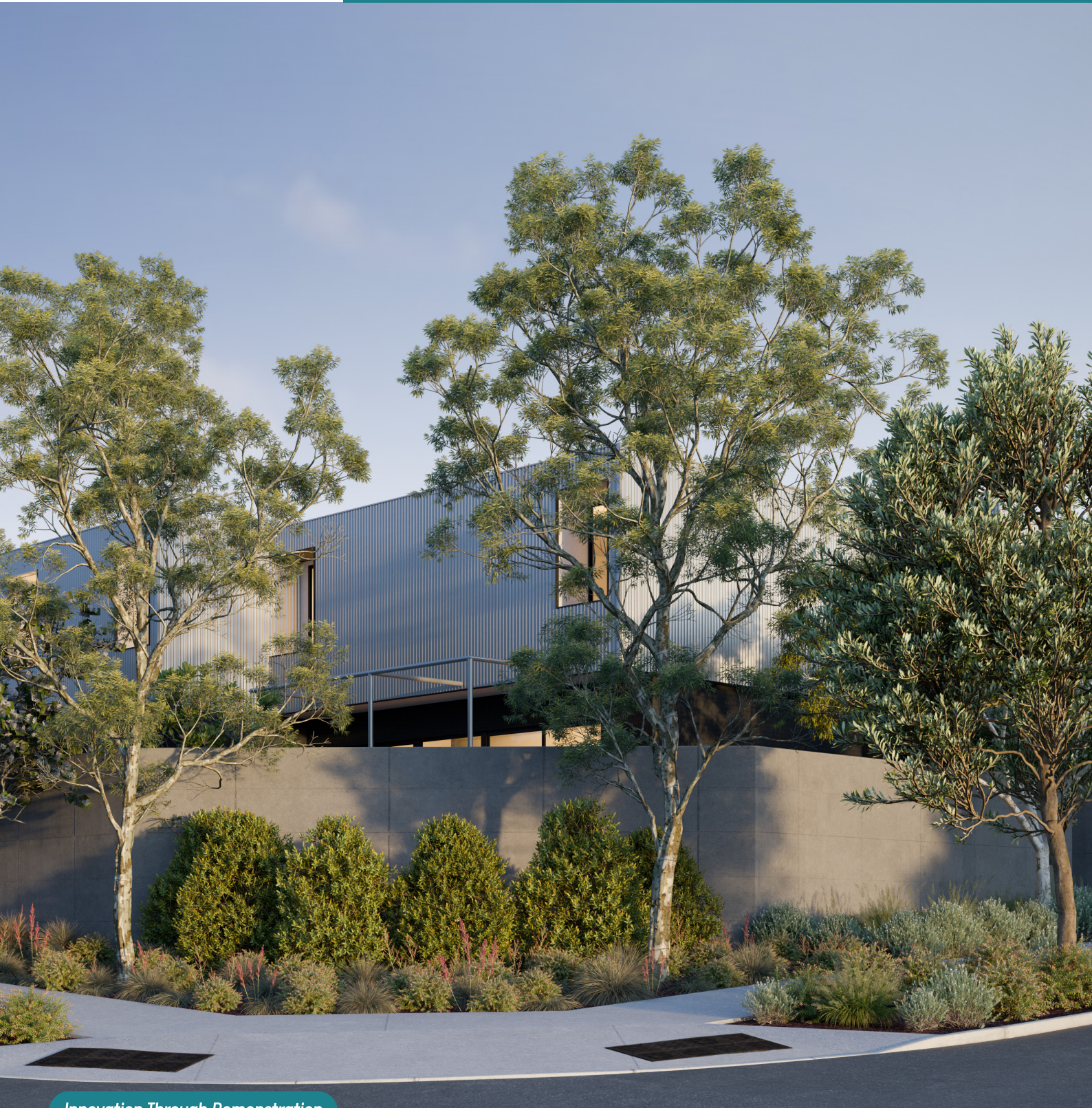




# One Planet Action Plan – East Village at Knutsford



Innovation Through Demonstration

Shaping our State's future



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## 1. Message from CEO



DevelopmentWA (formerly LandCorp, following the merge with Metropolitan Redevelopment Authority) was an early adopter of One Planet Living (OPL) in WA and the first developer in the state to achieve endorsement from Bioregional for a One Planet Action Plan for a residential development; WGV at White Gum Valley. We remain very proud of that achievement and have selected One Planet Living again as the framework to guide the project that we see as the natural successor to WGV, East Village at Knutsford (EVK).

East Village is a different model of development, with most of the site being the subject of a survey strata – a governance mechanism that enables management of some commonly owned elements between a group of dwellings. The design team has taken full advantage of this structure to bring innovations to energy and water services, landscape elements, and a sophisticated monitoring system that otherwise simply wouldn't be possible.

These elements are not hidden from future residents, they are celebrated and form the core of the identity of East Village. People who visit, consider buying, and eventually live at East Village will understand that they are enabled by decisions made at the design stage of the project to live highly sustainable lifestyles and be part of demonstrating that a resilient, sustainable development in WA is possible and is desirable.

East Village provides the unique opportunity to live in a new, connected community within a historic suburb that has established links to amenities, entertainment and the environment. Located within the historic suburb of Fremantle, East Village has been designed to reflect the city's rich history and culture while acting as an innovative exemplar for the future of vibrant and sustainable infill housing development.

The port city's rich history, changing demographics, architectural heritage and cultural diversity all contribute to its unique identity, and have informed the design. The development prioritises accessibility and is located within walking and cycling distance of local parks, art galleries, cafés, golf courses and the nearby Fremantle city centre.

EVK residents will each receive an introductory welcome pack providing information and resources to encourage them to:

- operate their home efficiently to reduce running costs
- grow and eat healthy and sustainable food
- access sustainable transport options
- access the services and opportunities available in the local community and through the City of Fremantle
- reduce the impact of the other services they rely on – schools, hospitals, shops

In return for embracing a sustainable lifestyle and committing to the vision of One Planet Living, residents at EVK will be rewarded with a reduced cost of living and the potential to save more than \$1,200 each year in reduced utility bills.

East Village is bringing people and urban greening to a previously unusable site that has had little of either in a very long time. It is being developed in a way that will minimize new impacts on the environment, and on energy and water infrastructure. DevelopmentWA is seeking to bring new opportunities for the existing community, and to connect new residents to that community, to create something that is immediately positive and enabling in the long term.

**Frank Marra, CEO, DevelopmentWA**



## 2. Key Leadership Initiatives and Partnerships

East Village at Knutsford is in some important ways a successor project to WGV at White Gum Valley.. DevelopmentWA understood the value of partnerships in the growth of WGV into a leadership project. From day-one at East Village DevelopmentWA involved partners such as the City of Fremantle, Curtin University, Murdoch University, CRC for Water Sensitive Cities, among many others. The project timeline was accelerated to enable it to become the centerpiece of a major, Federal Government Funded Smart Cities & Suburbs project, which was partially responsible for the project now housing an industry leading shared battery system governed by a block-chain based online tool.





The project team has a big cross-over with WGV, with the same Development Manager from DevelopmentWA (formerly LandCorp) , the same civil engineers, Tabec, and Josh Byrne & Associates providing

landscape architecture, urban water and sustainability services. The fact that these key parts of the team had so recently worked within the OPL framework made the process more straightforward and immediate, moving quickly to resolved responses to the principles and objectives.

Every aspect of EVK has been designed to work towards a sustainable future, in what will be a stand-out residential district in Fremantle.

If everyone continues to live like the average Australian, we would need more than four planets to support the current world population. EVK has been designed to be a place where people lead genuinely sustainable lifestyles.

### Leadership statements:

One Planet Principle	Leadership Statement
 Health and Happiness	Rigorous attention to excluding toxic materials from the site, design to reduce heat stress, active connection of people to the wider community.
 Equity and Local Economy	A thriving, diverse and resilient local economy that supports fair employment, work from home, inclusive communities and international fair trade.
 Culture and Community	Embodying the heritage of both Indigenous and European in the design, a research facility on site to provide education and outreach on sustainability.
 Land and Wildlife	A green, heat resilient landscape of native plants and productive species available to residents to harvest. Stormwater managed through the landscape design.
 Sustainable Water	High levels of rainwater use and sustainably sourced irrigation water lead to an 80% reduction in mains water consumption, with water systems powered by renewable energy.
 Local and Sustainable Food	Residents will have access to sustainable food production in both the public and private realms, including managing organic waste through the gardens.
 Materials & Products	Sustainable forestry sourced timber will be mandated at every scale, and the Living Future Institute's 'Red List' will be used to review all materials choices.
 Travel & Transport	A strata-owned, public fast charger adjacent to the car-share bay and all homes prewired for overnight EV and eBike charging. Strong links to the local cycling and public transport networks.
 Zero Waste	Targeting 100% recycling of construction materials, followed up in the completed project with an online service to facilitate sharing of tools and gifting of unwanted items between residents.
 Zero carbon	100% renewable energy for the 36 town homes, sourced from individual solar PV systems connected to a shared battery with backup grid energy from a renewable energy provider.



### 3. Message from the One Planet Integrator

It's been a pleasure to be part of this East Village project team, with OPL as a guiding framework from the earliest stages. Much of the team were also involved in DevelopmentWA's WGV project, which was the first OPL endorsed residential development in WA. Having that continuity smoothed the process and meant that the principles were understood, allowing us to work through the detail more efficiently.

The process of developing a One Planet Action Plan for East Village was different to that at WGV. The project design developed at a faster pace, so One Planet workshops happened more frequently, and the process was more intense. This

had the interesting effect of improving the integration of ideas into the design and less problems with corporate memory. Once a direction was agreed on, it was incorporated into the design, mitigating the need for constant revision sessions to retrace the agreed approach, as can sometimes be the case on other land development projects.

The existing relationship with Bioregional has been important, with the project team aware of

other projects that have been endorsed since WGV, and the global growth in interest in One Planet Living. It has also been great to once again have the City of Fremantle as the local authority. The City is an active One Planet Council and has provided guidance to project throughout the planning process, as well as being a substantial resource for locals seeking a One Planet lifestyle, which we are being careful to connect the eventual residents of East Village to.

DevelopmentWA have shown an unwavering commitment to leadership with this project, which has flowed through to the One Planet Action Plan. East Village is fast emerging as a reference point for the development industry in WA and I'm confident it will be transformative far beyond the site boundary.

Mark Taylor, Josh Byrne & Associates





## 4. About the Project

East Village at Knutsford is on a 1.5-hectare site less than 2km from Fremantle's GPO. It was a depot site for the WA Museum for many years. DevelopmentWA took control of the site on behalf of the State Government and conducted extensive remediation works due to contamination.



The site is in a light industrial part of Fremantle that is transitioning to residential and mixed use. The site will be divided into 3 main zones: two multi-res sites (approx. 0.18-hectares each) at the eastern end along Montreal St and one survey strata of 36 townhouses (1.15-hectares). The final development will feature a private street and two laneways running north-south and a pedestrian access way (PAW) running approximately east-west. The PAW and other greenspaces are ample, and the road is conceived as primarily a landscape feature. The common areas - laneways, pedestrian access ways and private street - are envisaged as part of a wider network of green spaces linking to Booyeembara Park and other proposed green spaces within the local structure plan.

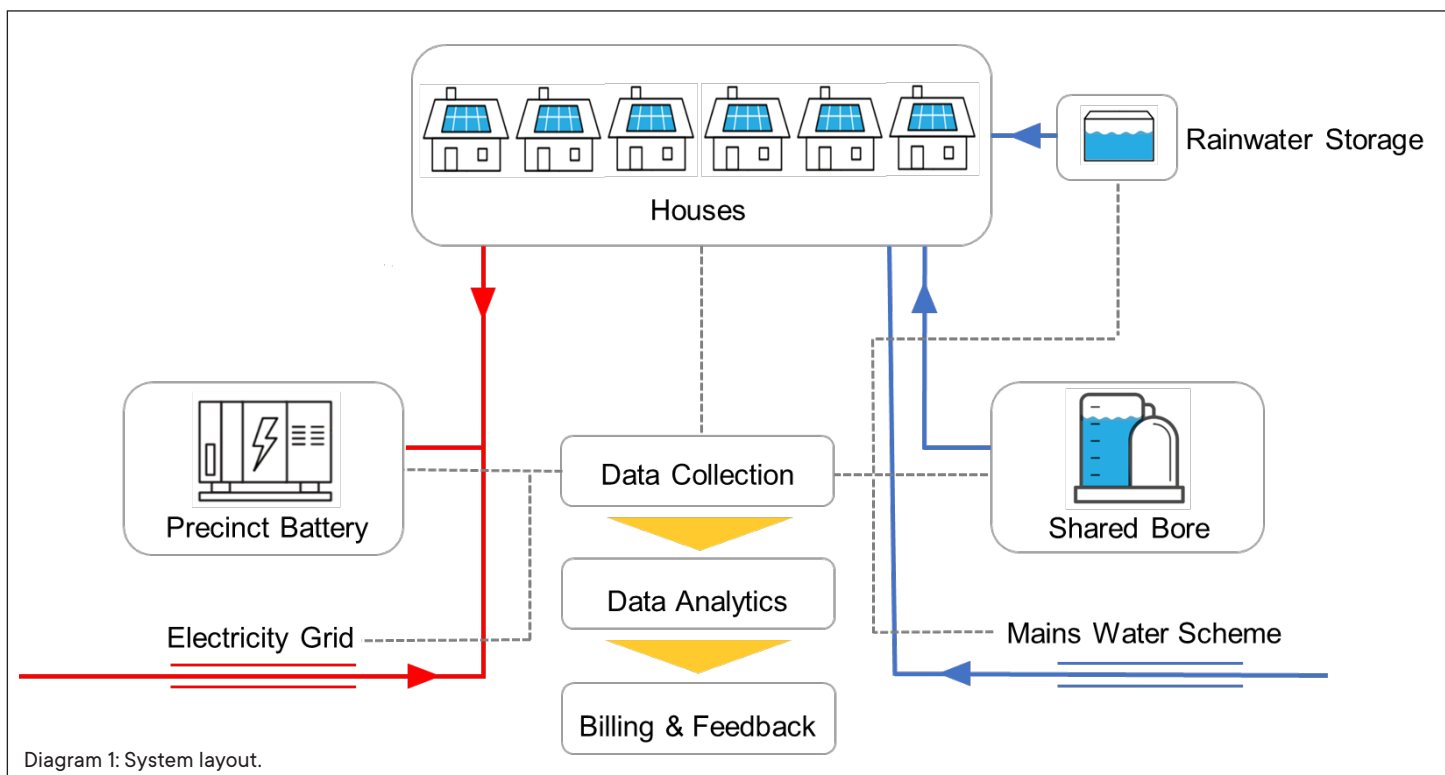
Systems for electricity and water supply and management take advantage of the strata governance model to achieve high levels of resource efficiency while demonstrating approaches that are innovative in the context yet based on a well proven set of technologies. A Smart Cities and Suburbs project that is being led by the City of Fremantle has brought an additional level of innovation to these systems, enabling new technologies to be tested without putting a reliable, 100% renewable energy supply at any risk.





## 4. About the Project (cont.)

The apartment sites are on separate titles and are being developed by third party developers selected via a Request for Proposal (RFP) process. But it's important to the project team that they support the One Planet vision for the project because we see them as an integrated, important aspect of the overall development. The RFP process will include asking developers to respond the One Planet Principles, with responses forming an important part of the assessment. The City of Fremantle will also require that these buildings adopt a high level of sustainable design. The first successful developer has returned a proposal that works with the established principles of East Village and will bring a strong affordability element also.





## 5. Message from Bioregional Australia

The East Village project location, just 15–20 minutes on foot to the Fremantle town centre and train station, is the ideal location for a medium-density, low-car, sustainable community. The current plans show how the townhouses at East Village will meet exceptional zero carbon and water efficient standards, with particular innovation in delivering these goals in a multi-lot development. The Request for Proposals for the adjacent 30+ unit apartment site demands a similar level of sustainability performance from the responding developers, while providing much-needed affordable one and two-bed accommodation.

The project aims to overcome the local planning requirement that all houses have two parking spaces by designing and marketing the townhouse parking space as multifunctional and encouraging purchasers to use the space for garden, outdoor seating, play areas or EV charge points for bikes, scooters or vehicles, connected to the onsite solar energy. This is a positive innovation that will need ongoing management to ensure it really does reduce vehicle ownership.

The project has also taken significant steps in demonstrating low embodied energy solutions, though 'reverse brick' construction (as opposed to double brick). Timber frame is still being considered and we recommend that this option is pursued. The Living Lab and sales centre site will also demonstrate the use of the carbon-positive, hemp-panelled mini demonstration house.

We commend East Village for its exceptional work in terms of energy, water and biodiversity and recognise that the One Planet Action Plan is a Global Leader in One Planet Living.

Ensuring that the apartment development meets the same standards as the housing, and that the site meets its transport and affordability objectives will be challenging. But we believe that the team has the skill and passion to rise to the challenge and look forward to following their achievements in their progress reports.

**Ben Gill, One Planet Living manager, Bioregional**



## 6. What is One Planet Living

We only have one Earth, but as a global society we're living as if we have several planets and consuming in ways which cannot be sustained. That means that a lot of things have to change. But we also know that if we work together we can enjoy just as much comfort, more security and better health, while living lives that are enriching, fulfilling and sustainable.

One Planet Living sets out to make this transition. One Planet Living is Bioregional's vision of a world where we can all live happily within the Earth's resources with space for wildlife, and a straightforward framework to achieve this.

One Planet Living is a simple framework which enables everyone – from the general public to professionals – to collaborate on a sustainability strategy drawing on everyone's insights, skills and experience. It is based on ten guiding principles of sustainability which we can use to create holistic, joined-up solutions.

Globally, there are now more than 600,000 people living in, working at or visiting places with a deep commitment to sustainability.

One Planet Living was created by Bioregional, a UK-based non-profit organisation, and developed together with WWF.

**Find out more – [www.bioregional.com/one-planet-living](http://www.bioregional.com/one-planet-living)**

	<b>Health and happiness</b>	Encouraging active, social, meaningful lives to promote good health and wellbeing
	<b>Equity and local economy</b>	Creating safe, equitable places to live and work which support local prosperity and international fair trade
	<b>Culture and community</b>	Nurturing local identity and heritage, empowering communities and promoting a culture of sustainable living
	<b>Land and nature</b>	Protecting and restoring land for the benefit of people and wildlife
	<b>Sustainable water</b>	Using water efficiently, protecting local water resources and reducing flooding and drought
	<b>Local and sustainable food</b>	Promoting sustainable humane farming and healthy diets high in local, seasonal organic food and vegetable protein
	<b>Travel and transport</b>	Reducing the need to travel, encouraging walking, cycling and low carbon transport
	<b>Materials and products</b>	Using materials from sustainable sources and promoting products which help people reduce consumption.
	<b>Zero waste</b>	Reducing consumption, re-using and recycling to achieve zero waste and zero pollution
	<b>Zero carbon energy</b>	Making buildings and manufacturing energy efficient and supplying all energy with renewables

Ecological foot printing shows that if everyone in the world consumed as many natural resources as the average person in Europe, nearly three planets would be needed to support human needs, where If everyone consumed as much as the average Australian, four planets would be needed (Global Footprint Network, 2018 National Footprint Accounts (Data Year 2014)).



## 6.1 Our Global Impact

One Planet Living uses the concepts of 'planetary boundaries' and ecological and carbon footprinting as headline indicators for environmental sustainability. Ecological footprint analysis is at the heart of One Planet Living as the overarching indicator of what constitutes a sustainable level of consumption, measuring our consumption of natural resources in global hectares of land and sea.

**Planetary Boundaries** is a concept of nine earth system processes the boundaries of which define a "safe operating space for humanity".

**Ecological footprinting** is a way of accounting for a wide range of our demands on the Earth's productive land and sea.

**Carbon footprinting**, derived from climate science, measures CO<sub>2</sub> and other greenhouse gases emitted from human activity such as burning fossil fuels and agricultural practices.

The Living Planet Report (WWF 2016) indicates humans are now exceeding the world's capacity to regenerate natural resources fifty percent faster than can be replenished. If our demands on the planet continue at the same rate, by 2030 the equivalent of two planets' worth of resources will be needed to maintain our lifestyles, critically limiting the capacity for future generations to access resources on earth.

Global levels of biodiversity are falling with the *Living Planet Index* (WWF 2016) reporting a decline of over fifty eight percent between 1970 and 2012, with freshwater species declining by eighty one per cent between 1970 and 2012. Unless action is taken now we could see a two-thirds decline in biodiversity in half a century from 1970 to 2020.

Well over half of our global ecological footprint comes from our carbon emissions. We know that humanity is warming the earth and changing the climate by putting carbon dioxide and other 'greenhouse gases' into the atmosphere, where they trap more and more heat as their concentrations build up. Scientists agree that we have to radically reduce our output of these gases if we are to limit the risks of dangerous changes in the climate.

Over 150 Heads of State attended the opening of the Conference of Parties (COP21) in Paris in December 2015, where the goal of limiting global temperature increase to well below 2 degrees celsius was reaffirmed, with an aim for no more than a 1.5 degree celsius rise [UNFCCC, Paris Agreement, 2015]. This is despite average global temperatures already increasing by over 0.8 degrees celsius.

The Paris Agreement requires all Parties to put forward their best efforts through "nationally determined contributions" and to strengthen these efforts in the years ahead. This includes requirements that all Parties report regularly on their emissions and on their implementation efforts.

To avoid a two degree rise, global greenhouse gas emissions need to be reduced by fifty percent from 1990 levels by 2050. For this to happen CO<sub>2</sub> emissions will have to be no more than 0.8 tonne per person per annum by 2050. This requires staged planning for the transition.

The time to act, to reduce emissions and increase ecosystem services and biodiversity, is now.



## 6.2 Ecological footprint assessment

The World Wildlife Fund (WWF) Ecological Footprint Calculator was used to compare the footprints of an East Village resident with a typical Perth resident in a modern house. The results indicate a single planet footprint for the EVK resident, based on the initiatives outlined in this Action Plan, versus 4.4 planets for the typical Perth resident.

Find the Calculator here:

<https://www.wwf.org.au/get-involved/change-the-way-you-live/ecological-footprint-calculator#gs.ioojob>

The following table lists the various assumptions and inputs to the calculator for transparency. As an online tool some inputs are limited, so the best fit has been used.

Footprint Calculator		Responses (selected from options OR input figures with references)	
Section	Question	Perth Typical	EVK
Food			
	How often do you eat animal-based products?	Very often (meat daily)	Occasionally (really like veggies - occasional meat, eggs/dairy)
	How much of the food that you eat is unprocessed, unpackaged or locally grown? (less than 320 kilometres away)	30%	70% (Based on availability of fresh produce, community gardens/orchard, and informed choices by residents)
Housing	Which housing type best describes your home?	House, running water	Duplex, townhouse or building with 2-4 housing units
	What material is your house constructed with?	Brick/concrete	Wood/steel frame
	How many people live in your household?	3 (rounded from 2.6, 2016 Census QuickStats)	3
	What is the size of your home?	186.3 m2 (CommSec Home Size Trends Report, 2018)	160 m2 (average of townhouses)
	Do you have electricity in your home?	Yes	Yes
	How energy efficient is your home?	Average (modern appliances, climate controls)	Efficiency-centered design (passive heating/cooling, advanced temperature control and ventilation, low electricity use)
	What percentage of your home's electricity comes from renewable sources? (either directly or through purchased green power)	25% Based on recent Synergy figures for the residential sector in Perth supplying rooftop solar in to the grid (SWIS). Slightly higher than the SRES national figure of 21.73%.	100%
	Compared to your neighbours, how much rubbish do you generate?	Same	Less



## 6.2 Ecological footprint assessment (cont.)

Footprint Calculator		Responses (selected from options OR input figures with references)	
Section	Question	Perth Typical	EVK
Transportation	How far do you travel by car or motorcycle each week? (as a driver or passenger)	210 kms (based on RAC 2018 info: <a href="https://rac.com.au/car-motoring/info/state-wa-transport-infographics">https://rac.com.au/car-motoring/info/state-wa-transport-infographics</a> )	210 kms (based on RAC 2018 info: <a href="https://rac.com.au/car-motoring/info/state-wa-transport-infographics">https://rac.com.au/car-motoring/info/state-wa-transport-infographics</a> )
	What is the average fuel economy of the vehicles you use most often?	10.6 L/100km (ABS Survey of Motor Vehicle Use (SMVU), 2016)	5 L/100km (based on target EV take-up and informed choices by residents)
	When you travel by car, how often do you carpool?	4.6% (2016 Census QuickStats)	70% (based on car share provision and informed choices by residents)
	How far do you travel on public transportation each week? (bus, train, etc.)	25km (2016 Census QuickStats: 11.8% public transport use, RAC 2018: 210kms/week travel)	75km (higher take-up due to proximity of train and cycling to station option)
	TRANSPORTATION How many hours do you fly each year?	7 hours (one interstate trip)	7 hours (one interstate trip)
<b>RESULTS</b>	Your personal Earth Overshoot Day is:	<b>24 March</b>	<b>19 January</b>
	If everyone lived like you, we would need:	<b>4.4 Earths</b>	<b>1 Earth</b>
	Your Ecological Footprint (global hectares or gha)	<b>7.5</b>	<b>1.6</b>
	Your Carbon Footprint (CO2 emissions in tonnes per year)	<b>11.6</b>	<b>2.6</b>
	Your Carbon Footprint (% of your total Ecological Footprint)	<b>53%</b>	<b>55%</b>

## 6.3. Leadership in Transformation

Review Theme	Project Response
Impact	<p>Good quality lifestyle with low operational cost for townhouses with potential very low energy &amp; potable water use in townhouse operation</p> <p>This is the first project in WA to mandate blower door testing for the final constructions. It has the highest mandatory NatHERS requirement of any project in WA and one of the highest in the country, with the Builder determined to exceed the requirement.</p>
Ambition	<p>The project is pioneering an innovative construction method and material in the Hemp House demonstration. This material is not ready for general implementation – hence the trial.</p> <p>East Village has a 7.5-star minimum, with the Builder determined to exceed the requirement. Each home will feature a large PV system connected to a shared battery to achieve close to energy independence.</p> <p>The L3 living lab building is a collaboration between DevelopmentWA and Curtin University. The project is a flexible study/meeting/communications facility that will activate the site in the early stages, provide a study space, provide a focus for activities and a platform for displaying data from EVK. L3 will test an array of building product innovations and will have a particular focus on the circular economy – looking at waste reduction, recycling, reuse and design for disassembly.</p>
Transformation	<p>Potential transformation of lifestyle across most aspects of One Planet Living; supported by research teams to measure and share learnings.</p> <p>There is a principle in place around connecting new residents to existing community groups and projects, prior to necessarily 'reinventing the wheel' onsite in every case.</p>








## 7. One Planet Action Plan Outcomes for 2022




One Planet Principle	2022 Outcomes	Key strategies
 <b>Health and Happiness</b>	To increase or support high levels of physical, social, mental and emotional health	<p>Programmatic tools to support the design intent. Best practice approaches to food sharing, including connection to existing local groups.</p> <p>Emphasis on cycling and active transport embedded in the house designs.</p>
	To increase or support high levels of happiness and wellbeing	Connection of residents to programs run by the City of Fremantle, and others, during the first 2 years of occupancy. Potentially including events, arts courses, seminars.
 <b>Equity and Local Economy</b>	To promote diversity and equality of opportunity across gender, race, age and sexual orientation	Apartments and ancillary dwellings included to provide affordable options.
	To create a vibrant, locally resilient economy where a significant proportion of money is spent locally	<p>"Align with City of Fremantle's 'Smart Cities &amp; Suburbs' project. Mutual benefit of Knutsford receiving some support for innovative programs onsite, while the Smart Cities project has a site on which to implement their innovation.</p> <p>Invite Curtin University to use one lot to house a 'Living Laboratory' installation for the intervening years until that lot needs to be built out.</p>
	To promote international trade that is conducted fairly and without exploitation	<p>Invite the CRC for Water Sensitive Cities to include a research intervention on the site (to be determined by the CRC - likely to be around water sharing/trading)."</p> <p>Fair Trade: residents will be informed of the City of Fremantle's 'Local and sustainable food' program.</p>
 <b>Culture and Community</b>	To foster a sense of place and belonging	<p>Features encourage walkers and exercisers to pass through the development. Including:</p> <ul style="list-style-type: none"> <li>- Exercise equipment and running circuits.</li> <li>- Distance markers to support runners. A 5km run circuit, including Boo Park and Knutsford green spine.</li> </ul>
	To encourage active citizenship	Enable resident engagement with local groups and programs by providing information.
	To enhance local culture, heritage and sense of place	<p>Architecture that refers to the light industrial heritage of the place.</p> <p>Street naming and artwork will address other heritage aspects (e.g. indigenous heritage) pending agreement with the City of Fremantle.</p>
	To nurture a new culture of sustainability	Living Lab onsite to offer information sessions for both occupants and visitors.

## 7. One Planet Action Plan Outcomes for 2022 (cont.)

One Planet Principle	2022 Outcomes	Key strategies
 Land Use and Wildlife	To ensure a positive net contribution to local biodiversity	<p>The site had been completely cleared for the previous use (WA Museum depot). This development will return green space including locally native species, and plants that provide useful foraging for local native fauna.</p> <p>Introduce specific new habitats and green links for fauna movement.</p>
	To enhance 'ecosystem services' such as providing clean water, clean air	Water Sensitive Urban Design (WSUD) initiatives will leverage the installation of required stormwater management features to achieve improved ecosystem services and biodiversity outcomes.
	To engage people in recognising the value of nature including its value to people	Providing interpretation of the site's natural and green infrastructure features.
 Sustainable Water	For everyone to have access to clean drinking water	Strategies compliment the design of the development leading to scheme (mains) water reduction
	To use water efficiently and return it clean to the environment	Water innovation and sectoral leadership: Connecting the rain water supply to hot water supply is a State-first innovation, already agreed in-principle with the authorities, such as the Health Department.
 Local and Sustainable Food	To make it easy and attractive for people to enjoy fresh, local, seasonal, healthy produce	Food in the landscape: edible trees in public domain. Many of these will be citrus due to their hardy nature and popularity of their fruit.
	To promote diets high in vegetable protein	Awareness raised around healthy diet.
	To promote sustainable farming which supports biodiversity and builds soil	Awareness raised around local sources of healthy food with transparency of provenance.
	To promote humane farming	Awareness raising around local sources of healthy food with transparency of provenance.
	To reduce or eliminate food waste	Awareness raising around organic waste, with advice on using unavoidable organic waste in the garden.
 Sustainable Materials	To reduce car dependence and the need for daily travel	Sustainable Transport: Cycle and pedestrian friendly design, connections to Fremantle path network, nearby bus route, and other alternatives.
	To make it easy and attractive for people to walk and cycle	Bicycle Storage: weather proof bike storage allowed for in townhouse dwellings and will be addressed by developers of the multi-dwelling sites.
	To promote car-sharing (including car clubs) and public transport	<p>Reduced private car ownership due to emphasis on other options.</p> <p>The town-home design rewards reduced car ownership by making the second car bay easily converted into an extension of the garden.</p>
	To promote low/zero-carbon vehicles including electric cars	EV charging allowed for in residential dwellings.
	To raise awareness of the impacts of, and promote alternatives to, air travel	Inform residents of alternative transport option then flying.



## 7. One Planet Action Plan Outcomes for 2022 (cont.)

One Planet Principle	2022 Outcomes	Key strategies
 <b>Sustainable Transport</b>	To promote sustainable living by make it easy to share and reduce consumption of natural materials	Facilitation of a sharing libraries (e.g. tool library) on the Online Community Notice Board (OnCoNoBo).
	To carefully consider every material and product and select them for their positive social and environmental benefit or for reducing negative impact	Climate responsive landscaping: use of deciduous trees to achieve seasonal shading (rather than built elements)
	To promote materials and products that are not toxic to humans or wildlife at any stage in their lifecycle from raw material, through manufacturing, use and end-of-life	Use of the ILFI Red List <a href="https://living-future.org/declare/declare-about/red-list/">https://living-future.org/declare/declare-about/red-list/</a>
 <b>Zero Waste</b>	To reduce wasteful consumption	'The builders to follow the MBA-WA Smart Waste principles.
	To maximise upcycling, re-use and recycling	Free composting and worm farm systems provided to residents. Composting may be done in shared below-ground units.
	To aim for zero waste to landfill	Diversion from Landfill: post occupancy waste will be taken to the South Metro Regional Council (SMRC) resource facility in Canning Vale, nearby. This facility currently achieves 70% diversion from landfill and is targeting 100%.
 <b>Zero carbon</b>	Buildings are energy efficient compared to a stated local or national benchmark or a recognised standard	Metering and monitoring. All townhouse dwellings to have access to detailed information on energy use.
	100% of energy consumed is supplied by non-polluting renewable energy generated on-site or off-site.	Meet electrical loads from onsite renewable energy (RE). Townhouses: Each rooftop 5kW PV system (180kW total). Shared battery system. Apartments: requested to install >1kW per bedroom.

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