

**2014**

**INAUGURAL CURF ANNUAL FORUM**

**CONNECTING LEADING RESEARCH AND PRACTICE  
FOR A SUSTAINABLE AUSTRALIAN CAPITAL REGION**

April 2015

Tayanah O'Donnell and Brian Weir

**CURF.**

CANBERRA URBAN AND REGIONAL FUTURES  
AT THE UNIVERSITY OF CANBERRA



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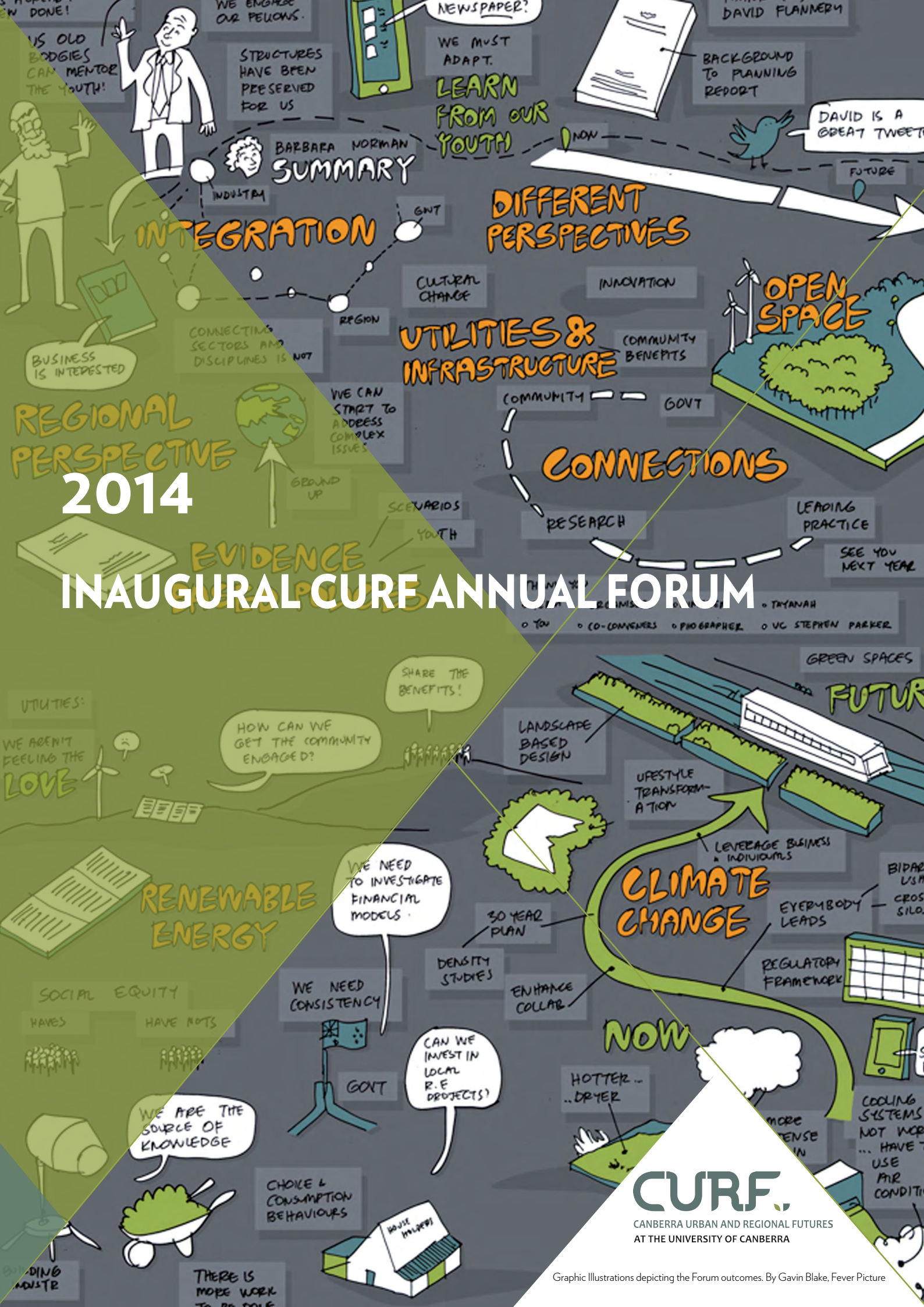
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2014

# INAUGURAL CURF ANNUAL FORUM



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## FORUM SESSION LEADERS

### CLIMATE ADAPTATION FOR CANBERRA AND THE REGION

Session chair: Dr Bob Webb, and Theme Leader: Green Growth, CURF University of Canberra

Overview presenter: Jo Mummy, Research Fellow, CURF University of Canberra

Rapporteur: Tayanah O'Donnell, Research Fellow, CURF University of Canberra

### RENEWABLE ENERGY FOR CANBERRA AND THE REGION

Session chair: Jon Sibley, Senior Manager Energy Markets and Renewables, ACT Government

Overview presenter: Liz Veitch, South East Region of Energy Excellence

Rapporteur: Hamish Sinclair, Research Fellow, CURF University of Canberra

### INTEGRATED TRANSPORT FOR CANBERRA AND THE REGION

Session chair: Kristin Blume, A/g Senior Manager, Major Projects and Transport, ACT Government

Overview leader: David Flannery, CURF University of Canberra

Rapporteur: Viv Straw, Research Fellow, CURF University of Canberra

### COMMUNITY HEALTH AND WELLBEING FOR CANBERRA AND THE REGION

Session chair: Anthony Burton, Active Living Coordinator, Heart Foundation (ACT Division)

Overview leader: Professor Helen Berry, University of Canberra, and Theme Leader: Health and Wellbeing, CURF University of Canberra

Rapporteur: Brian Weir, School of Management and CURF University of Canberra

## EVENT SPONSORS

The *Forum* Convenors and CURF gratefully recognise the support of our sponsors for this event:



## FOREWORD

Canberra Urban and Regional Futures (CURF), based at the University of Canberra, had its origins in the realisation that urbanisation, population pressures, the impacts of climate change and an awareness of the environmental and social impacts of urban growth were driving an increasing interest in research for evidence based decision making for cities and regions. Our overall objective in CURF is to find new pathways and implementation strategies for sustainable futures for cities and regions. In particular, CURF provides an international collaborative platform for the creation and dissemination of research and knowledge across four key research themes: *settlements and infrastructure, climate change and sustainability, green growth, and health and wellbeing*.

In 2014, CURF set out to create an annual event to bring knowledge brokers, stakeholders and other interested parties together to discuss current knowledge gaps, to identify solutions, and to showcase research (underway or completed) related to CURF's four research themes.

On 21 November 2014 CURF hosted the *Inaugural CURF Annual Forum*. Over 100 leaders and practitioners from research, industry and government in climate change adaptation, renewable energy, integrated transport and health and wellbeing in NSW and the ACT attended. This publication is a synthesis of the outcomes of the *Forum*. I thank all those attending and contributing to the *Forum*, in particular those who chaired and presented at the *Forum* sessions. I also thank my colleagues at CURF for their work on the organisation and very successful running of the *Forum*.



### PROFESSOR BARBARA NORMAN

Director *Canberra Urban & Regional Futures*  
Chair, *Inaugural CURF Annual Forum 2014*

## THE FORUM DINNER

CURF



## 1. INTRODUCTION

In the four years since its inception, Canberra Urban and Regional Futures (hosted by the University of Canberra) has achieved significant growth and reach in its role as a boundary organisation. CURF's primary objective is realised in bringing together researcher, industry, government and the community to discuss and analyse ideas, knowledge, implementation and outcomes as they cut across CURF's themes. CURF's themes are:

- Settlements and infrastructure
- Climate change and sustainability
- Green growth
- Health and wellbeing

The *Inaugural CURF Annual Forum* had two core objectives aligned with the four themes: the identification of knowledge gaps; and the development of potential options to address these gaps. As is core to CURF's frame of reference, the focus of the *Forum* was to provide opportunities for collaboration and the co-production of knowledge, and to develop strategies in achieving these two core aims.

With the central theme of the *Forum* being 'Connecting Leading Research and Practice for a Sustainable Capital Region', a key purpose was to showcase research and policy activity from the University of Canberra, the Australian National University and the Australian Capital Territory Government. These organisations are key CURF partners.

### Structure of the Forum

The *Forum* was held over an evening and a day (Thursday-Friday, 20-21 November 2014) at the University of Canberra. The *Forum* dinner, hosted by the University of Canberra Student Planning Society, was held on the Thursday evening. Mr Tony

Carmichael, Executive Director of Strategic Planning, Environment and Planning Directorate, ACT Government, was the keynote speaker. He provided an excellent overview not only of the importance of planning for the future of cities and regions, which was also an excellent 'scene setting' for the *Forum* the next day.

The *Forum* proper began with an overview and welcome, followed by the official opening and Ministerial addresses. It then broke into four workshops. Each began with an overview by a regional leader. They facilitated the workshop sessions, with *Forum* participants being encouraged to engage and explore current knowledge gaps, and identify possible options for the long term sustainable future of Canberra and the Region. Each session had a rapporteur who collated information and delivered a summary to the final plenary session. The four workshops were:

- Climate Adaptation for Canberra and the Region
- Renewable Energy for Canberra and the Region
- Integrated Transport for Canberra and the Region
- Community Health and Wellbeing for Canberra and the Region

This publication details the outcomes of the *Forum*. Following this introductory section, Section 2 provides the opening remarks and overview of the event by the *Forum* Chair, CURF Director and University of Canberra Professor Barbara Norman. This is followed by the official opening address by University of Canberra Vice-Chancellor Professor Stephen Parker AO, and an address by Simon Corbell MLA, ACT Minister for the Environment (and now also ACT Deputy Chief Minister). Section 3 provides a detailed discussion of the *Forum* workshop outcomes. Section 4 provides a synthesis of these outcomes. A bibliography of the major papers and documents arising in the *Forum* discussions is in Section 5.





**BRIAN WEIR AND TAYANAH O'DONNELL**

*Forum Convenors*

Finally, you will see on the inside front and outside back covers graphic illustrations provided by a graphic artist who sat in on the workshop plenary session. They provide a unique capturing of the outcomes of the *Forum*. They are also shown in Appendix 3.

### Acknowledgements

We would like to thank Professor Stephen Parker AO, ACT Deputy Chief Minister and Minister for the Environment Simon Corbell MLA, and Professor Barbara Norman.

We would also like to thank Jon Sibley, Kristin Blume and Tony Carmichael from the ACT Government, Liz Veitch from South East Region of Renewable Energy Excellence (SERREE) and Anthony Burton from the ACT Heart Foundation for their contributions. We are very thankful to our valued sponsors—Elton Consulting, the ACT Government and our UC Planning Students Association, without which the *Forum* could not have been held.

Finally, we would like to thank our CURF colleagues Professor Will Steffen, Dr Bob Webb, Hamish Sinclair, Jo Mummery, David Flannery, and Viv Straw, for their invaluable assistance.

## 2. CONNECTING LEADING RESEARCH AND PRACTICE: FORUM OPENING

### 2.1 Overview and welcome: Professor Barbara Norman

It is my great pleasure to welcome all of you here today. This *Forum* is a significant step forward for CURF. It's our first annual *Forum* and with the response we have had here today we're clearly filling a gap. The gap that we are seeking to fill is to provide a place where people, wherever they work, whatever university, whatever government department, whatever local council or state or federal agency (and we have Federal, New South Wales and ACT Government officers and a number of NSW local councils represented here today) come to share leading research with leading practice towards understanding and delivering action on the ground. I hope over time this will result in a more sustainable Capital Region.

When we thought about doing this, we realised there is no event currently in the ACT that provides this opportunity. There are events within governments, events within the community and there are events within particular universities. But this *Forum* provides a platform to bring us all together. So I hope when you look back in five years' time—when we've hired out the Convention Centre and there are 1000 people there, and it's the place to come—that you realise you were here when it began. So thank you very much for being here today. I would like very much at the beginning to acknowledge the Minister for the Environment, Simon Corbell MLA. He has a number of portfolios but he's in that capacity this morning. Simon has been a great supporter of CURF, instrumental in achieving our first funding from the ACT Government and has been an active supporter since.

Our Vice-Chancellor, Professor Stephen Parker, is an inspiring leader. He is well known in the community and has done a fantastic job for the University of Canberra. Bob Neil, the ACT Commissioner for Environment and Sustainability, and Dr Maxine Cooper are here. Welcome.

Welcome to all the other distinguished guests here, and friends of our organisation. As many of you would know, the origin of CURF is four years ago about this time, actually two days apart. It was in November in 2010 that it was launched by the Vice-Chancellors of UC and ANU (Professor Ian Chubb at the time) and Tony Carmichael, who now works for the ACT Government—it's a very Canberra story—but who was then in the federal department representing Simon Crean, and finally Andrew Cappie-Wood, Head of Chief Ministers Department ACT Government at the time.

So it started very much as a collaborative venture at that point. It's now four years old and it's really quite a timely event this one. It's also, I think, a very good time to reflect on what's happened and what's occurred with CURF and where we take it in the next four years—hopefully with some funding again. Hopefully with a more diverse source of funding and I am always happy to talk to any of you about opportunities of collaborative research, funding and partnerships.

I'd like to say a few words about the activities of CURF. We're not a research institute and people do get a bit confused about this. The University has its research institutes and they're very fine research institutes. As to what CURF is, I think the closest analogy I can describe to you is a collaborative research network. So people belong to their own research institutes and their own organisations. But they come together here to work on research, work on collaborative research, particularly around synthesis and transformation projects. We also do a lot of engagement clearly, and we also increasingly have a number of you contributing in a guest lecture role, and in an honorary role. Thank you very much too for contributing to our teaching programs. We have an undergraduate degree here in planning and a postgraduate Masters in planning and I'm also very happy to talk to you about those possibilities as well. In terms of the research that we do, even though it's small it seems to be going very well. We were very proud to win the national award by the Planning Institute of Australia this year for our South-East Coastal Adaptation research. I think it really encapsulates the kind of work that we're interested in doing. It involved seven local councils from Wollongong to Lakes Entrance, the New South Wales Government, regional organisations and three universities, the University of Canberra, the Australian National University and the University of Wollongong.

Leading a multidisciplinary team sounds easy, but trust me it's quite challenging and so we were really pleased that through that process we learnt as a group a great deal, and we were also very pleased to have that recognised at the national level. I thank all of my team who are here who participated in that. The other dimension to that work was about communicating research effectively, and our partnership with the ANU School of Art Field Studies program, who ran a six month field program that culminated in an art exhibition in the township of Eden which involved local primary school children, high school children, a whole range of people around the issue of climate change, demonstrated that. I think possibly it was much more effective than standing up giving a lecture full of graphs and diagrams. We need to explore new mediums of communication in translating our research and connecting with you in the broader community.

Which comes to my next point about CURF: we are very much committed to what we call the co-production and co-design of research. So rather than either you drawing up the brief or we drawing up the brief on the academic side, we sit down at a round table like here and very much like the discussion today and we start to design the brief together. So there are mutual benefits. We all have our measures and our performance indicators that we have to meet and our Vice-Chancellor is very keenly aware of this and so is the Minister here today. The Minister and I have also had a discussion about this. The result is that I can be involved in engagement activities 100 per cent of the year. I can also be producing research publications—a very key output for the University and that's what's expected of all academics.

However a whole lot of research publications really do not see the light of day. This is not immediately helpful to the Minister of the day. In a community I think you need somewhere to go where you can get—and this is where we think we can add value—a synthesis of all that information that's out there around the world. What is the latest being said on climate change adaptation, for example, and being able to go to our website and find something useful.

So just very quickly two examples of work we've just completed and available here today and available online next week for the ACT Government. The first is a synthesis report on climate change adaptation. The second is a synthesis report on urban transformation and transport which is seeking to provide a broader context for that very interesting and lively debate we're having on light rail. But really we think from our perspective the best thing we can do is really go right round the globe, read all the papers and provide to you a snapshot of current thinking from the research community around these issues.

So that comes back to what we often talk about which is evidence based policy. CURF is also beginning to become internationalised and we've joined the United Nations Sustainable Development Solutions Network. It's run by Jeffrey Sachs, of Columbia University in the USA. We have strong relations with the OECD, and strong relations with the United Nations University with our colleague Professor Tony Capon, who is now based in Kuala Lumpur heading up the Health Institute there. So let me just tell you a very quick story. CURF is very small. The United Nations Sustainable Development Solutions Network is very big. So they came to Australia and said we'd like to have some engagement with Australia.

Monash University jumped on board straight away, yes, the Sustainability Institute and well done there. The ANU and Melbourne University hedged their bets and then they saw CURF went through last December. Well guess what, they were very fast after that. So that was good to see. Good to see we're leading those institutions. Just finally before I introduce our next speaker who will be the Vice-Chancellor, I'd like to thank my team. They're very hard working, very committed. CURF is a very lean organisation and in many ways I like that. I don't actually want it to be much more than lean. But what it does rely on is a great deal of goodwill and that's what I get from the people who work with me and many of whom are PhD students doing a bit of casual work on the side and all of you who are very, very generous in your contribution and advocacy and support for us. So I'd like to thank you very much right at the beginning for doing that. It's now my great pleasure to invite the Vice-Chancellor at the University of Canberra to come and open and launch our inaugural annual *Forum*.



CURF

PROFESSOR BARBARA NORMAN OPENING THE *FORUM*



CURF

*FORUM* PARTICIPANTS AT THE MORNING REGISTRATION AND WELCOME SESSION



CURF

*FORUM* PARTICIPANTS AT THE MORNING REGISTRATION AND WELCOME SESSION

## 2.2 Opening: Professor Stephen Parker AO, Vice-Chancellor, University of Canberra

Canberra Urban and Regional Futures was launched four years ago this week in this room in a newly completed building. I remember it well. Ian Chubb and I officiated jointly. Ian Chubb showed an enormous map of the world on the screen implying that that was the ANU's global domination strategy. I remember in my comments suggesting that if CURF added electricity and water to its title it could become CURFume and it would save on both but clearly that hasn't survived the branding experts. We now find ourselves here at CURF's first annual *Forum* and it wouldn't take much to turn the acronym for today into CURFuffle and CURFuffle literally is a disturbance and I hope that whatever else is achieved today we have some disturbance.

The present and the future of Canberra and the surrounding region look bright but they're not assured economically, socially or environmentally and so some disruptive thinking is required rather than a search to return to an Arcadian past. Anyway the leaders of CURF don't need my advice, they are a high profile team at the cutting edge. So CURF has a director, Barbara Norman, shy and retiring as always, and four key theme leaders. The first theme is climate change and sustainability led by Professor Will Steffen who is overseas at the moment. Will obviously is a professor at the ANU but he's also an adjunct professor here at the University of Canberra.

*Health and wellbeing* is led by Professor Helen Berry, a professor here at the University of Canberra. Barbara leads settlements and infrastructure as a theme. Barbara is obviously a professor here but also an adjunct professor at the ANU, and I really like the reciprocity of this. The fourth theme, green growth, is led by the ANU's Dr Bob Webb. That's an interdisciplinary collaboration between the two organisations. Recent research has looked at south-east coastal adaptation which I'm told received the National Planning Award for cutting edge research in 2014 and there's something appropriate about coastal adaptation and cutting edge.

Another research area has been Transit Oriented Urban Transformation, which is a project with the ACT Government. A continuing partnership with the ACT Environment and Planning Directorate on climate change adaptation has been an active seminar series and publications to support that activity. We have a growing body of PhD students working on CURF research in the region. The principle aim of this, the first annual *Forum*, is better to connect research with decision makers and community leaders. In doing so, we can identify emerging opportunities and better target research investment.

This *Forum* is important to the university. It's part of our commitment to the Australian Capital Region (ACR). It'll help build strong relationships between our research and teaching with 17 local governments, regional organisations and of course the ACT Government. Additionally we have, as you may know, an urban and regional teaching program delivering both Masters and Bachelors' degrees in urban and regional planning which will further strengthen the skills in this region. So this first *Forum* is an annual snapshot or audit of research activity and of leading practice within the ACR, allowing stakeholders to share knowledge and experience and build collective capacity to solve complex issues in the region.

You have four topics today, climate change adaptation, renewable energy, integrated transport and community health and wellbeing. They all require applied research and partnerships with key stakeholders with a co-production of knowledge at the regional and local level that will strengthen capacity. So finally to some thanks. I'd like to thank the ACT Government, in particular Minister Corbell, who was the original funding minister to support the opening years of CURF.

I'd like to thank Minister Gentleman, now the Planning Minister, who will be responsible for CURF's funding budget bid for 2015 to 17/18. He is speaking at the CURF seminar on 1 December so please be very nice to him. I'd like to thank Tayanah O'Donnell and Brian Weir, the *Forum* convenors and the CURF team, the planning and tourism students for organising this event. Obviously thanks to Barbara Norman and the other theme leaders and thanks to you, the participants from the region, for coming to the University of Canberra today.

I hope you have a disturbing day. I hope you plan how to cause CURFuffles and I look forward to seeing you back at the 2015 annual *Forum*. It's my pleasure to declare this the first *Forum* open. Thank you.

## 2.3 Address: Simon Corbell MLA, ACT Minister for the Environment

Well thank you very much Barbara and Vice-Chancellor Parker. Thank you for your very warm welcome and good morning ladies and gentlemen. It's always a great pleasure to be back here at the University of Canberra. As a graduate of the University of Canberra, I'm always immensely proud to see this institution, which is a young institution in many respects compared to other tertiary institutions going from strength to strength. It really is emerging and evolving now as a very, very important tertiary education institution, not only for our city but for our region.

Can I also thank the Vice-Chancellor for his very principled and strong support of the importance of maintaining equity when it comes to funding and support for students in our tertiary institutions at a time when we have debates about the deregulation of funding. I think your leadership Vice-Chancellor has been very important in that context. But of course this morning we are here to speak about the importance of a more sustainable city and a more sustainable region. Let me start by reflecting on developments in the recent weeks.

The recent weeks of course have reaffirmed to us the significance and the very dire circumstances we face as a human society to the consequences of our patterns of energy consumption. The Intergovernment Panel on Climate Change (IPCC) most recent report confirms that we are tracking right now for a four degree world. That is a four degree increase in average temperatures by the end of this century. This is a stark and critical reminder of the steps we must take as a society to provide for a safe climate future for ourselves, for our grandchildren and for our great grandchildren, depending on your age.

The IPCC report message is very, very clear. That is that if there is one thing we need to do as a community it is to decarbonise our electricity supply sector because our



CURF DIRECTOR PROFESSOR BARBARA NORMAN,  
ACT MINISTER FOR THE ENVIRONMENT SIMON CORBELL MLA  
AND UNIVERSITY OF CANBERRA  
VICE-CHANCELLOR STEPHEN PARKER AO

electricity supply sector, our energy supply sector, is the key driver of the emissions profile that we are currently facing. We often reflect in these debates on the global and nation state politics of them but there are some very real and pressing issues that we need to face locally. To do that we need to have a better understanding of what climate change means for us in our city and in our region.

I think it's very fitting today that this *Forum* is very much focused on collaboration across jurisdictional boundaries, across the greater Australian Capital Region and of course with other governments, both state and local. The ACT has been very focused on engaging with our partners in the region and with other state jurisdictions and to that end I'm very pleased to say that in the coming week we will be releasing in conjunction with the New South Wales State Government the first detailed assessment of climate change projections in terms of temperature, rainfall and other factors for the New South Wales and the ACT areas.

Previously we've relied on climate change projections that have been measured at a scale of hundreds or even thousands of kilometres. But this most recent modelling which will be released in the coming days provides for modelling of climate change impacts on our community at a scale of tens of kilometres. This is very powerful data because it will allow us for the first time to understand what climate change specifically means and specifically looks like for our city, for our territory and for our broader region. From the initial briefings I've had on these findings and this very detailed modelling it shows that the number of days over 35 degrees that our city can expect to face by mid-century will almost certainly double and by the end of century it could be significantly higher.

We also know that the level of rainfall for, for example, the spring period which is our most productive rainfall period is projected to decrease by approximately 25 percent. These are disturbing long term trends that we need to understand and prepare for and also to work to mitigate against. They are based on worst case scenarios so there is opportunity for us to continue to act as a community and as a society to try and respond to these factors. To that end I've been very proud of the work that the ACT Government has been undertaking both in the area of mitigation and abatement as well as in adaptation.

On the mitigation front we have adopted a very aggressive policy setting of making the shift to a low carbon energy supply future. The 90 per cent renewable energy target is now well and truly in its implementation stage. The largest operational solar plant in the country to date is now of course churning out clean energy from the Royalla facility just south of Canberra. On a day like today I always remind myself it's there each and every day generating that clean electricity. We've got another large scale solar Photo Voltaic facility approved and about to start construction at Mugga Lane on the Monaro Highway and that 13 megawatt facility I expect to see underway in the next month or so.

Of course the Government has achieved these outcomes through the use of a nation-leading large scale feed-in tariff scheme. That scheme was recently recognised by the Banksia Foundation as the leading edge innovation in renewable energy and sustainability policy in Australia. I was absolutely delighted about a fortnight ago now to go to Sydney with the policy team from the Environment and Planning Directorate

to receive the Gold Banksia Award for the large scale feed-in tariff scheme. It's been a fantastic recognition of the innovation that's being delivered right here in Canberra. In the coming months I expect to also outline our next steps on the large scale renewable energy front. We're currently finalising our assessment of bids for wind energy generation to provide 200 megawatts of clean energy generation from wind for our city. This has the potential to meet the total energy needs in Canberra to the equivalent of 25 to 30 per cent of our total electricity demand. That is a very significant shift to a clean energy future for our city and a very significant reduction in the level of our city's greenhouse gas emissions. I'm looking forward to making announcements about those future winning projects for wind energy generation both in our city, in our region and potentially more broadly in the coming weeks.

I'd also like to mention some of the other key elements the Government is very focused on, firstly in the area of adaptation. Adaptation is critical to our future. We know there is a degree of warming already locked in to the atmospheric system and we need to be preparing our community for that. The ACT Government is currently finalising its development of an adaptation strategy which is very much focused on what are the implications for our community from a warming climate and how do we respond to them, whether that's in the area of nature conservation management and making sure that our nature parks and reserves are able to respond to a warmer, drier, hotter climate, or what that means for endangered species, what that means for vulnerable species, and how do we maintain those critical and beautiful ecosystems which are so central to our image as the Bush Capital. But also in the areas of physical and built infrastructure, how do we make sure that our built infrastructure is prepared and able to respond to a hotter and drier climate? How do we make sure that our emergency services' planning is locked in with other considerations such as health service planning and broader community resilience? These are critical issues that we need to see addressed in our adaptation strategy work.

Finally I would mention the question of transport. Outside of electricity use our key area of emissions as a city is transport, the use of transport fuels. We do need to provide our community with better choices, more resilient and more sustainable choices for how we move around our city day-to-day. We need to do that in a way that improves our city's productivity, liveability and sustainability. It's for these reasons that the Government has committed to the Capital Metro Light Rail Project. Like any large infrastructure project it is controversial and it is the subject of much debate in our city at this time.

I would simply make the point about this project that we have to think about the long term future of our city. We have to think about how we as a city are able to provide good transport service and choices for our citizens and how we can do that in a more sustainable way. Obviously a light rail network has the capacity to deliver transport in a manner that is, first of all, sustainable in terms of its energy supply, but secondly is an investment that can greatly improve the economic productivity of our city. We know the project delivers a positive cost benefit outcome for our city but it does much more than that.

It creates the spaces and places that people will find more liveable, more walkable, more connected, more able to engage in the day-to-day life of our city as citizens. It is a very important project for our city. To get this first length right lays the foundation

for a future network across our city and it enables people to think again about how they move around our city in a reliable, frequent and fast way. I hope today that your discussion focuses on this broad range of issues—abatment, mitigation, preparing for the future and adaptation. These are the critical questions for our city.

We may be a small city in Australian terms but we can demonstrate leadership and we can make sure we are well prepared for the future that we face. It does not have to be a dire prospect. It can be a prospect full of opportunity for a more liveable, connected, engaged and sustainable community. I hope out of your discussions today you agree that's very much the vision that we need to have. Thank you very much.



**CURF**

**ACT MINISTER FOR THE ENVIRONMENT SIMON CORBELL MLA  
IN DISCUSSION AT THE *FORUM***

### 3. FORUM WORKSHOP OUTCOMES

This Section details the outcomes of the four workshop sessions. The sessions were parallel sessions; with two mid-morning and two in the afternoon. The discussion below follows the format of the workshop sessions as they appear in the *Forum* program (copy at Appendix 2). The first session is Climate Change Adaptation for Canberra and the Region; followed by Renewable Energy for Canberra and the Region; then Integrated Transport for Canberra and the Region and finally, Community Health and Wellbeing for Canberra and the Region. The rapporteurs listened to the report back session and interpreted the results using a matrix of key issues that were then thematically analysed by the scribe.

#### 3.1 Climate Change Adaptation for Canberra and the Region

##### 3.1.1 SESSION TOPIC OVERVIEW: JO MUMMERY

While we all think about the weather every day, most of us don't really think about climate. Yet climate has a major influence on many aspects of our lives, including the following:

- the local environments that we can enjoy and access, and the sort of crops we grow;
- the structural design of our buildings and infrastructure—like their ability to withstand wind and rain, and to avoid being inundated from frequent flood events;
- the confidence we have in turning on a tap that water will emerge—from dams that are replenished from regular rainfall to our river catchments; and
- how much we pay to insure our assets and property.

The change in climate that is happening around the world, and in our region, that scientists advise will change even more over time, possibly very considerably, will affect all of these things.

Good adaptation is the process to adjust to the changing climate so that impacts on people, on communities, and on natural resources and other assets are minimised, and opportunities realised. Adaptation links to all spheres of decision-making. It is complex as it questions assumptions about how to do things that have been taken for granted or that are entrenched in society. It will require changes in practices—which is never easy.

##### Climate change risks to the ACT and the Australian Capital Region

What is the changed climate that the ACT and the Australian Capital Region (ACR) needs to adapt to? It is useful to consider climate change risks through how they affect extreme weather events—as extreme weather is often reflected in policy settings, such as the development allowed in floodplains or on the coast. Many of the key risks of climate change for the ACR relate to the changes in the frequency and intensity of extreme weather events, and are already being observed.

The Bureau of Meteorology (BoM) has found that heatwaves and hot days are increasing in south-east Australia including in the ACR. In 2000-2009 Canberra experienced an average of 9.4 days above 35 degrees, compared to a previous long-term average of 5.2 days per year. By mid-century an extreme hot day that currently occurs once every 20 years is projected to occur every 2-5 years (Norman et. al., 2014).

Climate change will also lead to increased high fire danger weather. More hot weather increases the Forest Fire Danger Index—and this has increased across south-east Australia including in this region over the last 40 years, and will increase further. The effect of extreme heat was an important factor in recent serious bushfires such as the 2003 Canberra fires, as well as having health impacts (Norman et. al., 2014). In addition, climate change can lead to an increased risk of heavy rainfall events and flooding—identified in the IPCC5 as one of the top three risks for Australia in coming decades. Modelling of rainfall change is very complex and there is uncertainty as to how rainfall may change in Canberra and the ACR (Norman et. al., 2014). Finally, since 1970 much of eastern Australia has become drier and with increasing temperatures droughts could become more severe. CSIRO and the BoM have developed new climate change projections for Australia at a regional scale, which were released in January 2015—see [www.climatechangeinaustralia.gov.au](http://www.climatechangeinaustralia.gov.au).

##### Adaptation challenges for the ACT and the Australian Capital Region

Climate related risks are pervasive, impacting all sectors, and they will be ongoing and will increase over time. Likewise, adaptation crosses sectors, and is a subject with a long-term focus. An example is well demonstrated on the intersections between community health and wellbeing and increasing heatwaves.

The importance of adaptation in the health sector was tragically emphasised by the premature deaths of over 350 people in Melbourne and Adelaide in the heatwaves of January 2009. This risk will grow with climate change. CSIRO analysis has found that heat related deaths in people aged over 65 in six of Australia's largest cities are likely to increase from around 1100 per year at present to around 2300-2500 by 2020 and 4300-6300 by 2050 (this also reflects an ageing population).

Health adaptation to heatwaves is multi-faceted and spans better early warning systems targeted to those most vulnerable, active social networks that can help vulnerable immobile people in poorly cooled housing get to a cooler place, preparation for spikes in demand of health services and hospital emergency departments, and cross-cutting heatwave response plans. This will require good information and analysis—including modelling at the intersection of how a changing climate will affect changing characteristics of populations at various scales. Questions which may arise in this context include:

- How will vulnerability change over time, for example, as increasing morbidity occurs in an ageing population? Are there regional differences that matter?
- Do we agree on a definition and measurement of a heatwave—again recognising regional variability—and how can we ensure that advice gets to the right people?
- What community education is required?



Health adaptation also needs to consider the spike of energy demand for cooling—any disruption to energy supply in times of extreme heat could have fatal consequences. This risk isn't hypothetical. Heat events often occur together with bushfires and infrastructure outages which place further pressure on emergency services. This occurred in Melbourne in January 2009. Cities need to improve the thermal performance of buildings and limit urban heat island effects, and ensure that housing is well designed and insulated. Effective leadership and coordination is needed linking institutions and services, and drawing on good knowledge shared by meteorologists, health care and community workers, carers, hospitals, utilities, builders and planners.

There are lots of other important areas for adaptation in the ACT and ACR—disaster and emergency management, settlements and infrastructure, water, natural resources and ecosystems, and agriculture. The recent commitment of the ACT Government to develop an adaptation strategy is a key step (ACT Government 2014; Norman et. al., 2014).

### Adaptation—some key insights

Adaptation is a cross-cutting agenda requiring integration of issues that are often currently dealt with in silos. The interface of changing climate and the changes in how sectors respond, including intersecting issues, is a new space for knowledge generation. In addition, the timescales that need to be considered go beyond most business and planning horizons. This really challenges our tools and decision making processes. We need new ways to genuinely link action now to a strategic consideration of the magnitude of future change or risk. Simple iterative or risk management approaches, often done in limited time frames, may not be enough. With the scale and complexity of the adaptation challenge, there is a growing awareness of barriers to effective action (Australian Government, 2012).

### 3.1.2 APPROACH FOR THIS WORKSHOP: DR BOB WEBB

Centred on the core premise of both this *Forum* and climate adapted futures, the climate change adaptation workshop discussion was focussed on what are the issues and what are the solutions?

These questions springboard from CURF Working Paper 4 (Norman et. al., 2014) in which current leading practice principles were identified and analysed aligned to the ACT Government's six priority sectors for adaptation. This paper found that the risks of a changing climate are pervasive, impact all sectors and with triple bottom line consequences. In addition, both the nature of the impacts and the range of responses demonstrate the numerous interdependencies across sectors.

This workshop had approximately 70 attendees seated at round tables. Each table had approximately 8-10 people, and the each discussion point would be had for about 15 minutes between the table members. In answering the two *Forum* questions, the following questions were tabled for discussion at roundtables by participants:

1. There is a lot of scientific evidence that the climate is changing. Are there things that you have noticed about a changing climate that have affected your work or community? Are there things that you have done to adjust to such observed changes?

2. Envisage the future. What would a well climate adapted Canberra and the ACR look like in 30 years?
3. What is needed to get us to a more climate adapted future? Are there impediments?

### 3.1.3 RAPPORTEUR REPORT ON WORKSHOP DISCUSSION: TAYANAH O'DONNELL

The following is a synopsis of the workshop outcomes. Each individual question was workshopped within the group settings for 20 minutes, at which time Dr Bob Webb opened to the floor and each table offered their contributions to the set question. After all three questions were completed in this manner the workshop participants then had a broader overall discussion prior to the session close.

1. There is a lot of scientific evidence that the climate is changing. Are there things that you have noticed about a changing climate that have affected your work or community? Are there things that you have done to adjust to such observed changes?

Participants discussed their individual and personal experiences of changes in climate already underway, demonstrating the real and tangible yet subjective relationships we all have with our surroundings. Current measures, many designed 30 years ago, are now not coping. Examples included guttering on houses not able to properly capture rain water for storage and use particularly in heavy rainfall situations, which are likely to increase in the future. Concrete storm water drains are not able to effectively cope with flash flooding, and evaporative cooling systems are seemingly ineffective.

Seasonal variation was a topic well explored by participants. Many commented "spring and autumn are shorter" and "summer arrives earlier, and lasts longer". That many Canberrans are "keen gardeners" was noted as a validation of these observations; particularly in the context of the changes in plant behaviour ("plants are flowering before bees come out of winter hibernation!"). The impacts of this on the wider ACR and agriculture were noted. Changes in seasonal patterns were also observed by every table. Most cited was the observation of less frost in winter, the flowering of plants at altered times of the year and less cooling/ventilation in the evenings in warmer months.

The overall change in heat patterns and less cooling at night received a lot of discussion; many participants commented that the lack of the "cool southerly" of an evening was a noticeable change in weather. Finally, the frequency and intensity of storms, particularly rainfall, was discussed at length by participants. The continued use of box guttering for rainfall capture was noted as a failure for adaptation in light of the increasing intensity of rainfall across the region.

In terms of the second part of this question, many participants agreed that adjustments to such changes included the greater reliance on air conditioning including of an evening to substitute for the lack of cooler overnight temperatures. Changes of housing stock such as the incentives to install solar panels and the availability of double glazing were noted. The lack of trees in newer suburbs, combined with smaller block sizes and the penchant of new home owners to favour black rooves was discussed as a form of maladaptation due to the impact of heat retention.

Further changes in terms of human behaviour were also canvassed. Participants noted that they would spend their time out of the home at a cooler location in the warmer months, such as in shopping centres, due to the availability of air conditioning. Other changes in the timing of outdoor activities were also discussed at length. The impact of this and the flow on effects for active and healthy lifestyles were noted.

2. Envisage the future. What would a well climate adapted Canberra and the ACR look like in 30 years?

In this session participants worked to a temporal scale in which a higher level agenda, as opposed to a climate adapted vision, was imagined. In achieving this vision, participants commented that “the identity of Canberra as a well-planned city” was important, as was a focus on ensuring “green spaces” and continued emphasis of green suburbs via “trees, particularly natives”. The urban planning agenda ought to ensure the “densification of Canberra”, sustainable urban design of both new commercial and residential buildings, and the suitable retrofitting of old buildings. A well-adapted Canberra and the ACR would see landscape based planning where “housing is designed to suit the environment” and open, green spaces within the city and the suburbs are prioritised.

In addition, this aspect of the workshop saw an emphasis on the importance of integrated planning. Participants noted and discussed transformative transport options for Canberra and the surrounding region. The linking of better public transport options such as the implementation of light rail throughout Canberra, and greater reliance on cycling and walking, could move Canberra from a “car focussed and designed city” to a more integrated city. In addition, the importance of strategic planning in avoiding urban sprawl was also noted as an option for a well climate adapted Canberra and ACR. This integration was again observed in the discussions at many tables on the future Canberra and ACR having a focus on “low or no carbon emissions and more renewable energy” sources working in partnership with New South Wales. It was considered that this would offer the ACR an option for a greener economy and forge continued strong partnerships. This session of the workshop highlighted the importance of a well-functioning regulatory framework, which in turn is encouraged by coherent and collaborative institutional arrangements across boundaries. It was considered that a well-adapted future would be one that worked across government and other institutional silos to ensure properly integrated adaptation measures were implemented.

3. What is needed to get us to a more climate adapted future? Are there impediments?

In this final session of the workshop, participants were asked to focus on the actions needed to achieve a climate-adapted future for Canberra and the Australian Capital Region.

Five key actions were identified as key for a more climate-adapted future:

1. Improving institutional settings across and between the community, government and industry sectors to enhance collaboration and reduce or remove silos
2. Leadership by all, and across boundaries, regions and communities, including bi-partisan political leadership. A long term issue requires stability to ensure efficiencies and continuing engagement of the city and its citizens

3. Planning and design of Canberra and the ACR will require integration of how we live in the next 30 years as a visionary future form of the city, encompassing density, light rail transit, sustainable urban design and a focus on green, open space
4. Leveraging the inputs of business and individuals via clearer and consistent engagement, consultation and education, including greater utilisation of social media will ensure a holistic approach to a well-adapted region
5. A focus on overall lifestyle transformation.

The focus on “greater food and wine production” across the ACR, and better linking the ACT to locally grown produce, was also discussed. The need for, within the ACT, the protection of farming and agricultural lands supported the approach for greater density within existing city and town centres.

### SUMMARY

In discussing actions needed to get there, the above factors were supported by the overall consensus and recognition by participants of the importance of holistic and well-integrated regional planning. It was considered that “adaptation planning be properly integrated into all aspects of planning.” In addition to holistic and well-integrated planning, a focus on leadership, and the crucial role light rail transit would have in urban transformation for Canberra, were agreed as key actions to achieve a climate-adapted future.



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JO MUMMERY, DR BOB WEBB AND TAYANAH O'DONNELL



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PROFESSOR BARBARA NORMAN WITH WORKSHOP PARTICIPANTS



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UNIVERSITY OF CANBERRA PLANNING STUDENTS PARTICIPATING IN THE FORUM



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CLIMATE CHANGE ADAPTATION WORKSHOP PARTICIPANTS



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CLIMATE CHANGE ADAPTATION WORKSHOP PARTICIPANTS



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CLIMATE CHANGE ADAPTATION WORKSHOP PARTICIPANTS

## 3.2 Renewable Energy for Canberra and the Region

### 3.2.1 SESSION TOPIC OVERVIEW: LIZ VEITCH

The ACT Government has legislated for a renewable energy target whereby 90 per cent of the ACT's electricity will be sourced from renewable energy by 2020 (set through the Climate Change and Greenhouse Gas Emission Reduction Act 2010). This is complemented by the Government's Climate Change Action Plan 2 (AP2), which outlines the required major shifts in energy consumption for the Territory to meet its 90 per cent reduction in emissions. Taken together, these documents outline a strong future for renewable energy in Canberra and across the Australian Capital Region.

The ACR is an Australian leader in the renewable energy space. The strength of the ACT's intellectual capital, particularly its world-class expertise in the research and development of new renewable energy technologies, is combined with the south east NSW region's wealth of opportunity in its abundant natural energy resources, particularly wind, solar, hydro and biomass.

The ACR is also serendipitously located on the Sydney-Melbourne transmission line, and its location around the ACT is a key driver for current industry development. New South Wales landholders now have a broader range of land use options for generating income beyond the more traditional farming choices of cropping and livestock production which may have included growing plantation timber, hosting farm stays and eco-tourism, to now hosting renewable energy infrastructure. Recently the South East Region of Renewable Energy Excellence (SERREE) launched a key partnership with the Australian Renewable Energy Agency, which will see the establishment of a Regional Renewable Energy Industry Cluster, designed to encourage knowledge sharing and collaboration across the Region.

### 3.2.2 APPROACH FOR THIS WORKSHOP: JON SIBLEY

Noting the key partnerships across the ACR in the renewable energy space, this session was designed to workshop two important features for a sustainable energy future for Canberra and the Region, which included identifying the relevant stakeholders and their potential challenges in transitioning to renewable energy. The session then identified participants' perceived priorities in meeting and exceeding these challenges. The session was facilitated through a roundtable style, with broader group interaction via Post It notes and butchers paper. This approach captured the responses of all participants in an interactive and collaborative way. There were approximately 40 participants.

### 3.2.3 RAPPORTEUR REPORT ON WORKSHOP DISCUSSION: HAMISH SINCLAIR

The following is a synopsis of the workshop outcomes. It includes details of the smaller group work as well as the broader discussion with all participants.

The identified key stakeholders were, in order of priority: utility companies, government (all levels), the building industry (including developers, and tradies and contractors) and householders. Their perceived challenges are summarised below, followed by the discussion on project opportunities.

## PERCEIVED CHALLENGES

### Utility companies

Utility companies were seen as being the single largest place of control and decision making over how energy is generated. Discussion took place as to the importance of their involvement in the development of a renewable energy sector. There was some consensus amongst participants that utility companies "aren't feeling the love". It was considered that this culture needs to change to better enable involvement and 'buy in' from the utility sector.

### Government

Both in the small group discussions and the broader workshop discussion, it was very clear that participants considered that consistency was required in government messaging. It was considered that this was particularly important in matters of cross border policy implementation. In some circumstances, governments are also the primary asset owner(s). Well informed consumers could use this to drive change internally which in turn could impact on external markets. Finally, there is a need to better balance both rural and urban community contribution with public benefit, with clear communication.

### Building industry

The building industry was seen as a "key implementer" and a key source of information about change in building design, and at the forefront regarding opportunities for emission reduction options in the built environment. One participant said "ask a builder about insulation suggestions for a new build and it's not a short conversation".

It was agreed that there is a need to find better ways of doing things measured against the best rather than worst case targets. An example included a renewable energy comparison against best practice renewable energy, rather than against the use of current energy provision through sources such as coal.

### Householders

At the individual level, householders were seen as key in changing choice and consumption behaviours. An area for change included the dependence on cars as the primary mode of transport. In addition, there was agreement that although householders have an entrenched role as energy users, they are increasingly also energy providers through the uptake of solar panels and other climate mitigation initiatives. Despite this, the session discussion highlighted that behavioural change needs to go beyond product choice.

## PROJECTS

### Utility companies

Participants suggested that "co-operative research focused on enabling cultural change and behaviour" would be beneficial for both the industry and government. In addition, feasibility studies for renewable energy initiatives seemed to attract a consensus, particularly in the context of new suburban infrastructure.

### Government

On this theme, participants suggested that a protocol that connects greenhouse gas savings, metering and retrofitting benefits for commercial and industrial development

would be beneficial. Complementing this, investment in financial mechanisms and models was seen as beneficial to both the renewable energy sector and to government. Development of quality research in this space could assist in supporting and driving government policy. Finally, the promotion of government purchase power in driving innovations and market change could be a key area of focus.

### Building industry

As a key implementer of built environment renewable energy options, it was agreed that an important area for the building industry was the provision of appropriately scoped research reports that analyse global best practice, as it could apply in the Australian context in the provision of renewable energy options. This could assist the industry to assist the consumer in making informed choices and decisions on renewable energy options. An example might include the analysis of case studies which examine the role of renewable energy in suburbs, or a review of suburbs which are 100 per cent renewable energy reliant.

### Householders

Options for householders included government toolkits which advised on best practice methods for individuals and households to consider their energy consumptions. In addition, providing information and education on investment opportunities in local renewable energy projects was viewed as a beneficial opportunity.

The development of a shared community benefits model for major renewable energy projects was discussed, and the role of a rural community renewable energy engagement strategy in potentially shifting the focus of responsibility from the proponents was canvassed.

### SUMMARY

There was some crossover and opportunities for projects to coexist with different stakeholder groups, demonstrating the importance of integration on these issues. Different perspectives could be captured through knowledge portals of key stakeholder groups. There was overall agreement for progressing the future of sustainable communities and the desirability of educational programs in all sectors to include a continued focus on renewable energy.

Of the 15 stakeholder groups identified, interestingly, youth failed to generate any priority. This could reflect their understanding of politics, power and responsibility. A further emergent issue from many of the group and issue discussions was an understanding of social equity between the haves and have nots and how this might be changed. Reflected in the renewable energy discussions was the recognition that efficiency in energy use is a critical component.





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### INTEGRATED TRANSPORT WORKSHOP PARTICIPANTS

## 3.3 Integrated Transport for Canberra and the Region

### 3.3.1 SESSION TOPIC OVERVIEW: DAVID FLANNERY

Cities have developed around the world during different timeframes. Modern cities, perhaps exemplified by Australian and American cities, have developed in a post low-cost oil economy following the Second World War, characterised by an ability to provide for individualised transport systems. These have had significant impacts on the form of the modern city. The ACT Government is planning to introduce a transformative transport system based on light rail and an integrated transport planning and urban planning framework, which will challenge this model.

A recent CURF Working Paper entitled *Transport Oriented Urban Transformation: Contributions to Urban Futures* (Flannery et al., 2015) was outlined. A key finding of that work was:

“Recent experience shows that action to improve the efficiency and outcomes of city transport systems, linked to well-planned urban development, can deliver substantial economic, social and environmental benefits to the community and to government.”

The Working Paper identified seven research findings that were discussed and explored by the participants of this workshop. These were:

- Urban consolidation, under-pinned by public transit and revitalisation of land with mixed use developments, brings with it triple bottom line (social, environmental and economic) benefits to the city;
- Developing public transport oriented growth and creating compact and walkable neighbourhoods can reduce car distance travelled, lower traffic congestion and emissions, provide significant health benefits and stimulate increased productivity;

- Increases in land value may provide a revenue source opportunity to return a significant proportion of the cost of public transport developments adjacent to transport oriented development;
- Containing the extent of greenfield urban development can assist in minimising household transport expenditure and in the protection of fringe real estate values;
- Transit oriented urban renewal provides the opportunity to plan for and invest in the integration of affordable housing and social housing, infrastructure and services;
- With the transport sector accounting for nearly 25 percent of Green House Gas emissions in metropolitan areas worldwide, creation of less car dependent urban forms is an essential governance and policy response to climate change mitigation and adaption; and
- It will be of value to establish research based monitoring and review of social, environmental and economic outcomes and performance targets of transport infrastructure and related transit oriented development.

### 3.3.2 APPROACH USED IN THIS WORKSHOP: KRISTIN BLUME

As noted, this *Forum* workshop used the CURF Working Paper, and its seven key findings, as its focus.

Participants in this workshop worked in five groups, reporting back at the end of each session on topics including, but not limited to, the research findings of the CURF Paper. A rapporteur collected and collated the discussions at each table and made notes during the feedback sessions which were then collated under the seven research findings in the CURF paper. There were approximately 65 participants.

### 3.3.3 RAPPORTEUR REPORT ON WORKSHOP DISCUSSION: VIV STRAW

Based on the background presentation and the existing knowledge of participants, in the first session we asked each table to identify issues on the topic of 'integrated

transport for Canberra and the region', identifying what is working well, and what could be improved (and how). The workshop returned time and again to the introduction of the light rail into the north of Canberra, the issues for urban consolidation and potential access and equity and equality issues. Disenfranchised future residents were primary concerns raised in the workshop.

#### *Forum discussion on Research Finding 1*

The CURF paper found that urban consolidation, underpinned by public transit and revitalisation of land with mixed use developments, brings with it a triple bottom-line (social, environmental and economic) benefit to the city. Members of the *Forum* questioned the need for an expensive public transit intervention in the city, while recognising that over time it would be necessary to revitalise much of the city and provide for urban consolidation.

Alternative scenarios were raised including moving employment out of the Canberra city centre into the existing town centres. There was considerable discussion about the existing structure of Canberra and its current ability to be able to provide for substantial workplace growth within existing town centres. It was considered that Canberra is able to provide multilevel mixed urban development within the existing town centres, over time reducing the need for a significant growth in transit from the town centres into the city centre.

It was recognised that a number of town centres were developed by the federal government during the decades it alone controlled the growth and development of the national capital. During that period residential, commercial and retail facilities were provided within easy access of the new suburbs, significantly reducing the need for cross city commuting.

Alternative perspectives in the session identified that newer suburbs were not always developed with the same facilities and consequently residents of these areas would need to commute to the city centre or to existing town centres. Not all future employment growth would occur within the town centre and consequently not all the commuting growth would be from Gungahlin to the city centre. The development of office space at the airport has had an impact on the development pattern of the city. This along with Gungahlin is leading to a reduction in the sustainable framework of the city.

#### *Forum discussion on Research Finding 2*

Developing public transport oriented growth and creating compact and walkable neighbourhoods can reduce car distance travelled, lower traffic congestion and emissions, provide significant health benefits and stimulate increased productivity.

There was general agreement on most of the tables that public transport oriented growth would have a positive impact on the creation of walkable neighbourhoods and the reduction of car usage across the city. Nevertheless, there were some questions in regard to claimed health benefits and whether or not public transport would lead to a greater social divide and reduce equity within the city.

Questions were raised about how the light rail would be integrated into existing travel and whether or not bus transport would be able to feed into transport hubs. It was recognised that light rail would significantly increase the quantum of people being able to travel from the far north, specifically from Gungahlin, and along the transport corridor into the city centre. Questions were raised as to how the transport system would be integrated to allow people to travel from existing suburbs into the transport hubs and then into the city.

A significant issue raised at a number of the tables was whether or not the development of the light rail in the north would significantly impact the land values in the south of the city. Representatives from the ACR wanted to see how public transport could be developed to provide for people living outside the ACT to provide for improved access to various parts of the city specifically from nearby NSW towns and local government areas, including Yass, Goulburn, Queanbeyan and Palerang.

Further issues raised in this discussion included:

- Has any thought been given to developing the railway line from Goulburn into the city and the spur line that used to go south to Cooma?
- Could better bus connections to the south coast improve the overall accessibility of Canberra to the coastal hinterland?
- Will the development of light rail have a negative impact on the corridor being re-developed for heavy gauge rail as the population grows?

#### *Forum discussion on Research Finding 3*

Increases in land value may provide a revenue source opportunity to return a significant proportion of the cost of public transport development adjacent to transport oriented developments.

However, this discussion raised a number of questions:

- Will increases in the land value along this transport corridor have negative impact on housing affordability for professionals such as nurses, police, teachers, child care workers and others who are on relatively moderate incomes being able to live close to transport systems?
- Will the development of the light rail have a negative impact on land values outside the corridor?
- Will the focus on the development of light rail have a negative impact on the development of other healthier forms of transport including cycling, walking and intermodal transport development?

#### *Forum discussion on Research Finding 4*

It was considered that containing the extent of greenfield urban development can assist in minimising household transport expenditure and in the protection of fringe real estate values. There was some recognition that the cost of urban development on the fringes of the city is becoming unsustainable and that there is a need for small lot residential development within the existing urban structure.

- Is there a focus on developing the north of Canberra at the expense of Woden and Tuggeranong?

For a number of the attendees at the *Forum* it seems that the citizens of Tuggeranong have been forgotten. This raised the question on whether there will be additional work undertaken in these town centres. Such work could include providing infill development close to the town centres to support existing shopping and commercial developments. In this regard, the introduction of fees for parking in the Parliamentary Triangle seems to have increased the use of park and ride facilities and the bus network, in the south of the city. This may encourage shopping and other retail activity around the Tuggeranong town and group centres.

Intensification of the existing fringe town centres and suburbs and rezoning them for higher-intensity development would allow the city to amortise some of the existing infrastructure costs. It is possible that some of this work be undertaken prior to the development of the light rail to infill and reinforce existing town centre and neighbourhood centre development.

- With an ageing population in some town centres there is a need to provide for people to live closer to existing local centres and to do so at similar value to the investment they have made in the low density suburbs. Will the future planning of the city enable this to happen through rezoning and other incentives?

For ageing in place there needs to be some more development of off-road paths and cycle ways to allow for mobility of people as they move toward disability or more restricted movement.

#### *Forum discussion on Research Finding 5*

Transit oriented urban renewal provides the opportunity to plan for and invest in the integration of affordable housing and social housing, infrastructure and services.

There are numerous opportunities for the ACT Government to invest in the integration of affordable housing and social housing infrastructure and services within the existing urban framework.

Some further issues raised and discussed:

- Is it possible that the development of the light rail will increase land prices close to the rail stops and disenfranchise a proportion of the population because the government will need to maximise its returns on the light rail through the development of high quality residential, commercial and employment related development along the corridor?
- While the light rail will carry large numbers of people into the city, how will it facilitate the growth and development of commercial development outside the city?
- Will there be a back load of transport going from the city to Gungahlin?
- Will the ACT Government reduce the requirement for car parking facilities

adjacent to or in association with new development so that people are discouraged from having cars?

- If people are discouraged from having cars, how will they get across the rest of the city?
- Will there be a negative impact on housing away from the new infrastructure reducing land values and discouraging people from living in the existing suburbs that are not connected to the light rail system?
- Will the development of the corridor negatively impact the development of new urban areas in other town centres and neighbourhood centres?

#### *Forum discussion on Research Finding 6*

With the transport sector accounting for nearly 25 percent of greenhouse gas emissions in metropolitan areas worldwide, creation of less car dependent urban forms is an essential governance and policy response to climate change mitigation and adaptation. There was some recognition that Green House Gas emissions in the ACT are amongst the highest of any Australian or European city (primarily due to transport) and that further work is required (and underway) to provide alternative transport options for people commuting to the city.

There also needs to be further consideration of the impacts of the distances between town centres. This is not just a climate change issue. Increasing the walkability of the city has positive health impacts and may reduce the pressure on our existing health system.

Further issues raised:

- How will the light rail system impact the ACR? Will it eventually be extended beyond the ACT into Queanbeyan and Yass, that is, beyond the political borders of the Territory?
- Are there options for alternative access to the stations for people travelling by bus, car, bicycle?
- Will people be able to take their bicycles on the light rail system so that they can use them in the city?
- Will the Government ensure that it continues to build the bike path framework which, while it is already fairly good, still needs some work to maintain our status as a leading cycling city?
- Within the city there are a number of residential flat buildings and townhouses that require a large area of land to be set aside for car parking, will this car parking area be redeveloped if it is no longer needed?

#### *Forum discussion on Research Finding 7*

It will be of value to establish research based monitoring and review of social environmental and economic outcomes and performance targets of transport infrastructure and related transit oriented development. 3.4 Community Health and Wellbeing for Canberra and the Region.





**CURF**

**KRISTIN BLUME  
AND WORKSHOP PARTICIPANTS**



**CURF**

**DAVID FLANNERY AND  
THE INTEGRATED TRANSPORT WORKSHOP PARTICIPANTS**



**CURF**

**INTEGRATED TRANSPORT  
WORKSHOP PARTICIPANTS**

## 3.4 Community Health and Wellbeing for Canberra and the Region

### 3.4.1 SESSION TOPIC OVERVIEW PROFESSOR HELEN BERRY

Professor Berry provided a brief overview of her *Urban Wellbeing Survey* research project, focussing on the question “what makes a great life, whoever you are, wherever you come from”.

The overview briefly summarised current literature with regard to the complex links between the natural and built environments, their interactions with the social environment, and the impact on the emotional and physical wellbeing of the community, and of families and individuals. She also reported briefly on initial results of her case study research in the new Canberra suburb of Crace, in the Gungahlin area of Canberra. A full copy of Professor Berry’s presentation is available on the CURF website at [www.curf.org.au](http://www.curf.org.au).

Professor Berry noted that her research shows the answers to this question are patterned by a person’s social, built and natural environment. In particular, the results showed that key elements for each of the study research questions could be summarised as below.

Thus for the first theme, when and how do places support, or undermine, Canberrans? Key elements that would support this include individual Canberrans feeling connected and effective in their relationships across family, community and work; being physically active and eating quality foods; and being able to access suitable resources (whether human, social, economic, etc.) to support this way of living in the city. Not having these elements will tend to undermine Canberrans.

#### When and how do places support or undermine Canberrans?

1. Connected and effective, across family, community, work;
2. Physically active and eating good food; and
3. Getting resources for this way of living (human, social, financial, institutional and environmental).

#### How can we build great places to live in Canberra and the Region?

1. Planning houses, work spaces, parks, meeting halls etc.;
2. Making it easy to move across different spheres of life; and
3. Services and governance processes that reliably and appropriately deliver to long-term outcomes.

#### How to measure achievement of these goals?

1. What do different sectors need to know? In what form?
2. How can sectors collaborate for mutual gain?
3. How to source reliable performance information?

Professor Berry noted these can be promoted by having great places to live, making it easy for people to access the different spheres of their lives and by having services and governance processes to deliver the other elements.

### 3.4.2 APPROACH TO THIS WORKSHOP: ANTHONY BURTON, HEART FOUNDATION

The workshop facilitator, Anthony Burton, from the Heart Foundation (ACT Division) used an interpretivist approach in this session. In this approach, participants in the workshop were seen as the ‘experts’ in their field, and invited to address, in groups, a number of the issues identified in Professor Berry’s research.

Participants were asked to self-select into three similar sized groups with a similar gender balance. Each group had a theme and under each theme participants were asked to discuss the three discussion points identified above. Participants were able to report back to the facilitator, Professor Berry and the workshop rapporteur about their interpretations of the questions asked. Each session lasted about 15minutes and the workshop had approximately 35 participants.

Each group appointed a scribe whose responsibility it was to record the ideas of the group and to assist in the report back to the main group. While most scribes did report back the floor was open to all participants and discussion was guided by the facilitator. The workshop facilitator moved between all three groups, prompting discussion of the subject and encouraging participants to make decisions and move through the questions. The final 30 minutes of the session was devoted to a report back and discussion. During the report back session all participants were encouraged to stand and move around the room to listen to the report back and allow open and frank discussion with their peers.

An initial analysis of this report back was undertaken by an appointed rapporteur, who, while present, did not actively participate in the workshop.



### 3.4.3 RAPPORTEUR REPORT ON WORKSHOP DISCUSSION: BRIAN WEIR

This workshop produced a lively and engaging discussion on community wellbeing generally and on the issues set for consideration.

#### *Group 1: Community wellbeing—when and how*

After considerable discussion, the group identified infrastructure as the key to success at ‘connections’ whether with family, community or work. ‘Infrastructure’ was seen as both physical, or ‘hard’ infrastructure works, such multi-purpose green spaces usable by residents of all ages and life stage, to retaining local schools, neighbourhoods and shops as facilities for connection and activity. There was also an interest in making (or keeping) infrastructure, providing diversity and variety in neighbourhood infrastructure so as to be worth returning to again and again, and attracting residents and visitors, thus facilitating connection between these. A further focus was on providing resources to assist residences remain physically active—perhaps through appropriate walking, cycling and green spaces.

This discussion led to a focus on using locally produced foods, with the recognition that this would require a regional assessment of agricultural resources—where are healthy foods available and grown—and consideration of how these could be made available at a competitive price across the ACT and region.

This discussion drew a diversity of views. One theme here was regional—and recognition that wellbeing will be significantly affected by employment opportunities and their longevity in the region. This led to discussion on how sustainable employment opportunities should be encouraged in the Australian Capital Region. One example given was through investing in more affordable housing in Canberra and the surrounding region. It was also recognised that there were significant barriers to pursuing such initiatives, including a general hostility to ‘Canberra’ in the region, the perceived impact of the ACT / NSW border, separating jurisdictions with different governments, governance, planning regulations.

#### *Group 2: Community wellbeing—how to build it*

This group focussed on the ‘how’ question—how can we build, support, encourage community wellbeing as discussed in the first group.

A key outcome here was the provision of services and governance processes that reliably and appropriately deliver long term outcomes in terms of addressing the sorts of issues seen as barriers above. The major issues seen as requiring better governance were transport planning and planning to accommodate demographic change in existing public and private housing stock. In terms of service delivery, more flexible service delivery models, to address changes in demography (in particular ageing) were seen as crucial. In terms of infrastructure, better maintenance of parks, streetscapes, and other community facilities was seen as important.

Another outcome was a focus on how to make it easier to move across different spheres of life, including ageing in place, greater flexibility to accommodate changes in buildings when residents age, improved public transport and better funded outreach services.

The group tried to bring these elements together to consider what good places to live would look like. Some answers emerging from this discussion include elements already identified above: connectivity—socially in particular—with the community, family, friends.; easy ways to access the surrounding urban landscape, including interesting greenspaces, but also good sealed roads, and easily accessible paths to local destinations such as shops.

The other side of this discussion—what would bad places to live look like—was also considered. The group felt these would have poor connectivity, facilities surrounded by car parks, poor transport connections and a highly car-dependent transport system.

#### *Group 3: Community wellbeing—how to measure it?*

In some ways, this group discussion was the most challenging. While it was reasonably straightforward to discuss when and how places support Canberrans, and how to build such places, the question of measuring achievement of these goals was more problematic.

Threshold questions werewhat are we trying to find out? What measurements or indicators could be used for this exercise? Discussion then focussed on what this was, and what data or information was available or could be obtained to answer these questions. The first part of the discussion was on existing data sources; what useful data could be obtained, where from, and how? This led to some discussion of data characteristics, with the group agreeing that to be useful, data needed to be appropriate for purpose, reliable, meaningful, both quantitative and qualitative (as required for different purposes), having enough context to be useful and accessible to both professional users and the general public, and spatially relevant.

Of course such a discussion led to a consideration of who need such information. The group felt this included all levels of government (federal, state / territory and local), the community and community groups, individuals, and business and those considering entering business.

### SUMMARY

This session worked its way through the questions set for it with energy and lively discussion and debate. In summary, the key elements needed for community health and wellbeing are three: supportive infrastructure, both “hard” physical works and facilities and “soft” social infrastructure which is flexible in use and in re-use; appropriate governance structures and processes that overcome boundaries and barriers; and appropriate data accessible and useable to measure progress towards a more liveable city and region.



HEALTH AND WELLBEING WORKSHOP IN ACTION

## 4. FUTURES FOR CANBERRA AND THE REGION: CONCLUSIONS FROM THE INAUGURAL CURF FORUM

This *Inaugural CURF Annual Forum* brought together stakeholders, academics, practitioners, government officers and representatives of non-government organisations (NGOs) and community groups, for a day of discussion on a number of issues under the heading ‘connecting leading research and practice for a sustainable Australian Capital Region’.

According to participant feedback, the *Forum* was a great success. The workshop format achieved its aim of initiating, sustaining and capturing the discussions. Each workshop session commenced with brief presentations from leaders in the field, then structured and facilitated discussion by the session chairs and participants, and captured by rapporteurs, with a report-back by each session’s rapporteur, and a final *Forum* summary.

A number of strengths were apparent in the discussions during the final *Forum* summary for Canberra and the region. An important one was an awareness in community, academia and government (ACT, NSW and regional local government in attendance) of the issues, and a growing consensus on which were key in challenging the region in the near to medium term. A further strength was general strong support for the current and prospectively growing research effort on these issues, again in the community, government and academia. A strong feeling at the *Forum* was that research already underway was paying dividends, and that further research would situate both Canberra and the region to continue to successfully meet current challenges and be well placed to meet new ones as they emerge. A further strength in the ACT was the strong and continuing understanding, acceptance and leadership provided by the ACT Government over what is now an extended period in tackling sustainability and climate change mitigation and adaptation. Awards and other forms of recognition that the ACT and ACR have received point to the success and to the pioneering of new and innovative approaches. A number of current and potential challenges were also identified. A recurring issue was the often piecemeal approach taken on issues in the region, likely exacerbated by the number of jurisdictions and agencies involved, further exacerbated when combined with the challenge of funding and varying priorities across governments, businesses and other active stakeholders. Related to this was a feeling that current research was largely sector or project focussed, and driven by what specific projects or stakeholders require for their individual exercises. However, ACT Government initiatives to develop whole-of-Territory planning tools, such as the ACT Climate Change Strategy 2007-2025 (ACT Government 2007), Strategic Bushfire Management Plan for the ACT (ACT Government 2009), ACT Planning Strategy (ACT Government 2012), ACT Water Strategy (ACT Government 2014) and the Population Health Strategic Framework 2013-15 (ACT Government 2013) show what can be achieved with leadership, drive and an commitment to developing comprehensive strategies to address comprehensive problems which span the detail of all four workshops held at the *Forum*.

Issues discussed in detail at the *Forum*, such as transport and community wellbeing, show that there is not only growing awareness of the issues and generally agreed directions towards sustainability, but also lively debate on process and priorities. Certainly with regard to transport, the discussion in the *Forum* emphasised that at least with regard to the Light Rail project, a sharp point has been reached with regard to community and other stakeholder interest in and differing viewpoints on this initiative. The need for not only community and business engagement and participation, but also measures and processes to bring these along with new and sometimes contested proposals is also clear.

The climate change adaptation agenda saw that the scale of activity, from individual to household to city and to broader ACR was not a barrier to a well-adapted Canberra and greater region, now or in the imagined future. A resolve to advocate for holistic and integrated regional planning was a recurring theme in this workshop, and one that complements the call for both leadership and working together across silos and jurisdictional boundaries, in innovative and engaging ways that contribute to the social, environmental and economic life of Canberra and the ACR.

Opportunities to enhance sustainable futures for Canberra and the region were raised in all four workshops. It was noted that, due to past efforts and current initiatives, the ACT and the ACR is already well placed to build on what has been achieved to become a national and perhaps international leader in sustainable growth. Institutions such as universities, the CSIRO, CURF and other research and teaching bodies are already strongly engaged with government, business and the community and this can only further develop over time.

For CURF, the *Forum* provided a number of insights as well. Firstly, from the *Forum* discussion it was clear that CURF’s key themes—health and wellbeing, green growth, settlements and infrastructure and climate change and sustainability—are well-targeted to meet the priorities for the city and region. It was also clear that CURF’s approach to research and practice—collaboration with other stakeholders and researchers, and active co-production of knowledge through such collaborations, was very appropriate for the regional situation. An inclusive, sharing and engaging approach invites participation and collaboration, and this was welcomed by those present.

Canberra and the ACR is well placed to understand and to continue to explore, through collaborative research on theory and practice, the array of possible futures and the decisions necessary to meet the identified challenges in attaining a sustainable future. CURF is pleased to have presented this *Forum* as an opportunity to initiate important dialogues around these issues. We look forward to hosting future *Forums* and to continuing to engage, discuss and seek effective responses to the challenges of the future.



RAPPORTEUR SESSION: L-R: BRIAN WEIR, VIV STRAW, HAMISH SINCLAIR, TAYANAH O'DONNELL AND PROFESSOR BARBARA NORMAN, WITH *FORUM* PARTICIPANTS

## 5. BIBLIOGRAPHY

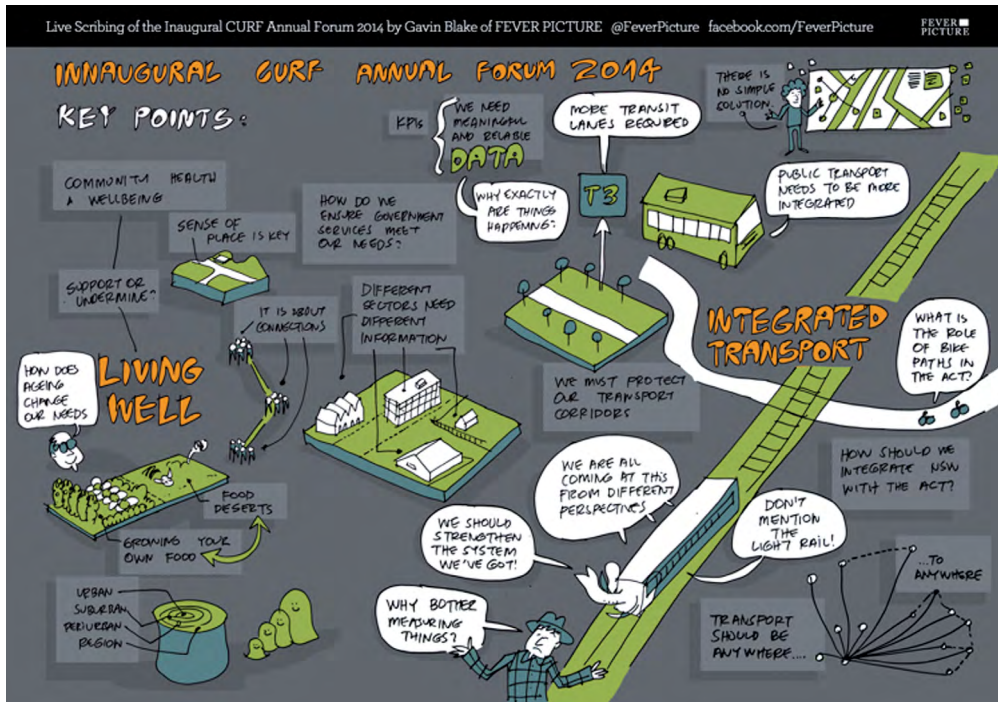
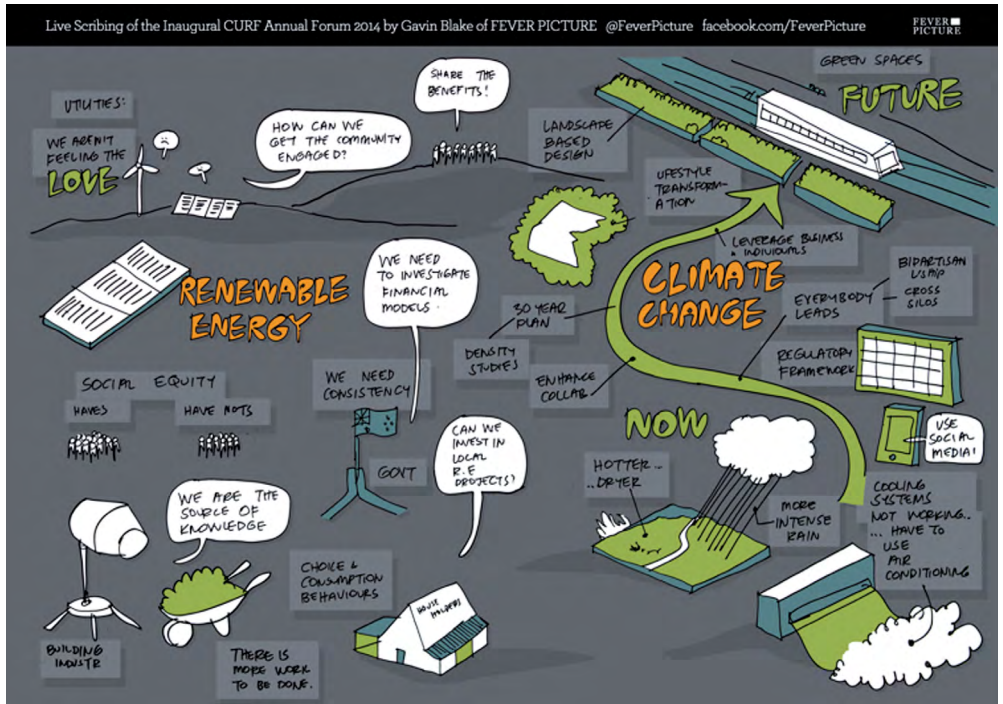
The *Forum* discussions ranged over a number of issues that have been the subject of ACT Government, CURF and other reports and strategic documents. The following list provides a bibliography of the primary documents for those seeking further information on topics raised.

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- Norman B, Sinclair H and O'Donnell T (2014), *Mind the Gap: Analysing ACT development controls for climate change mitigation*. Canberra Urban and Regional Futures, University of Canberra.
- Norman B, Webb R, Steffen W, O'Donnell T, Sloan T, Weir B and Williams J (2014), *Climate Adaptation Sector Review: Informing the future direction for the ACT & Region*. Canberra Urban and Regional Futures, University of Canberra.

### 6. APPENDIXES

#### APPENDIX 1: GRAPHIC ILLUSTRATIONS BY GAVIN BLAKE OF FEVER PICTURE

Graphic Illustrator, Gavin Blake of Fever Picture rendered his impressions of the Rapporteur Reports.



**THURSDAY 20 NOVEMBER 2014**

5:00-9:00PM	<b>FORUM DINNER</b> <b>Guest speaker:</b> Tony Carmichael, Executive Director Strategic Planning, Environment & Planning Directorate, ACT Government
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**FRIDAY 21 NOVEMBER 2014**

8:30-9:00	REGISTRATION, TEA AND COFFEE	
9:00-10:00AM	<b>FORUM OPENING</b> <b>Welcome and overview:</b> Professor Barbara Norman <b>Forum opening:</b> Professor Stephen Parker AO, Vice-Chancellor, University of Canberra <b>Ministerial address:</b> Simon Corbell MLA, ACT Minister for the Environment	
10:00-10:30AM	MORNING TEA – HOSTED BY ELTON CONSULTING	
10:30-12:30PM	MORNING SESSION	
	<b>CLIMATE ADAPTATION FOR CANBERRA AND THE REGION</b>  <u>Conference Room A</u> <b>Chair:</b> Dr Bob Webb (ANU) <b>Overview:</b> Jo Mummery (CURF) <b>Rapporteur:</b> Tayanah O'Donnell (CURF)  <b>Part 1:</b> Brief overview presentation – 10 mins – key themes <b>Part 2:</b> Facilitated discussion and workshop – where are we and what are the solutions (1.5 hours)	<b>RENEWABLE ENERGY FOR CANBERRA AND THE REGION</b>  <u>Conference Room B</u> <b>Chair:</b> Jon Sibley (ACT Govt.) <b>Overview:</b> Liz Veitch (SERREE) <b>Rapporteur:</b> Hamish Sinclair (CURF)  <b>Part 1:</b> Brief overview presentation – 10 mins – key themes <b>Part 2:</b> Facilitated discussion and workshop – where are we and what are the solutions (1.5 hours)
12:30-13:30PM	LUNCH	
13:30-15:30PM	AFTERNOON SESSION	
	<b>INTEGRATED TRANSPORT FOR CANBERRA AND THE REGION</b>  <u>Conference Room A</u> <b>Chair:</b> Kristin Blume (ACT Govt.) <b>Overview:</b> Mr David Flannery (CURF) <b>Rapporteur:</b> Viv Straw (CURF)  <b>Part 1:</b> Brief overview presentation – 10 mins – key themes <b>Part 2:</b> Facilitated discussion and workshop – where are we and what are the solutions (1.5 hours)	<b>COMMUNITY HEALTH AND WELLBEING FOR CANBERRA AND THE REGION</b>  <u>Conference Room B</u> <b>Chair:</b> Anthony Burton (Heart Foundation) <b>Overview:</b> Professor Helen Berry (UC) <b>Rapporteur:</b> Brian Weir (UC)  <b>Part 1:</b> Brief overview presentation – 10 mins – key themes <b>Part 2:</b> Facilitated discussion and workshop – where are we and what are the solutions (1.5 hours)
15:00-15:20PM	AFTERNOON TEA	
15:20-16:20PM	<b>FORUM SUMMARY AND NEXT STEPS</b> <b>Rapporteur reports</b> <b>Forum summary and close:</b> Professor Barbara Norman	
	FORUM CLOSE	



APPENDIX 3: LIST OF ATTENDEES

First Name	Last Name	Role	Organisation
Barbara	Norman	Director	CURF & Professor of Urban and Regional Planning, University of Canberra
Stephen	Parker	Vice-Chancellor	University of Canberra
Simon	Corbell MLA	Minister for the Environment	ACT Government
Maxine	Cooper	Auditor-General	ACT Audit Office
Bob	Neil	Commissioner	Office of the Commissioner for Sustainability and the Environment
Tony	Carmichael	Executive Director, Strategic Planning	Environment and Planning Directorate, ACT Government
Catherine	Keirnan	Manager, Climate Change Policy	Environment and Planning Directorate, ACT Government
Bob	Webb	Senior Research Fellow	Australian National University
Helen	Berry	Professor	University of Canberra
Tayanah	O'Donnell	Research Fellow	CURF, University of Canberra
Brian	Weir	Lecturer	School of Management and CURF, University of Canberra
Hamish	Sinclair	Research Fellow	CURF, University of Canberra
Viv	Straw	Research Fellow	CURF, University of Canberra
Jo	Mummery	Research Fellow	CURF, University of Canberra
David	Flannery	Researcher	CURF, University of Canberra
Shaun	Allen	Administration	University of Canberra
Lisa	Stiebel	Sustainability Consultant	Riverview Group
Scott	Martin	Policy Administration Officer	Australasian Railway Association
Isuru	Neelagama	National Manager Policy and Government Relations	Bus Industry Confederation
Toby	Roxburgh	Principal Energy Engineer	E2Designlab

First Name	Last Name	Role	Organisation
Roz	Chivers	Manager ACT	Elton Consulting
John	de Groote	Engineering Manager	Divall's Earthmoving and Bulk Haulage
Kim	Barton	Stakeholder and Engagement Manager	Capital Metro Agency, ACT Government
Caroline	Howard	Architect/Planner	
Kathy	Eyles	PhD student	Fenner School of Environment and Society, ANU
Leon	Arundell	Chair	Living Streets, Canberra
Alan	Morschel	Architect	Australian Institute of Architects
Mark	Fleming	Renewable Energy Regional Coordinator	Office of Environment and Heritage, NSW Government
Liz	Makin	Strategic Planning Manager	Yass Valley Council
Matt	Beaty	Research Projects	Land and Water Flagship, CSIRO
Katie	Eberle	Director, Adaptation Policy	Department of the Environment
Richard	Everson	Project Manager	RDA Southern Inland
Annalisa	Koeman	Executive Officer to Dr Tom Calma, Chancellor UC	University of Canberra
Robyn	Coghlan	Secretary	Friends of Hawker Village Incorporated
Helen	Swan	Executive Officer	South East Regional Organisation of Councils
Felix	MacNeill	Environmental Management Coordinator	Shared Services Centre, Commonwealth Government
Chris	Berry	Director Planning & Environmental Services	Yass Valley Council
Anthony	Burton	Active Living Coordinator	Heart Foundation (ACT)
Janelee, I-Chen	Li	PhD candidate	Canberra University
Lisa	Crossly	Project Manger	Da-Ha
Harold	Guida	Director	Guida Moseley Brown Architects
Diane	Gibson	Dean	Faculty of Health, University of Canberra

First Name	Last Name	Role	Organisation
Jonathan	Brown	Performance Auditor	ACT Auditor-General's Office
Allen	Grimwood	Principal Planner	Zenith Town Planning
Murray	Coleman	Architect	
Lain	Dare	Research Fellow	Institute for Governance and Policy Analysis, University of Canberra
Clare	Henderson	Executive Director	Conservation Council ACT Region
Peter	Smith	Director of Environmental Services	Cooma-Monaro Shire Council
Kris	Boyapati	Manager	Defence
Greg	Walpole	Secretary	Canberra EV
Tom	Sloan	Research Consultant	Sustineo
Jenny	Goldie	President	Climate Action Monaro; ACT Peak Oil; Sustainable Population Australia
Grahame	Legge	Architect	Collard Clarke Jackson
Tony	Carmichael	Executive Director, Strategic Planning	Environment and Planning Directorate, ACT Government
Kristin	Blume	Senior Manager, Major Projects and Transport	Environment and Planning Directorate, ACT Government
Dominic	Maiuto	Director	Oztal Architects
Annie	Kentwell	Project Officer	Planning Institute Australia
Richard	Marson	Assistant Director	Department of Infrastructure and Regional Development
Ellen	Grady	Events	Institute of Governance Public Policy, University of Canberra
Lucas	Carmody	Researcher	University of Canberra
Sachie	Terasaki	Utilities Regulation	Environment and Planning Directorate
Anne	Moroney	Strategic Planner	Environment and Planning Directorate
Tony	Adams	Director	A T Adams Consulting
Girish	Sagaram	Planning Officer	Environment & Planning Directorate

First Name	Last Name	Role	Organisation
Meetu	Sharma Saxena	Planning officer	ANU
David	Gribble	Associate	Northrop Consulting Engineers
Melinda	Dodson	Architect / PhD Student	Melinda Dodson Architects
Andrew	Wilson	President	Australian Institute of Architects, ACT Chapter
Caroline	Le Couteur	Executive Director	Australasian Centre for Corporate Responsibility
Cia	Flannery	Landscape Architect	Cia Landscapes and Colour Pty Ltd
Jeff	Ibbotson	Vice President	Pedal Power ACT
Brendan	Smyth MLA	Opposition spokesperson	ACT Liberals
Trina	McFarlane	Project Director/Principal Planner	Environment and Planning Directorate, ACT Government
Alison	Moore	Senior Manager	Environment and Planning Directorate, ACT Government
Amanda	Evans	ACT Chapter President	Australian Institute of Landscape Architects
Gill	King	Founder	Sustainable Jill
Toni	Sarri	Principal Project Manager	Lake Jindabyne Village
Gary	Shapcott	Citizen	
Karen	Dahl	Researcher	Embassy of Sustainability
Lindsay	Callaghan	Senior Planner	Knight Frank Town Planning
Aileen	Power		Woodlands and Wetlands Trust
Raj	Singh	Analyst	Department of Education
Rebecca	Sorensen	Acting Director Strategic Planning	National Capital Authority
Chris	Mackenzie Davey	Regional Clean Energy Coordinator	NSW Office of Environment and Heritage
Adam	Edwards	Researcher	Climate Change Institute, ANU
Storm	Watson	Impacts & Adaptation Programs Officer	NSW Office of Environment & Heritage

First Name	Last Name	Role	Organisation
Renee	Fulton		
Mark	Butz	Principal	Futures by Design
Tristan	Ryall	Designer	Ryall Design
Jessica	Ryall	Building Designer	Ryall Design
Robert	Care	Principal   Strategic Geographies Leader	Arup
Chris	Dare	Environment & Sustainability Manager	ActewAGL
Kristy	Moulds	Planning Officer - Southern Region	Department of Planning and Environment
Lydia	Agostino	Admin Officer & Planning Student	Regional Development Agency ACT
Petra	Oswald		Environment and Planning Directorate, ACT Government
Lisa	Crossley	former student	
Narsimha	Garlapati	GIS Specialist	University of Canberra
Phab	Vetsavong	planning officer	Environment and Planning Directorate, ACT Government
Rashed	Yamin	Planning Officer	Environment & Planning Directorate, ACT Government
Jon	Sibley	Senior Manager	ACT Government
Anthony	Hogan	Professor	University of Canberra
Georgia	O'Cianain	Assistant Director, Planning Analysis Branch	Department of Infrastructure and Regional Development
Sharen	Phillips	law student (environment)	
Damien	Haas	Chair	ACT Light Rail
John	Smith	Retired engineer	
Christine	Gingell	Secretary	Belconnen Community Council
Anna	M	Researcher	ANU
Carleton Bruin	Christensen	Lecturer	School of Philosophy, ANU

First Name	Last Name	Role	Organisation
Steve	Blume	President	Australian Solar Council & Energy Storage Council
Brett	Roantree	Urban Designer / Town Planner	Knight Frank
Katharine	Campbell	architect/urban designer	Environment Planning Directorate, ACT Government
Luke	Perkins	Student Planner	Cooma-Monaro Shire Council
David	Gambrill	Business Relationship Manager	National ICT Australia
Khursheed	Amur	Project officer	Society, environment, economy and change (SEE-CHANGE)
Simon	Webber	Manager Technical Advisory Services & Standards	ACTEW
Meagan	Cousins	Project Manager	Economic Development Directorate, ACT Government
Kristy	Moulds	Policy Officer	Department of Planning & Environment
Michael	Smith	Research Fellow	ANU
Jane	Crotty	Member	Capital Metro
Marea	Fatseas		

**FOR MORE INFORMATION**

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## KEY POINTS:

