

Submission to the Department of Water and Environmental Regulation

**Climate change in Western Australia: Issues paper**

21 November 2019

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The Western Australian Council of Social Service (WACOSS) welcomes the opportunity to make a submission to the Department of Water and Environmental Regulation's (DWER) Issues Paper on Climate Change in Western Australia.

WACOSS is the peak body of community service organisations and individuals in Western Australia. WACOSS stands for an inclusive, just and equitable society. We advocate for social and economic change to improve the wellbeing of Western Australians and to strengthen the community service sector that supports them. WACOSS is part of a national network consisting of the National and individual State and Territory Councils of Social Service, who assist people on low income and experiencing disadvantage Australia wide.

**Climate change and inequality**

Climate change is the most significant and complex environmental challenge facing contemporary society. As noted by DWER, Western Australia is one of the most fire-prone regions in the world making it particularly vulnerable to the impact of increasing temperatures and drying conditions driven by climate change.<sup>1</sup> Further, rising sea levels will continue to impact our coastal areas towns and cities, extended periods of drought will continue to contribute to our drying landscape, and WA will see increases in the frequency of other extreme weather events.<sup>2</sup> It is critical that WA begin to make the transition to a cleaner, renewable and sustainable economy for all. WACOSS welcomes the development of a State Climate Policy, however stresses the importance of establishing timeframes for immediate action and implementation.

As the only state with rising carbon emissions, Western Australia clearly needs to do more to combat climate change. Australia is a signatory to the Paris Agreement to limit global warming to below two degrees Celsius and pursue a limit of 1.5 degrees above pre-industrial levels.<sup>3</sup> In order for Australia to meet its contribution to these targets, serious action must be taken to decarbonise our economy.

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<sup>1</sup> Department of Water and Environmental Regulation. (2019). [Climate change in Western Australia: Issues paper 2019](#).

<sup>2</sup> Ibid.

<sup>3</sup> Australia is also a signatory to the United Nations Sustainable Development Goals, which include taking urgent action to combat climate change and its impacts.

This is a significant challenge for Western Australia, where emissions have *increased* by 23 per cent above the State's 2004 baseline.<sup>4</sup>

Poverty significantly increases peoples' susceptibility to poor health and wellbeing outcomes resulting from climate hazards such as heatwaves, droughts, floods, cyclones, and wildfires. Research conducted by the Centre for Urban Research at RMIT highlighted the significant risk posed to at-risk households by the increasing prevalence of extreme heat, particularly in our tropical northerly climactic regions. This research found that nearly 88 per cent of surveyed service providers were aware of people considered 'at-risk' from climate-related hazards accessing their services, reporting that they often opted to avoid using air conditioners, with half also not using fans due to electricity costs.<sup>5</sup> Many of the service providers reported people experiencing adverse health impacts or declining mental health as a result of these conditions.<sup>6</sup> Not only does poverty increase the risk of poor mental and physical health, these outcomes further undermine individuals' income and asset position as well as their human capital, due to loss of productivity, employment, and education.<sup>7</sup>

It is overwhelmingly clear that those experiencing poverty are likely to be more vulnerable to the impact of climate change. With little to no access to resources, disposable income, choice, power and social connections, peoples' ability to cope, adapt and recover from these hazards is limited.<sup>8</sup> The provision of information and knowledge is simply not enough. A challenge for WA in decarbonising our electricity supply is in ensuring we have an equitable transition to renewable energy, where everyone is supported in addressing this global issue.

### **Universal food security**

The Intergovernmental Panel on Climate Change's (IPCC) *Climate Change and Land* report stressed the importance for reforming global food production systems amidst rising levels of food waste to reduce the amount of waste-related greenhouse gas emissions.<sup>9</sup> There is a clear relationship between food waste and food insecurity, particularly as surplus food often filters into the food relief system for people who are unable to afford food.<sup>10</sup>

With government support, the food relief system can be utilised to reduce the greenhouse gas emissions from food waste. In recognition that food relief in our community is no longer being experienced as a short-term emergency, WACOSS and key stakeholders developed the *WA Food Relief Framework* with funding from Lotterywest.<sup>11</sup> This framework sets out necessary actions to

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<sup>4</sup> Australian Government, Department of the Environment and Energy. (2019). [State and Territory Greenhouse Gas Inventories 2017](#).

<sup>5</sup> Nicholls, L., McCann, H., Strengers, Y., & Bosomworth, K. (2017) [Heatwaves, homes and health: Why household vulnerability to extreme heat is an electricity policy issue](#).

<sup>6</sup> Ibid.

<sup>7</sup> Islam, S. N., & Winkel, J. (2017) [Climate change and social inequality](#) (United Nations, Department of Economic and Social Affairs DESA Working Paper No. 152).

<sup>8</sup> Intergovernmental Panel on Climate Change. (2007) [Climate change 2007: Impacts, adaptation and vulnerability](#).

<sup>9</sup> Intergovernmental Panel on Climate Change. (2019) [Climate change and land](#).

<sup>10</sup> Western Australian Council of Social Service. (2019) [WA food relief framework report 2019](#).

<sup>11</sup> Ibid.

reform the food relief landscape in Western Australia, including the need for proactive government leadership on this issue.

One key area the framework addresses is food waste. Not only does food waste cost the Australian economy around \$20 billion annually,<sup>12</sup> it is a major contributor to climate change from the emissions that come from landfill to the resources used to produce the wasted food in the first place. The *National Food Waste Strategy* outlines several areas that food waste occurs from primary production, processing and manufacturing, and distribution as well as through consumer behaviour.<sup>13</sup> Food that is often unnecessarily discarded that could contribute to WA's food relief system.

In preparation of the 2019/20 WACOSS State Budget Submission,<sup>14</sup> we spoke to people experiencing hardship and often heard stories from people having to find alternative ways of ensuring they can access food. One person spoke of catching public transport daily to buy ice to keep their food fresh as they waited for a donated refrigerator to arrive. There are many stories like this in our state, where people are not only unable to preserve their food but also struggle to afford healthy and nutritious foods in the first place.

While the declining use of single-use plastics should be regarded as a step in the right direction towards the preservation of our environment, it must also be noted that the use of plastics to preserve food and prevent food waste is currently essential. There are a myriad of purposes plastic packaging plays, including protection, outlining key product information and ingredients, convenience and portioning, utilisation and handling, and waste reduction through preservation.<sup>15</sup>

One of the key ways we can reduce food waste, is through improved package design, packaging systems and recycling opportunities in the food supply chain.<sup>16</sup> Not only will appropriately preserving food for longer will reduce food waste and benefit our environment, it will also benefit people accessing food relief services who currently have to find alternative ways to ensure they have food on the table.

*“Staff need to understand; I feel judged by them. It took so long to get a fridge, I had to buy ice every day” – Person accessing emergency relief services*

Often it is adults and particularly parents bearing the brunt of food insecurity. The *100 Families WA Project* found around 80 percent of adult individuals reported living with low to very low food security, compared to around 58 per cent of children in the project.<sup>17</sup> This suggests that often parents are in impossible situations having to decide between feeding themselves or their children.

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<sup>12</sup> Commonwealth of Australia (2017). [National food waste strategy: Halving Australia's food waste by 2030](#).

<sup>13</sup> Ibid.

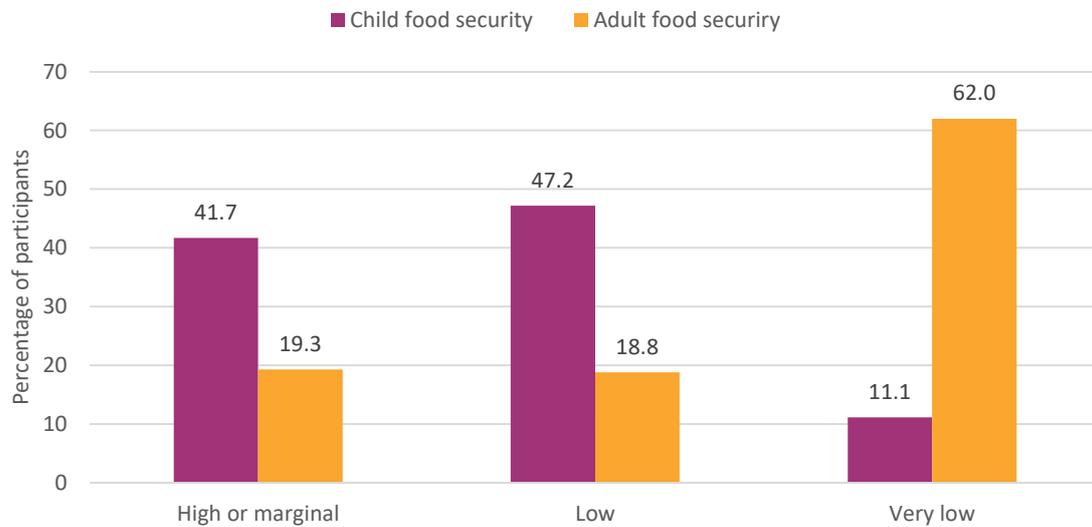
<sup>14</sup> Twomey, C., Hansen, G., Gray, J., Chambers, C. (2019). [A thriving community: Hope, inclusion and trust – Submission for the WA state budget 2020-2021](#).

<sup>15</sup> Vergheze, K., Lewis, H., Lockrey, S., & Williams, H. (2015). [Packaging's role in minimising food loss and waste across the supply chain](#). *Packaging Technology and Science*, 28(7), 603-620.

<sup>16</sup> Ibid.

<sup>17</sup> Seivwright, A., & Flatau, P. (2019). [Insights into hardship and disadvantage in Perth, Western Australia: The 100 families WA baseline report](#).

**Proportion of the 100 Families WA Sample (N=400) in Each Category of Food Security among Children compared to Adults on the USDA Household Food Security Module<sup>18</sup>**



*“The kids will eat everyday but parents will go hungry often. It’s a choice between bills, rent or food.”  
– Person accessing emergency relief services*

Women are at greater risk of food insecurity, and feel its impacts more strongly. Over one in four women in Australia (27 per cent) experienced food insecurity in the last 12 months, compared to 18 per cent of men. They are also more likely to have raised children on their own for an extended period (49 per cent compared to 28 per cent males). Single parent households (the vast majority of whom are single women) face the highest risk of food insecurity at 47 per cent compared to an overall population rate or 21 per cent.<sup>19</sup>

Regional and remote communities are a third more likely to experience food insecurity than those living in capital cities, and children are especially vulnerable.<sup>20</sup> Aboriginal people experience significantly higher levels of food insecurity, across both the metropolitan and regional and remote areas.<sup>21</sup>

Research shows that by reducing food waste by half globally would reduce food-sourced greenhouse gas emissions by around 20-30 per cent.<sup>22</sup> It is clear that by improving our food relief system we can not only support WA communities to become food secure, we also have an opportunity to reduce our waste and contribute to reducing WA’s carbon emissions. Implementing the recommendations outlined in the WA Food Relief Framework, investigating ways to better preserve our food and expand opportunities for recycling are ways we can address this problem in our state.

<sup>18</sup> Ibid.

<sup>19</sup> Foodbank Australia (2019) *Foodbank Hunger Report*. [www.foodbank.org.au](http://www.foodbank.org.au)

<sup>20</sup> Godrich, S., Lo, J., Davies, C., Darby, J. & Devine, A. (2017) ‘Prevalence of socio-demographic predictors of food insecurity among regional and remote Western Australian children’ *Australian and New Zealand Journal of Public Health*

<sup>21</sup> Lee, A., Ride, K. (2018). *Review of nutrition among Aboriginal and Torres Strait Islander people*. *Australian Indigenous Health Bulletin*, 18(1). <http://healthbulletin.org.au/articles/review-of-nutrition-among-aboriginal-and-torres-strait-islander-people>

<sup>22</sup> Bajželj, B., K. S. Richards, J. M. Allwood, P. Smith, J. S. Dennis, E. Curmi, and C. A. Gilligan. (2014). [Importance of food-demand management for climate mitigation](#). *Nature Climate Change*, 4(October 2014), 924-929.

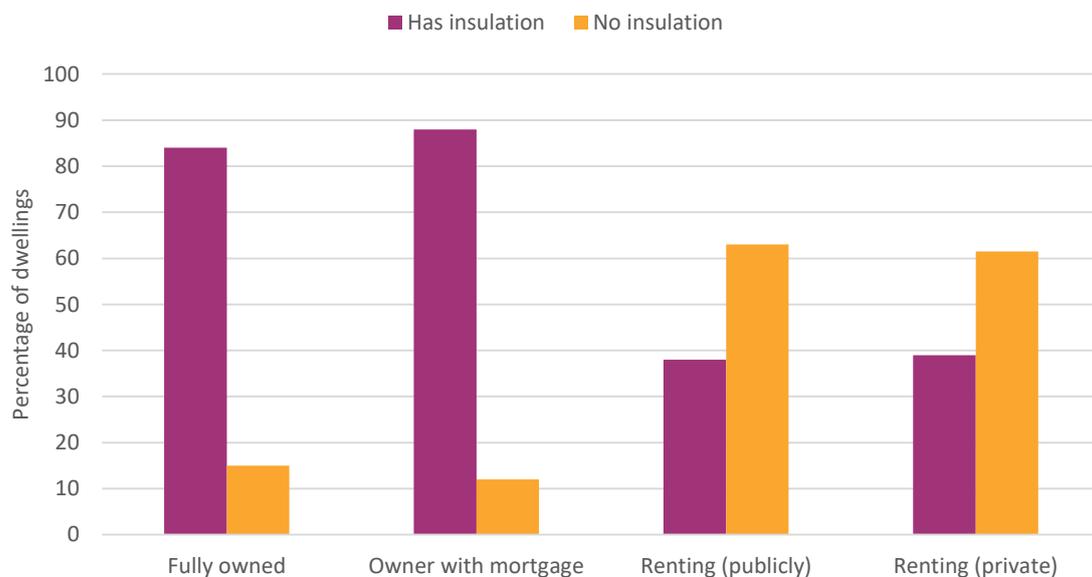
## Affordable access to climate appropriate homes

Households living in poor quality housing with inefficient appliances have limited capacity to reduce their exposure to extreme heat, and older households often underestimate their vulnerability to adverse health outcomes.

Poor quality housing is a substantial driver of people's experience of utility stress and energy poverty that significantly undermines households' capacity to be climate resilient. Common features of poor quality housing affecting peoples' ability to be climate resilient include lack of insulation; energy inefficient or faulty heating, cooling and hot water systems; and structural issues exposing the dwelling to the weather.<sup>23</sup>

The 2016 Bankwest Curtin Economics Centre *Energy Poverty in Western Australia* survey found that rental households were dramatically less likely to be insulated, meaning that those on low incomes were more likely to be using more power to regulate the temperature in their dwelling.<sup>24</sup>

**Percentage of dwellings with insulation in Perth 2009/10 (per cent)<sup>25</sup>**



Source: ABS. Cat. No. 4656-5

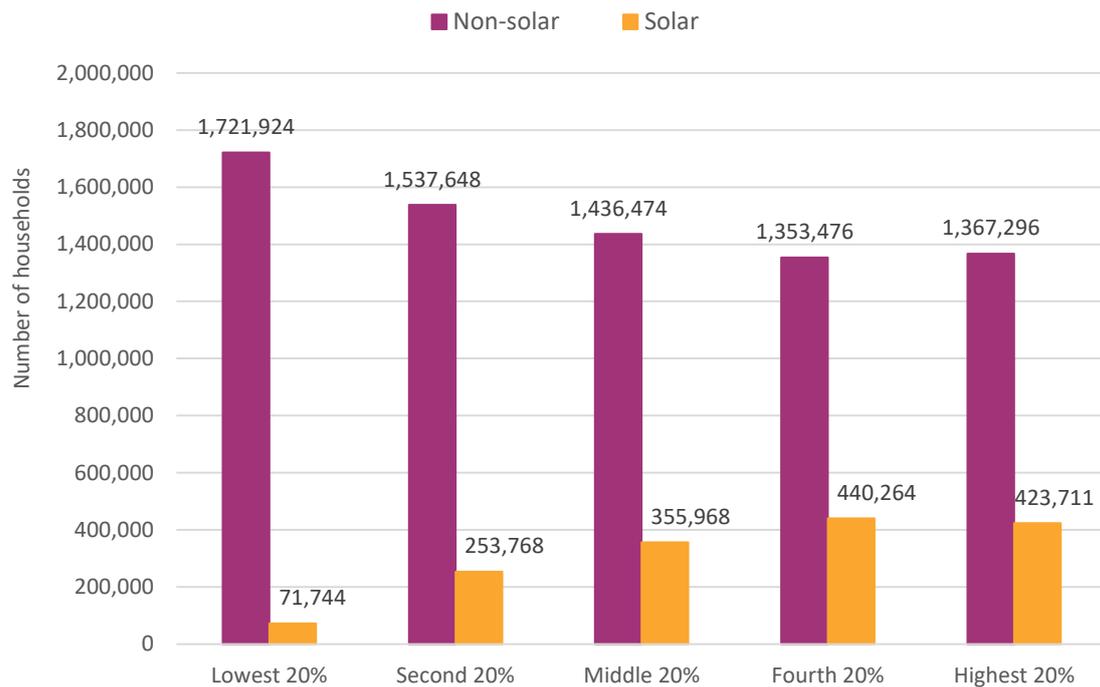
While the uptake of residential rooftop solar photovoltaics (PV) in Western Australia has been significant, ability to access this technology is not equal. Many on lower-incomes or in rental housing have fewer opportunities to benefit from reduced consumption cost, despite the longer-term cost benefit. As a result, increases in utility costs have disproportionately impacted on these households. Providing mechanisms for everyone to benefit from this technology is essential.

<sup>23</sup> <https://www.make Renting Fair WA.org.au/the-tenancy-ten/3-create-minimum-standards-including-climate-appropriate-housing/>

<sup>24</sup> Bankwest Curtin Economics Centre. (2016). *Energy Poverty in Western Australia: A Comparative Analysis of Drivers and Effects* (Research Report no. 2/16).

<sup>25</sup> Ibid.

### Solar panel households by wealth quintile Australia-wide<sup>26</sup>



Source: ACOSS and the Brotherhood of St Laurence (2018) *Energy Stressed in Australia*

Providing these households with the resources to become more energy efficient, through home audits and appliance upgrades can have a significant impact. There are many programs in the Eastern States that improve household energy efficiency for those on low incomes. These include the Tasmanian Energy Efficiency Loan Scheme, the Victorian Energy Upgrades program and the Healthy Homes program, and the NSW Climate Change Fund. Western Australia has not had a similar scheme in place since the axing of the *Hardship Efficiency Program* (HEP) in 2012. A revamped HEP should be introduced to support low income households to access energy efficiency measures based on the evidence of best practice.

#### Affordable and accessible transportation

Transportation is a major driver of rising carbon emissions, and WA is no exception. It has become imperative that people shift away from heavy polluting vehicles towards cleaner alternatives, including electric vehicles and public transportation.

The proposed METRONET precincts remain prime opportunities for building diverse, inclusive communities, featuring social housing dwellings that are integrated with accessible public transport. The new METRONET East redevelopment area around Bayswater, Forrestfield and Midland will act as a demonstration of how these precincts can be delivered as it will need to meet the Metropolitan Redevelopment Authority's affordable housing requirements, though even these are not ambitious enough.

This kind of piecemeal approach will not be sufficient to deliver the scale of social housing required and at the necessary speed. Inclusionary zoning that requires the provision of social and affordable

<sup>26</sup> Australian Council of Social Service, & Brotherhood of St Laurence. (2018). [Energy stressed in Australia](#).

dwelling in all new developments is essential for building inclusive communities throughout the state. Inclusionary zoning is standard practice in South Australia, the United Kingdom, the United States and many cities around the world with similar housing systems.

Western Australia needs to transition its entire public bus fleet to be fully electric. Analysis has shown that even when powered by coal and natural gas power, electric buses have lower emissions than diesel and natural gas buses.<sup>27</sup> This transition could provide an opportunity to reduce carbon emissions in the short term, while WA transitions towards a decarbonised electricity supply. Electric buses have already been deployed in China and a number of American cities, with California having set a target of operating an entirely emissions free bus fleet by 2040.

Public transport also needs to become more affordable and more accessible. Currently senior cardholders have access to free public transportation during the off-peak periods, and this should be extended to cover other groups who are vulnerable in our society, particularly those experiencing unemployment and those eligible for the recently established Asylum Seeker Hub concession. While these people have access to concessions, they often have the least income to be able to cover the cost of transport and have a greater need for it to be free.

### **Water supply in a changing climate**

Western Australia has been at the leading edge of climate change impacts in relation to water supply, with significant decreases in rainfall impacting on dam water levels in the seventies and another step-change in the nineties.<sup>28</sup> An on-average 23 per cent decrease in rainfall led to a 67 per cent decrease in runoff and hence dam water supplies – as a reduction in large rainfall events meant more water absorbed in situ by the landscape and hence less runoff.

This led to water restrictions, the development of alternative water supplies (including increased groundwater use, desalination, wastewater recycling and managed aquifer recharge technologies), promotion of water efficient fittings and appliances, and the ‘*waterwise*’ public education campaign.<sup>29</sup> As a result desalination now supplies 48 per cent of water to the two million people connected to the Integrated Water Supply Scheme (Perth, Goldfield and Agriculture regions and parts of the southwest).<sup>30</sup>

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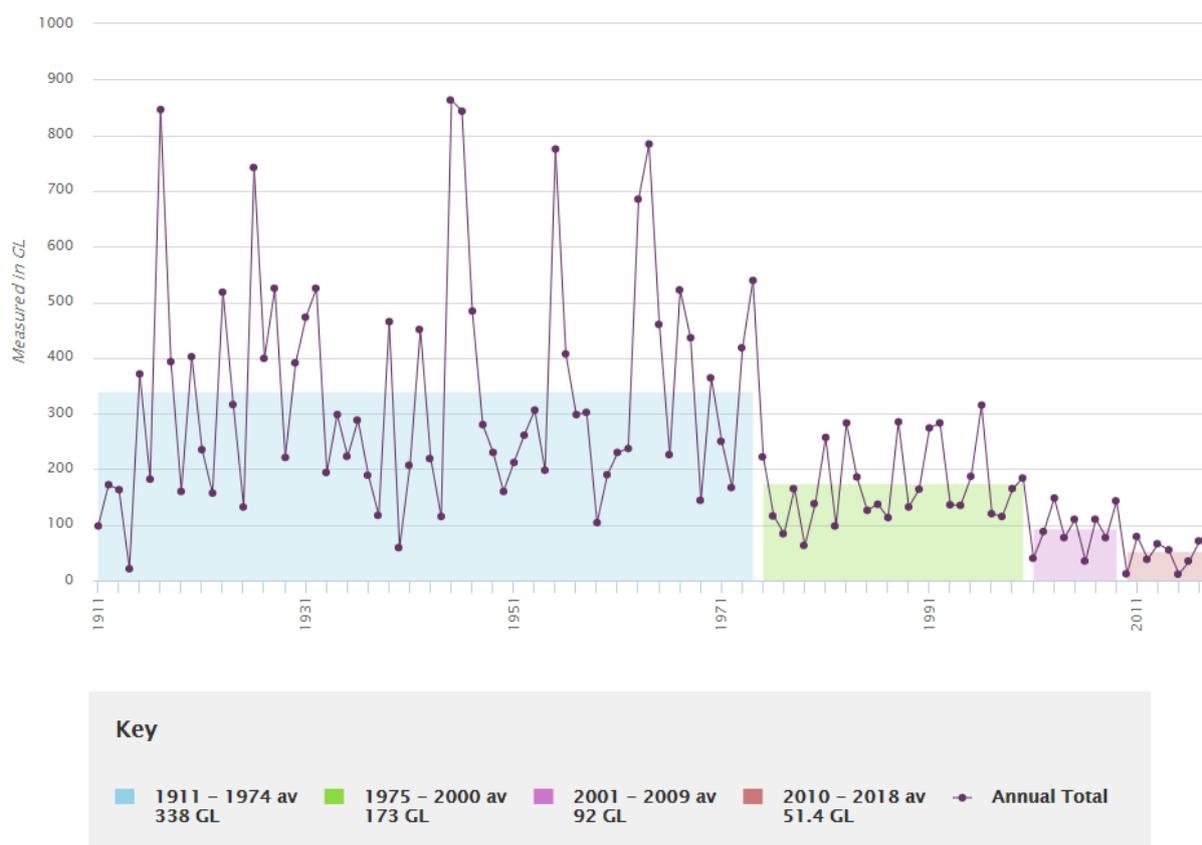
<sup>27</sup> Union of Concerned Scientists. (2018, July 18). [Study finds electric buses are cleaner in all parts of country](#) [Press Release].

<sup>28</sup> CSIRO (2009) *Surface water yields in south-west Western Australia. A report to the Australian Government from the CSIRO South-West Western Australia Sustainable Yields Project*. CSIRO Water for a Healthy Country Flagship, Australia. Department of Water WA (2009) *Streamflow trends in south-west Western Australia*. Surface water hydrology series Report no. HY32, Perth WA.

<sup>29</sup> Water Corporation (2009) *Water Forever: Towards Climate Resilience. 50 year plan*. The Water Corporation of Western Australia, Perth WA. [watercorporation.com.au](http://watercorporation.com.au)

<sup>30</sup> Water Corporation *Annual Report 2018*. [www.watercorporation.com.au](http://www.watercorporation.com.au)

## Historical Streamflow



Source: Water Corporation (2019) [Historical streamflow](#).

Climate modelling by CSIRO predicts the southwest of WA will see further decreases in rainfall and run-off [refs], further increasing our reliance on alternative water sources, and further increasing the energy intensity of that supply.<sup>31</sup> Water Corporation has over time developed renewable energy generation to power its services, including Exmouth and Broome bore-fields, Leonora and Beenyup wastewater treatment, wind and solar farms in Mumbida and Greenough River that directly power desalination. Water supply provides an excellent opportunity for the use of renewable technologies, as there is the opportunity to flexibly use solar and wind energy as it is generated for desalination, recycling and pumping and use existing water storage options to respond to changes in demand.

The rising energy intensity of water treatment and supply will drive rising water costs, potentially increasing the burden of cost recovery placed onto lower income households. Low income households spend a greater proportion of their weekly budgets on utilities and so are disproportionately impacted by rising prices and at increased risk of water hardship. Further, they are less likely to have access to water efficient appliances and more likely to be living in poor quality housing with leaky water supplies. State government water and concessions policy needs to ensure

<sup>31</sup> Silberstein, R. P., Aryal, S. K., Durrant, J., Pearcey, M., Braccia, M., Charles, S. P., Boniecka, L., Hodgson, G. A., Bari, M. A., Viney, N. R., and McFarlane, D. J. (2012) *Climate change and runoff in southwestern Australia*, J. Hydrol., 475, 441–455. Zhang, X.S., Amirthanathan, G.E., Bari, M.A., Laugesen, R.M., Shin, D., Kent, D.M., MacDonald, A.M., Turner, M.E. and Tuteja, N.K. (2016). *How streamflow has changed across Australia since the 1950s: evidence from the network of hydrologic reference stations*. Hydrol. Earth Syst. Sci., 20, 3947–3965

the supply of water as an essential service needed for drinking, cooking, bathing and cleaning is fair and affordable for all.

### **Community and social service sector climate resilience**

Supporting our communities' adaptive capacity is the responsibility of everyone, including Government. Governments must go beyond the provision of tools and information about the impacts of climate change towards providing communities with the necessary funding and resources to making adaptation to the impacts of climate change achievable.

Co-designing in partnership with communities and locally-based services to develop individualised local climate change adaptation and resilience plans is one way we can increase the capacity of communities to adapt. This would also provide avenues for communities to learn and build on existing knowledge about climate change and how to minimise its impacts.

It is also important to note that local and regional community-based services are often relied upon in disaster responses to support communities in recovery. Unsustainable funding arrangements for WA's services has meant that much of the sector is at or over capacity. Changes in funding arrangements can mean that local authorities may not know who to contact, particularly as services are often not included in local disaster planning. Similarly, reductions in funding in real terms and changes in program arrangements can mean that services may not still have the capability to contribute as expected in disaster response and recovery. Further, the changing nature of volunteering, with an ageing population and fewer people able or willing to contribute time also presents a threat to the resilience of local communities and civil society.

Research undertaken by the ACOSS and Climate Risk Pty. Ltd. in 2013, found that community service organisations in WA and NSW were less likely to have engaged in risk management, mitigation and transfer practices and were therefore less resilient to climate change and extreme weather impacts than organisations in other states.<sup>32</sup> Community service organisations surveyed as part of this research reported high levels of vulnerability to the loss of buildings and service centres, with 50 per cent of respondents predicting their organisation would still be out of operation after a week and 25 per cent indicating they would be at risk of permanent closure.<sup>33</sup> Half of the organisations surveyed predicted that an extreme weather event would cause a short-term increase in the demand for services, with 30 per cent predicting that the increased demand would be maintained long-term. Importantly, those organisations that predicted that the demand would be maintained long-term were most likely to be providing services relating to housing and homelessness, emergency relief and advocacy services.<sup>34</sup>

A project that previously existed to address the climate reliance of sector organisations in Western Australia and their infrastructure was the *Climate Change Readiness for Community Services* program.<sup>35</sup> From 2009 to 2012, WACOSS was funded by the Federal Government *Jobs Fund* scheme to run the project. The program trained people experiencing unemployment to conduct energy

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<sup>32</sup> Mallon, K., Hamilton, E., Black, M., Beem, B., & Abs, J. (2013). [\*Adapting the community sector for climate extremes: Extreme weather, climate change & the community sector - Risks and adaptations.\*](#)

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

<sup>35</sup> WACOSS. (2010). [\*Climate change readiness for community services: Information for community services.\*](#)

efficiency audits and then employed them to conduct free climate change and energy efficiency audits for participating community service organisations. 726 audits were conducted, with 400 organisations receiving \$1,000 minor retrofit grants and four \$25,000 major retrofit grants as a result.

Programs such as this were able to both increase the energy efficiency and climate resilience of community sector organisations, while also providing training and job opportunities for those experiencing unemployment.

## **Recommendations**

- Legislate for a 100 per cent Renewable Energy Target in WA by 2030
- Ensure access to the benefits of renewable energy for all low-income households
- Develop minimum energy efficiency and climate appropriate standards for rental properties
- Implement the recommendations outlined in the WA Food Relief Framework
- Introduce a revamped Hardship Efficiency Program to support low income households to access energy and water efficiency measures based on the evidence of best practice
- Shift to percentage-based energy and water concessions
- Transition the entire Transperth bus fleet to be fully electric
- Free public transport for all concession-card holders, including those experiencing unemployment or with refugee status
- Resource the development of place-based community-led *Climate Change Adaptation and Resilience* plans for all WA communities
- Review existing funding contracts in the community service sector to ensure they include opportunities for additional funding for disaster relief services.
- Establish effective programs for community sector organisations to adapt to climate change, emergencies and disasters, improve resilience of their service users, and ensure continuity of care for vulnerable people

If you would like to discuss this submission further, please contact the WACOSS Research and Policy Development Leader Chris Twomey at [REDACTED] or [REDACTED].

Yours sincerely,



Louise Giolitto

Chief Executive Officer, WACOSS

*WACOSS respectfully acknowledges the Traditional Owners of Country throughout Western Australia and recognises their continuing connection to land, waters and community. We pay our respects to them and their cultures, and to Elders both past and present.*