committed to making this work.
- The increase in the number of multi units on the single lots is helping to bring down the number of car parking spaces.



Zero Waste

	Goal	Indicator	Baseline	2018 status
ZW1	Maximise construction waste recycling	> 95 per cent recycled	38 per cent State Waste Strategy 2012	ECR achieved about 90 per cent Evermore 80 per cent
ZW2	Reduction in household waste in operation	30 per cent reduction (kg waste / capita)		No data
ZW3	Recycling rate of household waste	>70 per cent recycling rate	53 per cent	No data on rates - all houses have excellent facilities

Key developments

Construction waste:

- 180 tonnes of 224.8 tonnes of waste (80 per cent) recycled by Jaxon the building at Evermore
- Centralised site resource recovery facility set up onsite
 - o 3 houses used the Earth Care Recycling source separated bin system
 - o Data for 3 sites from ECR = 121m³ material was recycled (ave of 92 per cent recycled)

Operational waste:

- No specific data is available on the quantities of household waste or the recycling rates as information is only gathered at a municipal level.
- All houses have space for composting (single units) or a dedicated composting facilities (multi-res). Additional to this the City of Fremantle has run a successful food waste collection trial and will be rolling this out across the city.

crete



All rubble collected, **screened** and **re-used** on development sites

- Aggregate re-used for road base, sub-base, **crossovers and paths**
- Coarse aggregate used for **drainage stone**

All new building materials - **asbestos free**

All products are **engineer assessed** and **certified** as clean for reuse



Metal



174 tonnes of light gauge metal in 2017

Scrap metal is used for creating many home and office products, such as lamps, tables, benches, kitchen containers, and gliders - for manufacturing furniture



186

METAL RECYCLING



EARTHCARE RECYCLING

1800 1 EARTH

Zero Carbon

	Goal	Indicator	Baseline	2018 status
ZC1	Maximise energy efficiency	Sitewide 34 per cent reduction over baseline (kWh/m2/yr)	6-star NATHERS, Gas hot water, Standard air conditioning (2-star, single phase), Standard lighting	Modelled energy savings: Detached: 42 per cent, Attached: 38 per cent, Multi-res: 24 per cent
ZC2	Renewable energy generation	Meet 100 per cent demand net/year	0-14 per cent	Modelled savings: 98 per cent reduction in CO2eq emissions compared to base case

Key developments

- All buildings have PV systems.
- Average per dwelling: Detached: 5.4kW, Attached: 3.1kW, Multi-res: 2.1kW (39 Dwellings) – this gives a total of 198 kWh installed PV to date
- 212 kWh of battery storage

Achieving Zero Carbon Energy

This year the Precinx energy model was used to estimate what percentage of energy demand was likely to be met through onsite solar power. The model compared, for the completed buildings, the actual amount of PV and onsite battery storage with the likely energy demand of the site. This showed that over 95 per cent of energy demand was being met from renewable energy – a fantastic achievement.

Key strategies in achieving this have been:

- The design guidance ensuring that all buildings have PV installed
- The batteries installed at Gen-Y, SHAC and Evermore have increased the financial viability by increasing the amount of renewably sourced electricity that can be consumed onsite.

The Power Ledger energy trading platform is now operational at Gen Y and SHAC and is about to be launched at Evermore

Remote metering is now operational across most dwellings at WGV to better understand operational energy use and solar generation.

While there is some way to go WGV is making great progress in meeting all energy needs with solar power.



Bioregional comment on the Annual Review



Bioregional
Championing a
better way to live

WGV at White Gum Valley is proving to be one of those rare projects that sets itself highly ambitious targets and manages to exceed them! Construction progress has been significant in 2018, with the completion of the Evermore apartment development and close to half the single units under construction.

The impact and performance of WGV can be categorised in three areas; technical performance, sustainability culture and wider influence.

Technical performance

Real-life data is not yet available but accurate modelling based on installed solar PV capacity and storage shows that the highly ambitious targets are on track to be achieved in effect from day one. While this is in itself good news, the achievement is even more impressive because it's been achieved on a project with such a large diversity of housing; single self-build lots,

apartments, cooperative living. Not to mention the fact that the land developer (LandCorp) had to pass these requirements onto secondary developers and private individuals. The project has also been successful in reducing its embodied energy by promoting the use of timber and mechanisms to reduce the use of cement.

Culture of sustainability

WGV is developing a great platform to create a culture of sustainability among the residents. All the residents have learnt about sustainability through workshops and meetings before moving in and the site has many features that will encourage a sense of community and sustainability including; a low ratio of car parking spaces to number of house and electric car club, green waste and composting facilities onsite for all residents, ample green space and regular events organised by the artist's cooperative.



Wider influence

For such a relatively small development WGV is having a significant impact. The multi-unit Gen Y house has inspired at least three other lots being developed as multi-units – with associated efficient use of materials and reduced parking.

Spreading the message of sustainable change is also demonstrated through WGV:

- Sharing learning by examining progress in-depth through several research projects with local universities and organisations
- Winning a number of awards, including two at the 2017 Urban Development Institute of Australia (UDIA) Awards for Excellence.
- Inspiring further use of One Planet Living - due to both LandCorp and the City of Fremantle (known as Freo) promoting the framework,

a second development in Freo is using the framework and another of LandCorp's developments also aims to be a One Planet Community.

The result of this innovation and hard work is that all of the ten Principles are on track to meet the targets initially set and a number of them are almost complete already. As the project nears the end of design and construction, it is crucial that the two remaining major projects - the townhouse site and the Baugruppen project - also meet these targets. Based on the experience to date we can be quietly confident that they will find a way to meet the energy and water targets. What will require additional focus is ensuring that these projects minimise car parking and embrace strategies to minimise the embodied carbon of their construction.

If those projects can meet the standards set across WGV to date then this little project really will be a global beacon of sustainability.

Further information can be found at:

- A series of short videos on the achievements at WGV; <https://densitybydesign.com.au/wgv/>

Summary table

This is the third peer review of LandCorp's annual progress report in delivering its One Planet Action Plan. While this is a standalone document, it will be best understood if read in conjunction with LandCorp's internal review. Bioregional uses a simple 'traffic-light' approach to review progress in meeting their targets.

Substantially or entirely completed, or with a high degree of certainty over deliverability	Green
On track for a long-term target or to be implemented in operational phase	Yellow
Substantially incomplete, behind schedule or doubt over delivery	Red



One Planet Principle	Outcome	Indicator & Target	Comment	Status
Health and Happiness	Foster a strong sense of community	On average know > 9 neighbours by name	Varied housing type, new park and renovation of Sullivan Hall will all help enable this.	
	Foster a healthy community	> 50 per cent of people taking regular exercise	The above will support this, though additional resident engagement may be needed.	
Equity and Local Economy	Diversity of housing type and tenure	> 5 housing types > 10 per cent affordable housing	15 affordable dwellings have already been delivered and the Baugruppen project provides a further approach to achieve affordability. This provides an excellent example of different approaches to affordable housing.	
	Encourage fair trade and local economy programmes	per cent of residents considering these in purchasing decisions	WGV is providing a boost for the local economy, both in construction and by supporting 11 academic roles through its research projects. Further engagement with residents will be required to make progress.	
Culture and Community	Create a culture of sustainability	Number and participation rates in sustainability related events	Sustainability has been widely promoted to the future residents, and academic research undertaken.	
	Create a culturally vibrant community	> 5 onsite cultural events a year	While five specific events may not have been delivered WGV is already a vibrant community, with events and an active facebook group, before being fully completed.	
Land Use and Wildlife	Create two new habitats	Two new habitats	The 'Sump Park' is already flourishing and the green link is close to completion.	
	Contribute to an increase in biodiversity	Increase in number of species by 20 per cent and populations by 10 per cent	New habitat and nesting boxes will support this - anecdotally this has been successful but until the final monitoring it will be difficult to judge.	
Sustainable Water	Reduced potable water use by 75 per cent	50 litres/ person / day	Preliminary review reveals that WGV is on track to meet this highly ambitious target.	
	Manage stormwater treated onsite	100 per cent	The 'Sump Park' will deliver this.	
Local and Sustainable Food	Access to food growing space	100 per cent	Delivered to date including at the Evermore apartment through planters and community gardens. While not complete highly likely remaining units will be able to meet this.	
	Provide 'edible landscaping'	30 per cent of landscape trees edible	Achieved - mainly citrus and bay trees, but with 10 species.	
	Encourage sustainable, healthy purchasing.		Information included in Residents' Guide - but ongoing engagement is always required.	
Materials and Product	Reduced embodied energy of construction (tonnes CO2eq)	30 per cent reduction over baseline	About 1/3rd lots are using lightweight often timber frame construction. Other One Planet projects (e.g. Villages Nature) have shown timber frame to reduce embodied carbon over 50 per cent. If the remaining larger developments can prioritise timber then this 30 per cent target should be achieved.	
	Sustainable materials in operation	Participation rates in key initiatives	Information included in Residents' Guide - but ongoing engagement is always required	
Travel and Transport	Enable a sustainable transport carbon footprint	1 tCO2eq/ person/yr per cent commuting by private car (target required)	The location and connections and the electric car club on the SHAC development mean that residents can easily live without a car - will be interesting to track actual performance.	
	Reduced private car ownership	Car ownership to be < 1 per household	Current average of about 1.2 spaces per unit is encouraging, and the aim should be to bring this down at the Town House development and the Baugruppen where possible.	
Zero Waste	Maximise construction waste recycling	95 per cent	The site is achieving more in the range of 85 per cent, double national average but below the target	
	Reduction in household waste in operation	30 per cent reduction	All residents have the facilities and information to comfortably achieve this - hopefully the WGV culture will encourage participation also.	
	Recycling rate of household waste (70 per cent)	70 per cent		
Zero carbon	Maximise energy efficiency (34 per cent reduction)	34 per cent reduction over baseline	Modelling shows this is on track.	
	100 per cent renewable energy	100 per cent	Modelling of real data shows a 98 per cent reduction in CO2 emissions. With the diverse nature of the site this is a fantastic achievement	

Western Australian Land Authority

Level 6
40 The Esplanade Perth
Western Australia 6000
Australia

T +61 (08) 9482 7499

F +61 (08) 9481 0861

landcorp.com.au

POSTAL ADDRESS

Locked Bag 5
Perth Business Centre
Western Australia 6849

Disclaimer: The information contained in this document is in good faith; however neither LandCorp nor any of its directors, agents or employees give any warranty of accuracy nor accepts any liability as result of a reliance upon the information, advice, statement or opinion contained in this document. This disclaimer is subject to any contrary legislative provisions. The imagery and artist impressions contained within this document are for illustrative purposes only. © LandCorp 2019 LC 4935 04/2019

