



Government of **Western Australia**
Department of **Communities**



Climate Change in Western Australia

Issues Paper – September 2019

Department of Communities Response

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Department of Communities

The Department of Communities (Communities) is a multi-function human services agency. It was established in 2017 as part of the major reform of the Western Australian public sector.

Communities acknowledges on 25 November 2019 Premier McGowan announced further Machinery of Government changes that will see the some of the functions discussed in this paper move to DevelopmentWA.

Communities includes the Ministerial portfolio areas of:

- Child Protection
- Women's Interests
- Prevention of Family and Domestic Violence
- Community Services
- Disability Services
- Seniors and Ageing
- Volunteering
- Housing
- Veterans Issues
- Youth
- Regional Development

Everything we do is about people, place and home.

People...

reflects our focus on the needs and aspirations of the people we serve. We support people to be the best they can be, and to live a good and meaningful life, a life with opportunity.

Place...

relates to a collective sense of self and how and where people connect to the world around them.

Home...

is more than a building: it has a deep, emotional meaning. While home is different for everyone, it should provide both physical and emotional security.



Department of Communities and Climate Change

Communities thanks the Department of Water and Environmental Regulation (DWER) for the opportunity to respond to the *Climate Change in Western Australia Issues Paper* (the Issues Paper).

Communities acknowledges “... the McGowan Government’s commitment to work with all sectors of the economy to achieve net zero emissions for WA by 2050.”

We also recognise that an important part of strengthening local communities is assisting them to prepare for and adapt to the impact of climate change, particularly for the most vulnerable in our community and fundamentally the people Communities serves¹.

As published in 2019-20 Budget Papers, Communities had a total operating budget \$3.4 billion in 2018-19 and is involved in a large number of activities across the state generating economic activity, jobs and providing services to some of the most vulnerable people in our community.

Department of Communities Activities – Size and Scale

Land and residential housing development

Communities’ land development activity represents 12% of the land production across the state. Communities is a leader in the residential development industry and has a role to play in leading the market in adopting sustainable building practices to adapt to and mitigate climate change.

Communities has a long history of implementing sustainability initiatives across its commercial developments to improve environmental, economic and social sustainability by:

- reducing living costs
- improving the built form
- influencing and leading the market to provide sustainable and innovative solutions
- increasing individual and community wellbeing, and
- reducing the impact of our construction activities on the environment.

These initiatives have had positive flow-on effects to our accommodation programs as most of Communities developments

¹ Sevoyan, A, Hugo, G, Feist, H, Tan, G, McDougall, K, Tan, Y & Spoeher, J 2013, *Impact of climate change on disadvantaged groups*:

Issues and interventions, National Climate Change Adaptation Research Facility, Gold Coast, 180 pp.

include dwellings that are used for our social and affordable housing programs.

Housing Assets

Communities is the largest landlord in the WA, owning approximately 51,000 assets across five accommodation programs:

- Public housing (including remote Aboriginal Housing)
- Community housing
- Key worker housing
- Government Regional Officer Housing (GROH)
- NGO housing.

Along with tenancy and property management, services costs for the maintenance of the housing assets is approximately \$200 million per year (provided under a head maintenance contract model).

Communities has been proactive in implementing sustainability activities to support social housing tenants to reduce ongoing household costs and contribute to reducing the use of our limited natural resources. For example, in partnership with the Water Corporation, Communities has implemented a program to reduce water usage by the top 1,000 water users in public housing for the Perth metropolitan area.

Commissioning for Services

Communities provides human services to some of the most vulnerable people in in our community; including children, women, people with a disability, seniors and those people and families on low incomes.

While some services are provided internally by Communities staff, for many services we need to call on the expertise of external stakeholders and our service sector partners.

Communities commissioned approximately \$976 million towards services provided by funded agencies last financial year. This large economic impact comes with the ability to have significant influence to encourage service providers to be moving towards achieving net zero carbon emissions by 2050.

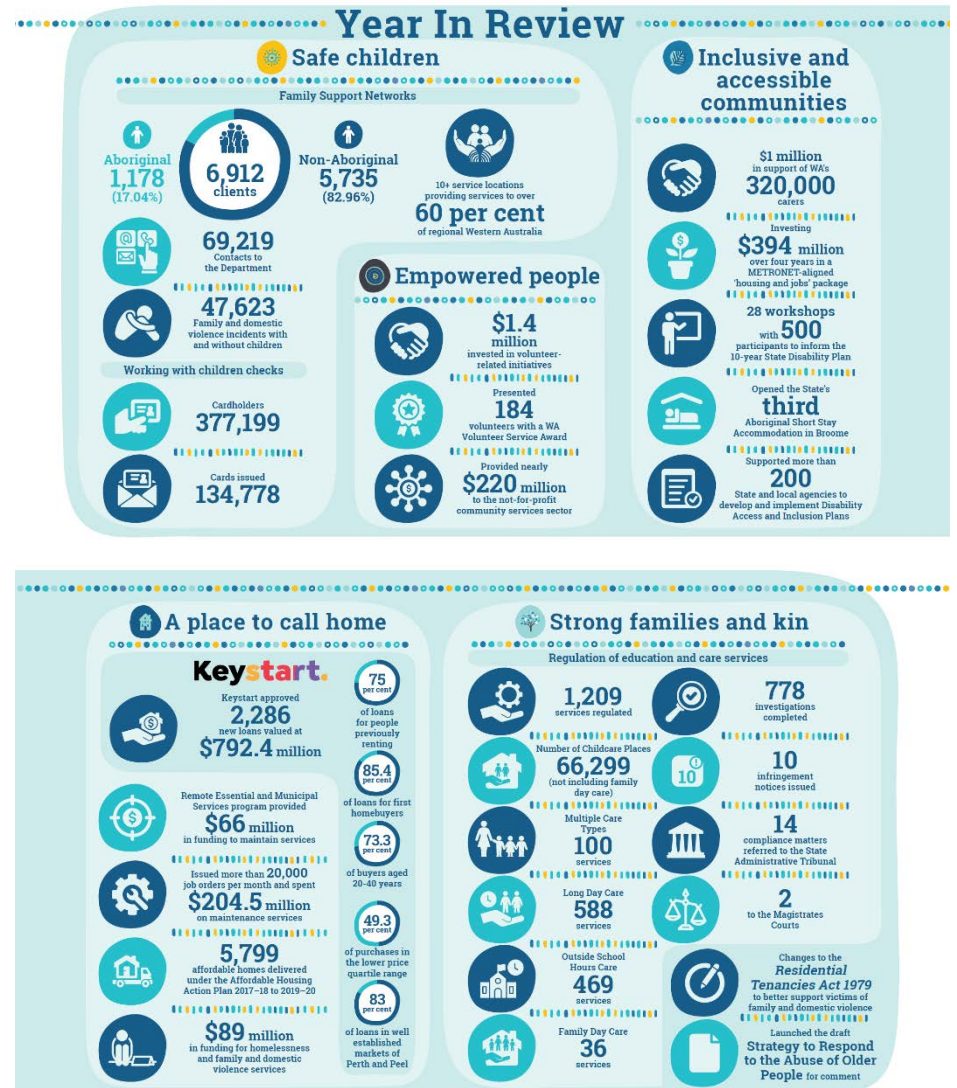
Corporate Footprint

Following public sector reform, Communities is now one of the largest agencies in the WA Public Sector. With approximately 6,500 staff located throughout Western Australia, we have a responsibility to be reviewing our own internal activities and seeking to achieve net zero carbon emissions by 2050.

Climate Change Challenges

While Communities is supportive of any Government action on climate change, there will be challenges in implementing any adaptaion and mitigation initiatives. These will be discussed in detail throughout our response to the Issues Paper and are summarised below:

- A shortage of focus, skills, knowledge and expertise within Communities to assess climate change risks
- The need for increased funding to support the implementation of adaptation and mitigation activities
- Maintaining and increasing economic stimulus and jobs growth through our commercial and commissioning activities
- Communities has a Sustainable Procurement Guideline which supports ensuring the provision of goods and service achieves social, economic and environmental sustainability. Given the large amount of activity the agency is involved in, it must be considered whether Communities has a role in encouraging or even mandating actions on climate change from procurment proponents and commissioned service providers
- Communities considers not only enironmental sustainability but also economic and social/communitiy sustainability. Finding the balance between these three pillars of sustainability can be challenging with economic sustainability often taking precidence over environmental and social/community sustainability.



Issues and Opportunities for Western Australia

In responding to each of the key areas, Communities will provide commentary on:

- Activities Communities is or has been involved in and examples of where Communities may already be contributing to the outcomes sought
- Opportunities and challenges for Communities
- Ideas for exploration.

1 | Transforming energy generation

- ▶ What are the main challenges for decarbonising Western Australia's electricity supply while ensuring adequate generation capacity, security and reliability?
- ▶ What are the most effective ways to overcome these challenges by 2030?
- ▶ Should the electricity sector make a pro-rata (or greater) contribution to Australia's national greenhouse gas emission targets?
- ▶ How fast do you think the transition of the electricity sector should occur?

Communities supports the McGowan Government's announcement of the Energy Transformation Strategy. Communities is particularly interested in the outcomes of the Distributed Energy Roadmap as this will assist Communities in

making decisions about the best renewable energy options for implementation across its activities.

Land and residential housing development

Across Communities' commercial developments, renewable energy initiatives have been implemented to assist in the reduction of ongoing costs of homes and reduce reliance on fossil fuel generated power. Communities continues to research, trial and assess different renewable energy options across all of its developments.

Communities is looking for opportunities to combine solar PV with electric vehicles. This combination creates an opportunity for distributed storage of clean electricity within the south west interconnected system. In this way, devices which use, generate or store electricity (including electric vehicles) will increasingly form part of our power system. This has huge advantage over exporting PV-produced power to the grid (reduced transmission infrastructure demands).

The implication for Communities is ensuring designs of housing and precincts are able to facilitate this opportunity (which is rapidly approaching commercial feasibility).

There are multiple projects where renewable energy initiatives have been implemented and some examples are below.

Harrisdale Green

The Harrisdale Green project began in 2010 in partnership with Cedar Woods and is expected to yield 430 dwellings with new land released in 2019.

A cash rebate of up to \$2,500 is provided to home buyers who install a 1.5kW photovoltaic renewable power supply system on the roof of their home. Cedar Woods has provided a large amount of these rebates, with approximately 80% of purchasers into the development taking advantage of the solar rebate.

A rebate of \$200 is being provided to home buyers who install a gas boosted solar hot water system. Also, home buyers are encouraged to install rainwater tanks approximately 3,000 litres in capacity, plumbed into the main toilet and laundry of homes. Cedar Woods is also providing a cash rebate if the rainwater tank is installed with the construction of the home, within 18 months of settlement. To date, Communities has observed that the take-up of the rainwater tank and gas boosted hot water system rebates is much less than the solar PV rebate.

In addition, the developer will be installing waterwise gardens to the front of every home.

The combination of all these sustainability initiatives will provide home buyers with reduced utility bills, assisting in maintaining ongoing affordability.

Stage 4 of the development was released in October 2019. Communities has sought expressions of interest from builders for

this stage and sustainability measures are being requested as part of their responses.

Housing Assets

Across our accommodation programs and particularly for social housing, a number of alternatives to traditional energy generation have been implemented including:

- Solar PV trial projects
- Heat pumps
- Solar hot water systems
- LED lighting
- Replacing external lighting with solar alternatives in public housing complexes.

The aim of these initiatives is to reduce costs for tenants and provide more efficient ways of managing Government assets to reduce costs to Government.

Communities is committed to delivering best-practice environmentally sustainable developments. Communities' focus is on working with and through the market to ensure low to moderate income households have access to safe, appropriate, secure and affordable housing. Communities acknowledges the development of renewable energy options as a crucial driver to the provision of long-term affordability and sustainability for Western Australian residents.

Solar PV trial for Public Housing

In 2012, Communities partnered with the Public Utilities Office to install solar panels at 412 public housing properties. While the trial results did acknowledge the potential for public housing tenants to benefit from the installation of solar panels, the requirement for a significant upfront capital investment and ongoing maintenance liabilities was not sustainable. As a result, Communities was not in a position to extend the trial.

Communities is currently collaborating with other agencies including Synergy, Western Power, Energy Policy WA, and DPIRD to investigate potential solar power solutions for government-owned properties and developments.

The relationship between the Government, as a landlord, and the social housing tenants it serves, presents a number of unique challenges which need to be resolved to ensure the long-term viability of installing solar PV on Government-owned properties. Communities continues to investigate solutions to these challenges.

Increases in energy costs can have a disproportionate impact on people on low incomes. Communities is currently developing the next WA Housing Strategy 2020-2030 (the Strategy).

The Strategy will consider ways of improving ongoing housing affordability, not just affordable rental or purchase costs.

While Communities is focused on increasing the performance of its new dwellings within current financial constraints, the quality of older housing stock and funding to implement adaptation measures is a barrier to climate change adaptation in the sector at present².

2 | Industry innovation

- What measures have been implemented by your business to lower energy use or emissions?
- What are the barriers to decoupling energy use and emissions in the resources sector?
- Have you assessed the implications of the low-carbon transition for your business or sector? How are these risks disclosed to stakeholders?
- What exemptions should apply to trade-exposed sectors in reducing our emissions?
- How can the Government of Western Australia foster clean industries and technologies?

Corporate Footprint

Communities, as with all general government agencies, works with the Department of Finance (Finance) in the procurement and

² Instone, L, Mee, K, Palmer, J, Williams, M & Vaughan, N 2013, [Climate change adaptation and the rental sector](#), National Climate Change Adaptation Research Facility, Gold Coast, 200 pp. – page 140

management of government office accommodation. This includes standards for office accommodation to be environmentally sustainable³.

The new Communities central office accommodation in Fremantle will house approximately 1,700 staff and will be aiming to achieve 4 Star Green Star Accreditation, 4.5 Star NABERS energy rating and 4 Star water rating.

Additionally, the Housing Authority previously coordinated a number of sustainability initiatives across its three central buildings being:

- City Switch Program
- Changing light bulbs to LEDs
- Implementation of a Building Management System
- Campaigns to reduce staff energy consumption, increasing NABERS ratings for buildings (from 2.5 Star in 2013 to 4 Star in 2016)
- Targeted campaigns to staff to increase awareness and implementation of sustainability initiatives:
 - Switching off electronic devices and light switches
 - Increased recycling
 - Using the stairs instead of the lifts
 - Encouraging alternative transport use (e.g. bicycle repair workshops and carpooling services)
 - “Green Corner” website with resources.

The WA public sector is one of the largest employers in the state, which brings with it opportunities to implement sector wide initiatives to move the sector to net zero carbon by 2050.

Land and residential housing development

An important consideration for Communities is the residential land and housing development industry. Communities will often partner with the private sector to deliver large projects, lending itself to a collaborative approach to industry innovation and leading the market to foster sustainability and lowered carbon initiatives.

There are often actual and sometimes perceived barriers to taking a more sustainable approach to land and residential housing development. However, as a leader in the market, Communities continues to collaborate, research, develop and implement innovation initiatives.

³ Department of Finance, [Government Office Accommodation Standards](#) March 2018.

The Amble

Communities, in collaboration with Yolk Property Group Pty Ltd and Ventura Home Group Pty Ltd, is transforming the former Hainsworth Primary School site to deliver the Amble Estate Girrawheen (The Amble). The Amble is delivering environmentally sustainable living through innovation in design, infrastructure, construction methods, materials and technologies.

Bioregional's One Planet Living sustainability framework is being implemented to guide built form and land development to deliver holistic, sustainable change, grounded in the reality of how people live their lives.

The Amble is utilising recycled and sustainable materials during construction including:

- recycled road base;
- recycled footpath;
- recycled asphalt, and;
- recycled limestone retaining walls.

In addition, the Amble is using timber-framed construction in a variety of homes. This sustainable construction method helps reduce onsite waste and carbon emissions.

Small lot homes and medium-density housing are key concepts at The Amble. Both assist to minimise the overall footprint and increase liveability. Increasing density near the city centre has been a goal for Western Australia for some time. By providing

innovatively designed small lot homes on 150m², buyers are getting more liveable space, at an affordable price.

Solar PV is also being offered to the Amble residents.

The Amble is the first residential estate in Western Australia to offer a complimentary Sustainable Living Package to reduce non-renewable energy and water use, ultimately creating cost savings for households. The package includes:

- oxijet showerhead pressure connectors
- reticulated vegetable garden and compost bin
- waterwise front landscaping with edible fruit trees
- landscaping to front verge
- a choice of R5.0 Insulation batts, ceiling fans with lights, LED downlights or skylight, (up to the value of \$1000).

Bioregional recently awarded Global Leadership to The Amble's One Planet Action Plan, placing international recognition on the estate as a One Planet Living community.



Artist's impression: The Amble Estate

Insurance and climate change

Climate change threatens the costs and viability of insurance due to extreme weather events and insurers covering at a loss some parts of Australia that are considered disaster-prone⁴.

Increasing temperatures, declining rainfall, increased bushfire risks and rising sea levels all have the ability to affect property development and established property markets.

Sea level rise could inundate residential buildings at a huge cost to individuals and the wider economy. The current residential property market downturn has had far reaching impacts on the WA economy. A question facing government is how we prepare and adapt to these changes and maintain economic activity.

3 | Future mobility

- What are the barriers to purchasing a low-emissions vehicle for your household or business?
- What can be done to facilitate the uptake of electric and other low-emission vehicles in Western Australia?
- How can we further encourage use of public transport and active transport, such as walking and cycling?
- How can we ensure that Western Australia isn't left behind in the transition to cleaner transportation?

Land and residential housing development

In the design of urban developments, consideration needs to be given to facilitating integrated transport modes from existing public transport services through to emerging public transport; such as electric ride sharing services and autonomous vehicles.

Just as important will be shifting commuter reliance on personal vehicles. Changing commuter behaviour can be assisted by changes to planning requirements so parking availability is reduced and public transport is seen as the better, more convenient option.

For example, the Vauban district of Freiburg in southern Germany is considered to be one of the world's best examples of sustainable urban living. The district was planned around green transportation where pedestrian and bicycle paths form a highly-connected, efficient transportation network with every home within walking distance of a tram stop and all schools, businesses and shopping centres located within walking distance. Cars are allowed but must limit their speed to less than 5km/hour, give priority to people not in cars and car parking is only available in the community lot on the edge of the district.

This model of urban design has made ownership of cars unnecessary and difficult to do even if you wanted to – 57% of

⁴ Edwards, I., 2016: [Insurance and climate change](#). CoastAdapt, National Climate Change Adaptation Research Facility, Gold Coast

households that previously owned a car decided to let their car go and 70% of inhabitants live without a car.

Mirco-mobility transport options should also be considered to support commuters to travel the “last-mile” in comfort including increased bike infrastructure and development of urban form to support “walkability”.

Additionally, the integration of all transit forms under a common or integrated ticketing system would assist to increase ease of use for people using the services.

For some time, Communities has been focused on building residential developments around existing amenity which includes public transport and alternative means of transport. Transit oriented developments like Wellard and METRONET located developments like Brabham are examples of these.

Abode West Perth

Abode is a modern inner-city residential development that is situated within walking distance of public transport, retail, dining and entertainment options.

Completed in July 2015, the development offered purchasers the choice of apartments with scooter bays as an alternative to traditional car parking bays. Of the 86 apartments, 10 included scooter bays, and were amongst the first sold.

4 | Regional prosperity

- ▶ How will climate change affect your regional community?
- ▶ What steps can we take to further enhance the resilience of our regions and our primary industries?
- ▶ How can we support the agricultural sector to participate in the low-carbon transition?
- ▶ What opportunities do carbon offset markets present for Western Australian land managers, including Aboriginal groups?
- ▶ What matters should the State Government take into account in developing a strategy for carbon farming in Western Australia?

Regional areas of Western Australia have a high reliance on fossil fuel industries. It is important that regional areas are supported to find opportunities to develop low-carbon industries maintaining and increasing jobs in these areas. Equal opportunity needs to be provided.

Communities currently contributes to regional prosperity via the Premier’s Priorities which seek to increase the number of employed persons in Regional WA by at least 30,000 by 2023–2024. Communities contributes directly to this through construction contracts issued by the North West Urban Construction Development Builders Panel, which generate significant employment, including a total of 39 Aboriginal apprentices in 2018–19 and more than 50 per cent Aboriginal employment overall.

Communities' Aboriginal Economic Development strategy applies local Aboriginal employment targets to works and maintenance contracts, apprenticeship targets to specific projects, and targets for procuring from Aboriginal-owned head contractors, sub-contractors and suppliers.

Remote Aboriginal Communities

Communities provides housing management services for approximately 2,700 homes in 112 remote Aboriginal communities across the State.

Communities supports the health and wellbeing of people in regional and remote areas, with a particular focus on Aboriginal Western Australians. The North West Aboriginal Housing Fund is a \$200 million fund that invests in housing options and wrap-around services to empower Aboriginal people to use stable housing as a launchpad to attain better education and employment outcomes. The first projects commenced through the fund include the expansion of the successful transitional housing program in the East Kimberley, and extension of transitional housing into South Hedland. An expression of interest process commenced in April 2019 to identify the next set of projects that can be co-designed and delivered with Aboriginal partners to meet the needs and aspirations of local Aboriginal people.

Supporting existing housing in remote communities

In December 2018, the State Government agreed to receive a one-off payment of \$121 million from the Commonwealth

Government to assist with delivering critical services and investment for remote communities from 2018 to 2020. This funding followed the previous 10-year, \$1.1 billion National Partnership Agreement on Remote Housing that expired on 30 June 2018.

The absence of Commonwealth Government funding beyond this period represents a substantial financial shortfall that severely reduces Communities' ability to commit to new builds and compromises the effective delivery of planned asset management. This includes any new activities to adapt remote communities to climate change. The State Government will continue to support existing housing in remote communities, recognising its importance for social, cultural, economic, health and education outcomes.

5 | Waste reduction

- What areas can we target to further reduce greenhouse gas emissions from waste?
- What can households, businesses and government do to reduce their waste and compost more?

Land and residential housing development

Communities is an active participant in the *Waste Avoidance and Resource Recovery Strategy 2030 Action Plan*⁵ (the Action Plan). There are two actions assigned to Communities related to construction and demolition waste.

Construction and demolition materials that contribute most to landfill waste include concrete, asphalt, rubble, bricks, sand and clean fill.

The actions assigned to Communities support the implementation of sustainable government procurement practices that encourage greater use of recycled products and support local market development. Communities can influence the development industry to recycle more and use more construction and demolition waste in our developments.

While there have been changes to how construction and demolition waste can be used, including the recent changes to the classification of clean-fill and the expansion of uses for recycled aggregates in civil works projects, there continues to be a general lack of knowledge and information of the potential uses, as well as apprehension about the availability, quality and content of recycled materials.

Communities is a core partner of Sustainable Built Environment national research centre (SBEnrc) and is involved in a number of research projects looking at sustainable communities and

housing outcomes. This includes a project focusing on Construction and Demolition Waste: *Creation and Stimulation of End Markets for Construction and Demolition (C&D) Waste*.

More education to the development industry about the uses of construction and demolition waste would be needed and this research may assist with this.

Bentley 360 – Brownlie Towers Demolition

Bentley 360 is part of the Precincts – a collective program of urban infill activity that goes beyond just building new dwellings to considering what makes a community a genuinely good place to live.

A community and its culture matter. By seeking out and adopting best practice in urban development, we aim to set a new standard in sustainable and affordable housing that will breathe new life into Bentley and create a place with a heart and soul, where people feel they belong.

The reuse and repurposing of materials from Brownlie Towers and the broader site and has been an important consideration for the project team. Reusing and repurposing existing materials from the site reduces waste and landfill and helps to maintain connection to the history of the site. Below is a list of just some of the material reuse that has occurred on the site:

⁵ DWER, [Waste Avoidance and Resource Recovery Strategy 203 Action Plan](#)

- re-use of the old kerbing on the new learn to ride track in the Northern Parklands
- utilising existing roads and pathways – reimagining of old roadways into linear park, race track, and learn to ride area
- reuse/repurposing of footpath slabs
- repurposing of previous Canning Aquatic Centre infrastructure (umbrella frames)
- repurposing of Brownlie Towers bench seating
- reuse of Brownlie Towers shade structures
- reuse of Brownlie Towers bins as basketball hoops
- reuse of limestone road base for pump track and exercise trails
- use of mulch obtained from site due to the felling of trees of ill-health
- create timber benches from milled timber obtained from previous felled trees or ill-health trees on-site
- re-use of existing internal roads for other purposes including pedestrian games and carparking
- use of LED lighting in new street lights as a sustainable and lower energy light source.



97% of material from the Brownlie Towers demolition has been recycled – if not being reused or repurposed (pictured).

Aboriginal Communities

The Waste Strategy has no mention of addressing the significant, unregulated waste issues in remote Aboriginal communities. The Action Plan that sits below the Waste Strategy has one action relating to remote communities: *1.11 Managing waste in regional/remote communities: in consultation with relevant State Government agencies, local government and communities, develop pragmatic guidelines for the design, maintenance and management of waste services and infrastructure in regional/remote communities, including Aboriginal communities.*

Unless there is clear agreement on roles and responsibilities for waste management in remote communities, and appropriate

resourcing to implement agreed guidelines, this action alone will not result in any realised benefits. Waste management in remote communities is being considered by Communities as part of the overall delivery of municipal services to remote communities, however, it requires innovative solutions to overcome issues of remoteness and isolation, and education to address years of unregulated management.

A circular economy and the opportunities it presents are particularly pertinent to remote communities where projects have demonstrated the benefits of resource recovery. For example, the NGO WasteAid has provided cardboard balers to community stores and the bales are put on trucks after a store delivery which avoids a one-way trip with an empty truck and avoids significant amounts of cardboard going to landfill.

6 | Safe and healthy communities

- ▶ What are the main climate risks for your household or your community? What can be done to manage these risks?
- ▶ What are your biggest concerns about Western Australia's future climate?
- ▶ What could be done to ensure your community is better prepared for possible climate impacts?

Low income households and disadvantaged groups are most at risk from climate change impacts as they spend a higher portion of their income on essential goods and services such as food, energy and water. As the cost of essential goods and services increase due to the impacts of climate change on water supply, food production and higher temperatures; low income households' ability to meet household rent or mortgage repayments is reduced increasing the risk of being in housing stress.

To reduce the impact of climate change on low income households and disadvantaged groups, the following options could be explored:

- coordinated Federal, State and Local government rebates that are easy to access for vulnerable households;
- targeted support to improve the energy efficiency of their homes and appliance; and
- targeted energy efficiency behaviour change programs.

The impacts of climate change on human health is also well known with some cohorts of the community more affected than others because of factors such as where they live, their age, health, income, and occupation; and how they go about their day-to-day life⁶. People with a disability, chronic health condition and older Australians are most at risk from extreme heat events.

⁶ Department of Health, 2008, Health Impacts on Climate change: Adaptation strategies for Western Australia

Like most developed countries, Australia has an ageing population. The number of people in Western Australia aged 65 or over is projected to grow by 40 per cent to more than 500,000 by 2026⁷. With more people living longer, we can expect to see a greater number of people in the community impacted by climate change in respects to their health and housing costs.

Housing Assets

Adapting households to heatwaves, including homes that form part of Communities' accommodation programs, is an important part of adapting to rising temperatures from climate change.

The development of a specific framework for Western Australia to adapt households to heatwaves (or extreme weather events in general – floods, bushfires etc) may assist in helping government and individual households to prepare homes for these extreme weather events⁸.

Public Housing Climate Control Policy

The Housing Authority Rental Policy Manual⁹ contains direction about climate control initiative for public housing. The Climate

Control Policy talks about heating and cooling appliances and when they can/cannot be installed.

Generally, heating and cooling appliances are not installed in public housing unless they are for particular cohorts:

- Senior and disability accommodation within cold climate zones – and always subject to available funding
- Ceiling fans can be installed in properties in the North West or Kalgoorlie and remote areas – subject to available funding
- Insulation is installed where the tenant is over 80 years of age.

Cooling ceiling fans, air conditioning apertures and ceiling/wall insulation are provided in all new construction in the North West (since 1990). Communities will install ceiling fans to existing properties in the North West or Kalgoorlie and remote areas. Design features are considered in all new constructions in the North West and Kalgoorlie due to the climate fluctuations in those areas.

For heating, Communities will provide a heating appliance to designated seniors' (over 55 years) and disability accommodation

⁷ Department of Planning, 2015, WA Tomorrow, age by sex SA4, series B.

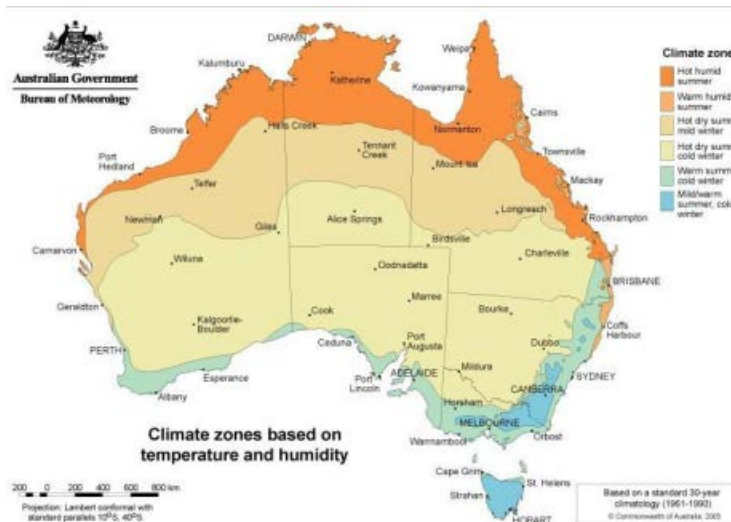
⁸ Saman, W, Boland, J, Pullen, S, de Dear, R, Soebarto, V, Miller, W, Pocock, B, Belusko, M, Bruno, F, Whaley, D, Pockett, J, Bennetts, H, Ridley, B, Palmer, J, Zuo, J, Ma, T, Chileshe, N, Skinner, N, Chapman, J, Vujinovic, N, Walsh, M, Candido, C & Deuble, M 2013, [A framework for adaptation of](#)

[Australian households to heat waves](#), National Climate Change Adaptation Research Facility, Gold Coast, 242 pp.

⁹ http://www.housing.wa.gov.au/HousingDocuments/Rental_Policy_Manual.pdf

within cold winter climate zones, as determined by the Bureau of Meteorology (see map pictured).

Heaters will not be automatically supplied to family and singles-designated accommodation, therefore tenants will need to apply for a room heater and be assessed for eligibility.



For insulation, Communities will install ceiling insulation at any property where the household head tenant or their partner are aged 80 years or older. Any tenant aged under 80 can apply for insulation to be installed at the property under special conditions.

As stated previously, while Communities is focused on increasing the performance of its new dwellings within current financial constraints, the quality of older housing stock and funding to implement adaptation measures is a barrier to climate change adaptation in the sector at present.

Public Housing response to heat waves

During the December 2012 heatwaves in Perth, Communities supported tenants through the heatwaves, particularly if there were concerns with tenant welfare.

Vulnerable tenants were identified and each contacted to discuss the following:

- Confirming family or friends could check on them and seeking emergency contact details
- Asking if they would like Communities to call them again in a few days and if they required further assistance
- Symptoms of heat stress and who could be contacted to seek help
- Providing heatwave advice from the Department of Health.

Each year Communities sends information to its tenants at the start of summer to raise awareness about preparing for the warmer weather, including heatwave facts and contact numbers of health providers.

In addition, Communities has publicly available information on its website about preparing for heatwaves.

Emergency Response

Under the Western Australia Emergency Management arrangements, the Department of Communities is a designated support organisation and coordinates the provision of welfare

support services to individuals and families affected by emergencies or natural disasters.

For the 2018-19 financial year, the Department of Communities responded to 15 incidents.

This included the deployment of 64 staff to provide support to Queensland following the Townsville floods, as well as the recovery of communities in the Pilbara in the aftermath of Tropical Cyclone Veronica.

With the potential increase in the number of extreme weather events that could occur due to climate change, further resourcing would be required to ensure Communities and emergency services providers can continue to support the community during emergency events.

Remote Aboriginal Communities

Aboriginal people in remote communities already suffer poorer physical and mental health than the national average due to a range of matters. Closing the Gap activities are meant to be addressing this, but it is acknowledged that there are still significant gains to be made. Consequently, residents of remote communities are vulnerable to the environmental alterations caused by climate change.

Examples of current issues causing existing health burdens include wastewater management that causes overflows of treatment ponds; poor roads and drainage causing water ponding issues leading to mosquito breeding; high dust levels due to

unsealed or poorly maintained roads. All these sorts of issues will be exacerbated through climate change impacts.

Housing in remote communities often deteriorates in condition faster than those in metropolitan areas or regional towns. This is generally due to environmental factors or either permanent or periodic overcrowding.

Historical investment in Aboriginal community services and infrastructure has been ad-hoc and has occurred in the absence of any formal land administration or planning strategy.

Essential services are generally not provided through licenced service providers and are not planned, maintained or operated to a regulated standard.

The current under-investment in essential services results in rapid deterioration of assets and expensive emergency repairs year on year by both the Department of Communities and the Department of Planning, Lands and Heritage on behalf of the Aboriginal Lands Trust.

Remote communities are already vulnerable to extreme weather events and unless we build our remote communities to infrastructure standards commensurate with the rest of Western Australia, this vulnerability will only increase as the impacts of climate change become more severe.

A strategic plan for investment into remote communities that focuses on the long-term sustainability and resilience will go a long way to 'climate-proofing' these communities.

7 | Water security

- What can we do to encourage Western Australians to use water more efficiently and adapt to a drying climate?
- Are there policies adopted in other jurisdictions we should consider for Western Australia?
- What are the best management options to deal with the water security implications of climate change for our agricultural sector?

Water is a precious resource. As the largest landlord in the state and conducting 12% of land development in WA per year, Communities has a responsibility to investigate and implement water saving initiatives.

Communities is an Essential Participant for the Co-operative Research Centre for Water Sensitive Cities (CRCWSC). There are five integrated research projects (IRP) as part of the CRCWSC and Communities projects are being used to implement the research completed in Tranche One and to undertake further priorities that were identified at the commencement of the CRCWSC in 2012.

Using the research and tools developed by the CRCWSC and continuing to support the Water Sensitive Transition Network will

be important to ensure there is an ongoing focus on water in Western Australia.

Communities is a partner to the *Perth Waterwise Action Plan*. The two-year plan is the start of a process to transition Perth and Peel to a leading waterwise city by 2030 and acknowledges and responds to the impact climate change has had on our access to and management of water in Perth and Peel.

The *Affordable Housing Action Plan 2017/2018 – 2019/2020*¹⁰ drives Communities to work with industry to trial new solutions and approaches to land use, infrastructure, place-making, housing design, construction, tenure, financing, partnering, and/or environmental efficiency, for example:

- promote water efficient practices and harness technology to support public housing tenants to save water and reduce their water bills
- demonstrate water efficiency outcomes in new Department of Communities land development projects in cooperation with the Department of Water and Environmental Regulation, Water Corporation and the Cooperative Research Centre for Water Sensitive Cities.

As an agency, we are involved in a large range of activities with a range of partners where we can lead and influence these groups

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http://www.housing.wa.gov.au/HousingDocuments/Affordable_Housing_Action_Plan_2017_2018_2019_2020.pdf

to consider waterwise approaches when working with us; including across our Corporate, Commissioning and Service Delivery activities.

Land and residential housing development

Communities has been implementing water-saving initiatives across its commercial developments for quite some time, with the ultimate aim to reduce people's reliance on potable water including:

- Communal rainwater capture in complexes for use in landscaping and general maintenance
- Water submetering in complexes
- Efficient fixtures and fittings
- Efficient appliances
- Waterwise gardens
- Use of community bores
- Rainwater tanks
- Precinct-level water solutions including efficient storm water and drainage management, minimisation of evapotranspiration and urban heat islands through tree retention, wetland retention and rehabilitation.

Brabham – a case for alternative water management solutions

Brabham is a development in the North-East corridor of Perth. In partnership with Peet, Brabham is expected to yield 3,300 homes as well as schools, shops and recreational areas close to the future Whiteman Park Station delivered under METRONET.

Water for the development is not secure – there is no available ground water for use for public requirements such as schools and public open space. This leads to lowered amenity in the area and an increased heat island effect. Additionally, Brabham also has a high ground water table which means areas of the development are prone to flooding.

To support finding solutions to these issues, Communities funded the development of an *Ideas for Brabham*¹¹ report which identified six ideas to make Brabham water-sensitive. For example, looking for building typologies that assist in minimising the need for fill.

Following on from the above report, Brabham has been the subject of CRCWSC IPR3 and IRP5 projects which included collaboration with Communities, our development partner Peet, DWER, DBCA, the City of Swan and research academics:

¹¹ CRC for Water Sensitive Cities (2018), [Ideas for Brabham](#). Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities

IRP3 was focused on better ways to conduct collaborative water management planning which will assist in gaining approvals for future stages of the development.

IRP5 is investigating development in areas of high groundwater. This research is ongoing and a final report will be provided to suggest solutions for managing high groundwater, for example managed aquifer recharge.

In order to secure some ground water for public services, Communities has acquired sufficient ground water licences to complete Stage 1 of the Brabham development.

Housing Assets

As with any landlord, Communities is receiving water bills from the Water Corporation directly and separately invoices tenants for usage. Communities has been working in partnership with the Water Corporation for some time on projects to reduce potable water use in our housing assets. Some of these projects includes:

- Leak detection device trial – it was found that as these devices required a high level of intervention, they did not perform well in a tenanted environment
- Upgrading maintenance technical specifications to match current National Construction Code WELS specifications for water fixtures and fittings
- 1,000 Water Audits Program Trial – working with the top 1,000 public housing water users to reduce potable water use through audits, maintenance and education

- Water Corporation Smart Meter data sharing – where smart meters are installed, the Water Corporation is reporting to Communities on any changes in water usage in households and plumbers are being sent to the properties to detect and fix any leaks.

Providing education and support for households is one of the most important parts to helping reducing water use and adapt to drying climate:

- to first understand where their water comes from
- how climate change is impacting these water sources
- what individuals, organisations and developers can do to reduce water use and find alternatives to traditional water sources.

Aboriginal Communities

Communities supports that ongoing investment is required to deliver reliable and safe water supplies to remote communities, supporting health and wellbeing in Aboriginal communities across the State.

Currently, remote community water and wastewater services are not regulated. The implications of this are:

- drinking water quality that sometimes does not meet Australian standards and no access to the dental health benefits of a fluoridated water supply
- water supply interruptions

- failing infrastructure leading to major water leaks, depletion of precious bore fields, sewerage pond overflows or leaks and the pooling of stagnant water (with attendant health consequences)
- residents of remote communities not having the same customer protections as most Western Australians, including the ability to claim hardship rebates.

Drinking water security is another issue for remote communities as it is generally considered within ‘unlicensed abstraction’ allocations but this is not written into the formal water allocation plans. This means that water supply for remote communities does not have legislative or even policy-level protection. This risks remote communities’ drinking water allocation being overlooked in climate change adaption planning.

8 | Liveable towns and cities

- ▶ What are the key barriers to improved energy efficiency for our built environment?
- ▶ What information or tools do you require to improve energy efficiency in your household or workplace?
- ▶ What energy efficiency standards or disclosure measures do you support for our homes and offices and the appliances we use in them?
- ▶ How do you think climate change will affect the liveability of your neighbourhood or region?
- ▶ How can we improve the retention of vegetation, particularly tree canopy, in our cities and suburbs?

Communities is genuinely interested in what makes a community a good place to live. We are committed to developing sustainable communities that integrate with the environment and connect people with jobs, services and community.

Sustainability is at the forefront of our thinking in how we plan, design and deliver our land and housing projects. We are increasingly aware of what we can do to protect the environment and how we can use resources more wisely.

Increasingly, our projects are seeking accreditation through frameworks such as EnviroDevelopment or Bioregional’s One Planet Living. This enables us to embrace a holistic and long-term approach to sustainability by adopting principles related to sustainable energy, water, local and sustainable food, sustainable materials, zero waste, zero carbon and culture and community.

Housing Assets

Communities has an aging asset base, with the average age of public housing stock being 27 years. Some of this stock is unsuitable and not adapted to climate change, with many:

- Lacking insulation
- Lacking air conditioners
- Burdened by heating and cooling costs
- Lacking Energy efficient appliances
- Reliant on solid fuel or gas heaters

As stated previously, while Communities is focused on increasing the performance of its new dwellings within current financial constraints, the quality of older housing stock and funding to implement adaptation measures is a barrier to climate change adaptation in the sector at present.

Land and residential housing development

The construction, maintenance and use of buildings, account for approximately 25 per cent of Australia's annual carbon emissions. The built form of houses is an important consideration as thermal-efficient building designs can assist with reducing the cost of heating and cooling a home. This is especially important given that climates will become progressively warmer. Additionally, carbon footprints can be minimised through these efficiencies, reducing the impact on the environment.

The effects of climate change may also affect where houses are built. Coastal sites and low-lying, flood-prone locations are susceptible to the effects of extreme weather. This could result in homes being uninsurable, a figure that the Australian Actuaries estimate could be one in ten homes.

While increasing density in the Perth and Peel metropolitan region is critical in curbing urban sprawl and achieving the State Government's infill targets, the design of this infill is equally as

important in reducing the impacts of climate change, in particular urban heat island effects.

To minimise urban heat island effects, Communities supports actions by State and Local government, developers and the community to minimise removal of mature trees and the planting of new trees through:

- mapping of tree location and consideration of tree health early in planning process
- retainment of trees in appropriate localities
- providing incentives for the retention and planting of new trees
- support for tree relocation where appropriate
- increase awareness of benefits of urban tree canopy.

Urban vegetation was identified as the dominant control on land surface temperatures. It is important that any urban heat island mitigation is done at the planning stages of suburbs and building.

But where this is not feasible or as a bridging strategy, the upgrade of assets through changes such as roof colour and increasing ceiling insulation can help reduce indoor temperature extremes¹².

¹² Barnett, G, Beaty, RM, Chen, D, McFallan, S, Meyers, J, Nguyen, M, Ren, Z, Spinks, A & Wang, X 2013, [Pathways to climate adapted and healthy low](#)

[income housing](#), National Climate Adaptation Research Facility, Gold Coast, 95 pp.) – page 1

9 | Resilient infrastructure and business

- What are the key climate risks for the primary industry or resources sectors?
- Do you currently assess the impact of physical climate risks on your business, assets or infrastructure?
- Is there information which would assist you to do this better?
- What are the best ways to enhance the resilience of public and private infrastructure?

Comments in relation to aspects of resilient infrastructure and business are addressed already throughout this submission.

10 | Protecting biodiversity

- Can existing land use and biodiversity management practices be modified to reduce vulnerability and improve resilience?
- Are there opportunities for new collaborations with landholders or communities to address climate risks and improve biodiversity outcomes?

Land and residential housing development

Protecting Western Australia's endemic plant and animal species is an important consideration in all of Communities' developments. Communities aims to protect habitat areas within our developments and ensure that our built and urban environment interfaces with these environmental assets in a sustainable and practical manner.

Purchasing land to offset development in Kiara for Black Cockatoos – Gingin

Communities owns a 13.7-hectare site in Kiara that is planned to feature two vibrant residential developments, designed in harmony with the site's cultural heritage and natural environment, with a range of modern housing options that are well-connected to nearby services and amenity.

The site was identified as being black cockatoo habitat. Communities has purchased a 76-hectare offset site at Gingin which is suitable for Carnaby's Cockatoo habitat. Carnaby's Cockatoos typically spend January to June on the Swan Coastal Plain. The remainder of the year, being the breeding season, is typically spent in the Wheatbelt.

Additionally, the development will retain over 30 per cent of the existing bushland at the Site for public open space and a significant proportion of trees will be retained for cockatoo foraging and habitation.

The development will also provide opportunities for re-vegetation of parts of the public open space, in collaboration with the local community.

11 | Strengthening adaptive capacity

- Are there gaps in the availability of adaptation knowledge, climate information or skills for your community, organisation or sector? How can these be addressed?
- What are the main barriers to the adoption of effective climate change adaptation?

Communities acknowledges there are gaps in the availability of adaptation knowledge, climate information or skills within the agency. This was made clear in developing our response to the Issues Paper. Communities would welcome from DWER strong leadership and guidance on the best ways to strengthen adaptive capacity in Communities.

Communities supports that climate risks are generally not spread evenly across the community, but are greater for vulnerable groups including remote Aboriginal communities, the elderly and the homeless.

Aboriginal communities face greater challenges and inequity and this demonstrates their current and increasing vulnerability to climate change impacts.

Communities accepts that local governments are on the frontline of climate change adaptation and are best placed to identify the adaptation needs of local communities and will typically be the first to respond to local impacts.

However, this is a challenge when many local governments do not include remote aboriginal communities in their strategic or infrastructure planning; they are not included as part of the local government “area”. As local governments do not provide any municipal services to remote communities, they are not best placed to identify the adaptation needs of local communities and this is currently left to a range of often Perth-based State government departments. Currently the Department of Fire and Emergency Services develops the emergency plans for remote communities (which is almost always Perth based).

Communities has seen some of the best outcomes occur when staff are supported to educate the people we serve face to face. It is suggested that we place a large focus on upskilling staff and services providers in climate change adaptation and mitigation initiatives¹³. For example, Communities staff completing tenancy inspections could discuss with tenant’s ways of reducing water and energy consumption.

¹³ Nicholls L., McCann H., Strengers Y. & Bosomworth K. 2017. Heatwaves, Homes & Health: Why household vulnerability to extreme

heat is an electricity policy issue, Centre for Urban Research, RMIT University, Melbourne. – page 43

Conclusion

The Department of Communities' activities, particularly land development and housing construction, relate to a number of the key areas outlined in the Issues Paper. The Issues Paper does not in itself have implications for the agency, but the policy outcome certainly will in the areas of construction standards; water and energy efficiency; protecting environmental attributes; encouraging behaviour change; and increasing resilience in infrastructure and service design and delivery.

Communities would seek for DWER to ensure that the proposed Climate Change Policy provide a detailed plan for getting the State to net zero carbon emission by 2050.

Given the implications of the future policy, Communities would welcome early and ongoing involvement in the development of the Climate Change Policy for Western Australia.