LOW CARBON LIVING CRC

RP 3019 Pathways to achieve Low Carbon Living Outcomes through Collaborative Urban Development Planning in Australia

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Acronyms

CEFC Clean Energy Finance Corporation

CRCLCL Cooperative Research Centre for Low Carbon Living

DAD Decide-announce-defend

DCG Deliberative Collaborative Governance

GLO Government Land Organisation

IAP2 International Association of Public Participation

LCL Low Carbon Living

MRA Metropolitan Redevelopment Authority

NCDD National Coalition for Dialogue and Deliberation

Executive Summary

Collaborative Urban Development Planning for Low Carbon Living

This research project - RP 3019 *Pathways to Achieve Low Carbon Living Outcomes through Collaborative Urban Development Planning in Australia* - is part of Program 3 of the CRC for Low Carbon Living (CRCLCL): Engaged Communities. The CRCLCL identifies collaborative urban planning as a core pathway to more livable and sustainable neighbourhoods with low carbon footprints.

Drawing on the knowledge of key stakeholders in the Australian urban development industry, including CRC LCL participants, the project examined the potential for collaborative urban planning processes to reduce the carbon intensity of urban precinct developments.

The contributors to this research project endorse the use of collaborative urban planning in general, and as a pathway to achieve low carbon living specifically. The survey respondents in this study personally endorse collaborative approaches to urban development planning as either extremely important (50%) or very important (43%). They may well be leaders or change agents in the process of embedding collaborative approaches to urban development planning in governance systems, since they report that while the organisations they work for also have a strong level of comittment to collaborative processes, respondents suggest it is at a slightly lower level - 21.4% of organisations are reported as seeing collaboration as extremely important, 36.1% seeit as very important, and 51.9% see it as moderately important.

While all participants in this research support the use of collaborative approaches to achieve low carbon living in urban precincts, the challenge of how best to achieve this remains. It is an evolving field, with a growing community of practice designing and testing innovations. Consequently, participants' experience with collaborative approaches is often described as a learning-by-doing journey, requiring ongoing, often context-specific innovation in relation to designing and implementing collaborative processes that yield LCL results.

Collaborative approaches offer a number of benefits, such as improving urban planning decisions and implementation, and strengthening democracy. This enables communities to become more resilient and hence able to respond to climate change adequately, such as through low carbon living. Collaborative planning can offer a way to integrate scientific and other expert forms of knowledge critical to low carbon living with the essential lay knowledge of commnunity members who wish to assert a democratic right to have a say in how they live. These approaches are not without challenges – gaining sufficient understanding and experience of innovations in this field can take time and resources and existing cultures within and between government and other stakeholder institutions can be difficult to change.

As a starting point, most governments and government departments and utilities at state and local level already have "community engagement" guides intended to ensure that comnunity involvement is adequate and of high quality.These guides are a required point of reference for governments wishing to involve communities in planning decisions and urban development. The guides typically have a fairly wide range of useful generic information and suggestions, and often refer to design tools such as the IAP2 Public Participation Spectrum or the Bang the Table Community Engagement Triangle.

These guides tend not to be prescriptive or to endorse particular participatory techniques or approaches – they simply indicate the range of forms of engagement that governments can undertake for various purposes, from information sharing as a top down process, to full collaboration between citizens, stakeholders and governments.

Each element of the spectrum of public participation can be useful for specific purposes – in fact a range of elements may be combined in a single participatory process. However, as this research shows, there is a tendency in Australia for governments to be the primary driver of collaborative processes, and to attempt to fulfil their obligations for community participation using processes where citizens are relatively disempowered, either as recipients of information, or by being "consulted" about essentially pre-formed policy decisions. Truly collaborative, co-decisional approaches are far less frequently seen. Furthermore, these government-sourced community engagement guides rarely refer to methods of integrating low carbon living and other sustainability goals into engagement practices.

Participants in this research recommend greater use of the full spectrum of public participation options, particularly when complex decisions are needed that impact on communities and require ongoing community action to be effective in achieving sustainable, low carbon communities. In this case, co-decisional processes are seen as being effective and essential. For instance, deliberative democracy is a highly collaborative methodology that has been used with considerable success in Australia and elsewhere. Its key attributes – deliberativeness, representativeness/inclusiveness, influence – can support a fair, transparent, and informed decision making process that can lay a solid foundation for low carbon, sustainable living.

Contributors to this research also note the need for innovation in terms of how expert and laypersons' knowedge is integrated into specific collaborative projects, especially when considering highly scientific or technical information relevant to low carbon living, and the need to apply it in a manner that supports communities' values and aspirations.

Furthermore, while government-provided engagement frameworks are important, collaborative networks can also be formed that exist and operate beyond the boundaries of government organisations to a significant extent. It could be argued that a move to more collaborative governance is not only wise in terms of its

philosophical commitment to stronger democracy and practical problem solving benefits, but possibly`as an inevitable corollary of the broad trend towards distributed, crowd-sourced, self-organising networks. Distributed economies, for example, are emerging as a transformational force that can promote sustainability by challenging and/or complementing existing large-scale, centralised production. Community-owned renewable energy sources such as wind farms, and other distributed low carbon and sustainability innovations may require similarly distributed governance systems.

In each case, context-specific governance systems and tools of governance are needed that:

a) Enable the appropriate network of people to be identified and involved or represented

b) Provide a user-friendly collaborative governance platform that can be adapted to different contexts

c) Involve a user-friendly way of identifying gaps in knowledge and hotspots where it is essential for collaborators to co-create a better way of understanding and working with each other. For instance, local, technical, and scientific knowledge may all need to be integrated at various times during the collaborative governance process.

d) Involve a user-friendly way of collecting, co-creating and sharing information. This could involve citizen science, for instance.

e) Enable the people involved in the collaborative network to adapt the governance process over time, as they learn from experience.

f) Enable robust evaluation of aspects of the collaborative governance process and its outcomes, over the short and long term.

Collaborative governance for low carbon urban living must reach beyond individual planning initiatives or events, particularly when considering precinct-scale developments, which inherently require collaboration between all levels of government, developers and other private sector stakeholders, and communities. This is true of both up-front planning decisions as well as ongoing use and maintenance, and further development and change that inevitably occurs. The research participants described larger “networks of collaboration” in which they interact on a regular basis when undertaking precinct development. These consist of formal and informal relationships between government, community and oher urban development stakeholders such as infrastructure providers. These are manifested in a variety of configurations and serve to imagine, plan, build, live in, service and reform the urban environment.

A particular challenge to the goal of achieving low carbon living is the need to incorporate LCL concerns and scientific information into citizens and stakeholder dialogues. In any given network of collaborators, various types of expert and non-expert information will need to be “translated”and/or co-created so that all members of the collaborative network can usefully access it in order to better inform deliberations or build capacity to provide and use low carbon infrastructure.

Participants in this research project identified a number of opportunities to improve the efficacy of collaborative urban development processes, that integrate LCL and other sustainability concerns:

1. Continuing to improve the quality and reach of collaborative processes through iterative ‘learning-by’doing’.
    a. Having a system to do this and to share experiences in order to build capacity (e.g. a website or app).
2. Utilising the full spectrum of public participation approaches described by the IAP2 as appropriate, and moving away from the overreliance on informing and consulting.
3. Undertaking collaboration in ongoing processes, part of business-as-usual, not just as a series ‘one-off’ events.
4. Identifying and mapping the relevant network of collaboration necessary to achieve precinct development and low carbon living, including formal and informal processes, and all relevant citizens and stakeholders. This should include a timeline.
5. Identifying points in the network of collaboration where different types of knowedge, such as local and scientific knowledge, need to be translated and integrated so that people can collaborate in an informed way, and can co-create new understandings.

Stakeholders who participated in this research made a number of suggestions that they consider would assist them in undertaking the particular projects they are involved in:

- An *organisation that can provide independent third party advice* and support to organisations such as local governments that want to undertake deliberative collaboration in urban planning for low carbon living and other sustainability outcomes
- *Training* courses /accreditation
- Websites and *online information*
- New and/or adapted *digital planning platforms* that could be used in collaborative planning techniques such as workshops, or online
- *Rating guidelines* for deliberative collaborative governance
- A *tender guide* for governments wanting to undertake low carbon urban development
- A *guide to help local governments collaborate with energy providers* and the community to build renewable energy infrastructure.

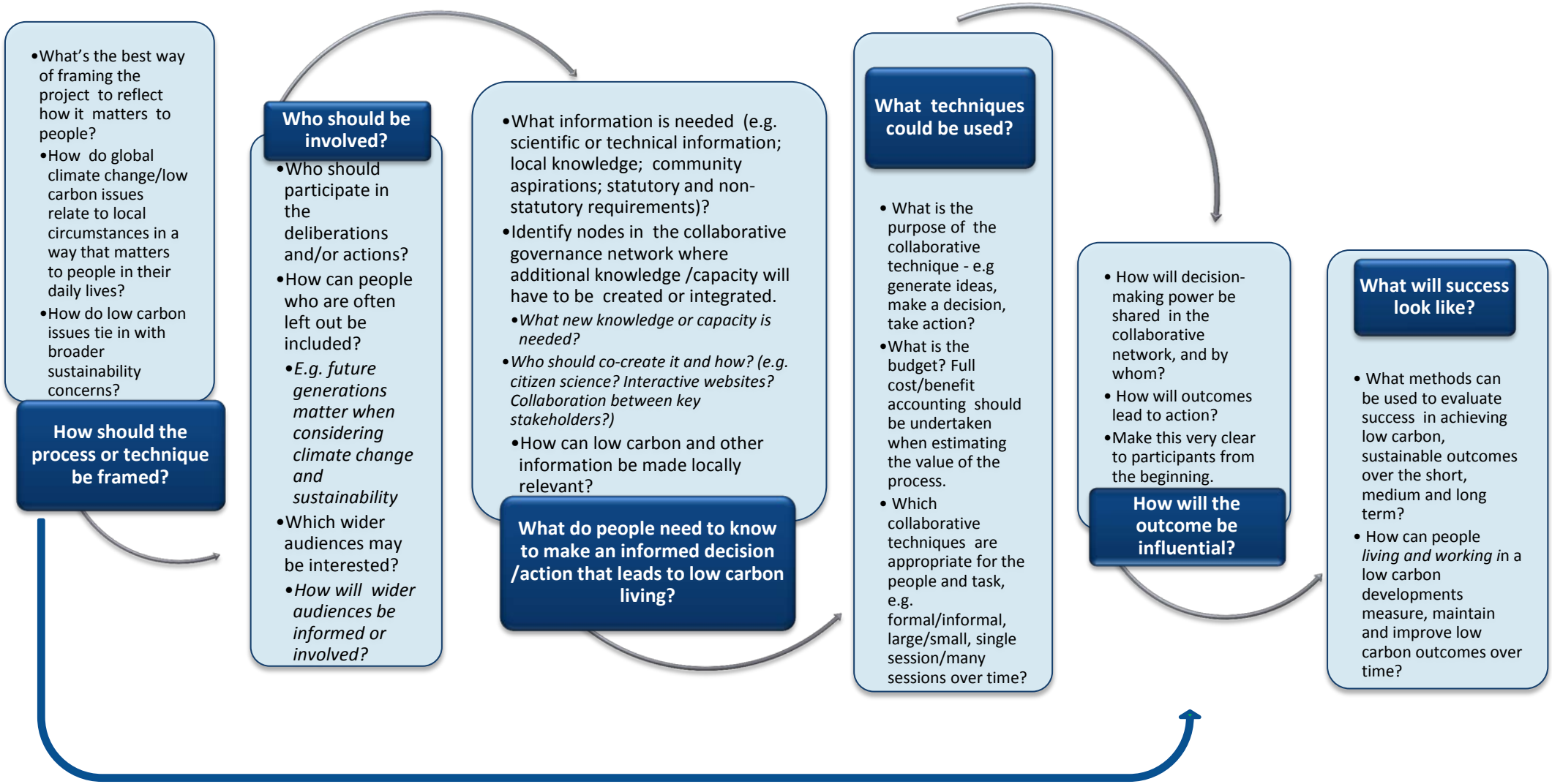
Process map for collaborative governance for low carbon living

The points above do not represent an exhaustive list of tools required to support low carbon living in every collaborative urban development process to be undertaken in Australia (although many could be widely relevant). Nonetheless, these suggestions illustrate stakeholders' perceived need for independent advice, training and evaluation, and the need to develop tools that help collaborators identify and solve particular issues that occur in nodes of specific collaborative networks, such as the need for local governments and consultants firms to understand each others' requirements when considering infrastructure development and the need to build capacity to improve low carbon infrastructure.

A generic collaborative governance process design map is provided (see Figure 1) that may provide a useful starting point for designers and participants who wish to achieve low carbon urban living, or indeed broader sustainability outcomes. It raises questions that should be considered when designing a collaborative process.

The process design map could be used to develop an entire process, involving many techniques over time, or it could be used to design a single collaborative governance event for a particular purpose. As shown by the suggestions from participants in this research project, the process map will need to be populated and adapted to suit specific development contexts. However it depicts many of the decisions and related factors that typically need to be considered in the Australian urban planning context. In many instances, the questions can and should be raised and answered collaboratively by several or all of the participants in the collaborative network.

Figure 1: Collaborative Governance for Low Carbon Urban Development Planning - Process Design Map



This process map could be translated into a ***Pathways to Low Carbon Living App*** that provides digital infrastructure and information to support a collaborative governance framework, incorporating low carbon living and sustainability, and that can be utilised by stakeholders and everyday citizens. While the design and development of such an app is beyond the scope of this project, the following preliminary suggestions are offered for consideration. An app could enable people in the collaborative network to:

- Map the collaborative network so that everyone understands who is involved, and who is doing what and when
- Keep in touch with each other in a more convenient, inclusive and structured way than email or social media platforms such as facebook;
- Suggest additional participants who may need to be included.
- Flag processes or issues where additional information, better understanding or capacity building is required to complete the task concerned (such as the guide for local governments wishing to put out a request for tender for companies to provide renewable energy that is provided as an example in this report)
- Deliberate online were appropriate - for example, to come up with solutions to issues that are raised during the design and development of a low carbon urban precinct, develop knowledge or capacity to deliver outcomes, or to develop precinct plans.
- Support planning, delivery and evaluation of face-to-face deliberative workshops
- Follow the outcomes of deliberations in parts of the network they are not directly involved with
- Find or co-create and share relevant information, with links to more in-depth online information that may be required or relevant. This could include capacity for citizen science.
- Evaluate the governance process on an ongoing basis so that adaptive management of the process itself can be undertaken, and so that participants' opinion about the overall quality of the collaborative process is clear.
- Provide the basis for a governance system that supports users, homeowners, tenants and businesses who live in and use the low carbon urban development after it is constructed in the case of a greenfields development or redeveloped in the case of a brownfields development.

This research offers insight into urban planning processes in Australia at a moment in time when entrenched versions of stakeholder and community consultation appear to be slowly yielding to new, more truly collaborative approaches, and there is wide recognition of the need to continue this trend. Urban development stakeholders in Australia are being required to develop more collaborative approaches to urban planning. At the same time, the need for more sustainable, less carbon intensive ways of living is becoming more widely accepted.These trends are converging - the link between low carbon living and other sustainability goals and collaborative modes of governance is being explored in both theory and practice.

Without claiming to provide a representative view of the entire Australian urban development sector, many of the participants in this study are noted for their innovations and experience in the field. They therefore offer valuable insights which are likely to be of broad interest. The project also highlights relevant Australian and international examples of innovations in collaborative governance that may inspire progress in this field.

1. Introduction

The problems that must be dealt with in order to create low carbon urban developments are often "wicked" – in other words, they are complex, value-laden, and influenced by interrelated social, environmental and economic factors that effect each other in often unforeseeable ways through feedback loops. Wicked problems have no single correct "answer". They often require judgement and action in the absence of certainty. Furthermore, wicked problems such as achieving low carbon living can only be achieved over the long term through a governance system that can adapt quickly to sudden, interrelated and often unpredictable environmental, sociocultural and economic shifts.

A variety of perspectives and knowledge must be integrated to achieve low carbon living in urban areas. Governments, citizens, stakeholders, and scientific and other experts are among those who may be needed to co-create low carbon urban developments. Collaborative approaches are needed at various stages – including initial visioning and planning, delivery/construction, and ongoing operation (see Kasemir et al. 2003; Eden 1996; De Marchi and Ravetz 2001; Garmendia and Stagl 2010; Jäger 2009; Fierlbeck, 2010, 2; DiMarchi and Ravetz 2001; van den Hove 2000; RSE 2011).

One of the central challenges to achieving sustainability outcomes such as low carbon living is the need to integrate various types of expert knowledge in decision making and governance (Cash et al. 2006; see also Shaw et al 2012; Clarke et al 2013; Kasemir et al. 2003; Whitfield et al. 2011; Garmendia and Stagl 2010; Bäckstrand, 2003; Bulkeley and Mol 2003; Eden, 1996). It can be difficult to present specialist knowledge in an format that is relevant and readily accessible to all involved in collaborative processes. For instance, theorists of 'sustainability science', which examines the integration of nature and society, argue that it is critical to consciously support the coproduction of knowledge and innovation, managing 'the boundaries between science and policy across disciplines, scales and knowledges to create information that is salient, credible and legitimate to multiple audiences' (Cash et al. 2006, 465). *Learning by doing - ongoing*

In the case of climate change policy generally, it has certainly proven notoriously difficult to connect scientific information to the political decision making process effectively via conventional governance processes in countries such as Australia (see for instance Jäger 2009, 144). (There are also related reasons for this that can be explained by cognitive/social psychology)

Expert knowledge alone cannot 'provide' low carbon living, given the diversity of expert knowledge that must be integrated to achieve low carbon living, and since even "experts" 'are usually "laypersons" outside their specialties, and…policy-makers are generally no more knowledgeable than ordinary citizens' (Ravetz, 2003, 62). No single body of expert or lay knowledge encompasses the entire urban system (Innes and Booher 2000; Healey 1997; Williams 2013; Gollagher and Hartz-Karp 2013; Hartz-Karp et al. 2013). In fact, research shows that systems 'must possess requisite variety in order to adapt to changing external conditions' (Pasmore 2005, 45) and that 'systematically bringing stakeholder values to a planning process can help improve its efficacy' (Chakreaborty 2012). In particular, 'Community partnerships between businesses, local authorities,social enterprises and civil society groups are a practical means of achieving significant change' (RSE 2011,146).

Collaborative governance is advocated for its philosophical commitment to stronger democracy as well as for its capacity to support improved, practical problem solving. From an ethical perspective, it can be argued that citizens *should* have a pivotal role in the process of reducing the carbon intensity of urban areas, since it is fundamentally about how they would like to live. Beyond this, it could be argued that collaborative governance is a desirable and perhaps inevitable corollary of the broad global trend towards distributed, crowd-sourced, self-organising networks. Distributed economies, for example, are emerging as a transformational force that can promote sustainability by challenging and yet complementing existing large-scale, centralised production. Community owned renewable energy sources such as wind farms, and other distributed low carbon and sustainability innovations may require similarly distributed governance systems. Über, AirBNB, and Kickstarter are well known examples of this trend (see for example Johansson et al. 2005; van den Dool et al. 2009).

However, conventional systems of governance in Australia have not yet been able to rise to the challenge of achieving low carbon living adequately (Gollagher and Hartz-Karp 2013). Top down planning processes undertaken in government department silos do not connect well with each other, or with the community, and therefore lack the capacity to integrate the range of knowledge and values necessary for successful low carbon living: 'Conventional local planning processes seldom incorporate climate change scenarios systematically or quantitatively, often failing to address the range of response options comprehensively due to 'silo-thinking' (Sheppard et al 2011, 410) (see also Hartz-Karp, Gollagher and Petrova 2013 for a fuller discussion of these limitations). For instance, representative comments from contributors to this research are:

> *I think a lot of the time, our experts are way off the track. They just don't know what's implementable. They just haven't used citizen's values to figure out what can people live with and what they can't* (Consultant/researcher in collaborative governance).

> *The problem I had with traditional engagement was that (the bureaucrats) go "here is the proposal we've developed"…Then it gets presented to the community and then you go for submissions…then the community is resistant to it because they see that the decision has already been made and they've been dealt out of the whole*

process; or the community mobilises and objects to it (Senior local government interviewee)

Another contributor to this research argues that:

> *We have a dysfunctional democracy. Increasingly we are moving to one term governments because people can't stand what they see…I think people are just getting frustrated. We've got these problems, we need to solve these problems, we need to have a greater emphasis on clear policy directions, and that's not being delivered though the processes that one would hope it would be delivered through* (Collaborative processes designer/facilitator).

A former state government employee heavily involved in developing planning frameworks explains:

> *It's an issue about how we could harness collective intelligence, how we could organise our system of governance to use the co-intelligence of everyday people, scientists, those who are technology experts, those who are spiritualists? How do we get that to influence the decisions we make about the planet we live on, that would allow us to be sustainable – hence low carbon living?*

Patsy Healey[1], one of the earliest and foremost authors on the subject, argues that 'The task of the planning enterprise is to critically interrogate the governance practices that currently exist … and to help governance communities develop different approaches where these are seen to be failing' (2003 17). Like advocates of collaborative urban planning in Australia today, Healey proposed collaborative planning as a way to expand the design of planning processes 'beyond 'manipulative politics, the rational–technical process, top-down command-and-control practices and bureaucratic rule governed behaviour'. Introduce quote We need 'new technologies of cooperation' (McKibben 2006).

Collaborative Urban Development Planning

Collaborative governance can be highly effective in planning and supporting complex, dynamic urban environments influenced by wider social, environmental and economic forces and where public and private actors work collectively with citizens to establish the rules of the provision of public goods (Healey 1997). In practice, collaborative urban development planning is interpreted in a variety of ways in Australia – even the terminology associated with it is diverse and contested. Concepts and terms such as deliberative democracy, participatory planning, co-creation, community engagement, collaborative governance, deliberative collaborative governance, and community consultation all permeate the evolving contemporary discourse of collaborative urban planning in Australia. They are sometimes used interchangeably, or with loosely prescribed meanings.

Several of the interviewees in this research noted that choice of language when proposing a collaborative process or governance system is very important. Some prefer to adhere to the formal titles of approaches such as 'deliberative democracy' for instance, as a way of differentiating them from conventional forms of engagment. Others suggest that it may sometimes be more appropriate to avoid jargon and use descriptive terminology that is more 'everyday':

> *Twyfords 'The Power of "Co"' very cleverly avoids the use of "deliberation" and "deliberative democracy", and they talk much more about the cycle: co-define, co-design, co-create and co-deliver, with an emphasis on different forms of collaboration…maybe this is a way of doing it, just keep emphasising that co-definition of the problem and the co-design of any process to look at that problem and then the co-creation of solutions of those problems and then co-delivering them … coming at it via the problem and saying ok we've got a wicked problem, a complex problem, how do we actually look at it and solve it and so on. I sometimes find their cycle more helpful* (Researcher/consultant in collaborative processes) (see http://www.twyfords.com.au/our-resources/publications/excerpt-from-the-power-of-co for more information) .

Fundamentally though, collaborative urban development planning, and governance, could be described as an approach that involves citizens throughout the planning process which:

- Is based on informed dialogue and includes diverse viewpoints
- Encourages positive solutions instead of political compromise
- Allows participants representing the full diversity of the collaborative network concerned to share and develop their views in a constructive way
- Builds shared understanding on a problem/collaborative learning process
- Establishes an agreement based on cooperative scenario building
- Identifies steps that lead onto action (see for example Innes and Booher 2000; Healey 1997).

The collaborative network for citizens' participation in the planning process that has been proposed by Judith Innes and David Booher (2000) encourages positive solutions to problems instead of political compromises. the process of collaboration enables the development of a context where different actors jointly share and develop their views in a constructive way. One of the key results of collaborative planning is that it allows for the development of shared understanding and vision (Connor et al. 2004) and consensus building (Healey 1997; Innes and Booher, 1999). Consensus building among stakeholders is an increasingly common as a way to search for feasible strategies to deal with

[1] Healey first wrote about collaborative planning in 1997 after her investigation into the form and impact of English planning processes.

uncertain, complex, and controversial planning and policy tasks.

Williams (2013) looks specifically at collaboration for low carbon living and argues that citizens should be involved not only in the planning and decision-making process but also in the provision of the built environment so they have control over the inclusion, provision and operation of low carbon infrastructure and practice (see also Hartz-Karp et al. 2013). His picture of collaboration is systemic, and long term. There are examples from around the world where this more long term, systemic form of collaborative governance is being tried, such as Dockside Green in British Columbia, which is described as an 'urban development committed to creating a well-loved, culturally vital neighbourhood where the mix of people and environment fuels health and a vibrant local economy'. In Dockside Green Community Conversations, architects, planners and designers collaborated with residents, community members and engaged citizens to revist the original plans for the area to take into account the communities ideas and aspirations for the neighbourhood. Shortly after a series of workshops were completed, the design team began to develop a more specific big picture plan for the short and long term, guided by the feedback they received. This process continues iteratively as the planning proceeds, and can be followed online (see http://www.docksidegreen.com/ and placespeak.com/docksidegreen for more information).

Williams (2013) also notes that citizen-led collaborations are not the only path to low carbon living, and even suggests that government–led approaches may be most suited to driving rapid change towards low carbon living. It will certainly interesting to observe the effectiveness of governance approaches to sustainability over time in countries founded on representative democracy in comparison to those with more centralised governmental control. Nonetheless, Williams argues that collaborative approaches that empower communities are perhaps fit better with what he sees as emerging entreprenerial and collaborative forms of governance. As explained in the CRC for Low Carbon Living Project RP3004 *Deliberative Democracy/Participatory Sustainability for Low Carbon Living: Scoping Study*, 'the persistant finding of the research on participatory decision-making relating to issues relevant to low carbon living is that they are more effective when they are deliberative, have a clear intent, are flexible to suit the context, and are meaningful to participants, in particular that the outcomes of the deliberations will matter' (Hartz-Karp at al. 2013, 17)

There is now a significant body of evidence that collaborative community-engaged decision making provides cost effective, situation-appropriate, and widely supported solutions to urban development issues such as reducing carbon emissions (see for example Innes and Booher 2000; Gollagher and Hartz-Karp 2013; Hartz-Karp et al. 2013; Connor et al. 2004; O'Flynn and Wanna 2008). Collaborative urban planning is being used in Australia in an attempt to address the failings of existing governance practices.

Collaborative planning processes offer an alternative to conventional "community consultation" processes conventionally practiced in urban planning in Australia, such as "decide-announce-defend" (DAD), in which experts and bureaucrats devise a policy or planning solution and subsequently offer it to the public for review and comment. Such conventional consultation practices have been shown to be inadequate in dealing with wicked problems, and indeed often counterproductive in terms of cost-effectiveness, policy rigour, community approval and capacity to enact governance decisions (see for example Meadowcroft 2004; De Marchi and Ravetz 2001; Gollagher and Hartz-Karp 2013; Hartz-Karp, Gollagher and Petrova 2013).

Contributors to this research noted that good collaborative processes are not just about "bringing the community along" – they involve working with citizens to co-create a shared understanding of issues and opportunities in order to reach decisions that everyone involved can live with. Collaborative processes seek synergies between perspectives that lead to *new* shared knowledge or understanding, rather than simply selecting between established, competing ideas.

Deliberative Democracy/ Deliberative Collaborative Governance.

In particular, deliberative democracy has been identified by the CRC for Low Carbon Living as a key pathway to low carbon living because of its ability to bring (i) legitimacy to decisions, (ii) its ability to deliver more appropriate decisions representative of the community and (iii) its ability to create ownership and commitment to action in the community, through active participation in the process. This potential was explored in the CRC for Low Carbon Living Project RP3004 *Deliberative Democracy/Participatory Sustainability for Low Carbon Living: Scoping Study* (Hartz-Karp at al. 2013).

Participants in this research note that the inherently innovative nature of the push for low carbon living means that ongoing community involvement is essential. As one former senior bureacrat explains:

> *If you want to do change, and good planning, if you haven't got the community on side, it will fail. Whenever you are looking at doing anything different, it just can't work in the usual sense. If you just start imposing rules or regulations, they never work. So you've got to change attitudes and culture. If you haven't done collaboration then essentially it's business as usual and you just roll out the same planning framework.*

Participants can produce a coherent voice through deliberation, and co-create a better understanding of an issue than can be reached by merely pitching competing ideas against one another to see which prevails. Where the purpose of deliberation is to reach a decision, participants may not actually reach complete agreement with one another in every respect, and this is acceptable, and in many cases, to be expected. Participants may instead work to understand each other's perspectives in order to reach a legitimate, workable agreement that all

involved can live with, and which can form the basis for action. Deliberators can reach a 'metaconsensus', which can be thought of as a softer form of consensus achieved when participants reach an agreement that all involved can live with, without completely agreeing on the outcome (Dryzek and Niemeyer 2006).

Deliberative collaborative governance (DCG) is a closely related concept, with perhaps more scope in terms of the forms of collaboration that it encompasses. Deliberative democracy could be seen as a subset of deliberative collaborative governance, since deliberative democracy tends to be government driven and to involve government activities, while DCG can encompass collaborative efforts that may not include government at all, such as collaboratiions that are driven and undertaken entirely at the grassroots[2] (Gollagher and Hartz-Karp 2013; O'Flynn and Wanna 2008) (see Figure 2). Since low carbon living and other responses to climate change must involve all members of society, this paper focuses on deliberative collaborative governance.

Figure 2 Deliberative Collaborative Governance

Three key elements are recommended for deliberative collaborative governance processes to produce wise, well informed choices, and joint action. These elements are rarely present to the full extent in all cases, but they are worth considering as a touchstone. Such processes should be:

- **Deliberative** – different options are identified and weighed, with careful consideration of the range of relevant values and perspectives and information, to establish priorities that inform a direction for action. Participants have equal opportunity to express their views and learn from others;
- **Representative/inclusive -** the general public or relevant community of interest and stakeholders are included in the process in a demographically representative manner;
- **Influential -** the actors are able to influence the decision-making process and the subsequent outcomes. Solutions based on consensus are encouraged, rather than political compromise. Steps that lead to action are identified (Innes and Booher 2000; Hartz-Karp, Gollagher and Petrova 2013).

A guide to what may be considered minimal and what may be considered ideal in terms of the extent to which these elements are present in a collaborative governance process is provided in Table 6.

While deliberative democracy and deliberative collaborative governance processes are seen to have unique potential as democratic pathways to low carbon living, they are not as yet widely practiced in Australia, possibly partly due to a lack of understanding, experience and expertise – a view expressed by many of the participants in this research. Meanwhile, urban development stakeholders across Australia are slowly pushing the existing boundaries of "community engagement", often working on a trial and error basis.

When dealing with sustainability issues such as the need to reduce the carbon intensity of the built environment, they face an additional layer of challenges, such as how to bring expert scientific and technical knowledge into the dialogue in the most helpful way.

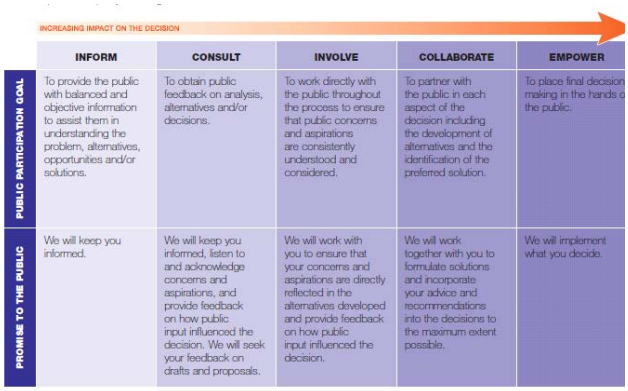
This small research project therefore set out to analyse current collaborative urban planning processes that their proponents identify as collaborative, to identify their strengths and weaknesses, and the barriers and opportunities for carbon reduction through collaborative urban development planning in Australia. In addition, urban development stakeholders – predominantly CRC members - were involved in the co-creation of new ways to improve collaborative urban planning with lower carbon and more cost effective outcomes in Australia, and suggestions for future projects.

The IAP2 Spectrum

In order to have a standard for comparison, this research uses the public participation spectrum developed by the International Association for Public Participation (IAP2) as a touchstone (see Figure 1). This is a widely recognized spectrum, which participants in this research project were at least familiar with. Many development stakeholders in Australia, including governments, use it as the basis for their public participation strategies. For the purposes of this research then, we have defined collaboration as any one of, or any combination of, the categories of public impact listed in Figure 2.

Figure 3 IAP2 Public Participation Spectrum

[2] See Gollagher and Hartz-Karp 2013 for more information on the closely related concepts of deliberative democracy and deliberative collaborative governance, including a typology.



	INCREASING IMPACT ON THE DECISION				
	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision. We will seek your feedback on drafts and proposals.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will work together with you to formulate solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

The IAP2 spectrum is intended to be a design tool, rather than a prescriptive framework or standard by which to judge collaborative processes. It can be a useful way to begin to explain the idea of collaborative approaches:

> *The biggest value of the IAP2 framework is that it's a nice little descriptive formula* (State and local government interviewee).

The spectrum is supported by a set of core values which define the 'expectations and aspirations of the public participation process' (IAP2 n.d., 2). The IAP2 notes that processes based on the core values listed below 'have been shown to be the most successful and respected':

1. Public participation is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process.
2. Public participation includes the promise that the public's contribution will influence the decision.
3. Public participation promotes sustainable decisions by recognising and communicating the needs and interests of all participants, including decision makers.
4. Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
5. Public participation seeks input from participants in designing how they participate.
6. Public participation provides participants with the information they need to participate in a meaningful way.
7. Public participation communicates to participants how their input affected the decision (IAP2 n.d.)

This version of the IAP2 spectrum has been criticized. For instance, some see it as being overly focused on the transactional activity of decision making. It does not explicitly consider important secondary effects of public participation, such as whether people have changed, learned more, made new or stronger contacts in their community networks, better understood an issue, contributed in some way, self-organised in order to continue to act to address an issue, or owned difficult decisions taken for the good of the community. Other secondary benefits of well-run public deliberative, collaborative include their capacity to:

- provide learning opportunities and build social capital
- enable new and broader perspectives to develop
- insert democratic principles more emphatically at the centre of decision making
- provide legitimacy to political processes
- take natural resources and environmental issues into account
- achieve equity
- realise their final objective better than conventional processes (DeMarchi and Ravetz 2001; Meadowcroft 2004; Gastil 2008; Garmendia and Stagl 2010; Smedby and Neij 2013).

The IAP2 spectrum does not address these secondary benefits, which some participants in this research argued can, in some cases, be at least as important as the planning decisions that emerge. There are some that attempt to do so. For instance, the Bang the Table Community Engagement Triangle, which is used by a number of local government participants in this research, looks at three parameters: Decision making, relationship development and capacity building (see Figure 3)

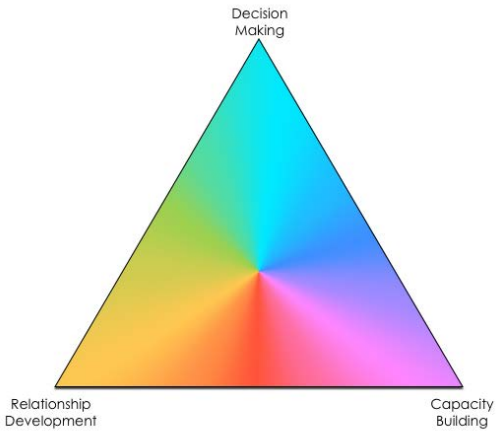


Figure 4: Bang the Table Community Engagement Triangle

(Source: Bang the Table 2015 http://bangthetable.com/what-is-community-engagement/#1)

For others, the spectrum itself is too mainstream and does not challenge existing norms in collaboration enough. For instance a comment from an interview was that the IAP2 spectrum '*is actually pretty right wing in comparison to the deeper stuff*'.

Despite these issues – or perhaps because of them - the spectrum has had wide appeal, and has filled a niche effectively.Many of the participants in this research, and the organisations they represent, have used it. It is subject to review and innovation itself – the IAP2 has

been running an organised conversation about the strengths and weaknesses of the IAP2 spectrum and seeking ways to improve it (see http://iap2canada.ca/spectrum_review for example).

Arguably, deliberative collaborative governance and deliberative democracy processes fit on the right hand side of the spectrum, since they are about power sharing, even if they involve other levels of public impact as well, such as distributing information. However, they are rarely practiced in Australia. As participants in this project told us, efforts to collaborate with the public fall mostly on the "inform", "consult" and less often "involve" end of the spectrum. Although the spectrum is not intended to depict a linear progression from less desirable "informing" processes to more desirable "empowering" ones, it is of concern that the left hand end of the spectrum is overrepresented in practice in Australian development planning, while collaborative and empowering processes are rarely seen.

This report is exploratory, and since it is based on the input of a select group of participants and is therefore not necessarily representative of the Australian situation as a whole, its findings must be used judiciously. It is intended to provide insights and outcomes that may prove useful in particular contexts, or that can be adapted to suit, and to set the scene for further research.

Urban development stakeholders in Australia including planning and deliberative democracy consultants, government bureaucrats, and representatives of government land organisations (GLOs), including managers participated in this research through an online survey targeted to urban planning stakeholders in the CRC (n=46), and seventeen semi-structured one-on-one interviews (see Appendix 5 for a list of interview questions). Unfortunately we were unable to interview industry partners who are involved in constructing urban infrastructure or undertaking greenfield or brownfield development. Several were approached but none were available to participate at this time. A desktop study of collaborative urban development projects was also undertaken, drawing on experiences in Australia and elsewhere. Finally, interested CRC partners and other stakeholders participated in a deliberative workshop focusing on principles to achieve better collaborative urban development for low carbon living in Australia, and identifying possible future CRC projects and tools/resources to support them (see appendices for information on interview questions, survey results and workshop design and outcomes).

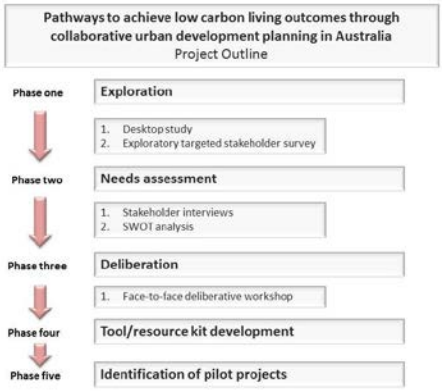


Figure 5 Project Strategy

Section 2 provides a brief overview of best practice in collaborative urban planning for low carbon living specfically. (Additional in-depth examination of relevant international initiatives can be found in Hartz-Karp et al. RP3004 *Deliberative Democracy/Participatory Sustainability for Low Carbon Living: Scoping Study* (2013), the precursor to this project.)

Section 3 provides a brief overview of current collaborative urban planning for low carbon living in Australia. It looks at the strengths, weaknesses, opportunitues and threats associated with collaborative governance for low carbon living, as identified through the literature review, survey and participants' own contributions.

Section 4 outlines participants' suggestions for ideas, tools and resources that would help them improve collaborative governance for low carbon living in the particular projects that they have been involved in. These include principles that they suggest for consideration to achieve better collaborative urban development for low carbon living in Australia, and tools/resources, some of which can be developed subsequently.

A generic process map is also provided in Section 4 (see also Figure 1) that shows key steps that should be considered when designing and implementing collaborative governance processes for low carbon urban development.

Representative comments from participants in the survey, interviews and workshop are included throughout the report.

2. Collaborative Urban Planning for Low Carbon Living

The potential for collaborative approaches to help to achieve low carbon living has been widely acknowledged. However, while political and legal commitment to public participation in environmental decision making at local, national and international levels can be traced back to the early 1990s (Klinke 2011), collaborative urban planning and governance for low-carbon living is a more recent development. There are comparatively few examples of collaborative urban governance that exemplify the right hand side of the IAP2 spectrum – "collaborate" and "empower". In many cases they are limited to one off initiatives, without a long term governance system (Peters et al 2010, Klinke 2011).

Internationally, there are more examples of collaborative public participation for climate change related issues generally – particularly energy generation and use - than for development planning for low carbon urban living specifically (see Hartz-Karp et al. 2013 for an in-depth analysis of a representative sample of these. See Appendix 2 for a summary of collaborative approaches to low carbon living, and practices and challenges faced during their implementation).

The UK is a leader in initiatives to engage citizens for low-carbon planning. However, the majority of these one-off projects are focused on behavior change and/or social learning through provision of information and sporadic "community engagement".

Relevant insights can be gleaned from collaborative approaches that have taken place with the aim of effecting behavioural or cultural change for low carbon living in urban areas. Such approaches are important not only because they illustrate how collaborative processes may be structured for best effect, but also because they are part of the collaborative networks that are necessary for the ongoing succes of low carbon urban precincts. It is important that residents and other users are motivated and able to utilise low carbon infrastructure optimally – an aim that often requires behaviour change.

The PlanLo CaL (Planning for Low-Carbon Living) programme initiated in 2009 by the Centre for Sustainable Energy in Bristol is an example of a successful implementation of deliberative and participatory mechanisms for communities to engage in low-carbon living initiatives. It uses a participatory deliberative approach based around community-led planning[3] to empower communities to identify priorities and take ownership of their future. The authors of the project recognise the need for a sense of joint agency to tackle climate change, between and within communities, local government and society. Therefore the programme aims to help establish a genuine sense of responsibility for taking action on national and global issues at the local level. The project successfully incorporates social learning, shared understanding and meaningful community involvement in planning, so that community members understand and take ownership of the solutions and challenges towards low-carbon future and share responsibility for achieving it. The process is designed to be democratic and inclusive, giving everyone a chance to contribute to a shared vision of the future. In February 2012, the Low Carbon Bath project, part of the PlanLoCaL programme, was announced as a ground breaking initiative for engaging local community in the planning process in the unique and sensitive context of world heritage sites.

This report focuses predominantly on collaborative planning for low carbon urban development. It examines regional or precinct planning case studies as opposed to the energy efficiency of single buildings (although clearly they are related).

[3] Community-led planning showcases the shift from community engagement to community empowerment. It has been defined as " a step-by-step process, that enables every citizen to participate in, and contribute to, improving the social, economic, environmental and cultural well-being of their local area. It relies on people coming together locally, researching local needs and priorities and agreeing a range of different actions which help to improve their neighbourhood."(Eardley and Vincent 2011).

Table 1 UK Collaborative initiatives for low carbon living.

(Source: Hartz-Karp et al. 2013)

Project Name	Location	Aim	Engagement Activities	Challenges
TrIsCo .	Hampshire, UK; Andalusia, Spain; Viismi, Estonia; Gotland, Sweden	Transition Island Communities: Empowering Localities to Act) was a two year project – July 2009 to September 2011 - aimed at overcoming the barriers to implementing low carbon communities To engage variety of communities each at a different level of involvement in the climate change debate.	• Measuring Energy use • Educational programs • Training programs • Community engagement (Climate street parties; A Solar and Biomass Heating Fair;) • Knowledge Exchange & Policy influence	• Not identified
Low Carbon Community Project	Shropshire Country Council	To achieve significant reduction of CO_2 emissions within three local communities, involving household residents and business	• Home energy checks, business and building audits, energy efficiency grants and 'Climate Change Months' awareness-raising activities	• Dissemination of information campaigns thwarted by apathy and indifference towards climate change among community members • Difficulties associated with engaging community members • Building trust between authorities and communities in relation to establishing and maintaining relationship
Green Living Centre	London Borough of Islington Council	A community resource to help people in the Borough reduce their carbon emissions in and around the home	• Face-to-face advice to visitors on recycling, energy, efficiency, biodiversity and green travel. One-off events to boost the Centre's profile and engender greater interest and increase visitors numbers	
Low-carbon Communities Challenge Project	22 communities across the UK	To fund, and learn from, community-scale approaches to the delivery of low carbon technologies and engagement activities.	• Face-to-face, personal approaches such as door knocking, using either trusted local residents or local councillors; • Training energy or community champions to spread awareness and knowledge in the community and provide residents with 'go to' points; • Involving schools in a project to raise awareness and engender support • Having a well-known local person to champion the work. For example, Kirklees enlisted the support of a local councillor to go door knocking over a weekend; • Getting the strongest and loudest opponents on side	• resistance within the community which have been related to lack of community consultations from the outset • Project expectations and assumptions didn't match those of wider community

Vauban, Freiburg

One notable international case study of collaborative urban planning for low carbon livng is the sustainable neighbourhood of Vauban, Freiburg, in Baden-Württemberg, Germany (see Figure 5; and http://www.vauban.de/en/topics/history).

The Vauban district, formerly a squatted area, covers 38 hectares, and was developed with the intention of housing over 5000 inhabitants and providing 600 jobs. As Fraker explains, Vauban is 'one of the most unusual and enlightened examples of sustainable urban design'. As he emphasises, 'the story of Vauban is as much about the people and process as it is about the successful application of technology' (2013, 98). One of the most innovative aspects of collaboration in Vauban was the adoption of the principle "learning while planning", which guided its often experimental approach to urban development, with community participation integrated from the outset (Fraker, 2013, 98). This is an example of collaboration being undertaken at an early stage, and then as an ongoing, iterative form of dialogue, involving mutual learning, as advocated by theorists and practitioners of collaborative governance (Bell and Hindmoor 2009,139). The "green" vision that as guided development in Freiburg from the beginning has survived changes in government over many years.

The original impetus for change in Freiburg arose from the grassroots and was subsequently embraced by government bureaucracies involved in legislation and planning, which is perhaps not surprising since Freiburg has been 'at the forefront of the environmental movement since the 70s' (Fraker, 2013, 98). The citizen's organisation, Forum Vauban, has been a crucial element in in the redevelopment of Vauban. The Forum provides an essential link between the Vauban community and the municipality of Freiburg. In fact it was legally recognised as the official participatory planning body by the City of Freiburg in 1995, thereby achieving a level of institutionalisation of collaborative governance processes that is rarely seen, a feat that was even more remarkable given its grassroots beginnings.

The Forum also supports community-based groups, such as owners in cooperative building developments. The unique participatory approach co-created by the community and the municipality lead to significant sustainability outcomes in a range of areas such as transport, energy, public open spaces, parking urban form, energy efficient homes, combined heat and power district systems, waste use for biodigesters amongst many others.

Citizens and experts co-designed projects and established partnerships for delivering low carbon living. The infrastructure integrated into the neighbourhood reflected commnunuty and stakeholder goals, so that they were therefore willing to be involved in the co-provision of services.

Fraker explains that:

> The overall principle of "learning while planning' enabled the project's goals and objectives to emerge naturally out of the far-reaching participatory process. Most important, because the homeowners played a critical role in developing the goals and objectives, they had knowledge, understanding, and a stake in their successful implementation (2013, 100).

He also notes that:

> The continuous participatory planning and design process, "planning that learns," was instrumental not only in achieving the goals of energy efficiency and renewable energy supply but also in promoting the goals of a socially integrated living and working neighborhood that is friendly to families, children, and elderly residents (2013, 114).

Figure 3 outlines key aspects of Vauban's development in terms of how its governance system supported low carbon, sustainable development.

Figure 6 Vauban, Freiburg, Germany

Vauban Freiburg, Germany

Freiburg stands out as an exemplar of the way collaborative approaches can improve urban planning and achieve low carbon living outcomes. While it is difficult to determine whether the collaborative governance system in Vauban is deliberative, an 'ongoing dialogue' involving the community and other stakeholders, underpinned by a commitment to create a "green city", has created a political framework that embeds sustainability as a central concern in urban development (City of Freiburg, 2011a, 4, in Kronsell 2013).

Factors for success:

- Broad political and community endorsement of the need for a "green" city;
- Ongoing dialogue between citizens, local authorities and industry;
- The community was engaged in the visioning process of the new urban development which went far beyond the legal requirements for public participation in Germany;
- Extensive grassroots collaboration

Forum Vauban
Public participation

To a large extent the residents and businesses in Vauban were in control of the development there. The planning authority established some environmental parameters for the development: the height of the buildings, a low-energy standard, a traffic concept, regulations concerning rainwater in- filtration, and the greening of facades and roofs (Sperling, 2002). Within these parameters the community stakeholders made decisions about the development.

They went beyond the municipality's parameters and expanded the environmental vision for the site. Community stakeholders determined the infrastructure integrated into the neighbourhood, which reflected their environmental goals, the local context, and their willingness to be involved in co-provision. This enabled the coevolution of low-carbon sociotechnical systems within Vauban.

Networks of Collaboration

Participants in this research project identified a number of sites in "networks of collaboration" that require improved collaborative governance processes over time, as well as improved communication and understanding between nodes of collaborative practice within a network.

A network of collaboration can be thought of as all organizational structures and relations between actors that are involved in the collaborative planning process, and in the process of living in the co-created urban form. This includes the relationships between governments, citizens and/or stakeholders, as well as inside and between government bodies. It is the public network of discourse and action that includes public agencies, citizens, and interest based entities (Agger and Löfgren, 2008). As Hajer notes, it is increasingly common place for networks of actors who are "relatively stable sets of independent, but operationally autonomous and negotiating actors, focused on joint problem solving' to contribute to policy of all types (2005, 241, cited in Baud et al. 2011). This is seen as particularly important when trying striving for sustainable development (Baud et al. 2011).

Similarly, the concept of 'deliberative systems' is also gaining precedence in the discourse of deliberative democracy. A deliberative system is defined as

> a set of distinguishable, differentiated, but to some degree interdependent parts, often with distributed functions and a division of labour, connected in such a way as to form a complex whole" that "encompasses a talkbased approach to political conflict and problem-solving"' (Mansbridge and Parkinson 2012, cited in Min 2014, 1). A deliberative system not only incorporates "talk" in the formal institutions of the state like the legislature, but also the talk that occurs in the minipublics, social movements, and informally around the "watercooler" (Min 2014, 1).

A collaborative governance consultant asserted that deliberative systems

> *May be the only way we are going to solve wicked problems. We know that complex problems are not going to be solved in the usual way, and it's absolutely my contention that we need to create a deliberative system.*

A range of collaborators can be involved in the formal and informal aspects of this collaborative network. For instance, it frequently involves formal participatory processes that are instigated by government to share decision making with ordinary citizens (although participants in this research emphasized the point that these government-driven processes are often best to be designed, facilitated and evaluated by an independent third party, to ensure fairness and trust). At other stages collaboration occurs primarily between government organisations, or temporary alliances, for example between governments, developers, and the construction industry (such as Alliance Contracting[4]). These alliances provide a 'safe environment' where risk is shared which therefore

> *can lead to better sustainability outcomes, because you can challenge the status quo, because you're sharing the risk. Alliance projects always deliver within or under that budget, and they are often quite outstanding in terms of when they deliver as well* (State government employee).

Sometimes community members or stakeholders drive their own informal or formal collaborations (see Figure 1, which includes representative comments of interviewees). These approaches can be thought of as top-down (e.g. instigated and driven through government authority) or bottom-up (e.g. instigated and driven by community members) (see Figure 2).

Participants in this research recognise the value of working with other government and private organisations in networks of collaboration. For instance

> *We have collaboration with other levels of government, with universities, with green interest groups, whoever they might be, and we have a culture of engagement on all our projects as well* (Local government employee).

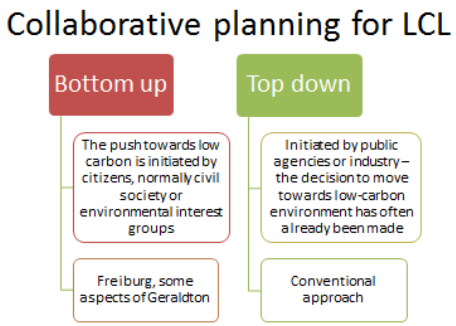
Many suggested ways that they could be accessed to improve low carbon living and other sustainability outcomes. For example, a State Government bureaucrat interviewed for this research suggested that

> *As a building regulator, the area where community engagement might help us is in the behavioural aspects of building performance. We're very much focussed on technical standards for buildings, but there's a recognition that - if I can use the motor car analogy - you can sell a Prius or a really energy efficient car, but if it's poorly driven and poorly serviced and maintained, it can still be an energy guzzler.*

[4] Alliance contracting provides a commercial framework that specifically embeds collaboration, in order to deliver complex projects with high levels of risk, such as the design and construction of major infrastructure. In contrast to more conventional, adversarial processes of infrastructure provision, risk is shared by all participants and value-based solutions are sought through collaborative processes. It is specifically designed to simulate innovative thinking in government and business alliances undertaking projects with critical time constraints and uncertain and changing scope. Community, stakeholder and environmental concerns are comparatively easily incorporated into projects via this business framework. It has also been demonstrated to be a cost effective way of achieving project goals. Experience suggests that alliancing may be particularly suited to achieving low carbon and other sustainability outcomes by virtue of its emphasis on collaboration, relationship building, integration, innovation and inclusion of community and environmental concerns (Gollagher and Young, 2009).

Within networks of collaboration, the impetus to collaborate to achieve low carbon living may come in a top down fashion from conventional government bureaucracies or industy or it may originate at the grass roots, sometimes to be taken up subsequently by governments. Top down approaches where the decision to move to low carbon living by public agencies or industry are prevalent in Australia.

Figure 7 Collaborative Planning for Low Carbon Living



Interviewees also stressed the importance of informal relationship-building within these networks of collaboration, particularly when projects have long lead times, and need an active, engaged citizenry and stakeholders and continue to innovate and function as hoped over time. This informal relationship building is seen as very important for building trust and identifying options:

> *We know we're going to get from A to B but we have no idea how we're going to get there. So we go in and engage at that early point. Then in that particular corridor, we say, we do need to do something in five years, these are our particular options, let us know what you think about it, is there anything we haven't considered, and go from that point. So definitely relationship building with individuals, groups and local governments. We tend to go wide and stream it down the closer we get to the final option. We give the people who might be affected brief explanations by way of email or letter, and say come along to a drop-in session to find out more if you're interested, and then we'd hold structured sessions after that. We've found it really successful. For that particular project, we turned a very, very reactive, angry community group, who had been working on this project for about 2 years, not working well, to the point where we had the two co-convenors write to us and say "you've changed the way you do all your engagement, we believe you now and we trust in what you are doing, and the right way you're going about it", which was a major coup for us*
> (Government utility employee)

One recommendation to support this important relationship building work, suggested by an interviewee, is to have a "consultation" management system in which all informal and formal engagement activities can be recorded. (This was described as being more than a customer service system.) Such a system can also help to avoid 'engagement fatigue', for instance when there are staff changes within government organisations.

Table 2 Comparison of Bottom-up and Top-down approaches to low carbon urban development

Key features	Bottom-up	Top-down
Initiators	Citizen-led consultation, visioning and design	Public authority and/or industry led
Leading stakeholder	Community	Planners/public authorities Industry (developers, utility companies, energy service companies, and multiutility service companies to deliver low-carbon urban systems)
Role of community/civil society	Essential	Passive
Main goal/focus	To build support and involve citizens in the provision of the built environment	To *deliver* infrastructure and reduce carbon emissions To encourage innovation
Ongoing dialogue/succession	Encourages long-term public support	Ensures that patterns of new development support LCL
Collaboration according to our definition	Yes	Yes
Behaviour and lifestyle changes towards low-carbon living	Yes	No
Built-environment co-provision encouragment	Yes	No
Energy and carbon savings	Yes	Yes
Examples	Aspects of Freiburg's and Geraldton's development	Aspects of Freiburg's and Geraldton's development

3. Collaborative urban development planning in Australia

In Australia, the move towards more collaborative approaches is being driven partly by recognition of the value of collaborative approaches, and partly by regulation. Governments, Government Land Organisations (GLOs), councils, utilities and developers are facing increasing regulatory requirements to undertake more effective community and stakeholder engagement as part of development planning.

There are now regulatory requirements for Australia governments at various levels to undertake more effective "community engagement". For instance, in Western Australia, local governments undertaking integrated planning and reporting are required to 'provide evidence of their community engagement in the Strategic Community Local Plan', and must identify tools and techniques that 'best identify community aspirations and priorities' (Government of Western Australia, Department of Local Government 2012, 3). This is in keeping with the trend across Australia for community engagement to be progressively 'reframed as core local government business' (Government of Western Australia, Department of Local Government 2012, 3). (See Appendix 1 for more information on Australian local government engagement strategies). Some suggest that deliberative collaborative processes can 'help planners who shoulder increasingly complex roles, to maintain a clear and transparent role in the changing practice of strategic planning' (Legacy 2014).

Development stakeholders interviewed in this project also note that collaborative, deliberative processes can reduce risk for developers and industry. An example given by one local government interviewee is that in collaborative processes:

> *You've got industry arguing for an area to be zoned for high rises because it's a great tourist strip and they can make money, and people go oh rightio, but we only want this much…And you get that balance.*

A State Government employee commented that

> *It gets you on the right side of all the right people, it reduces risk, reduces project delays, reduces costs in general, and it's just the right thing to do, at the end of the day.*

An industry representative felt that collaborative processes are valuable since:

> *They make sure that the decisions and implementation are better, and that the community comes along with the project, rather than fighting it because they were not properly involved in developing it. It saves time.*

A representative from a state government organisation currently pushing the boundaries of community engagement in a learning-by-doing approach explains:

> *If you have a look at our consultation processes from years gone by we would do that "DAD" approach and we might be quicker at the front end, and not do very meaningful engagement, and then we'd end up with a massive backlash at the end, we had action groups we had media interest, dragged out across years, and we had to allocate staff time to defend these positions. Now we are generally seeing that we are getting really strong buy-in from all levels from the government, from the community, from staff, from everyone.*

Another interviewee from state government level argued that

> *When you're defending all the time it just leads to delays, and there will be people holding up your project… if there are so many people against what you're trying to do, then it can't be a good idea.*

All participants in this CRC research project endorsed collaborative approaches to urban development planning for low carbon living as essential. They endorse its positive primary and seconday effects, and identify a range of strengths, weaknesses, opportunities and threats to effective collaborative urban development planning for low carbon living (see Table 3 for a SWOT analysis of collaborative urban planning for low carbon living in Australia).

At the same time however, commitment to low carbon living outcomes through urban planning and development appears to be lower than commitment to collaboration in this particular group – for instance 48% of survey respondents indicated that that low carbon living outcomes were only moderately important to their organisation, while only 38% thought they were either a high priority or essential.

However, as one urban planning consultant explained, collaborative processes can be effective vehicles for learning and action for low carbon living:

> *One of the lasting benefits of consultation/engagement is the opportunity to bring people up to speed about issues, to educate them on a range of different topics. That whole sustainability/low carbon living thing is one of the topics. People may have heard of it but they don't necessarily understand all the details, so when you do have engagement you have the opportunity to bring them up to speed and to teach them something about it.*

Participants see collaborative approaches in general as cost effective and able to lead to better decisions, and better relationships with the community, and more likelihood that action will continue once particular processes are completed. As one interviewee explained, collaborative processes can lead to better decisions:

> *Because you are not looking at it from just a technical point of view, you're not looking at it from a soft community point of view, you are looking at the overall benefit for everybody involved* (State government interviewee).

An urban planning consultant explained that collaborative processes:

> *Give me courage. As a consultant you get given a commission, you do something, you stop, you invoice and get paid and you move on to something else, and you never really see what happens. And eight times out of ten the report sits on a shelf and nothing ever happens. I think when you've got the engagement, if you do have that engagement process, more people are brought into the process, and there's more chance of them taking carriage of it. Because when you walk away, they are the ones who are left there.*

All research participants described effective collaborative processes as cost-effective, and having broader value to organisations. For instance, one explained that:

> *We have got figures put together on what it takes to turn around a Ministerial. So if someone writes to the Minister and complains about a project, we have worked out a dollar value as to all the people's energy that's put into that. But I think reputationally, for a business like ours, when it all goes sour, then it's pretty bad. So I think they see the value in our team engaging. No one really understands the value in community engagement until it all goes bad* (State government interviewee).

The people who agreed to participate in this research may well be leaders or change agents, given their participation or interest in the CRC LCL. The participant group reports a higher personal commitment to collaborative approaches to urban development planning than the organisations they work for. Most survey respondents personally endorsed collaborative approaches to urban development planning as either extremely important (50%) or very important (43%). In contrast, organisations' commitment to collaboration for urban planning is reported more often as being either very important (36.1%) or moderately important (51.9%), with a smaller proportion (21.4%) described as regarding it as extremely important.

Their responses in this study, supported by desktop research, indicate that the conventional form of consultation in which communities are involved at a superficial level, and often after concept and design work has been completed by planning experts, bureaucrats, and politicians, remains dominant in Australia.

Furthermore, the tendency is to involve stakeholders representing interest groups or concerned parties rather than citizens, and to confine participatory practices to the "inform", "consult" and less frequently "involve" categories of the IAP2 spectrum above (see Appendix 3 for a summary of survey results). Many engagement techniques that have been used in survey respondents' urban planning practices tend to be related to gathering opinion and distributing information, such as through the use of fact sheets, surveys, and information sessions**.**

Certain government organisations involved in this research are have an increasingly narrow scope and therefore have limited opportunities to undertake more truly collaborative or empowering initiatives. As one interviewee explained:

> *We were looking at citizens Juries…but our scope of work has moved further over. So now we're not building that much more infrastructure, we are maintaining it and we are moving some of it, but it's not that big picture stuff. That's when I think you really have the opportunity to go out there…* (State government employee).

This is partly why many advocate attention to "networks of collaboration" that can work effectively to enhance urban planning generally, and urban planning for low carbon living specifically (see following section on Networks of Collaboration).

While all categories of the IAP2 spectrum can play a productive role in an integrated approach to collaborative planning, the lack of examples that empower citizens and conform to IAP2's "collaboration" and "empowerment" categories indicates a restricted repertoire that limits our governance systems' capacity to cope with the challenges of achieving low carbon living, or indeed to tackle any wicked problem.

However, many of those involved in urban planning in Australia are taking steps to include the right hand side of the IAP2 spectrum more often, designing collaborative processes to be fit for purpose:

> *Each process or policy development will be fit for purpose, so some of the projects might operate at a very high level with a citizens jury as part of the engagement, or some may really just be a few meetings and a consult and an online component* (Local government employee).

A great deal of effort is often invested in framing and designing collaborative processes to ensure they are fit for purpose:

> *it really comes down to a framework for the entire organisation … when we sit down with the strategic planning section, we go through a range of thinking exercises around these projects – what are the negotiables with the community, what are the non-negotiables, how far do we want to go in terms of input into decision-making, what's the project actually about? You then go from there to framing your key messages, looking at your target audience, and say who are they and how do you want to talk to them, and that would determine how you frame, what tools do you need, and your techniques, design…*(Local government employee).

There are internationally renowned examples of collaborative planning in Australia that are founded on respect for the right and capacity of everyday citizens to be involved in co-creating their own urban future, and have clearly demonstrated the benefits of doing so. The most groundbreaking of these involve new ways of involving citizens in the process of imagining and co-creating urban precincts (see page 35 for a description of Geraldton 2029 and Beyond, for example), as well as experimenting with emerging tools such as modelling software that can rapidly give planning scenarios and their carbon outcomes visual form in order to enhance decision making.

Learning by doing

"Learning by doing" appears to be an important factor in undertaking collaborative planning processes intended to foster innovation for LCL, and encouraging others to do so. The term "learning by doing", as used by the participants in this research project, refers to the process of adaptive management that occurs throughout collaborative low carbon urban planning networks, to discover and respond to challenges and opportunities that arise. Adaptive management is needed since much of the work on both collaborative governance and low carbon living is innovative and must be trialled and refined over time.

As illustrated by our survey, those who have been involved in collaborative urban planning processes are more likely to believe that decisions related to urban planning should be made through collaboration with stakeholders and community members than those who have not. This resonates with several interviewees' observations that it is essential to experience effective collaboration to appreciate it fully, and that it takes time to create internal understanding and capacity for collaborative processes, and build a culture that supports it as part of business as usual. It also takes nerve and persistence at times:

> *just keeping on trying, because nobody knows how to do this stuff, so all you can do is just keep on trying And also remember that you've always got something to learn, and you need to be constantly willing to experiment* (Collaborative governance consultant/researcher).

The need for time to learn about innovative collaborative approaches, try them, learn from the experience and take another step is a common theme amongst the research participants. Capacity building within a single organisation can take years:

> *We started this in 2007 when we did our first engagement around our first community plan. These things don't happen overnight, they do take a number of years to build, but once you've got those systems and policies and procedures in place, it does pave the way, to come to that next level of engagement* (Local government employee).

> *The framework also includes training pathways for staff. The whole change program around this really had capacity building at its core, so whilst we have a small team of engagement people, the organisation itself has embraced this way of working* (Local government employee).

Many research participants described being actively engaged on a path of learning:

> *There's been that knowledge that if we engage early we'll get better outcomes and we'll get better buy-in from the community..We've haven't yet gone to a complete empower model in the organisation, but we've gotten probably the next step along* (State government employee).

> *We're at a level now, after 5 or more years, where we have lots of people in the organisation beginning to understand deliberative processes and wanting to learn more about them. So it's been an evolution, a maturing in the organisation, through experiencing these processes largely* (Local government employee).

An expert in collaborative processes commented that

> *We underestimate how much education, not even education – experience, decision makers need to have. They need to be part of it, they need to watch aspects of it, and understand what comes out of it*

Some seek outside assistance in order to develop capacity and try collaborative processes that the IAP2 spectrum indicates have higher level of impact:

> *And there has been a clear decision to move out of "inform" and into "consult", but rather than engage a community consultation type firm we've engaged a market research type firm to be the arms and legs driving that* (Local government employee).

One interviewee felt that the input of external process designers, working on the cutting edge of deliberative democracy, was of great benefit to the project concerned, and to their own knowledge and practice of collaboration:

> *I thought it was very good. Most of the ones in the past we have done on our own, or with a team of other consultants that we regularly work with, and I think we got ourselves into a bit of a formula, this is how we do it, we rock up, we go through the motions and we come out, and the outcomes have normally been pretty good, but you do tend to feel, that you are just going through the motions. Whereas this one was something very different. The degree of engagement was more, the method of engagement was different – more intensive and there was more engagement with the community, and that I found particularly refreshing. I don't know whether that coloured my perceptions of the project, because I enjoyed it* (Urban planning consultant).

Another explained that the community and stakeholder participants themselves need time to experience and learn about collaborative processes:

> *That's why one workshop on its own never works. You need to ease people into the process so that they come away feeling that they are old hands at it. So we had a kick-off workshop and introduced some of the ideas that we would be exploring in the main workshop.*

Barriers to Effective Collaboration

Participants identify a number of barriers to effective collaboration in the planning process, including:

- Intractable gaps between local, state and federal governance structures that make it difficult for infrastructure and service providers to collaborate to deliver LCL outcomes
- Financial and time constraints can make it difficult to include citizens and stakeholders

- Existing institutional paradigms, organisational culture and broader governance challenges
- Lack of capacity within lead organisations to recognise when collaborative processes would be helpful, design and implement collaborative processes, or understand how to write and interpret tenders for independent third party collaborative process designers, facilitators and evaluators
- Specialised expert knowledge about LCL and other options is essential to the planning dialogue, but it can be incomprehensible and inaccessible to the range of people involved in the collaboration

The latter point is a key one in relation to climate change and low carbon living. Available scientific data is often too complex to be understandable by those who are not experts in the field, and it may not be relevant to local communities. Furthermore most of the information that can be provided by experts relates to biophysical parameters rather than social or economic ones (Sheppard et al. 2011).

Networks of Collaboration in Australian Urban Planning

As explained previously, participants in this research emphasise the need to attend to the entire networks of collaboration that imagine, plan, build, live in, service and reform any urban environment. Some noted that the narrow scope of their own organisation's activities prevented them from undertaking collaborative projects, even though they could see the value of the "big picture" visioning work with the community. Many told stories about the failure of collaboration between government departments for instance, which hampers implementation of decisions and plans achieved through public participation. When this occurs, systemic collaboration cannot be achieved. For example, many interviewees described how difficult it is to get the relevant levels of government and government agencies to collaborate deliberatively in order to plan and deliver low carbon infrastructure according to the wishes of even deeply engaged communities. They noted that this undermines the effectiveness of community collaborative processes. A representative from a local government undertaking very innovative collaborative processes outlined the difficulties:

> *We've set out good plans in terms of low carbon outcomes for those areas, but that relies on a lot of large institutions, energy providers, water providers, State Government, the City and all the private land holders in those areas, to think out a different approach to BAU in terms of the way energy and water infrastructure is provided. That's something that we still haven't really been able to tackle.*
>
> *To me, that's a big barrier - where there are multiple decision makers and it involves hundreds of millions of dollars to do things differently, where doing it as business as usual is a lot safer.*

Another interviewee from local government explained:

> *We have to work very hard with state government and all its various agencies to improvise – and this is actually is a collaboration…Most Australian cities are like this – they have very small local government jurisdictions…So a lot of effort goes into trying to broker those functional governance arrangements, either directly with State Government or its agencies.*
>
> *We identify those connections and relationships.... So we would know that we would need the Mayor and/or Councillors to be meeting with strategic partners and build relationships so we can build that leverage and start to work together and be able to mobilise our projects*.

A government interviewee noted that in Western Australia, even the outcomes from well run collaborative processes at local government level can be nullified by a subsequent decision of Development Assessment Panels or the Planning Minister, which undermines the value of the collaborative process, and makes it difficult to enter collaborations with a guarantee that people's contributions will count. This can happen when

> *The politicians haven't come on the journey. They haven't had the benefit of seeing the issues and learning about the issues with the community and seeing the community, changes in community response to this issue* (urban planning consultant).

A collaborative governance consultant concurs with the need for collaboration between various actors, including during the construction phase of urban development, noting that it is best to involve relevant actors from the beginning of the planning and development process, rather than expect them to step in "cold" at a late stage:

> *At co-delivery stage I think it's so important to do stakeholder collaboration in order to make sure that it's rolled out effectively. But if those people are there at the beginning, it shouldn't be as difficult to roll it out at the end. So it's about having them all as part of the whole design. You can't just bring them in at the end and say "Implement – this is what the people have said." They've got to be there in the beginning to be able to say, ok this is good. If we get this right this is what we'll do. You need that commitment at the beginning.*

Another factor to consider in urban planning for low carbon living is summarised in a quote from a consultant:

> *There are the three magic T's of urban development - the maxim: "Things take Time". Any planning project takes 5 years before you see something happen after it starts.*

A consultant and former state government employee similarly argues that

> *The problem with our planning is that it's a very long drawn out process, and in terms of sustainability, by the time you get to do it, it's already out of date, and most plans end up on the shelf.*

These comments suggest the need to have effective networks of collaboration over the long term, and also to

find quick wins to undertake in order to retain the trust and involvement of the community.

The observation that the entire network of collaboration that supports urban development must function effectively is supported by other research that indicates 'joint optimisation' is needed in socio-technical systems, since the 'attainment of optimum conditions in any one dimension does not lead to the optimal condition for the system as a whole' (Reason and Bradbury 2005, 42). More explanation.

Some argue that institutions' boundaries should become more porous in order to enable these networks of collaboration, or that new institutional configurations are necessary that better support collaboration over the long term. One former senior bureaucrat suggests a completely transformative approach to city governance, to remove the walls of government silos that currently prevent collaborative, systemic planning:

> *The cities that have the best infrastructure and planning (laws) are European and Chinese. And the reason is that they've got governance structures for major cities. We need a city council that does all the planning, so you don't need the Planning Commission that does major infrastructure, and main roads that does the highways and freeways, and the public transport authority that does public transport. (A city) can manage them as an integrated system...It's been transformational for London.*

The Planning Institute of Australia (PIA) and others similarly argue for A Metropolitan Planning Authority that could work along the same lines as the Greater London Authority (GLA) (see http://www.dlaaust.com/media/city-governance-a-new-opportunity-for-australian-capital-cities/ for example). There are smaller scale examples of this in Australia, such as the Metropolitan Redevelopment Authority (MRA) in WA which has a planning function, a development function and a place management function which apply to dedicated project footprints, rather than the entire metropolitan region. (Once the MRA has completed its job, control is resumed by the relevant local council)

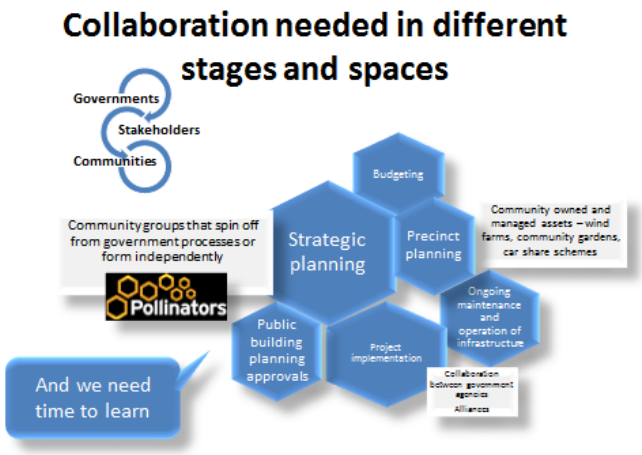
Alternatively, this interviewee suggests that virtual organisations can be created, something like the partnerships in alliance contracting (see section 2) with or without formal contractual agreements in place.

Key planning processes relating to urban planning for low carbon living that were identified by interviewees as requiring better collaborative processes in their experience included:

1. Strategic planning
2. Precinct planning
3. Building planning approvals
4. Project implementation (e.g. Main Roads Alliances; collaboration between government agencies)
5. Ongoing maintenance and operation of infrastructure
6. Community managed assets – wind farms, community gardens, car share schemes
7. Community groups that spin off from a government process or form independently (see Figure 3).

Figure 5 depicts some nodes of collaboration in the Australian planning network identified by interviewees as essential to a systemic collaborative effort to achieve low carbon living. Each can involve citizens, different levels of governments and government agencies, and stakeholders. Interviewees also noted that the versions of collaboration that occur at these points could be improved (see SWOT analysis for more detail). Of course, given the limited number of participants in this research, and the fact that they were generally referring to their own experiences, this is not an exhaustive list. However, it highlights that there are numerous nodes in urban development networks where collaborative processes should be employed if the full potential of collaborative governance for low carbon living is to be reached, and that even where some attempt at this is currently occuring, they are often in need of improvement.

Figure 8 Key Nodes in Networks of Collaboration in Urban Planning in Australia



Sometimes new nodes of collaboration can develop from collaborative processes. As one deliberative democracy project proponent explained

> *these types of deliberative processes are almost like little fire starters that you inject at certain times in the cycle. But hopefully out of it, things spawn off, and you implement cultural change that then gets driven independent of you, as a government.*

Another told the story of how a collaborative process had stimulated community members to start their own groups:

> *One of the outcomes of the workshop was that members of the community, local business owners got together and set up an Traders Association. There were a couple of champions there, once of the champions was the butcher, who is a really*

interesting character. He basically stood up and said I'm believe passionately in this area, it's where my business is, I love being here, I'll put the time in to get this up and running. And since then they've also started up the night markets.

If you can get little community groups forming, get the community interested and get them involved, and they can carry on, keep the momentum going, keep badgering local government.

Informal networks of support and learning in relation to collaborative governance are also important to many of the people we spoke to in this research. For instance, one interviewee explained:

I guess what we do is rely on networks that are already used such as IAP2 and informal networking…we all know the people (who work in the field)…because it is a specialised area – if there's a job coming up you generally move in the same field. We've tried before to do cross-organisational set-ups and I think they do happen at an executive level, but it's quite difficult to maintain the momentum and buy-in from people when everybody is busy…I think people are more willing to share in those environments because they are not speaking specifically on behalf of their business. It's more in terms of "these are the kinds of things we are looking at, at the moment. I think this is going to work, that's interesting what are you doing? And sharing it like that takes it away from the formal setting and has worked well.

The Role of Local Governments

Local governments appear to be uniquely placed to collaborate effectively with their communities to achieve low carbon living in Australia. In fact, a number of interviewees with extensive experience in collaborative urban development processes recommended local government as the most appropriate level of government to centre collaborative planning and action with community members and stakeholders. They noted that an inherently stronger connection between government and community exists at the local level than at state, regional or federal government levels, and that this lays a better foundation for collaborative governance. As one interviewee said:

There's a lovely book by Benjamin Barbour titled "If Mayors ruled the World". One of the points that he's making is that the government that is close to the people is the one that is more likely to want to actually engage with its people, whereas the more the power becomes centralised, as happens with state and federal governments, the less likely it becomes…I suppose it's a more amateur zone, and that's not a bad thing. I think when you get the professional politicians you have a hard time encouraging them to share their power (collaborative process designer/facilitator)

Another interviewee who has been responsiblefor highly innovative deliberative democracy initiatives explains:

Local governments are better connected. We actually talk to people. 99.99% of public servants would avoid engagement with a member of the public like the plague. They don't believe they need to. They rule by edict. "We put a notice in the paper, we gave you the opportunity to do a submission. What more do I need to do?" Whereas with the council, the difference is that the governance structure is with there the people, so when people aren't happy they go to the council every Tuesday night. They rock up and they ask you the questions across the podium. It's not a specially controlled meeting, it's not a special convened forum, it's not a controlled public session, it's a council meeting. Every Tuesday night a member of the public goes to speak. What that does is it puts pressure on the elected members, but also on the executive. So you're highly accountable.

There are exemplars of effective and innovative collaborative urban planning in Australia, which have included attention to low carbon outcomes, particularly at a local government level. Collaborative processes have worked well at the level of the strategic plan for instance, which is appropriate since strategic plans 'guide city planners to make development decisions that reflect an agreed understanding of where the city aims to go, how challenges are to be addressed and how uncertainty is managed' (Legacy et al. 201, 319). Community and stakeholder input can clearly enrich the process of creating the strategic plan – it is necessary to understand how residents experience and value their living environment' (Faehnlea et al. 2014, 171).

Notable examples are the Geraldton 2029 and Beyond project (Hartz-Karp 2012; Grant et al. 2012); and the City of Melbourne's continually evolving and institutionalised commitment to participatory planning and sustainability.More explanation about City of Melbourne's work (see http://participate.melbourne.vic.gov.au/ for more information).

For example, Geraldton 2029 and Beyond involved finding ways to allow citizens in the regional City of Greater Geraldton in Western Australia to collaborate in the local planning process and create a more sustainable future for the City region. One of the outcomes of this collaborative process was a decision to make the City of Greater Geraldton carbon neutral, an outcome that decision makers in the local council argued would not have been achieved via conventional means of governance (see page 35).

It was also pointed out that local governments are very complex, with a large range of responsibilities, often uniquely structured, and have very different operational approaches and values. This means that there is unlikely to be a 'one-size-fits-all' approach to collaborative urban planning. It was noted however that having a vehicle for sharing experiences and learning about collaborative planning could help, as well as third party advice and support (see Section on Innovative Tools and Resources).

In some cases, state governments are aware of the successes of local governments in undertaking collaborative planning processes, and link into them:

> *The City has developed a strong reputation, particularly with the State Government, for our ability to engage with the community and stakeholders around many of these policy objectives in a very direct way; a way in which they are not often well equipped to do themselves. So my experience is that they are often motivated to partner with us to effect policy objectives on the ground.*

Talking about "low carbon living"

The need for more sustainable, less carbon intensive ways of living is becoming accepted, even if the buzzwords such as sustainability or climate change themselves do not always have traction in all contexts. Indeed, the phrase "low carbon living" is not part of common parlance, although its meaning may be intuitive to a certain extent. These expert terms themselves may be seen as elitist, and thus create a barrier to collaboration if they are used to frame the dialogue.

Designers of collaborative urban planning development processes therefore think carefully about how to frame the problem they are planning to collaborate with the community about. How should they talk about sustainability or climate change issues in a way that is relevant to the community? Should they even be mentioned in those terms?

Contibutors to this research advocated framing planning dialogues in broad terms as as general rule, and avoiding framing an entire process in terms of climate change. For example, a local government interviewee with considerable experience in deliberative democracy explains:

> *I would say you don't talk about climate change. The problem with that is whenever you talk about something in isolation, it detaches you from the primary reason for being, which is how you live. And part of the discussion is how can we live in a more sustainable way that provides opportunities and security for future generations? And if you couch the language in those terms, the themes of climate change, the theme of sustainability, the themes about economic diversity, all come in, and they embed themselves. I think when you try to lead with one topic, the risk there is that you're acting almost unsustainably, in that you're not looking at the whole picture* (State and local government interviewee)

Figure 7 depicts the most common suggestions about framing the dialogue and communicating information and ideas that emerged from surveys and interviews. Based on their own experiences, participants recommend "keeping it simple", using stories and visualisations that are relevant to people's lives and preferably involve people rather than presenting to them as a passive audience. Visual information and oral information such as stories can also address the issue of differing literacy skills, cater for people who find it easier to process visual or oral information than written information, and reduce or avoid the need to ask people to read long written submissions, which can be a significant disincentive. As an urban planning consultant explains:

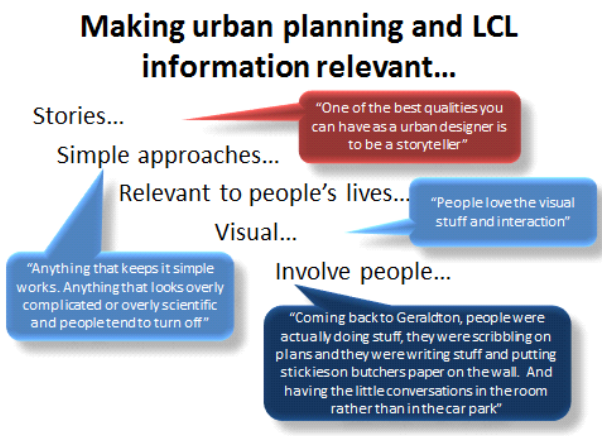
> *Anything that keeps it simple works. Anything that looks overly complicated or overly scientific or overly process driven, people tend to turn off. I'm a great believer in storytelling and I lecture in urban design, and one of the things I say is that one of the best qualities you can have as a urban designer is to be a storyteller. It's almost one person standing in front of a group, with an armchair, almost a one-on-one conversation, albeit with a group of people, as if you were just chatting over a cup of coffee or a beer or something, rather than being overly professional, or technical and jargoning, and gently bring them up to speed. A lot of pictures.*
>
> *You have to get people excited. When people start talking jargon, talking professionally, people start yawning, there's no real passion. Passion is the antidote for everything*

Most participants in this research, including those with formal sustainability qualifications, have found that the language of "sustainability", "climate change" or "low carbon living has little traction in their communities, at least at the start of a collaborative process.

Representative comments include:

> *After the awful dramas about what happened in Australia and climate change, and the polarisation that resulted, which is an inevitable path I think of the political system which we now have, I stopped calling it climate change and started calling it whatever happened to be relevant at the time (Facilitator, 2015).*
>
> *I try not to use the word sustainability too much, to be honest, because it means a lot to us but if you talk about it to the community their eyes glaze over… I guess we try to break down that in-house language* (Local government interviewee).
>
> *We don't call it sustainability. With sustainability, everything uses it for everything, everything becomes sustainable and it means nothing. Nobody really knows what it means* (State government interviewee).

Figure 9 Making Urban Planning and Low Carbon Living Information relevant



Presenting expert scientific or technical planning information can be challenging, but as one interviewee argued:

> *In my view, a real expert on a topic is someone who is able to present that information simply. If you really understand it, you can make it simple… You can pitch it in a way that is understandable to people who don't understand the arcane language you might be using* (State government interviewee).

If low carbon living and sustainability ideas are framed in the right way, experience shows that lay citizens will engage with the subjects with enthusiasm in deliberative collaborative processes. An urban planning consultant noted that:

> *They are definitely interested. I've seen a number of cases where someone has gone in, not knowing much about it, they'll even be anti-development, anti-density for instance. They might have spent the last 40-50 years living in a very suburban lifestyle and everything that implies, and they've got three cars and a four wheel drive and you tell them this story and they go, oh my God, I never thought about that before…*
>
> *And one of the keys to it is actually relate it back to them. One of the guys I used to work for years ago used to say anytime you're telling anybody something, you have to assume that they are sitting there asking the question what's in it for me. So you have to put it in their context and say how it's going to benefit them. What they are going to get out of it?*

Another very experienced collaborative process designer and facilitator explained that as a collaborative proceeds, people's self interest often gives way to interest in the common good:

> *It always comes up. I doubt that they would use that language…I've always found there's something magical that happens in deliberative processes… about halfway through a process people stop using first person pronouns… they start to talk about "we" but they won't be talking about their own family, they'll be talking about this group of people that they are then having a deliberation with…and then (if we haven't already invited them) they think about who's not in the room. And once they start asking which voices are missing, they start to say "yeah but what about the next generation, and what about non-human animals, and what about the environment?" They might not be using the language of sustainability, but they would certainly be thinking in terms of the long term, of our life time and of future generations, and certainly the planet.*

A related challenge is that of translating community aspirations for low carbon living into formal strategies that can be utilised in conventional government processes. A local government employee describes one way of improving this process:

> *We use exernal reference groups…We did with the development of the emissions strategy - we had an engagement process and then we had an expert reference group to help us then craft the outcomes of that consultation into a strategy.*

Tools, such as online tools or modelling software can be helpful in this regard, because they can present very complex information in an accessible visually appealing form, quickly, and so that it is fun to use. There is a good deal of interest in the use and ongoing development of participatory e-planning tools that *'have the graphics to actually have a communication about the future opportunity for your suburb'* (interviewed with experience in both state and local government). A government employee who had been involved in the use of a simple online planning tool noted that the element of fun was key:

> *It has an element of fun and that's important, and people told us that, they thought it was actually fun to do. They like to get involved that way, they were more likely to engage with the tool, whereas traditional forms of consultation get far less response.*

They have been found to be very successful and popular:

> *Some wonderful work is being done. The tree map that was produced for the city has mapped every single tree, private and public; it has an address, a dollar value. You can actually write to that tree. But we've colour coded it as well. The growing trees are green, dying trees are red, and it is astounding how much red is on that map. And those sorts of things really help the community to understand the problem. And we have a lot of buy-in* (Local governmet employee).

Web tools to facilitate collaborative processes

In addition to participatory e-planning using online or digital tools used to supplement existing modes of urban planning or governance processes, e-planning can involve 'coproduction and sharing digital content as well as the configuration of the supporting technologies' (Sulonen 2012, 1).

Nonetheless it can take a significant investment in time and effort to shape scientific or technical information into a form that is accessible to the non-expert:

> *People could have a look at all the technical reports but they didn't necessarily understand. So we had to package it in a way that the laypeople could actually understand. So it was a load of work, but it was all about building the trust in that process.*

A number of tools that could be used are discussed in Section 4. These are either suggestions for future development or draft/proforma versions are included in this paper.

Geraldton 2029 and Beyond

The ‘Geraldton 2029 and Beyond’ Project in Western Australia is a ground breaking example of deliberative democracy that is driving a shift towards low carbon living. Geraldton 2029 and Beyond involved citizens collaboratively in its urban planning process. Between 2010 and 2014 the City invited stakeholders and lay-citizens to participate in a wide range of public deliberation techniques to imagine the future they want for the Greater Geraldton region and then to actively participate in achieving it. In this sense, it began as a top-down initiative.

The project was designed to provide diverse opportunities for a significant cross-section of the community to have conversations on issues that matter to them in ways that are inclusive of different viewpoints, cognizant of different values, seeking and carefully considering alternative options, enabling them to explore the potential for common ground and joint action.

Decisions and actions that involve the City administration have been fast-tracked through the system, implemented where feasible, and explained when not (Hartz-Karp 2012, 5).

This has resulted in plans and actions that are more far reaching than local decision makers had ever envisaged, an outcome that is in keeping with other researchers’ findings that public deliberation can lead to improved sustainability outcomes (Bulkeley and Mol 2003). The Strategic Community Plan, created through public deliberations over a year, incorporates a key goal for the city and region to become carbon neutral.

There have been challenges, such as the need to work with existing forms of government planning and implementation, which have been met to some degree thorough adaptive management, identifying appropriate opportunities to implement deliberative democracy as they arise (Hartz-Karp 2012). Other challenges have included transitioning through local government elections, which meant that the trust built with the former council had to be rebuilt with incoming council members; and changes of key staff, such as the impending departure of the innovative CEO who drove adoption of the deliberative democracy process in the first place.

The project also had elements of bottom-up development. There were a number of community initiated processes, such as a community driven need to deliberate about what they identified as the “Gero feel”, in order to make sure it was adequately reflected in planning documents. The Pollinators, a ‘member-based social enterprise founded as an Incorporated Association in December 2010’ with a mission to “Nuture innovations and people that enable healthy, resilient communities’ was developed by local community members at that time. Pollinators objectives include raising awareness of social innovation and social entrepreneurship; providing practical support for innovators and entrepreneurs; researching and sharing cases, tools and knowledge; enabling collaboration within and across sectors of society; and partnering with individuals and organisations with aligned objectives (see http://pollinators.org.au for more information).

SWOT Analysis of Collaborative Urban Development Planning in Australia

Table 3 SWOT Analysis of collaborative urban development planning in Australia

Strengths

Observation	Representative comments from survey and interviews	Responses
Low carbon outcomes are becoming more important to planning decision makers in Australia	*I think the conversation about climate change broadly is required. It's on the agenda for the city and I think our communities expect it as well.* *We've talked to the community around adaptation, maladaptation, the future, and what it's going to be like...how they want to respond and if they want to work with us to cool the city by 4 degrees celsius*	Framing of the issue is important – a focus on 'living well' can lead to discussions and decisions promoting low carbon living whereas a singular focus on low carbon outcomes can be counterproductive. The drive for low carbon living is only likely to become more pressing.
Encourages formations of partnerships between institutions and the community for delivering new infrastructure	*We know that complex problems are not going to be solved in the usual way, and it's my contention that we need to create a deliberative system.* *We do this informally and occasionally we have formal agreements, MOUs. We have quite a good agreement with our peers, our inner city peers at State Government, called "Inner Melbourne Action Plan" (http://www.imap.vic.gov.au/). Which is about the formal extension of our local governmental powers out, but there are informal arrangements and formal ones. Some are just around projects, some are ongoing.*	Networks of collaboration can be sustained through informal and formal processes – from relationship building to formal alliances.
Empowers the participants through a joint learning process	*We think we know what the best option is, but you've got local knowledge that we don't know about. So you tell us what you know, and we'll work together and find the best solution.*	The joint learning process supports better decision making up-front, as well as improving the community's ability to work with government and other stakeholders to implement low carbon living over time.
Encourages positive solutions to problems instead of political compromises	*Because you are not looking at it from just a technical point of view, you're not looking at it from a soft community point of view, you are looking at the overall benefit for everybody involved*	Ensure all aspects of the planning task are appropriately covered through the framing of the collaboration, the information provided, and diversity of stakeholders and community members involved

Cost effective in the long run	*It can be expensive up front but in the long run since it saves time that cost is worth it.*	Provide cost/benefit analyses e.g. cost of doing Ministerials to respond to complaints Explore social return on investment – how to create it, how to measure it. Ensure that collaborative processes are fit for purpose - *The decision around the (form and cost of) consultation is commensurate with the legacy that project leaves.*
Can address community cynicism and opposition to change	*It gets you on the right side of all the right people, it reduces risk, reduces project delays, reduces costs in general, and it's just the right thing to do, at the end of the day* *They make sure that the decisions and implementation are better, and that the community comes along with the project, rather than fighting it because they were not properly involved in developing it*	Ensure all aspects of planning issues are covered, and all relevant voices are heard. Ensure transparency of the process, with clearly expressed commitment to follow through from the start, including making the boundaries of the collaboration clear
Reduces risk for developers, industry	*(Collaboration) makes sure that the decisions and implementation are better, and that the community comes along with the project, rather than fighting it because they were not properly involved in developing it. It saves time*	Spend time up front bringing stakeholders into the framing discussion and ensuring their concerns are included in the dialogue.
Gives a greater voice to people, animals, the environment and the future than conventional governance systems	*Once they start asking which voices are missing, they start to say "yeah but what about the next generation, and what about non-human animals, and what about the environment?". They would certainly be thinking in terms of our life time and of future generations, or the planet.* *I've seen deliberative processes where people have actually put an empty chair in the room for the environment or the seventh generation.*	A steering committee can help ensure that all relevant perspectives are considered Ensure a dempgraphically representative group of citizens participate in public deliberations, since non-partisan citizens tend to work towards an outcome that is best for the community, in contrast to lobbyists, for example. Be prepared to provide additional information of expertise during the collaboration. *The group itself will typically identify what voice is missing and how might we hear from that voice*.

Weaknesses

Lack of knowledge and experience of collaborative planning in specific contexts – much collaborative planning practice is informed by experiences elsewhere, without appropriate consideration of different contexts.	*In the first round we trained up lots of people as facilitators and/or recorders. Also lots of people have been trained up more fully in the IAP2 framework, and then also again in facilitation and practical management as well. So we've put a lot of time and effort into doing that.* *The framework also includes training pathways for staff. The whole change program around this really had capacity building at its core, so whilst we have a small team of engagement people, the organisation itself has embraced this way of working.* *Maybe we've got to think more in terms of a snowballing effect. It started with the training of 12 people, and then they went out and convened a process, and by convening a process, trained other people.*	Create an independent organisation of experts that can offer advice on designing, implementing and evaluating collaborative governance processes for low carbon living and sustainability. Create training courses /accreditation to be offered through universities/industry bodies/RTOs. Undertake internal capacity building in organisations.
Tendency to rely on low level engagement techniques on the left of the IAP2 spectrum	*Most people (in government) will not allow themselves to feel completely out of their depth. Instead they will take that much of the issue, they will hone it down to be "ooo I can do this and handle this*"	Undertake training to expand awareness and capacity to undertake processes from all parts of the IAP2 spectrum. *We have a group of people who really could be expert designers. And we could broaden that group out and they've got to have practice doing it, but the practice isn't designing the same thing all the time, and that's what's happening with community engagement* Demonstrate the value of collaborative processes through low risk pilot projects with "easy wins"
The public and stakeholders can get "collaboration fatigue"	*If it is later in the project and the community has already been collaborating, you don't need to do more. Don't want "fatigue"*	Avoid ad hoc or token collaboration, have a strategic approach that is part of business as usual Look for quick wins - *you can't just have a big plan and not start to do precinct planning - start to make something happen, so people can see what it looks like on the ground* Ensure each collaborative process is necessary and fit for purpose. Have a "consultation" management system in which all informal and formal engagement activities can be recorded. (This was described as being more than a customer service system
Scientific data needed to inform	*You have to get people excited. When people start talking professionally,*	Present information that relates specifically to the region

collaborative processes is highly complex and difficult to understand not salient to local communities	*people start yawning. There's no real passion. Passion is the antidote for everything*	concerned. Present information in different ways – eg transmedia
Most scientific and technical information is biophysical, with little information available about social or economic issues		Develop software that can integrate biophysical, social, economic and other information. Use simple deliberative techniques to integrate different perspectives and forms of dialogue so that technical and scientific discourse does not dominate.
The need to work with existing forms of government planning and implementation	*Existing institutional paradigms and culture can be a barrier to collaboration* *One of the other big challenges is that local government powers are restricted by the state, and what we would want in some cases, and what is reflecting our communities, can be overridden by the planning minister.*	Can be managed to some extent through adaptive management, identifying appropriate opportunities to implement deliberative democracy (eg in Geraldton 2029 and Beyond). Ensure these limitations are clear to participants at the start of collaborative processes so the full extent of their likely influence is understood. *Encourage people to look outside their interests and understand that collective design , decision making and implementation is required to achieve goal(s) - "we are all in this together"*
Bureaucrats, politicians, citizens, government staff and stakeholders may lack experience and knowledge of engagement processes	*Confirmation is needed at "gateways" before moving the project forward – so that all are stakeholders on board. The issues must be clearly articulated from a multidisciplinary perspective.* *A clear brief, and programme, of community engagement is needed - open and consistent* *The right people have to see the value in it within the business. You can only get buy-in to something with the backing of the CEO. Otherwise you are wasting your time. You can work and work and work, but you're not going to get it.* *We underestimate how much education, not even education – experience, decision makers need to have. They need to be part of it, they need to watch aspects of it, and understand what comes out of fit* *These things don't happen overnight, they take years to build, but once you've got systems, policies and procedures in place, it does pave the way to that next level of engagement*	Identify or create organisational specific tools such as a "map" of collaborative planning pathways that includes steps and key milestones for a collaborative processes; including who participates; how; under what circumstances. Create principles to guide development, implementation and evaluation of collaborative planning processes Undertake training/capacity building with a long term vision. *You've got to have visibility. You've got to make yourself that visibility. We're getting the runs on the board.*
Collaboration currently targets public and private stakeholders		While it is appropriate to collaborate with stakeholders in many parts of a collaborative network, sometimes citizen

predominantly, rather than ordinary citizens		involvement is crucial. It can also engender greater trust when tackling contentious issues, since undue influence of vested interests can be mitigated
Can be difficult to reach all relevant participants in a community		Use different methods to enrol participants – eg online, face-to-face in shopping centres, using local governments rate payers lists, etc. it may be easiest to pay a marketing or research company to do this. During collaborative processes, participants *try to find out how can we hear from non-English speaking backgrounds, illiterate people, for people disinclined to accept an invitation.* *Transmedia – explain (and add to body of text as well)*
Lack of influence can undermine trust in collaborative processes and reduce social capital	*One of the other big challenges is that local government powers are restricted by the state, and what we would want in some cases, and what is reflecting our communities, can be overridden by the planning minister.*	Avoid inviting people to participate in "token" consultations Get government decision makers on board and have clarity about the scope of the collaborative process they will support. Make sure the level of influence is made very clear at the start of each collaborative process.
It can be difficult to ensure that members of the public actually participate	*We had a series of open community sessions, which were advertised on the website and the local community paper, and we just took a deep breath and waited to see how many people would turn up.*	Ensure that sufficient time and resources are provided early on in the collaborative process to attract a representative sample of the relevant community. A marketing firm can sometimes help with this. A steering committee can oversee the process to ensure that all voices have the opportunity to be heard.
Integrating different forms of knowledge into the collaborative process can be challenging, e.g. scientific knowledge, local	*A huge amount of specialist technical knowledge needs to be translated through design*	Different tools and collaborative processes can be employed - such as high-tech digital modelling tools that show the outcomes of planning decisions, to low-tech collaborative process design that integrates perspectives

knowledge.		through dialogue.
Institutional culture can be a barrier	*Culture (is the main barrier). It's as simple as that in my mind. The principles that we apply in our mind, as an organisation, and in our jobs, are the greatest barriers.* *There is still a sense that we are engaging so that we get the community to agree with us.* *(Before they experience collaborative governance), they just thought these were incompetent people telling them how to do their jobs*	This can take a long time to address. Internal collaborations can be helpful. First hand experiences are often the best way to allow people to explore the benefits of collaborative urban planning processes. .

Opportunities

Web 2.0 and Information and Communication Technologies (ICTs)	*It would be beneficial to have a broader understanding of the different tools that aid collaborative planning, and the applicability of these tools*	A number of tools are suggested in this report – including

can be better utilised	*for different stakeholders and projects.* *You still need to have other avenues and channels available for people who might not be able to have access to a computer.* *It has an element of fun and that's important, and people liked that, they were more likely to engage with the tool, whereas traditional forms of consultation get far less response.*	web-based modelling and facilitation tools. Tools need to be adaptable to be context specific and to provide information or models that present complex information in an easily accessible way, integrating a variety of expert and lay-knowledge.
Share experiences and knowledge to help people create collaborations that are suitable for their city/suburb/region	*Need skills to facilitate and deliver in house*	Several pathways currently exist in local government to share sustainability experiences. Some (eg from local government) volunteer to write up and share their experiences Additional support to share ideas is recommended, such as websites, independent third party advice, critical thinking guides and so on.
New tools that help experts and non-experts visualize outcomes of planning decisions to achieve low carbon living	*It would be beneficial to have a broader understanding of the different tools that aid collaborative planning, and the applicability of these tools for different stakeholders and projects.*	Publicise new tools that are available Develop and implement pilot studies, adapting or developing tools to be fit-for-purpose Maximise their adaptability and ease of use, minimise their cost. Make tools compatible with the existing tools/reporting requirements of stakeholder organisations
Formalise collaborative processes as part of core business within organisations	*We are looking at implementing a community engagement framework based on the IAP2 principles and core values. We would like to formalise a framework so the whole organisation is really clear, and it does become embedded into our place-making model*	*We have a way of working in the City that we've developed over a number of years in a very collaborative way, so that the approach we take to involving our communities and stakeholders is mapped out and agreed to.*
Co-create knowledge relevant to urban planning and low carbon living	*We commissioned several hundred community members to go out and do a citizens science exercise to gather data on biodiversity for us… we will co-design a strategy around urban nature* *We establish external reference groups*	Involving community members and stakeholders in the co-creation of knowledge gives access to a greater amount of information and ideas, and greater willingness and capacity to continue to act to achieve low carbon living and other sustainability goals.
Use innovative technologies throughout the collaboration process, including ICT and Web 2.0	*On-line interactive mapping or GIS based systems (could help)* *We utilised a specialist digital agency to build our online engagement tool in the first phase.*	While some innovative online and digital technologies are being used, there is enormous scope to increase this, and be more innovative.

		They should be affordable and adaptable.
Adapt different forms of knowledge for use in community dialogues	*Urban forest map; science and laypersons knowledge,*	Community members can contribute to data collection and analysis, and integrate their own knowledge with other expert and scientific knowledge
Establish collaborative governance framework for shared ownership or infrastructure such as for energy or water	*Think out a different approach to BAU in terms of the way energy and water infrastructure is provided*	There are examples of community owned renewable energy generators for example.
Acknowledge successes and partners	*The project builders, client, suppliers and designers were acknowledged in various awards - winning national HIA GreenSmart and MBA awards*	Awards and publicity can be used.
Use the media to publicize collaborative processes, including social media	*The promotion of the consultation is extremely important otherwise people just don't know about it. You can get it out to your normal stakeholders and the people who would normally provide comment on your business, but it's not the public.* *I think there is value in constantly doing something and getting it into the media so that others hear* *We had a really great public launch with the Premier, when we launched and that was when the tool got most of its activity because people were watching on the news*	Utilize conventional media streams as well as online media and social media. It can help to get local newspapers 'on board' to promote participation and offer a wide range of information (rather than push a particular view). This worked will in Geraldton 2029 and Beyond, for example.
Crises can be an opportunity to use collaborative processes to achieve positive outcomes and encourage active citizenship	*In the case of one local government, they only moved to the step of participatory budgeting because people were complaining about it, so there was a crisis.*	Crises points are often the foot in the door to try more innovative approaches to collaboration – when other more conventional approaches have failed. Well-designed collaborative processes can support decision makers and achieve wide support for difficult decisions, co-designed with the community.
Progress step by step with decision making and implementation.	*As you go on each step of the journey, start locking that policy or regulatory framework in. Because if you wait for the nirvana at the end when you've stitched it all together, circumstances will change and you can lose your momentum.*	Look for quick wins that can demonstrate commitment to the process and encourage collaborators to stay engaged in the process over time.
Provide pathways to provide finance for green building and other sustainability initiatives that help to	*We have an independent trustee that the City owns, called the Sustainable Melbourne Fund, a small investment fund that provides finance for sustainability projects. They administer the loan scheme, negotiate between*	Identify suitable funding bodies (eg CEFC), or processes or create your own.

implement development plans created collaboratively	*banks, owners, tenants*	

Threats

Bureaucrats, politicians, citizens, government staff and stakeholders may lack experience and knowledge of engagement processes	*Further experience, risk management analysis (pre-emptive strategies), other options for collaboration techniques (enquiry by design etc), facilitation ideas, experts to help (e.g. mediation, facilitation) (are needed to make collaborative processes more successful in future).* *In my experience, unless you've got a elected member that's a champion around that stuff, it is much harder.* *We trained people who were going to go out and talk with the community.*	Allow time (even years) for internal training and learning by doing when undertaking collaboration.

	They would be engineers, technical people, property people. This took 2-3 years	
Elected representatives may not be familiar with collaborative processes, low carbon living	*You've got to put lots of time and effort in. And some of them – it depends on their level of sophistication around that stuff – will be more or less difficult.*	"Put the base in place" - *we've got a sustainability policy, we've got a commitment to the climate change declaration, we've got an engagement policy.*
Time, resource and budget constraints	*Getting stakeholder buy in is essential to attracting funding.* *It can be expensive up front but in the long run since it saves time that cost is worth it.*	Establishing a culture of collaboration within the organisation is important to overcome this, although it takes time. Full cost/benefit analyses can be helpful.
Certain planning processes are open to corruption or being overridden by higher authorities	*Local government powers are restricted. What we would want in some cases, and what is reflecting our communities, can be overridden by the Planning Minister.* *Development Assessment Panels and Ministers have power to override local governments in certain states of Australia. This can lead to corruption as well.*	A long term response is needed where this occurs. For instance one interviewee suggested that a *a system is established that ensures* *a) the community is engaged and plans well* *b) local government decision makers set the rules and regulations properly* *c) an efficient approvals process system that is done through private certification is set up.*
Decision makers may be wary of 'sharing power' with ordinary citizens and stakeholders	*Staff conditioning to think they know best; Councillors and staff can feel threatened* *A key success factor is having your elected members on board* *The constraints relate to the attitude of elected and non-elected council officers, rather than tools available to individuals and the community* *Fundamentally you've got to be committed to a genuinely collaborative process, not a token exercise where you are dressing up a fait accompli*	Set realistic parameters for what can be achieved. Work beforehand to ensure that the leaders and key people within the organisation leading the collaborative process are on board.
Collaboration can require high levels of resources such as time and money up front	*Cost is king and sometimes it's expensive to spend time on CSR work for little or hard to measure returns of marketed environmental points of difference against our increased sales or work load* *It can be expensive up front but in the long run since it saves time that cost is worth it.*	Provide cost/benefit analyses e.g. cost of doing Ministerials to respond to complaints Explore social return on investment – how to create it, how to measure it.

		Ensure that collaborative processes are fit for purpose - *The decision around the (form and cost of) consultation is commensurate with the legacy that project leaves.*
Elections can remove elected members who are supportive of collaborative governance; Key staff can move on.	*Having strong guiding principles will help a lot. If you get "we're all about providing community amenity and environmental sustainability" in your guiding principles, then it opens the door for people to behave in a different way.*	"Put the base in place" - *we've got a sustainability policy, we've got a commitment to the climate change declaration, we've got an engagement policy.* Institutional culture and memory can to be built up to ensure that transitions areas smooth as possible; individuals' trust in collaborative processes may have to be regained through new collaborative processes that lead to action
Lack of trust in collaborative processes, community cynicism, lack of willingness to participate	*Community tension around density and development - We needed to assure the community that valued neighbourhoods were not the target, rather a series of opportunity areas were identified for increased development potential, helping to balance existing character with required change* *We always get someone independent. We always get an independent consultant, because it has to stand up to public scrutiny no matter what* *There is a vocal community group against the development as it includes the truncation of rail line.* *I really think there's a huge role to be played by third party independent organisations, who can be there as a consistent form of advice and support* *There has also been local political scandal, which has affected trust in government from some sectors of the community*	Independent third party facilitators can be engaged to run the processes. External reference groups, eg a group of community leaders, can run projects; Spend time establishing relationships within the relevant community; Establish third party NGO organisation/s that can offer sector specific advice to undertake collaborative processes for low carbon living.
Citizens input may be bureaucratized in ways that are unacceptable to them	*We had a reference group or advisory group which was 10 or so community members who reviewed all the information that was sucked out of the different consultation processes so that we didn't lose and bureaucratise and professionalise the intent.*	Have systems in place to assure that collaborative processes are unbiased and stay true to citizens intent, e.g. by having steering committee or citizens reference group.
Lack of transparency	Adds to cynicsm about governance systems, and governments. Reduced opportunities for improvement, innovation, and emrolment of additional participants and a wider audience.	Undertake rigorous, independent evaluation of processes and outcomes. Make the results of the evaluation available, and respond iteratively to recommendations for improvement.
Lack of government support and guidance when required	*Engagement of Councils using LGA resources and engaging Council resources for project objectives is a factor for success.*	Create independent third party organisations that can offer support and guidance; create networks of practitioners who

		undertake collaborative processes, or link into existing ones.
Uncertainty in approvals processes means that development may not proceed according to community wishes.	Outcomes from collaborative processes at local government level can be nullified by a subsequent decision of Development Assessment Panels or the Planning Minister	There is an unavoidable risk, however it can be mitigated by involving state government representatives appropriately throughout the process, and ensuring that collaborators are aware of the risks from the beginning.
Misaligned priorities between key stakeholders	*You can't just bring them in at the end and say "Implement – this is what the people have said." They've got to be there in the beginning to be able to say, ok this is good. You need that commitment at the beginning.*	Ensure enough time is spent at the start of a collaborative process to develop appropriate framing, a clear process and involvement throughout.

Principles to guide collaborative processes for low carbon living

Although collaborative processes for low carbon living are best tailored to suit local contexts and specific purposes, high level principles can guide their design, implementation and evaluation. These principles can themselves be developed to suit local contexts, although experience shows that a number of principles are commonly endorsed. In this project, guiding principles were considered in a deliberative workshop involving research participants.

It is often a useful exercise to invite members of a collaborative network to spend time considering which principles should guide their governance system and processes early on in a new design phase. During the deliberative workshop held simultaneously in two venues (Perth and Sydney) involving around 20 stakeholders from local and state government, research organisations, and industry bodies, participants briefly deliberated about principles that should be used to design, develop, implement, and evaluate collaborative processes for low carbon living. This task was undertaken to set the scene for deliberation on the subsequent question:

What new CRC projects for collaborative development planning for LCL would we like to see developed?"

The session was therefore not intended to provide a representative view of universal principles that could be utilised across the Australian urban development sector. It was intended to provided context-specific thinking about principles that could inform ideas for specific future CRC projects.

Since the invited partipants brought significant knowledge and experience, their suggestions are offered as a contribution to thinking about principles for collaboration for low carbon living. It is also interesting to note the similarities and differences between the principles offered by the workshop presenters, and those that workshop participants suggested.

Before deliberating, the participants heard from two process designers with extensive experience in the field, Iain Walker (New Democracy) and Professor Janette Hartz-Karp (Curtin University Sustainability Policy Institute), and Kelly Hertzog, from the City of Melbourne who works on the collaborative aspects of the City's urban forest strategy. Each related aspects of their experiences to the group, and outlined the key principles that they thought might be usefuly considered (See Appendix 7 for a fuller summary of each of their presentations).

Iain Walker, from NewDemocracy, discussed Citizens Juries, the process they run. He noted six key principles:

1. Random selection of juries
2. Sufficient time to learn about and consider complex policy problems
3. Neutrality of information provision
4. Clear remit – a plain English question, phrased neutrally.
5. Upfront authority - citizens respect the accountability of elected officials and know that their recommendations will mean something.

Professor Hartz-Karp emphasised 3 key principles for deliberative democracy processes specifically:

1. Representative of the broader public and their diverse viewpoints
2. Deliberative i.e. participants have the opportunity to
    a. Understand each other as well as the science and data
    b. Devise potential options/solutions, and
    c. Seek common ground - based on their agreed values/criteria
3. Influential, with the elected official declaring the extent of influence that each public deliberation will have, and continuing to involve participants in planning and execution.

Kelly Herzog, from the City of Melbourne recommended

1. A long timeframe for participation
2. Online presence and tools
3. Developing collaborations and partnerships
4. Provide information that helps people to deliberate about complex issues
5. Undertake evaluation and constant improvement

After hearing the presentations, the participants spent time working in small groups to come up with a number of principles to keep in mind as they proposed new CRC projects, and thought about what tools and actions they would need to implement the projects. They are (in no particular order):

1. Learn from experience and accept change
2. Have a clear framework and rules for engagement
3. Identify all stakeholders and understand what value they can obtain and contribute
4. Have fair involvement with all types of participants (for example citizens, government, community, stakeholders) so that everyone has their say

5. Ensure all stakeholders and community members share realistic objectives from the start of the process
6. Ensure that all stakeholders, including the community, declare commitment at the beginning of the process
7. Identify knowledge gaps
8. Build and maintain trust and respect with all participants
9. Communicate in an open, transparent and comprehensive way throughout the process
10. Share ownership, responsibility and accountability
11. Compensate participants for their time and effort
12. Incorporate evaluation of the process and outcomes.

While there are clear overlaps in the four sets of principles, there are also distinctions between them. Common themes include representativeness, the quality of information available to participants, fairness, and transparency.

It is interesting to note that while facilitation consultants and researchers who presented at the workshop focused more on high level principles, workshop participants and contributors, many of whom work in or with various levels of government also included more practical principles. These included the use of online tools to allow people to access expert knowledge (and contribute to it where appropriate), provision of compensation for participants of collaborative processes, and identifying knowledge gaps.

Furthermore, workshop participants' principles seemed to reflect experience with organisational and individual change associated with learning-by-doing collaborative urban planning, and awareness of risks such as creating mistrust and opportunities such as accessing the value various particicpants can bring to collaborative process. Suggested principles such as 'Learn from experience and accept change', 'Ensure all stakeholders and community members share realistic objectives from the start of the process' and 'Identify all stakeholders and understand what value they can obtain and contribute' may be indicative. This would require further research.

Collaborative Governance for Low Carbon Urban Development Planning – Process Design Map

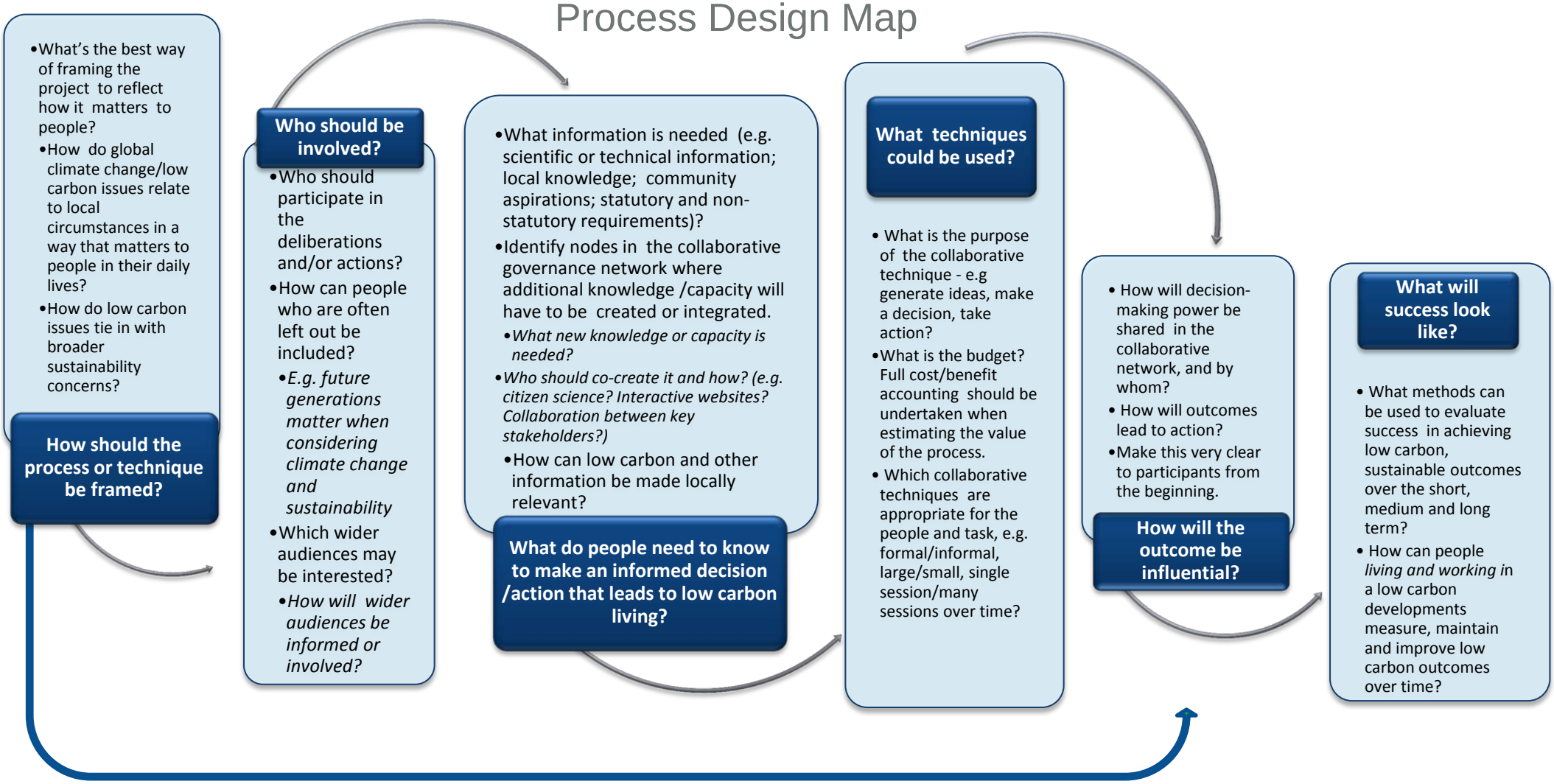
The findings of this literature review, survey and interviews have been used to inform a Process Design Map that can guide the design, implementation and evaluation of collaborative low carbon living urban development planning processes. A generic process design map is outlined in Figure 1, and on the following page.

Common themes touched on by participants in this research include a need for independent advice, training and evaluation, and the need for tools that help collaborators identify and solve particular issues that arise between collaborators. These include the need for local governments and consulting firms to understand each others' requirements when considering renewable energy infrastructure development, and the need to build capacity in contracting businesses in order to improve the design and delivery of low carbon infrastructure.

A generic collaborative governance process design map is provided (see Figure 1) that may provide a useful starting point for designers and participants who wish to achieve low carbon urban living, or indeed broader sustainability outcomes. It raises questions that should be considered when designing a collaborative process.

The process design map could be used to develop an entire process, involving many techniques over time, or it could be used to design a single collaborative governance event for a particular purpose. As shown by the suggestions from participants in this research project, the process map will need to be populated and adapted to suit specific development contexts. However it depicts many of the decisions and related factors that typically need to be considered in the Australian urban planning context. In many instances, the questions can and should be raised and answered collaboratively by members of the network.

Figure 1: Collaborative Governance for Low Carbon Urban Development Planning - Process Design Map



4. Innovative Tools and Resources for Collaborative Urban Planning

While the Process Design Map indicates the general flow of activities when designing, implementing and evaluating a collaborative governance process or technique, specific collaborative networks are likely to require different range of relevant participants. They may also have unique nodes within the larger collaborative network that need additional information, capacity or ways of interacting to enable the potential of the entire network to be fulfilled. Where gaps or blockages exist, good work that has been achieved elsewhere in a collaborative network can be undermined or even derailed. These gaps may not be evident to all participants, therefore there should be a mechanism by which any participant can bring a gap or opportunity to the attention of the broader network.

Participants in this research showed interest in developing and/or trialling a number of new tools or ways to use existing tools to improve the efficacy of collaborative urban development planning for low carbon living.

Technological tools are not seen by respondents as a panacea but rather as an aid to collaboration. Opportunities exist to utilize technological innovations as well as process innovations to enhance collaborative urban planning

Some of the challenges of undertaking collaboration raised by research participants that could be at least partly resolved by the development of innovative resources/tools for collaborative governance for low carbon living sare:

- Presenting scientific data in an accessible, useful way;
- Evaluating the carbon outcomes of planning decisions;
- Utilizing the full potential of software and modelling platforms in a workshop situation.

In many instances, people who are designing or participating in collaborative processes are not aware of the full range of tools and resources that are available to them, or that could be developed in order to help overcome challenges or make the most of opportunities. This is particularly true in the case of software modelling tools for instance, since innovation in this area is proceeding rapidly. There is potential for those involved in deliberative, collaborative processes to work with software designers to co-create modelling tools that are widely relevant, and can be modified to suit specific contexts. This could be a key area for future CRC for Low Carbon Living research.

Key suggestions for resources, tools and CRC legacy projects are listed below. These are based on suggestions from research participants. Drafts and/or key considerations for a number of these have been included in this report as indicated:

- Develop an *organisation that can provide independent third party advice* and support to organisations such as local governments that want to undertake deliberative collaboration in urban planning for low carbon living and other sustainability outcomes (see page 47).

  This could be achieved in partnership with an existing organisation.

- Create training courses /accreditation to be offered through universities/industry bodies/RTOs.

- Websites and online information:

  An app that can support the development, organisation, implementaton and evaluation of collaborative governance for low carbon urban development involving a variety of participants. It should be easy to use, able to be adapted for application in different planning contexts, and able to link to other digital platforms.

  A Wiki, like Participedia (http://www.participedia.net/en) but with added dimensions, including LCL stories and information. Developed for all end users - community, government, NGOs and industry.

  A blog/chat rooms where anyone can network, share stories and dialogue, and collaborate about the design of collaborative processes. These could be open source, or organisation or project specific.

  A searchable index, hosted by a university or other established organisation. The index could have links to relevant resources, such as:

    Information relevant to low carbon living

    Deliberative democracy sites such as those the International Association for Public Participation, and the National Coalition for Dialogue and Deliberation (a US organisation with resources that are applicable globally) which have descriptions of collaborative techniques that can be used

    Links to particular processes such as:

    Bang the Table http://bangthetable.com, Speakout, WeAssent, Keypoint technology http://www.keypoint-tech.com/.

    Case studies with short films and related resources such as Dockside Green http://www.docksidegreen.com/stories/

- Critical thinking guide

- Further refinement and combination of digital planning platforms such as Envision Scenario Planner (ESP): Web-based urban scenario planning for the 21st century (see Appendix 6 for detailed information)

- A MOOC on deliberative collaboration and low carbon living. This could be run by an Australian university or cohort of universities.

  Include links to other MOOCs (e.g. *Engaging Citizens: a game changer for development?)* https://www.coursera.org/course/engagecitizen

- Simple rating guidelines for deliberative collaborative governance, at least as a starting point. This may be context or region specific. The draft guidelines for deliberative processes (see page 40) can serve as a template for this.
- A request for tender guide for governments wanting to undertake low carbon urban development, with recommended low carbon and collaborative process inclusions (see page 51). A tender assessment guide might also be useful.
- A guide to help local governments understand private sector needs when looking to cooperate to build renewable energy infrastructure (see page 53).

Preliminary outlines for several of these proposed innovations are given in the following pages.They are:

- A panel to provide independent third party advice
- A deliberative, collaborative process planning worksheet
- A proforma for a business case to increase renewable energy infrastructre in collaboration with the private sector: a guide for local governments
- A draft collaborative process to improve low carbon urban development outcomes through improved tender development
- A critical thinking guide
- Digital tools that could be used to better inform deliberations in collaborative urban development processes.

A panel to provide independent third party advice to organsations undertaking collaborative urban development planning.

Several of the barriers and weaknesses in collaborative urban planning in Australia such as a lack of experience of collaborative processes, a lack of capacity to undertake them, the frequent lack of trust in government-run processes, and the need for expert knowledge relating to sustainability and low carbon living (see SWOT analysis in Table 3). could be addressed in part by the development of a panel or panels. This could provide independent third party advice in real time to local governments, industry partners and communities participating in urban development planning. This could be an independent body, or it could be affiliated with an organisation such as a university or government or industry body.

Of course, there are already many "community engagment" guidelines that have been developed by and for for local and other levels of government, industry and the community (see Appendix 2 for a representative list of these). These tend to be based on accepted principles (typically those of the IAP2 Public Participation Spectrum), and adapted to the context-specific needs of particular organisations or government or industry sectors[5]. Indeed, many interviewees saw a need to develop a new guide for their particular organisation, and to continue to refine it.

However, participants in this research indicated that additional support is needed to accelerate the implementation and experience of collaborative processes, build capacity within the relevant networks of collaboration, and ensure that collaborative processes are transparent and trusted.

Independent third party input into the design, implementation and evaluation of collaborative urban planning processes has the potential to address these issues, and accelerate the scaling out of collaborative urban planning. This is important given the urgency of establishing low carbon living as business as usual in Australia.

Structure and function

A independent panel could provide neutral, unbiased, and sophisticated guidance on participatory processes and sustainability, in much the same way as the Productivity Commission works in the Australian context, or the International Standards Organisation operates internationally. It could facilitate improved learning-by-doing. It would help to design, operationalize, evaluate and possibly accredit collaborative urban development planning iniatives.

Independent third party advice could be provided on:

- Design
- Implementation
- Evaluation
- Accreditation of collaborative processes

Independent advice would also be useful in providing appropriate information relating to sustainability and low carbon living, in ways that are relevant to participants of collaborative processess.

Design

The design phase would itself be a collaboration between the independent body, project proponents and relevant stakeholders. A steering committee is often involved. However the independent design team will add rigour and balance to ensure that collaborative processes designed to support low carbon living are fair, inclusive, comprehensive, unbiased, well-informed, and take relevant regulatory and legal factors into account, for instance.

Implementation

[5] A draft deliberative collaborative process planning worksheet is provided on page 48, that could be adapted for use as part of an overall collaboration strategy.

An independent body could take the role of lead facilitator, or recommend someone to do so, to ensure the quality of the dialogue that occurs in the collaborative process, and ensure that participants trust the process and see it as unbiased.

The independent body could train and possibly accredit others who wish to learn to design, facilitate, and evaluate aspects of a collaborative process.

Evaluation

Evaluation of collaborative processes is an essential part of ensuring their quality and credibility. Key aspects to evaluate include:

- Design integrity
- Sound deliberation and judgments
- Influential conclusions and/or actions
- Secondary benefits (see Hartz-Karp et al 2013 pp.71-74) for a fuller description of these elements).

Accreditation

Accreditation protocols for collaborative processes could be developed with a suitable organisation in order to institutionalise best practice,rather than focusing on compliance reporting of basic minimum standards. The aim would be do avoid “tick box” reporting with overly simplistic performance indicators. Deliberation could be utilised as part of accreditation processes themselves.

An accreditation scheme for individuals in collaborative processes could also be developed with an appropriate public or private sector partner.

Deliberative Collaborative Process for Low Carbon Living

Planning Worksheet Proforma

This planning worksheet proforma outlines key features that should be considered in the design of a deliberative democracy, or deliberative collaborative governance process, in a roughly sequential basis (although in practice many iterative changes and adaptations can occur in a non-linear fashion). Although the worksheet looks simple, each step requires careful consideration, effort and detailed preparation to complete. For instance, deliberative democracy and public deliberation experts in this research noted that process designers often do not spend sufficient time or effort on the framing of the project or process, and initial enrolment of key stakeholders, such as government representatives. This worksheet could be adapted and produced in digital form, such as an online platform or app.

It is expected that this worksheet will be adapted to suit partcular urban development planning contexts and purposes.

Name of project, including how it will be framed (to maximise participation in problem solving)

Its Purpose:

What is it about?

Why do the organisers or self-organisers want to do it?

Why is public deliberation important in this instance?

What is the context/background (political, social, environmental, economic issues)?

How long is your public deliberation project likely to take from start to finish?

Desired Outcome(s)

Ideally, what difference will your public deliberation make?

Include the desired short, medium and long term impacts.

How you will know if you are successful?

What are the key indicators of success?

How will you measure them?

How will you maximise:

1. **representativeness and inclusiveness? Consider:**

Who cares about this issue?

Who will be impacted by this issue - positively and negatively?

Who should be involved?

2. **deliberativeness?**

How will you make sure the deliberation is informed and not just “top of mind”?

How will you make sure all voices and perspectives are heard?

How will you make sure that dialogue/deliberation takes place – synthesising a shared, often new understanding or coming to a consensus that everyone can live with?

Where are the points in the network of collaborators where scientific and other expert or lay knowledge needs to be “translated”, new knowledge co-created, or better understanding of different actors capacity and requirements is needed (e.g. where local governments and renewable energy providers need to better understand each others’ roles and requirements) in order to develop a successful project?

What is the best way of providing information that needs to be translated to the collaborators concerned, and to other interested parties?

How can collaborators better understand each others' roles and requirements? What capacity building exercises or guidelines are needed?

3. influence?

How will the collaborative governance project have influence? This needs to established at the outset and clearly stated up front. Ideally it will be directly influential and lead to action.

Collaborative governance technique(s) you think would be useful in this process and why

Name of Technique(s)	Stage applied in the process	Reasons for selecting

Resources you need for the deliberative techniques selected

Approximately how much money will you need to carry out your process(es)? For what?

Approximately how many people will you need to work on this? Doing what?

What other resources are likely to be needed? Venues? Digital platforms? Marketing?

Key Milestones

What are the key milestones/things you need to achieve, by when?

Key Milestones	By When

Risk management

Is this process high or medium or low risk? Why?

What could be done to reduce the risks? What are you contingency plans?

(Based on Hartz-Karp et al. 2013).

Creating a Business Case to Increase Renewable Energy Infrastructure in Collaboration with the Private Sector: a Guide for Local Governments

Local governments may look to the private sector to help achieve their renewable energy goals for stationary energy, and reduce their Scope 1 and 2 carbon emissions[6]. Many local governments recognise the need to generate renewable electricity close to where it is consumed for maximum efficiency and therefore seek to build local renewable energy infrastructure. Local or decentralised electricity generation avoids the high costs of transporting electricity over distance, and the loss of electricity that occurs during transmission (City of Sydney 2013, 3). Public-private-people partnerships have been demonstrated to be effective in reducing carbon emissions from residential developments, for instance by providing appropriate energy systems (Kuronen et al 2010).

Private sector involvement is often important for local governments in these projects, because although renewable energy infrastructure often has low operating expenses (Opex), it can require high up-front capital expenditure (Capex) which may be beyond the financial means of individual local governments. For instance, the City of Sydney recognises that it "will need to cooperatively work with the private sector and other levels of government to deliver the full potential" of its 2013 Decentralised Energy Master Plan for renewable energy.

However, local governments and private energy companies may come to the negotiating table with different drivers. As a former local government senior bureaucrat explains:

In local government we often do a poor job of setting conditions for development and we create disincentives for investment…All the private sector wants is certainty. They don't want to hear about incentives or grand plans or visions, just give them certainty. At the end of the day what a financier wants to hear is what's my risk? And the minute you start talking about approval uncertainty or development uncertainty, the risk level has gone through the roof, and they're not going to finance it, so projects don't happen.

The table below outlines some key considerations that a representative of the renewables industries identified as often missing from business cases that local governments put together when considering renewable energy infrastructure. This is then reflected in the Requests for Tender that are put out to the private sector, making it difficult for tenderers to respond in a way that achieves the best possible project.

The suggestions in the table below have been drawn from discussions with representatives from private sector organisations with experience in trying to develop and service renewable energy sources in collaboration with government. They are indicative of the sorts of information that would enable the private sector to collaborate more effectively with local governments to develop renewable energy infrastructure, and therefore help to meet their carbon emissions reduction targets. An improved understanding of private sector needs would facilitate development of renewable energy infrastructure. For instance, local governments may focus on identifying available land on which energy infrastructure could be constructed, whereas private sector representatives suggested that land availability was rarely the main barrier from their perspective, and that the lack of a business case was far more of an issue.

It is important to note that renewable energy strategies must be tailored to suit the needs and capacity of each local area. For instance, a different portfolio of renewable energy sources may be suitable for different areas. Types of renewable energy infrastructure that local governments could consider include:

- solar photovoltaic (PV)
- concentrated solar PV
- solar thermal hot water,
- onshore and offshore wind energy
- geothermal
- cogeneration/trigeneration, (renewable gas from waste and biomass).
- solar hot water district heating
- micro/building integrated wind turbines
- wave power/tidal energy.

A range of criteria can be used to assess the suitability of these renewable energy technologies. Ultimately, some combination of a number of technologies may be most appropriate. For instance the City of Sydney assessed and prioritised renewable technologies using a stepped process based on:

[6] "The scope that emissions are reported under is determined by whether the activity is within the organisation's boundary (direct—scope 1) or outside it (indirect—scope 2 and scope 3). Direct (or point-source) emission factors give the kilograms of carbon dioxide equivalent (CO2-e) emitted per unit of activity at the point of emission release (i.e. fuel use, energy use, manufacturing process activity, mining activity, on-site waste disposal, etc.). These factors are used to calculate scope 1 emissions. Indirect emission factors are used to calculate scope 2 emissions from the generation of the electricity purchased and consumed by an organisation as kilograms of CO2-e per unit of electricity consumed. Scope 2 emissions are physically produced by the burning of fuels (coal, natural gas, etc.) at the power station." (DoE 2014, 7).

1. Greenhouse gas emissions savings
2. Marginal cost of energy
3. Spatial land use constraints and site requirements
4. Total generation capacity within and beyond the City of Sydney LGA.

In Sydney's case, estimated delivered costs meant that decentralised energy solutions such as building integrated and precinct scale renewable electricity technologies proved cheaper than most utility scale renewable electricity technologies, because of rising costs of transmission and distribution network charges. However, at least 12% of renewable electricity generation will need to be sourced" (City of Sydney 2013 , 17).

Table 4: Creating a business case for renewable energy infrastructure in local government areas

Issue	Consideration	Comments
1. Offtake contract	Which organisation or group of organisations will purchase the power produced?	This is a key aspect of the business case from the perspective of private sector renewable energy developers. There needs to be a clearly identified client base willing to sign an offtake contract, to reduce the risk of development. In contrast, obtaining land to install renewable energy may be comparatively straightforward in many local government areas
	What is the amount of power required, what is the price per kWh?	The contract would need to guarantee a certain level of consumption at an agreed price. For example, a private sector energy provider explained that in WA in 2015 a group might need to commit to supporting a 5 MW solar PV project as a minimum. This could generate around 8 gWh per year. This would raise $1.6 million in electricity per year (at 20 cents/kWh), which would be bankable for a PV developer. Costs may change quickly in the rapidly developing renewables industry, and with changes in government support. In some cases, in very dense urban areas such as CBDs in major cities it can be difficult to find land for renewable energy infrastructure. One option is to form a group which buy aggregate power from beyond the local area boundaries. This could be based on a reverse auction system, where energy purchasers declare their power needs and energy producers bid in a reverse auction to supply the power.
	What is the credit worthiness of the party/parties signing the offtake contract?	Local businesses might be interested in signing on as customers, but they may not be credit worthy, and/or they may not be able to guarantee that they will be able to purchase energy over a long enough time (see below). It may be worthwhile involving larger state government organisations such as local energy utilities who may wish to purchase energy. Other state government utilities may also be interested, such as water utilities who may wish to purchase renewable energy to run desalination plants.
	What is the offtake contract duration?	Long term offtake contracts are needed – preferably 15 years, possibly 10, although this would be less attractive to renewable energy developers. It may be necessary to collaborate with other local governments to achieve the necessary scales to support contract terms that are reasonable for the private sector.
	Plan once offtake contract has expired.	What happens to the renewable energy infrastructure once the offtake contract expires? Does the local government retain the infrastructure?
2. Local government's energy needs and emissions targets	What is the local government's own energy consumption? Can the local government source all of its renewable energy needs locally or will it need to look beyond its boundaries?	The local government itself will be the foundation customer. Factors to consider include the local government's existing and projected energy consumption, the cost of carbon offsets that it is currently paying or may pay in future,
3. Finance	What is the source of finance?	Organisations such as the Clean Energy Finance Corporation may be more likely than banks to take the

		risk associated with investing in renewable energy infrastructure.
4. Selection of renewable energy technology	Which technology or technologies are most appropriate? What priorities will be used to determine this?	For example, the following criteria may be applied: • Greenhouse gas emissions savings • Marginal cost of energy • Spatial land use constraints and site requirements • Total generation capacity within and beyond the local government area
5. Stakeholder and community involvement	How can the community help to co-create a renewable energy strategy or project that they can live with, and which will be supported?	This is critical to developing a workable renewable stationary energy plan, and should be done early in the process of creating a decentralised renewable energy plan, or developing renewable energy infrastructure. This can reduce risk and associated costs, improve the decision making process.For example, citizens could help to identify suitable land to use for renewable energy generation. This could also be part of a broader community planning exercise. Community owned renewable energy infrastructure may be a possibility.

Draft collaborative process to improve low carbon urban development outcomes through improved tender development

The interaction between development proponents and developers is a crucial one in the network of collaboration that impacts on low carbon living outcomes of greenfields or brownfields urban development.

The process outlined in Table 5 is intended to be a supply chain driven and informed model that identifies existing capacity of the supply chain and then helps to co-create progress. It is intended to give a clear indication to providers that the government concerned is committed to ongoing reductions of the carbon intensity of urban developments, and is willing to collaborate with industry to achieve optimum results. It has elements of collaboration throughout, and as part of a network of collaboration, is intended to be integrated as required with collaborative planning governance involving citizens and stakeholders. There are likely to be many similar ways of engineering such a process – this is intended to be an example that can be used, adapted, or simply inspire an alternative design.

There is support for such a model. Participants in this research note examples where similar collborative processes have been utilised to improve tendering processes and outcomes, as an alternative to the typically linear, top down processes where architects or urban planners formulate and idea and then go to market. For instance, one interviewee told the story of the City of Melbourne's experience with Council House Two

> *where they ran a process and got the engineers, the architects, the ESD consultants, the quantity surveyors all around the table from the start so everyone was working toward a common goal, defining the common achievable standards rather than the traditional linear process where the architect says "here's my great vision" and then the structural engineers have got to make it stand up, and then the electrical and mechanical engineers have got to try and fit their duct work around…At the end of the day the sustainability guy has got to get a five star green rating after the horse has bolted. So we ran some information sessions, we got our overseas expert in who happened to be in Melbourne, to say to them look you really need to be thinking about prospective tenderers, you need to manage this project in that kind of integrated way, not in your typical linear way, so you get a better outcome. If you do that you'll be able to provide a tender that raises the bar in the green space higher. And that actually did lead to a space where the result where the successful bidder offered a project pitched at a six green star level, which was phenomenal.*

This style of improvement process may be of great benefit to larger companies working in the region who may also trade in countries such as China that are committing to reducing carbon intensity of urban development and industrial processes. It could therefore be of benefit to Australian companies international competitiveness.

	Comments	Key considerations
Identify a proxy of low carbon readiness that can be adapted to suit local circumstances	For example, ISCA, GBCA rating system, Nabers, or BASIX. This is likely to be easier than developing a new rating system. Adapt this to suit, so that it can be presented to tenderers.	If there is a choice between rating systems, chose one that has been developed in close collaboration with industry. The tool needs to be co-created with industry. This will give industry confidence in the tendering process and that the project will be viable.
Recruit a panel of providers interested in future tenders	These will be short listed companies to whom the tender requests are sent	
Undertake a mock assessment of the panel of providers	This can be undertaken by an independent third party, such as a consultant or researcher	University researchers can be a good choice because they are bound by ethics requirements not to share commercial in confidence material, and are unlikely to compete in the tender process themselves Panel members are incentivised to participate in the assessment process because the outcomes will influence future tenders, which they may have to respond to. An immediate benefit for the local government is that they can identify "low hanging fruit" that all prequalified tenderers can supply. This reduces political and other risk.
Tender inclusion	Based on the findings of the assessment, a number of different requirements could be included: 1. First level – minimum performance requirements that all tenderers will be able to meet. 2. Second level - slightly more demanding. Ask for willingness to undertake pilot projects, and collaborate with government to evaluate carbon savings etc. 3. Third level – include aspirational targets, in an innovation section of the tender, seeking new approaches and ideas	Work within the government department to build capacity to frame the tender request and then interpret the tenders that are received
Capacity building over time	Hold events to build capacity and continue to collaborate with industry	e.g. greening supply chain workshop
Repeat the process every 3-5 years	Gradually ratchet up the requrements of levels 1, 2 and 3	This can be guided by the outcomes of the orginal tendering process and the low carbon outcomes of delivered projects. Include non-binding indications of the levels of carbon reductions the government will seek in future. This will help industry innovate and plan.

Table 5: Draft collaborative process to improve low carbon urban development outcomes through improved tender development

Source: Interview with Dr Charlie Hargroves

Draft rating guidelines for deliberative collaborative planning involving communities

The rating guidelines outlined in this table could be developed into a star rating system for community collaborative processes. The suggestion that a star rating system be developed was made by participants concerned about what they saw as the overuse of techniques from the “inform” and “consult” end of the IAP2 spectrum in urban development planning, and the need to improve or better evaluate the quality of collaborative processes generally.

1. Deliberativeness	**Minimally:** sufficient time, opportunity and encouragement should be provided so participants can work together in an egalitarian, respectful environment, setting aside preconceived ideas, challenging assumptions, listening to new views and seeking common ground.
	Ideally: a respectful, egalitarian process should be provided that: i. Provides opportunities (often through facilitation) to improve the quality of interaction, balancing listening, enquiry and advocacy, as well as balancing team dynamics, tasks and individual needs; ii. Generates understanding, provokes thought and seeks cognitive congruence iii. Creates and/or explores options and strives to make tough decisions, often involving trade-offs; iv. Explores complexity, considers unintended consequences and opportunities to move the system towards low carbon living; v. Deeply explores differences and co-creatively seeks common ground.
2. Representativeness and Inclusiveness	**Minimally:** participation should include ordinary citizens/residents who reflect the demographics of the population. Particular care must be taken to ensure that those who are often marginalised, such as low socio-economic groups, young people, people from different cultural backgrounds, including Indigenous people, and the time poor can participate. The range of attitudes/positions on issues should be considered.
	Ideally: there should be random sampling of the demographics of the broader population.
	Where relevant/most appropriate: i. Participants invited through demographically representative random sampling ii. Including the range of attitudes/positions on issues; iii. Large scale elicitation, involving large numbers of the population (scaling out); iv. Other methods that intentionally seek to broaden participation, such as one third random sample, one third respondents to advertisements and one third a broad array of stakeholders.
3. Influence	**Minimally**: prior to implementation of deliberative democracy processes, government decision makers should: i. make public their intent to share the problem solving and decision making with the general public more equitably; ii. make a clear statement of the extent of the influence the outcomes of the public deliberation will have. This should include a commitment to explain to participants, and the broader community, what actions were taken in response to recommendations or ideas generated in deliberative processes, and why.
	Ideally: partial or complete decision making authority over a particular issue should be delegated to deliberative democracy processes.

Table 6 Draft Rating Guidelines for Deliberative Collaborative Planning Involving Communities. (Source: Hartz-Karp et al. 2013)

Critical Thinking Guide

Some participants working in specific contexts – for example in local governments working on their strategic plan, and wanting to access information on collaborative processes, as well as low carbon living and other sustainability issues – saw a need for a 'one stop shop' to help busy local government employees.

Others were interested in having an easy access source of information on planning, low carbon living and sustainability to community members participating in collaborative urban planning processes.

One very experienced collaborative process designer and facilitator suggested that a critical thinking guide should be prepared for participants in deliberative collaborative process for low carbon urban planning, arguing that:

> *I actually don't think that (developing one place to access information) makes any sense any more. I think we are absolutely flooded with information and I think we are increasingly good at finding the bits of information that we need, and I think that's the joy of having a diverse group of people together.*
>
> *I remember going into this group, and one person said "well I've just done a whole lot of research on this since we last met and I've put together a couple of pages that I think summarises the issue". They'd put together the for and against..*
>
> *And someone else said, "You know how the Council gave us that spreadsheet on such-and-such, well I had a look and that was missing, and I've redone the spreadsheet, and I'd like to know if this would stand scrutiny by the council".*
>
> *You just sit there shaking your head thinking, we don't need to give people information, they go off and they find stuff and they summarise it and they analyse it, and they bring it back in and see if it withstands scrutiny. I think what happens is, we encourage these people to be the critical thinkers that they are, but are never given an opportunity to be. And as soon as you give them an opportunity, they are little amateur researchers, they are fantastic.*

In conclusion, the consultant suggested that 'it would be great to have a one pager on how to be an amateur sleuth, how to be a great critical thinker in a deliberative process'.

Critical thinking guide

"Critical thinking is reasonable, reflective thinking that is focused on deciding what to believe or do."

It can take some effort.

Try this famous puzzle:

A bat and ball cost $1.10.

The bat costs one dollar more than the ball.

How much does the ball cost?

The answer ***isn't*** 10 cents, although don't be surprised if that's what came to mind first. That intuitive answer tends to flash even in the minds of people who eventually work out the correct answer. Daniel Kahneman, Nobel Prize winning psychologist and behavioural economist explains:

> *A number came to your mind. The number, of course, is 10: 10¢. The distinctive mark of this easy puzzle is that it evokes an answer that is intuitive, appealing, and wrong.*

The 10c answer comes as a result of intuitive, or *fast thinking*. Fast thinking is very useful as a survival technique, such as responding quickly to a dangerous situation or processing the huge amount of information that we face in our daily lives, but it's not always enough. Sometimes *slow thinking* is needed.

To get the correct answer, you have to do some cognitive work, and think very carefully and slowly, checking your thinking as you go:

> *If the ball costs 10 ¢, then the total cost will be $1.20 (10¢ for the ball and $1.10 for the bat), not $1.10. The correct answer is 5¢.*

(See Daniel Kahneman's book "Thinking Fast and Slow" if you would like to find out more).

Critical thinking

So to think critically, we need to think "slowly", as in the puzzle above.

And we also need to:

- formulate clear and precise questions and problems
- gather and assess relevant information
- come to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- think openmindedly, recognizing and assessing underlying assumptions, implications, and practical consequences
- communicate effectively with others in figuring out solutions to complex problems.

Checklist

What should you keep in mind when searching for information or ideas to help solve a problem or answer a question?

1. **Clarity** – Is the information clear? Would an example or illustration help me to understand it better?

2. **Accuracy** – How could I check? What sources of information could I believe and trust?

3. **Precision** – Is the information precise enough, or do I need more detail?

4. **Relevance** – Does it relate to the problem or question well? Does it help?

5. **Depth** – What factors make this question or problem complex or difficult?

6. **Breadth** – Would it help to look at this from another perspective?

7. **Logic** – Does my reasoning make sense? Does the logic flow? Test it by looking at it another way.

8. **Significance** – What is the most important idea to focus on? Which information is the most important?

9. **Fairness** – Do I have a vested interest in this issue? Am I sympathetically representing other viewpoints? How can I see this from other perspectives?

How do I know if I can trust "expert" information I have found, on the internet for example?

You may want to find out more about scientific research, or other expert information relating to urban planning.

- Look for information from reputable organisations or websites, preferably peer-reviewed sources, rather than blogs.
- Check other sites to see whether the information is corroborated, or whether there is disagreement.
- Wikipedia can be useful, but since it is open source it may sometimes be inaccurate. References cited at the end of a Wikipedia entry can be good sources of information to follow up on.

Sources: Kahneman, D. 2013. *Thinking Fast and Slow.* Farrar, Straus and Giroux, New York.

Paul R. and Elder L.. 2006. *The Minature Guide to Critical Thinking Concepts and Tools.* The Foundation for Critical Thinking. https://www.criticalthinking.org/files/Concepts_Tools.pdf

Digital tools

There was significant interest in finding new ways to use digital tools, such as web 2.0 technologies to enhance collaborative urban planning processes and promote low carbon living by providing or modelling information quickly, or even to be the vehicle *for* urban planning processes.

There is plenty of scope for the development of modelling software and web-based tools since there 'are currently few integrated assessment methodologies addressing climate change that both cross scales from the global to the local and incorporate local level tools such as modelling or visualisation to make the information tangible to local users' (Sheppard et al. 2011, 401). The use of digital tools in deliberative collaborative urban planning for low carbon living around the world is still developing, despite extensive use in other fields such as architecture (Lodigiani 2014). Research shows that 'designed correctly, web-based three dimensional tools can foster collaboration and facilitate negotiated agreements' for instance (Hollander 2011, 587).

Sheppard et al. argue for three specific requirements for decision support tools that enable productive dialogue in which scientific experts understand communities perceptions and values, while ensuring that technical and scientific knowledge more salient to community members:

1. Make sure expert information is presented in a way that is relevant to the local level
2. Use holistic scenarios combining multiple aspects
3. Use visual tools to maximise interest and engagement (2011, 401).

In addition, given the variety of configurations of collaborators in the network responsible for designing, building and living in low carbon urban developments, there is scope for a Pathways for Low Carbon Living app that supports the overall governance process itself. Preliminary suggestions for the functionality of an app which could be developed for this purpose are outlined in the following section.

Participants in this research report that at the moment web 2.0 technologies are mainly used for one way communication, such as dissemination of information and gathering public opinion.

> *We had web portal…People could go in and get access to the tool, and we designed it with a drag and drop technology so they could drag water, or lighting, or a fountain, or whatever they wanted to drag into the square, plus provide their own ideas. We captured all of that data.*

GIS tools were utilised in less than 15% of the cases reported in the survey, while visualisations are more popular, reported to be used in one third of the projects (see Appendix 4 for more details).

There is interest amongst the participants in this research in going further with web-based or digital technologies, both in terms of providing sophisticated depictions of planning outcomes and to support better deliberation online.

Two examples of digital tools that have been developed through the CRC LCL and can be further developed to be used as fit-for-purpose tools in collaborative urban planning processes for low carbon living are outlined on pages 62-65: *Envision Scenario Planner (ESP)* and Cole Hendrigan's *Three models for activiating community visioning*.

Facilitating collaboration with web based technology

Web based digital technology also have the potential to facilitate deliberation, as opposed to merely providing information or modelling capacity to be used in other collaborative processes. This technology could support asynchonous deliberation as well as face-to-face deliberation, or some combination of the two. It also be facilitate collaborative processes that take long periods of time to complete.

There are few examples of this type of software. For example, the deliberative software "WeAssent", from WeThinkToAct[7] (see http://wethinkweact.com/), used in the deliberative stakeholder workshop in this research project is an example of a platform that facilitates online synchronous and asynchronous deliberation. It can be used for online (including email), mobile and/or face to face deliberations.It is customisable and is designed to enable users to come together around their shared concerns in a meaningful conversation, where they can understand their differences and pursue mutual interests though practical cooperation.

WeAssent's design is grounded in deliberative democracy guiding principles and practices. It supports inclusive and respectful collaboration to develop ideas, options and proposals, considering others ideas and reasons, then reaching consensus to reach an agreed outcome. The platform offers prompts on how to facilitate dialogue by framing questions to suit for example.

The platform continues to be developed iteratively over time. It is difficult to facilitate deliberation online, particularly asynchronously. Simply having a digital platform that can connect people online does not guarantee that deliberative, collaborative governance will result. The quality of deliberation - or indeed whether deliberation is achieved at all – will depend on the technical architecture and the way the online deliberative space can accommodate the deliberative task (Davies and Chandler 2013).

[7] WeThinkToAct was previously known as CivicEvolution

Proposed Pathways to Low Carbon Living App

The process map (see Figure 1) could be translated into a ***Pathways to Low Carbon Living App*** that provides digital infrastructure and information to support a collaborative governance framework, incorporating low carbon living and sustainability, and that can be utilised by stakeholders and everyday citizens. This has the potential to reach a wide range of participants and interested parties in real time, to improve the efficacy and transparency of collaborative governance, enable self-organised activities where they are appropriate, to provide a platform to share and co-create information and understanding, along with a range of other benefits.

While the design and development of such an app is beyond the scope of this project, the following preliminary suggestions are offered for consideration. An app could enable people in the collaborative network to:

- Map the collaborative network so that everyone understands who is involved, and who is doing what and when
- Keep in touch with each other in a more convenient, inclusive and structured way than email or social media platforms such as facebook;
- Suggest additional participants who may need to be included.
- Flag processes or issues where additional information, better understanding or capacity building is required to complete the task concerned (such as the guide for local governments wishing to put out a request for tender for companies to provide renewable energy that is provided as an example in this report)
- Deliberate online were appropriate - for example, to come up with solutions to issues that are raised during the design and development of a low carbon urban precinct, develop knowledge or capacity to deliver outcomes, or to develop precinct plans.
- Support planning, delivery and evaluation of face-to-face deliberative workshops
- Follow the outcomes of deliberations in parts of the network they are not directly involved with
- Find or co-create and share relevant information, with links to more in-depth online information that may be required or relevant. This could include capacity for citizen science.
- Evaluate the governance process on an ongoing basis so that adaptive management of the process itself can be undertaken, and so that participants' opinion about the overall quality of the collaborative process is clear.
- Provide the basis for a governance system that supports users, homeowners, tenants and businesses who live in and use the low carbon urban development after it is constructed in the case of a greenfields development or redeveloped in the case of a brownfields development.

Envision Scenario Planner (ESP): Web-based urban scenario planning for the 21st century

Dr Roman Trubka, Research Fellow, Curtin University, Western Australia

Envision Scenario Planner (ESP) is a web-based 3D scenario sketch planning and assessment toolset for urban planning projects. The system was developed collaboratively by Curtin University, Swinburne University of Technology and the University of Melbourne with support from the Cooperative Research Centre for Spatial Information (CRCSI) and the Australian Urban Research Infrastructure Network (AURIN).

ESP was developed to supply end users with a tool for investigating and comparing options for redevelopment sites that would bring together scenario visualisation and quantifiable assessment outputs. As such, in addition to providing users a 3D volumetric virtual world to design their precincts the system also reports on a range of performance categories including embodied and operating carbon, energy demand, water demand, transport, construction and operating cost, and more.

The ability for urban planners to design, assess and communicate redevelopment options is an important and valuable innovation for urban planning. Not only does this support evidence-based planning by providing quantifiable project outcomes, but the visual nature of the system can convey massing and density that can be highly contentious with various project stakeholders and community groups. While there are a number of software applications in existence that can be used to design, visualise and assess precinct plans, to our knowledge there are none that do them all in one package and thus intrinsically link the visualisations to the performance outputs and allow rapid scenario option creation in as short of a time as a few minutes.

A guiding principle when designing ESP was to ensure the system would be intuitive and relatively easy to use while not sacrificing the quality and sophistication of the modelling that happens within it. While sophistication and ease of use tend to be opposing concepts, ESP accomplishes this balance by including default modelling parameters that are specific to Western Australia, Victoria and New Zealand and designing a user-friendly interface that is cleanly and laid out and feels intuitive to the user. Moreover, all the calculated fields and algorithms are not exposed to the user in order to hide the complexity of the system. For Western Australia, Victoria and New Zealand we also provide a default precinct object library for users to use when designing their precincts. The result is a system that is ready to use at the outset in the aforementioned locations and yet is flexible enough to be used anywhere in the world and allow new precinct objects to be created or imported into the system.

While designing a precinct, users of ESP are able to import and/or create land parcels, subdivide and amalgamate lots, zone and rezone land, experiment with lot height limits, visualise the existing built form by extruding building footprints, populate their precinct with precinct objects using a number of methods including drag-and-drop and auto-

population, draw in roads and pathways, and more. During the design process the system generates feedback on the performance of the design being created, modelling a wide variety of outputs including the following:

- Operating Energy (Gas and Electricity)
- Carbon (Embodied and Operating)
- Operating Water (Internal and External Demand)
- Stormwater Run-off
- Parking (Street-level, Garage and Underground)
- Cost (Construction and Operating)
- Transport (Mode Split, VKT and GHG)
- Planning Metrics (Density, Plot Ratio, Number of Residents, Number of Jobs, etc.)

The ESP precinct sketch planning and assessment system has not yet been fully utilised by the project's stakeholder group, which mainly includes state and local government agencies, as it is set to be completed by the end of March 2015. It is expected, however, that the system will be used for regional and precinct-scale scenario modelling by planners and policy-makers as well as in community engagement settings where plans for future development options will require community buy-in. An augmented reality (AR) extension to ESP will further enable scenarios developed in the ESP system to be communicated to community groups and will also be available in the coming months.

ESP is not an end product but part of a journey to evolve the usage of geographic information systems (GIS) in urban planning beyond that of simple map making, to make GIS more accessible and more usable for non-experts, to make the evaluation of redevelopment projects more holistic and consider metrics beyond dwelling density and yield, and to streamline an assessment and visualisation workflow to save time and money. The system will be released under a creative commons license and will likely be open source, however, the details of this are currently being worked out.

Cole Hendrigan's three models for activiating community visioning

Platforms / models

There are three models developed to look into three scales of inquiry into urban and community futures. These can be used for any one site or broader city goals.

Global Model

The Global Model uses existing – real and hence understandable - places around the world to demonstrate the effects of policy choices and urban design has on the types of places we love to live in. Community members will be asked to 'solve' a dilemma regarding one of eight investment and design issues they may face: urban fabric, location, area, density, public transport, parking ratios, the level of mixed use and overall street-level design. Then they are asked to rank their preference according to a scoring chart provided. This ranking is calculated into a product which is linked to a hyperlinked Google Earth folder with many examples from around the world of the type of urban outcome they have individually or collectively chosen by their ranking. The example sites are all set at the same height above the ground for an immediate appreciation of the differences at the same scale. However, as Google Earth allows zooming in and out and even with Street View the community viewer may then be able to see more clearly the interaction of policy choices with urban outcomes.

This is in operable in a beta mode.

Regional Model

The regional model is structured to make more clear the various pay-offs and trade-offs required, site by site, to achieve city, metro or nation-wide outcomes within transparent urban policy setting. The regional model requires a large map with enough specificity that individual sites may be clearly identified so that very clear **polygons** of redevelopment may be drawn. Where are the sites which a community is willing to have redeveloped? How high may the building go? What mix of use? How much park space ought to be set aside? These are the primary questions to be asked and drawn on the map. An operator skilled in Autocad (not very specialised, especially if a file is set up and clear instructions given) will then redraw these polygons to find their exact land area in square meters. After adding these area numbers (m^2) the spreadsheet will self-populate. However, the initial **assumptions** may be altered (height, mix, park) by changing the numbers under each heading. The results are shown as a series of charts. Have we reached the target of population accommodation or park space or jobs located closer to home? If not, return to either the polygons of redevelopment or the other assumptions and adjust. If the targets cannot be reached, it is possible there is an intractable setting within the group or within the policy guiding the future growth of the metro region. We have now elicited a conversation on real choices for real places.

This is in operable in a beta mode.

Local Model

The local model is very similar in scope to the regional model but that it is more specific about the impact of an urban redevelopment and the required transportation trade-offs required to activate the development. Step one: a neighbourhood undergoing rezoning with first need to establish the polygon of rezoning site by site, then – in the spreadsheet - set the 'efficiency' of the use of this land (how much set back, surface parking, internal roads, park space within each site etc.) similar to the assumptions of the regional model, nominate the height for each site, set the mix of land use as a ratio, designate an average number for the dwelling size in m^2 in each site to find the amount of homes, jobs, retail, parks and other may be created in this neighbourhood redevelopment over the coming years.

Step 2: takes these land use trip generators (as set by New South Wales' Roads and Transport Authority, but changeable within the spreadsheet) to uncover the transport task and the transport modes capacities to cope with this task (as created in step one) to view the relationship between balancing the parking supply and highway expansion versus providing different levels of public transport supply as different – optimised – transport modes (bus, Bus Rapid Transit, rail transit). The outputs are a series of charts which report immediately and clearly the impact of land use changes, density and which transport mode will accommodate the oncoming needs of the new and existing residents sufficiently.

This opens eyes to the level of infrastructure investment required to make informed choices for real places.

Significance

The significance of these models is to transform broad policy on land-use and transport integration to specific land redevelopment opportunities with demonstrable outcomes. This work will enumerate the costs and benefits of achieving metropolitan-wide aspirational goals by detailed calculations of issues site by site across the region. The outcomes will be quantified following transparent assumptions based on citable literature. The outcomes will be meaningful - from a human-scaled perspective - for the residents, for the city as an entity, the broader surrounding rural region and even the nation as the pay-offs and trade-offs are made apparent. The outcomes will be presented as metres for housing, offices, retail, parks and parking; numbers of residences and work places; area of sprawl avoided; dollars which may accrue to government coffers from the real-estate yields; costs avoided; GHG and VKT reduced; and level of public service

provision, including high-capacity public transport, which should follow from strategic encouragement for the private sector to build homes and workplaces for the future.

The three models at the global, regional and local scale which will provide transparent and flexible assumptions to objectively measure the extent of change possible even in an automobile-dependent city. The model originally used Perth, Western Australia, as a case study for a hypothetical high-capacity public transport investment cycle to support reductions in VKT and CO_2 emissions, while also finding space to accommodate the increase in population, with local jobs available in walkable mixed-use re-urbanisation precincts, set in a regional context, over the next 50 years. This is significant as rarely are all these flow-on benefits accounted for in a transparent model.

The models provide a timely and novel approach to imagining the nexus of transport planning, regional land-use planning, financing and urban design professions to create a transit-oriented metropolitan growth strategy. All of these aligned professions must overlap and rise to the challenge of shifting automobile-dependent urban fabrics, place-by-place, to create a region of increased walking, bicycle and public transport mode with numerous flow-on effects. The method is also intended to bridge the sciences of engineering and transport planning, as well as the arts of urban design and landscape urbanism.

Effectively, the three models together provide a two-way track bringing details up to the strategic regional scale to create a more 'realistic' portrait of what is possible, and scale strategic planning down into details for higher resolution and consistency. The modelling will reveal a formula in positivist scientific-notation to express the attainment of a 'Transit-Oriented Region' as a product of forces and levers being artfully applied.

The cities for which these models are most useful are those which are automobile-dependent, growing in population and economy, and expanding outwardly into greenfield areas, and those which have the capacity to build infill developments in beneficial, amenity-rich ways. For such cities the concept of TOD has long been seen as a major tool to help provide options and opportunities for those who may want to reduce their car dependence. However, what has not been done is the extension of the TOD concept into a regional system that, with synergy, is able to transform the options and opportunities available to the city as a whole. Urban systems have properties that are different in each precinct, TOD station area or corridor due to the networks and linkages that are involved. This approach shows how a whole urban system can overcome its car dependence.

These three models **do not** require large data sets which may be cumbersome, inaccurate and out-of date and/or even out-of-reach from the agencies who 'own' them. This relies on community members and policy makers to apply what they know and feel to a discrete set of questions to view if their preferences lead to positive outcomes for this – and following – generations.

Conclusion

These have been kept quite simple as models, in spreadsheets with maps which could be drawn on, so that the models may be employed globally to cities and regions where there may not be data or specialized operators knowledgeable in the use of some software; rather this could almost be all done in Google Earth Pro and Excel. If Google Earth Pro is not available then AutoCad, one of many widely used drafting softwares, is appropriate.

The implication of this suite of models is that, at least for cities willing to embrace positive management of their growth, there is hope for a clear base-line for discussions on what each site's potential may contribute to broader metropolitan urban goals in clear dollars, residents, jobs, GHG and life-quality indicators.

Requirement going forward

Access to software developers, testing groups and to Google Earth Pro.

5. Conclusion

Australian urban development planning is slowly moving towards the use of more truly collaborative approaches involving citizens, governments and stakeholders. There is wide recognition of the need to continue this trend. Urban development stakeholders in Australia are exploring this option, not only because regulation is driving them that way, but also because of increasing appreciation of the value of cooperative approaches in terms of strengthening democracy, building social capital, risk mitigation, reputation, cost effectiveness and improved outcomes. The need for more sustainable, less carbon intensive ways of living is also becoming more widely accepted.

Collaborative processes enable a variety of perspectives and knowledge to be integrated for best effect when making urban planning decisions and undertaking development. This is essential for low carbon living, since scientific and other forms of expert knowledge must integrated with community visions and local knowledge in decision making processes.

Currently, collaborative governance networks for urban planning in Australia are created largely in the space between existing organisations and institutions, and this model has been the focus of this research project. Other governance models may be preferable. For instance, one transformational innovation suggested by a participant in this research was to completely revise the formal institutions of urban governance, so that city governments are able coordinate all aspects of their development. This govenance model is used in many cities in Europe and China. This could provide a level of integration that is difficult to achieve with the current "division of labour" in urban development planning which means that major infrastructure, roads, public transport and other elements of city development are lead by different government organisations that often have difficulty coordinating their efforts. However, even without significant institutional transformation, well-designed collaborative governance networks can produce decisions and action that lead to low carbon, sustainable urban development.

It is important to note that citizens' involvement in planning processes in Australia has tended to be restricted to receiving information or being consulted about planning decisions that have effectively already been made by governments. Participants in this research, many of them at the forefront of innovation in collaborative urban development planning for low carbon living, note that most collaborative governance initiatives in Australia stlll fall at the "inform" and "consult" end of the IAP2 public participation spectrum. This "decide announce and defend" approach is seen as deficient and inadvisable by participants in this research. They recommend sharing decision making power with everyday people to a far greater extent, since citizens have essential knowledge that can improve urban development outcomes. More than this, citizen participation in planning processes that fundamentally affect how they live is arguably an expression of democratic right.

Participants in this research project identified a number of opportunities to improve the efficacy of collaborative urban development processes, that integrate LCL and other sustainability concerns:

1. Continuing to improve the quality and reach of collaborative processes through iterative 'learning-by'doing'.
2. Utilising the full spectrum of public participation approaches described by the IAP2 as appropriate, and moving away from the overreliance on informing and consulting.
3. Undertaking collaboration in ongoing processes, part of business-as-usual, not just as a series 'one-off' events.
4. Identifying and mapping the relevant network of collaboration necessary to achieve precinct development and low carbon living, including formal and informal processes, and all relevant citizens and stakeholders.
5. Identifying points in the network of collaboration where different types of knowledge, such as local and scientific knowledge, need to be translated and integrated so that people can collaborate in an informed way to co-create new understandings.

Collaborative Urban Development Planning Process Design

A generic collaborative governance process design map has been developed (see Figure 1) that may provide a useful starting point for designers and participants who wish to achieve low carbon living. It raises questions that should be considered when undertaking collaborative urban development planning.

Participants in this research operate in what could be termed "networks of collaboration", consisting of formal and informal relationships between government, community and other urban development stakeholders who imagine, plan, build, live in, service and reshape urban environments. Collaborative planning processes must therefore be designed with the diversity of participants and many steps in planning and developing urban precincts in mind. For instance, there may be nodes in the network where different types of knowedge, such as local and scientific knowledge, need to be translated so that they can be understood by a variety of people, shared understandings co-created, or capacity to design and deliver low carbon infrastructure improved. Different

collaborative urban development networks may vary in their needs. It is therefore anticipated that the process design map will be modified and adapted to suit particular contexts.

Urban development stakeholders in this research suggested several tools or resources that could be developed to address issues they had encountered in the collaborative governance projects they have personally been involved in :

- An *organisation that can provide independent third party advice* and support to organisations such as local governments that want to undertake deliberative collaboration in urban planning for low carbon living and other sustainability outcomes (draft structure supplied in this report)
- New and/or adapted digital planning platforms that help model carbon outcomes in collaborative planning processes (examples of suitable software identified and described in this report)
- Rating guidelines for deliberative collaborative governance processes (draft provided in this report)
- A request for tender guide, for local governments wanting to undertake low carbon urban development (draft developed for this research project)
- A guide to help local governments collaborate with energy providers and the community to build renewable energy infrastructure (draft guide developed for this research project).

In addition, a ***Pathways to Low Carbon Living App*** is proposed that would be useful for people in collaborative urban development planning networks. The app could have wide application. It is beyond the scope of this research project to develop the app, however a number of key attributes are suggested for consideration.

6. Appendices

Appendix 1: Examples of Community Engagement Guidelines and Toolkits in Planning in Australia

Document	State department	Type of document	Summary
Community engagement in the NSW planning system (2003)	NSW Dept of Planning	Manual	A starting point in fulfilling the need for practical guidance on how to conduct quality processes of community engagement. The manual provides tools and techniques on deliberation and discusses IAP2 spectrum. http://www.communityplanningtoolkit.org/sites/default/files/CommunityEngagementHandbookNewSouthWales.pdf
Engaging Queenslanders: A guide to community engagement methods and techniques (2011)	QSL	Toolkit	The document aims to provide practical advice and information for community engagement practitioners http://www.qld.gov.au/web/community-engagement/guides-factsheets/methods-techniques/
Effective Engagement (2013)	Vic Dept of Environment and Primary Industries	Toolkit	Comprehensive toolkit of three parts: Book 1 - An Introduction to Engagement Book 2 - The Engagement Planning Workbook Book 3 - The Engagement Toolkit http://www.dse.vic.gov.au/effective-engagement

Community Engagement Handbook. A Model Framework for Leading Practice in Local Government in South Australia (2008)	Local Government Association of SA	Handbook	The principal aim of the Handbook is to provide Councils with a model framework to adapt to local circumstances for effective planning and implementation of community engagement processes for small and large projects. http://www.lga.sa.gov.au/engage
Checklist for local government climate change adaptation planning	WALGA	Guidelines	Document outlining 7 steps in climate change adaptation planning. Step 3 (Building relationships) emphasises on the development and implementation of a process to engage the community, however the document does not provide guidelines on public engagement and participation http://www.walgaclimatechange.com.au/adaptation-plan-checklist.htm
Strengthening Community Engagement (2012)	WA Dept of Local Government	Guidelines	Guidelines on Community engagement and Integrated Planning under the regulatory framework for Integrated Planning Framework. Advisory standards: The local government has a community engagement policy/strategy. Community engagement involves at least 500 or 10% of residents, whichever is fewer, and is conducted by at least 2 documented mechanisms. https://integratedplanning.dlg.wa.gov.au/Page.aspx?PID=13
Guidelines for Major Project Community Consultation (2007)	NSW Dept of Planning	Guidelines	The document provides guidelines on community and stakeholder consultations for major projects under the EP&A Act http://www.planning.nsw.gov.au/assessingdev/pdf/Dr3%20DOP%20GuideMajProjComConsult%20BRO.pdf
Our environment Our communities - Integrating environmental outcomes and community engagement in the NSW planning system (2012)	NSW	Report	Aims to identify best models for integrating environmental and community considerations in the NSW planning system in relation to the New South Wales Environmental Planning and Assessment Act (EP&A Act); Provides an overview of existing community engagement tools and guideline documents; Emphasises on early, sustained and genuine community engagement in strategic and land use planning processes http://www.edonsw.org.au/our_environment_our_communities_integrating_environmental_outcomes_and_community_engagement_in_the_nsw_planning_system
Local government and community engagement in Australia (2011)	ACELG	Working paper	This annotated bibliography outlines a number of key resources on the topic community engagement that have been prepared for practitioners and policy makers. This document contains information about a range of resources which have been grouped in the following broad categories: ■ Guidelines ■ Democracy and Governance ■ Methods and process design ■ Principles of engagement ■ Council policies ■ Case studies ■ Resources about online participation http://www.acelg.org.au/news/local-government-and-community-engagement-australia-working-paper

Reconnecting the community with the planning system (2010)	NSW	Discussion Paper	Environmental Planning and Assessment Act 1979 P&A Act) “to provide increased opportunity for public involvement and participation in environmental planning and assessment.” Important recommendation - Recommendation # 1: Establish minimum mandatory consultation requirements under the EP&A Act that guarantee genuine community involvement in plan making and development assessment procedures. http://www.planning.nsw.gov.au/Portals/0/PolicyAndLegislation/TEC_EDO_Planning_Consultation_Final_Report_230810.pdf
Environmental planning and assessment Act 1979 –SECT 57	NSW	Environmental plans	Sec57 – requires community consultation on any local environmental plan http://www.austlii.edu.au/au/legis/nsw/consol_act/epaaa1979389/s57.html
Local Government Act 1993	NSW	Community Strategic Plan	Requires the development of a community strategic plan for a period of 10 years
Local Government (Administration) Regulations 1996	WA	Strategic Community Plan	Requires a ten year strategic community plan;
Local Government Act 2009	QLD	Community Strategic Plan	Not compulsory - a 5-year corporate plan that incorporates community engagement. Long-term community plans in Queensland needed to consider regional as well as local issues which affect the local government area.
	VIC		Community plans are not legislated, however many local councils develop them
	SA		Community plans are not legislated
	NT		Community plans are not legislated

Appendix 2 International examples of public collaboration in low carbon initiatives

Initiative	Duration	Location	Initiator	Level	Aim	Methods and participants	Participants	Outcome	D[8]	R[9]	I[10]
Danish Future Energy Systems[11]	2004-2007	Denmark, EU	Danish Board of Technology	National	To create a debate, contribute to decision-making processes and support on-going dialogue between key stakeholders.	Future panel	Members from the Danish Parliament;	Resulted in input to the Danish Parliament on a new Energy Strategy.	+	-	?
						Steering group	Politicians and experts (the biggest or most important players in the energy sector, researchers, NGOs, and the Danish parliament)				
						Public hearings open to the public	Panel members, experts, general public				
Engaging Civil Society in low-carbon scenarios[12]	April 2009 - March 2012	France and Germany	European project[13]	National	Key aim of the project was the development of a method to transparently integrate stakeholder contributions into	Scenario building, stakeholder workshops, creation of a European Network on Low	Trade unions, energy companies, environmental NGOs, consumer NGOs, industries and banks.	The central position of stakeholders in scenario building allowed the	+	-	/[14]

8 Deliberative
9 Representative
10 Influential
11 Dorfman,P., Prikken, I. and Burall, S. 2012. Future national energy mix scenarios: public engagement processes in the EU and elsewhere. EESC, Brussels
12 Ibid.
13Participants - Germanwatch, Potsdam Institute for Climate Impact Research (PIK), Climate Action Network France (RAC-France), International Research Center on Environment and Development (CIRED), International Network for Sustainable Energy - Europe (INFORSE-Europe).
14 This was a research project, not linked to any formal decision-making processes

					modelled energy scenarios.	Carbon Scenarios		integration of the degree of acceptance for specific energy policy measures or technology decisions.			
Energy Cities IMAGINE initiative[15]	2006 – on-going	Europe[16]	Energy Cities; a European association of local authorities	Pan European, Local Authorities	The purpose of IMAGINE is to build 'visionary plans' for the long term sustainable development of cities for a low energy climate resilient future.	Exchange platform, think-tank, resource centre	Technological and industrial actors; those from the energy and service industry; consumers; local communities, politicians and trade unions; the academic, cultural and media sectors.	Resulted in a network of partners from the public, private and community sectors around Energy Cities.	?	-	+
Public participation approaches in radioactive waste disposal: Implementation of the RISCOM model in Czech Republic[17]	January 2008 - July 2009	Czech Republic	ARGONA (European Commission programme) Coordinated by Karita Research	National	To raise awareness and facilitate active involvement of the general public and key stakeholders, in informing and improving the decision-making process. The RISCOM model attempted to enhance transparency in decision-making mechanisms about complex and controversial	Stakeholder reference group, working group and public hearing	Stakeholders - Czech nuclear waste management; government bodies, representatives from potential siting communities and NGOs: external expert support	NA	-	-	?

15 Dorfman,P., Prikken, I. and Burall, S. 2012. Future national energy mix scenarios: public engagement processes in the EU and elsewhere. EESC, Brussels
16 Pilot projects - Bistrita (Romania); Dobrich (Bulgaria); Figueres (Spain); Lille (France); Milton-Keynes (UK); Modena (Italy); Munich (Germany); Odense (Denmark)
17 Dorfman,P., Prikken, I. and Burall, S. 2012. Future national energy mix scenarios: public engagement processes in the EU and elsewhere. EESC, Brussels

					processes						
The Spanish Energy Mix Forum[18]	2012	Spain	European Commission, Economic and Social Committee	National	A structured national discussion on differing low carbon energy sources in Spain, reviewing economic, technical, environmental and socio-political aspects of differing low carbon energy sources	Piloting the pan-EU multi-stakeholder national energy forums	'Up-stream' participation of a very broad range of stakeholders throughout the dialogue	The Forum is piloting the EESC concept of multi-stakeholder national energy mix forums.	?	-	?
Sustainable NOW[19]	2012	Bulgaria, Hungary, Italy, Germany, and the UK.	European Sustainable Energy Communities Effective Integrated Local Energy Action Today, IEE/07/752/SI 2.499210	Pan European, Local Authorities	To arrive at sustainable energy solutions at community level, work with levels of government closest to citizens through building local government capacity, learn from experience, encourage political leadership, and identify opportunities for change at political, administrative, economic, social and environmental levels	Capacity building, peer exchange and review through involvement with local and regional actors, including: local governments, 'frontrunner' communities, peer-to-peer exchanges, study visits, capacity development workshops, and staff trainee programmes	Local and regional authorities, communities and stakeholders	Resulted in energy guidance packages with instruments to support Local Energy Action Plan (LEAP) implementation.	-	-	+
PlanLoCaL (Planning for	2009 – on-going	UK	Centre for Sustainable	National	A programme designed to give	Community-led Planning,	NGO, Stakeholder Engagement, Local	Community participation in local	+	-	+

18 Ibid.
19 Ibid.

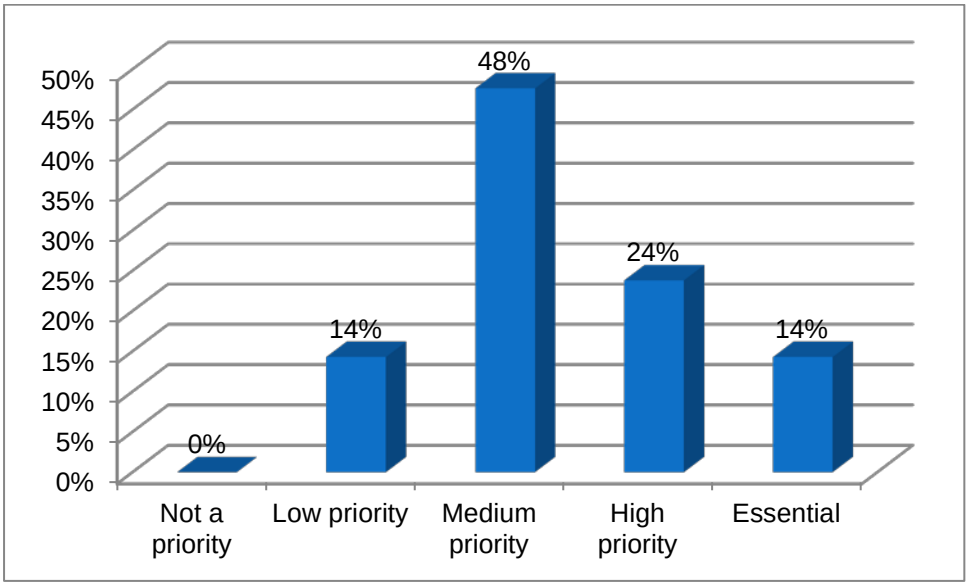
Low Carbon Living [20]			Energy, Bristol		communities embarking on a community energy project the confidence, knowledge and ambition to achieve a low-carbon future for their area. It provides support on positively influencing strategic planning, as well as driving forward low-carbon initiatives in their area		Government	planning and decision making			

(Source: Hartz-Karp et al. 2013)

20 Source: http://www.planlocal.org.uk

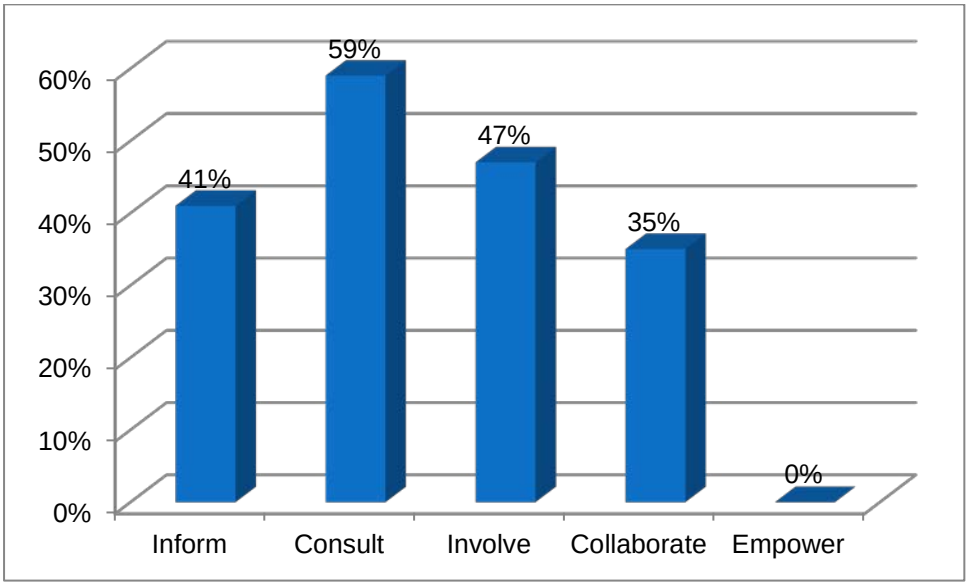
Appendix 4: Survey results

How important is it to your organisation to achieve low-carbon living outcomes from urban planning and development?

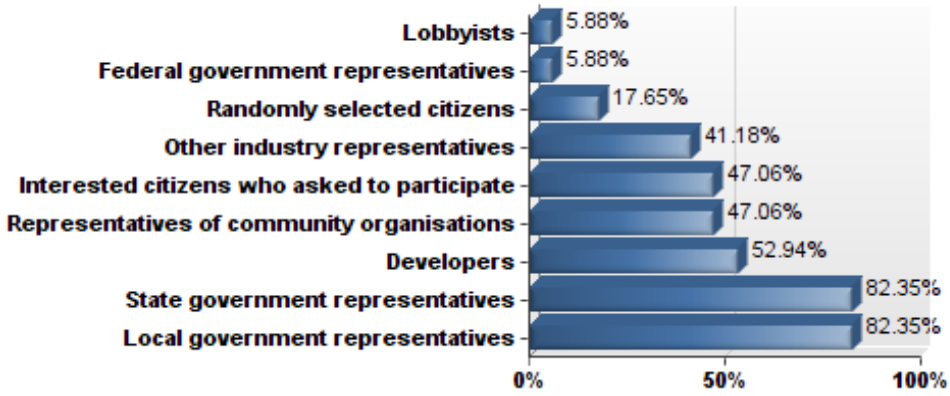


Survey respondents were asked to describe a particular collaborative urban planning project and asked the following questions:

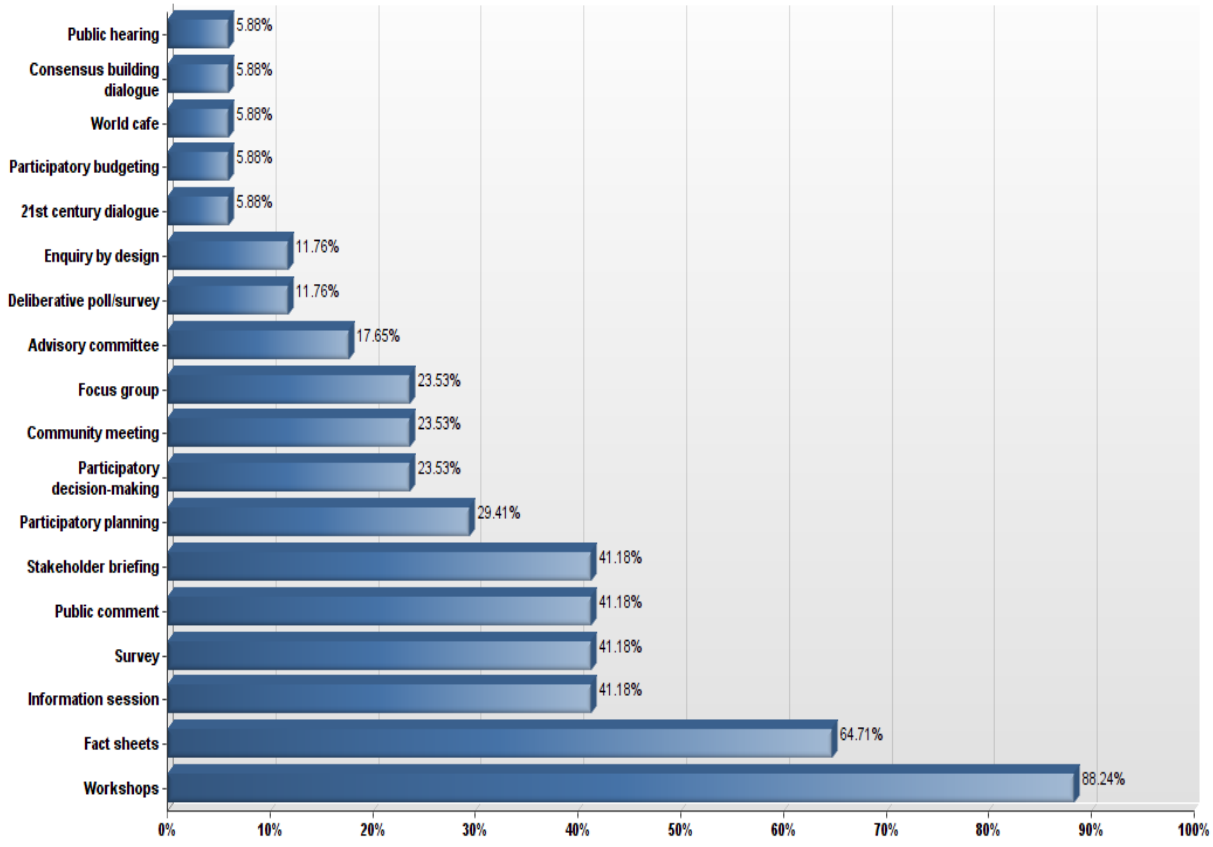
What kind of participatory approach was used to involve participants?



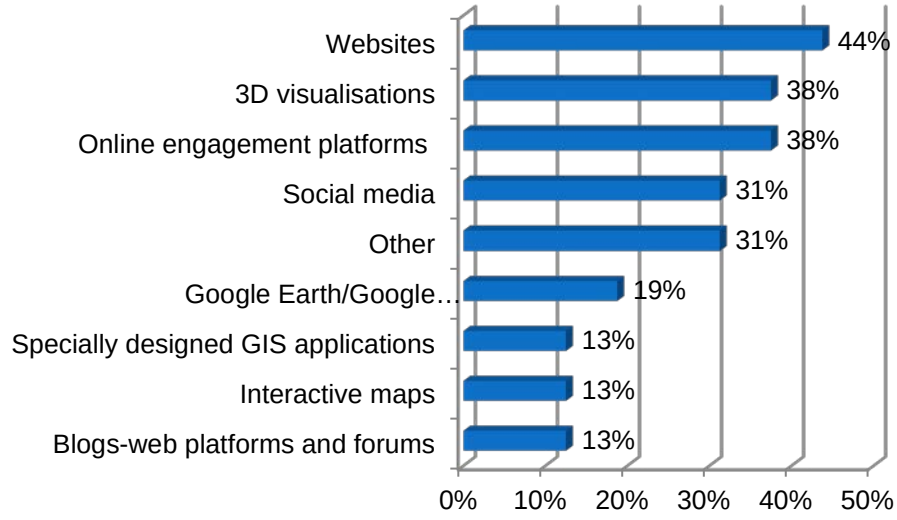
Who were the participants in the process? (Choose all relevant options)



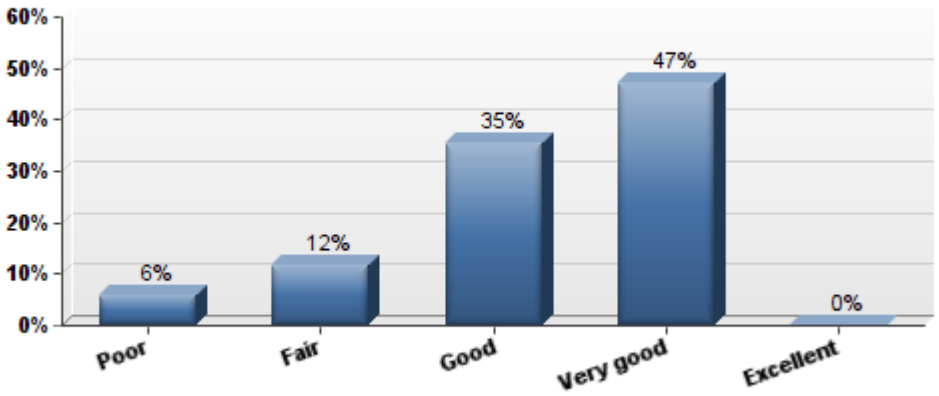
What type of collaborative techniques and processes did you use in this process?



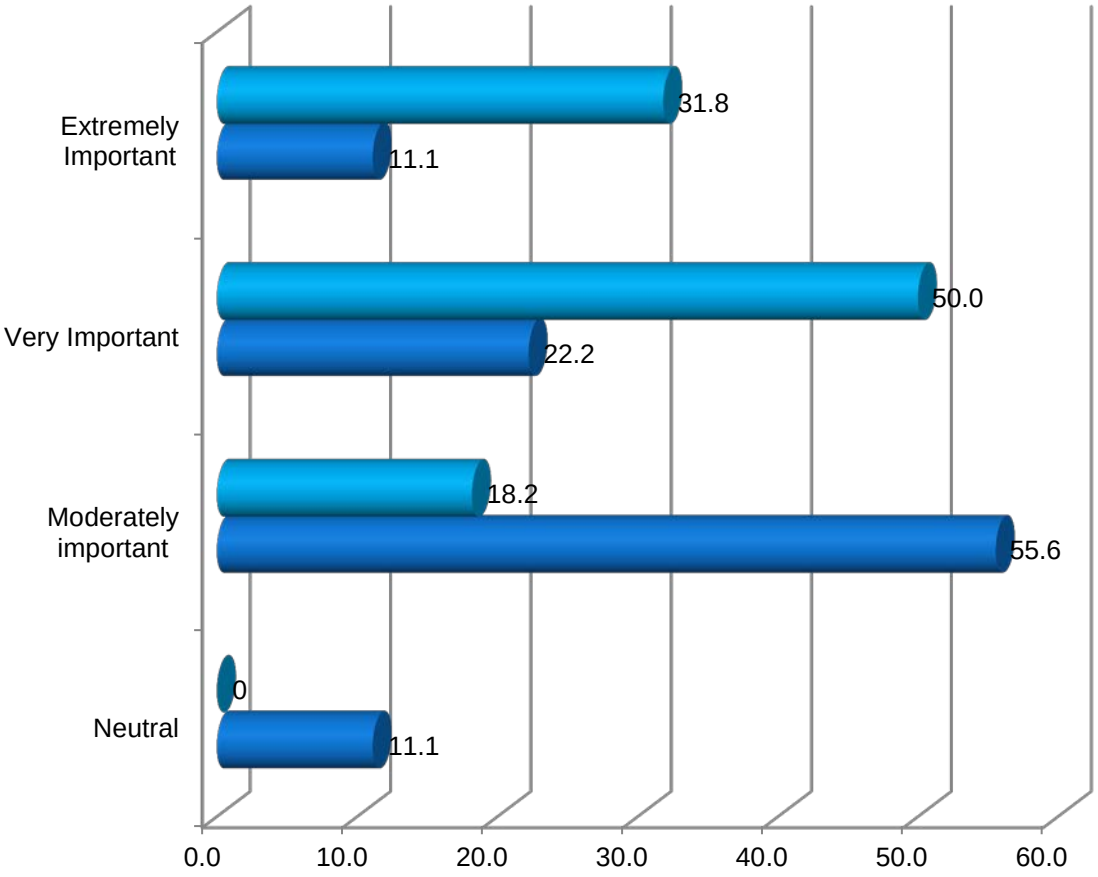
What tools and technologies did you use in this particular project?



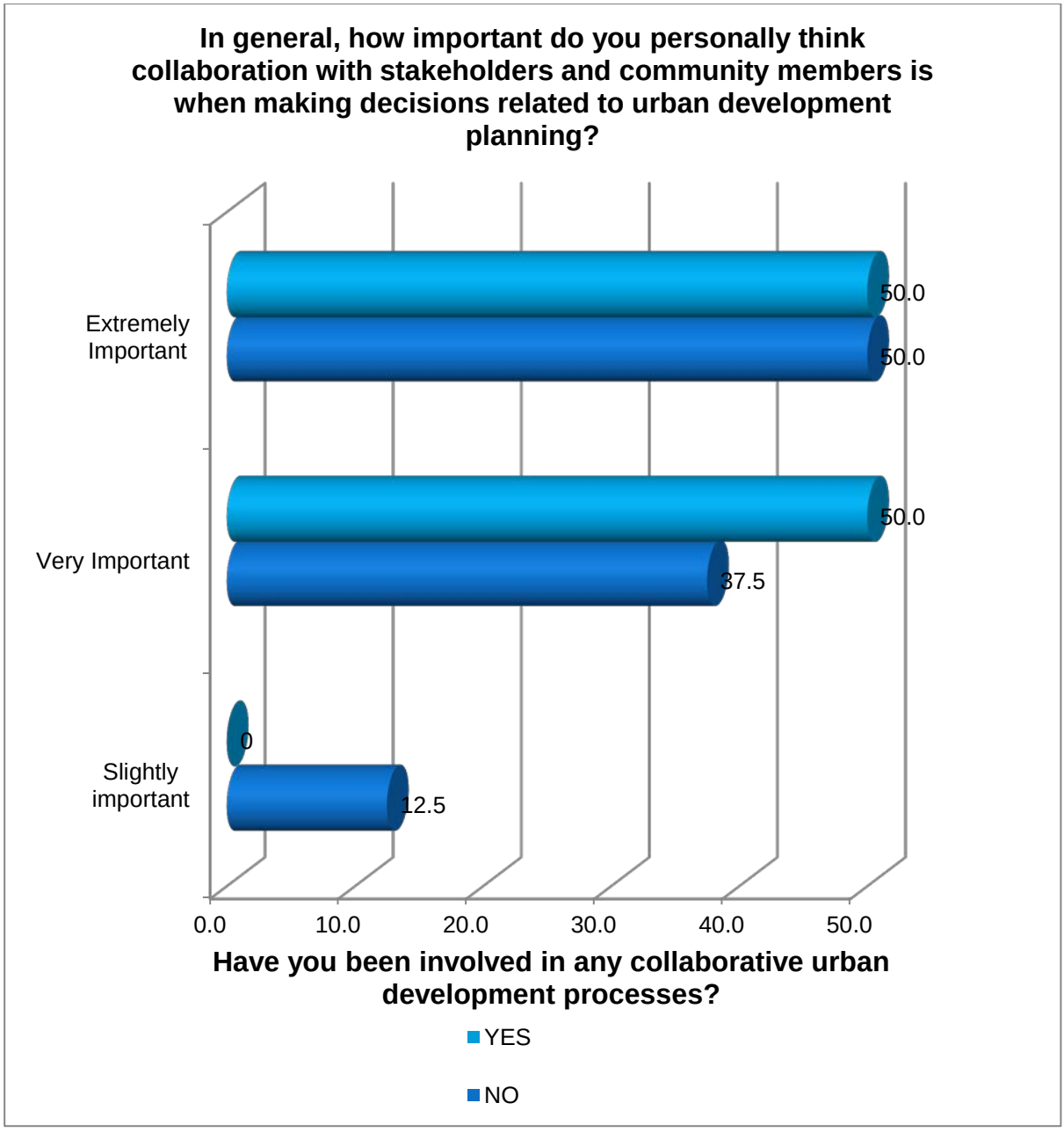
How would you evaluate the quality of the collaborative process?



In general, how important is it to your organisation that decisions related to urban development planning are made through collaboration with stakeholders and community members?



Have you been involved in any collaborative urban development processes?


In general, how important do you personally think collaboration with stakeholders and community members is when making decisions related to urban development planning?
Extremely Important
Very Important
Slightly important
50.0
50.0
50.0
37.5
0
12.5
0.0
10.0
20.0
30.0
40.0
50.0
Have you been involved in any collaborative urban development processes?
YES
NO

Appendix 5: Interview questions

Curtin University

Curtin University Sustainability Policy (CUSP) Institute

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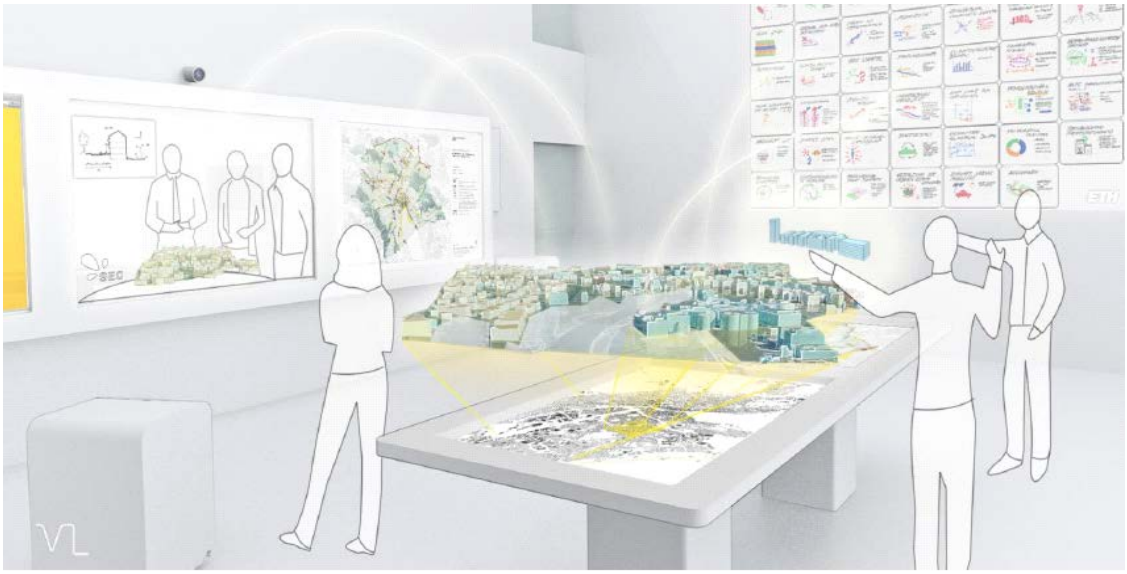
Pathways to achieve low carbon living outcomes through collaborative urban development planning in Australia.

Semi-structured interview/group discussion questions

Have you been involved in or are you aware of collaborative urban design processes that have been implemented in Australia or elsewhere? Describe them.

1. In your opinion, what aspects of these collaborative processes were successful? Why?
2. In your opinion, which aspects of these collaborative processes could have been improved? How could they have been improved?
3. What are the opportunities to use collaborative urban design processes to achieve low carbon living outcomes in Australia?
4. What are the barriers to the use of collaborative urban design processes to achieve low carbon living outcomes in Australia?
5. Overall, would you recommend the use of collaborative urban design processes to achieve low carbon living outcomes and why?
6. Is there anything else you would like to share?

Deliberative Workshop on Collaborative Urban Planning for Low Carbon Living



Drawing: Lukas Treyer, ETH Zürich, 2005

Friday June 12th 2015

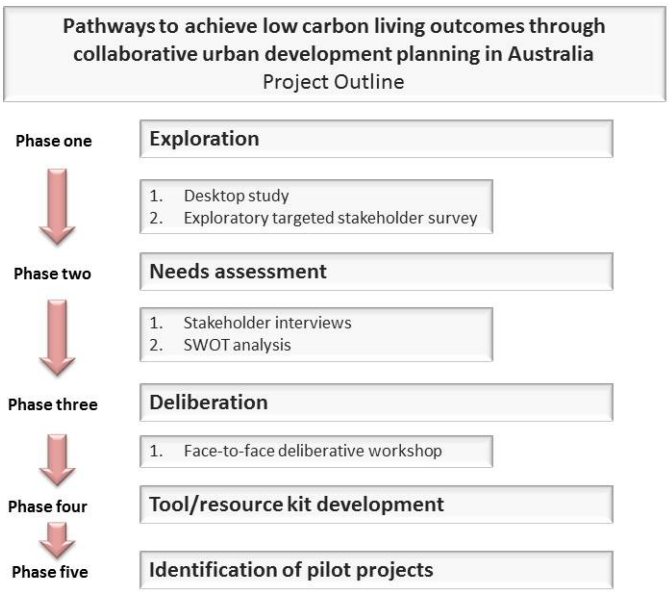
Perth, WA

Sydney, NSW

RP3019 Pathways to achieve low carbon living outcomes through collaborative urban development planning in Australia

Introduction

The CRC for Low Carbon Living (CRCLCL) has identified collaborative urban planning as a core pathway to more livable and sustainable neighbourhoods with low carbon footprints. Collaborative community-engaged decision making is known to provide cost effective, situation-appropriate, and widely supported solutions to urban development issues. This research project is part of Program 3 of the CRC for Low Carbon Living (CRCLCL): Engaged Communities. It draws on literature review, best practices and the knowledge of key stakeholders in the Australian urban development industry, particularly CRC participants, in order to better understand the potential for collaborative urban planning processes to reduce the carbon intensity of urban precinct developments. This workshop is part of phase three of RP3019 Pathways to achieve low carbon living outcomes through collaborative urban development planning in Australia.



The objectives of this workshop were to:

1. Explore key challenges around collaboration for low carbon development;
2. outline principles to design/develop, implement and evaluate collaborative urban planning processes for low-carbon living;
3. explore ideas for projects in collaborative urban development for low carbon living that the CRC might fund.

This report outlines **preliminary results** that came out of the Workshop held on June 12, 2015.

Agenda

Deliberative Workshop on Collaborative Urban Planning for Low Carbon Living

Agenda, Friday June 12th 2015

Facilitator, Robert Weymouth Sydney, Margaret Gollagher, Perth

11.00 – 11.10	Welcome and introduction to today's workshop
11.10 – 11.25	**Small table discussions** - *"What are your key challenges around collaboration for low carbon development?"*
11.25 – 11.35	**Presentation** - Dr. Stephen White, Program Leader 'Engaged Communities', CRC for Low Carbon Living – *"Engaging Communities in Urban Developments"*
11.35 – 11.50	**Presentation** - Collaborative urban planning for low carbon living in Australia, key project findings so far **Plenary session** - feedback on key challenges around collaboration for low carbon development
11.50 – 12.25	**Presentation** Janette Hartz-Karp, Curtin University, Perth WA Iain Walker, New Democracy, Sydney, NSW
12.25 – 12.45	*BREAK*
12.45 – 13.10	**Presentation** Andrea Selvey, Director Creative Communities, City of Greater Geraldton, WA Kelly Hertzog, Project Manager, City of Melbourne, VIC
13.10 – 13.40	**Q&A Panel** - Panel to respond to alternating questions between Perth and Sydney.
13.40 – 14.00	**Small table discussions –** *"What principles should be used to design/develop implement and evaluate collaborative processes for low carbon living"*.
14.00 – 14.20	**Presentation –** New tools and technologies facilitating collaborative urban planning
14.20 – 14.55	**Open space session** - *"What new CRC projects for collaborative development planning for LCL would we like to see developed?"*
14.55 – 15.00	**Closing session** - Where to from here?

Five key principles for collaboration

Iain Walker, New Democracy

a. *Random Selection*: government inevitably hears from the noisiest voices who insist on being heard. In contrast, we trust 12 randomly selected people on a criminal jury to assess evidence, discuss their views and reach a consensus recommendation because random selection generates "people like us". We get beyond the enraged and the articulate because the public would perceive them as having a bias.

We trust jury selection. We trust lottery results. We have less trust in interest groups and, unfortunately, existing government structures and processes seem incapable of dealing with the challenges of the future. Our approach aims to build on structures we trust today: the jury model is not "new", it is just being applied in a different area.

This is an increasingly tried and trusted approach: numerous governments have conducted increasingly large projects using this fundamental idea. It has resulted in positive media reception which in turn enables legislative change on topics which have otherwise proved challenging for any change.

b. *Time*: most policy problems which warrant the investment in a jury will be complex topics, so we need to allow people the time to educate and immerse themselves in the topic. Faced with a clear remit and a worthwhile level of authority citizens will invest the time.

We generally need approximately 5 months to deliver the process from date of approval – on an 'all of budget' topic encompassing services and infrastructure with some potentially transformative future projects we would schedule 6 all day meetings for citizens (45 hours in person), as well as allowing for a spare 7th meeting which will likely be called upon.

c. *Information*: Neutrality of information provision is a core principle, and we are careful to alert all juries that all writers have their own bias and perspective and they need to critically analyse this.

To counter the view that "you can find an expert to say anything" we focus the start of a process on asking the jury "what do you need to know… and who would you trust to inform you?" – and use this as a way of selecting the speakers for subsequent meetings.

Government has the ability to present both a factual baseline and a recommended position. Moreover, we offer elected representatives a minimum of two opportunities to make their case individually to citizens in small group discussions and through the written submission process. This is complemented by allowing stakeholder groups to also nominate speakers who they feel the jury needs to hear from in order to be fully informed.

d. *Clear Remit*: a plain English question, phrased neutrally.

This is the most time consuming aspect in finding agreement with a sponsoring Mayor or Minister. The difference between a politically palatable question and an effective remit the public can understand can be seen in the examples of "How can we continue to achieve excellence in financial sustainability for the benefit of the community" in contrast with "How can we live within our means?". Everyday people (not impassioned activists) need to instantly understand the problem to care enough to get involved, and only the latter question does that.

e. *Upfront Authority*: To get everyday people in the room making a considerable time commitment, they need to know that the recommendations they reach mean something. Equally, citizens respect that accountability and thus the final decision rests with the elected Mayor and Councillors. It should come across that the decision is genuinely shared, that no pre-made decision lurks in the background, and that the elected are open to any and all ways of the problem being solved. Our commitments from Premiers have been for the report to go to Parliament verbatim and unedited, for the Premier to commit to meeting the jury for an hour to respond with which elements he will pursue and for the document to earn a response from Cabinet. This is a better offer than most citizens would normally receive to genuinely have a say.

Key learnings from implementing collaborative practices

Janette Hartz-Karp, Curtin University

- I became involved in this work when I was consulting to the Minister for Planning and Infrastructure, when the WA government had made a firm commitment to sustainability. She hired me saying that only hearing from the bureaucrats, other experts and lobbyists was not helping her understand what the people could live with if they understood the issues including the trade-offs; and that no-one, including her, had the 'right' answers to complex issues.
- The most important learning from this work was that we could 'trust' the people to co-create wise, sustainable solutions if we adhered to the following principles: That all public deliberations would be:
  a/ representative of the broader public and their diverse viewpoints,

  b/ deliberative, i.e. participants had the opportunity to -

  - i/ understand each other as well as the science and data,
  - ii/ devise potential options/solutions, and
  - iii/ seek common ground - based on their agreed values/criteria

  c/ influential, with the Minister stating at the outset of each public deliberation the extent of influence it would have, and then continuing to involve participants in the continued planning and execution
- We found that everyday people did not have experts' silos and timelines guiding their thinking, so inevitably thought more holistically and long term i.e. applied sustainability thinking.
- Both in this work, and in the many empowered public deliberations that have followed, including our 4 years working with the City of Greater Geraldton, the recommendations made have been far more ambitious in terms of sustainability and low carbon living than the government had previously been willing to take on. Importantly, this work improved trust between government and the public, and changed the way government operated – both critical to implementing future low carbon living.

Development and implementation of Melbourne's Urban Forest Strategy

Kelly Hertzog, Project Manager, City of Melbourne, VIC

- What is the Urban landscapes branch and what work do we do? Our mission is "To create healthy and resilient urban landscapes for future generations through participation, transparency and ecosystem driven adaptation".
- We deliver on this mission through a range of strategies that work to increase green open space, increase water capture and reuse, increase canopy cover, green the urban form and enhance urban ecology and biodiversity.
- Partnering with the community is central to the way we do our work.
- One example of this is the Urban Forest Strategy. The strategy sets out targets to increase Melbourne's urban forest to cool the city by 4 degrees and deliver a range of social, environmental and economic outcomes.
- To develop this strategy, we embarked on an eight month community consultation phase that included a range of participation modes. The community's desire to be involved in the implementation of the strategy was clear, and this became a key action in the strategy.
- Implementation of the strategy has taken place over three years and included ten separate community engagement programs. Key factors in the success of these programs have been:
    - Long timeframe for participation
    - Online presence and visual tools
    - Collaboration and partnerships
    - Presentations of complex issues – provide information that helps people to deliberate
    - Evaluation and constant improvement
- Despite recognition of this process as being successful, we aim to improve. For example, the Urban Ecology and Biodiversity Strategy is being developed deliberatively.

Key challenges around collaboration for low carbon development

A Competing agendas between stakeholders and lack of data to convince stakeholders to collaborate

B Benefits to stakeholders beyond certain industries (for example the development industry) are not translated into a convincing argument.

C There are false barriers to collaboration causing us to not work together enough

D The benefits to the development industry are defined

E Getting stakeholders to collaborate

F The economic costs and benefits (beyond those to the development industry) are not clearly defined or distributed.

G Regulations limiting collaboration

H Research information is not informing and convincing stakeholders effectively.

I Examples and data to encourage collaboration

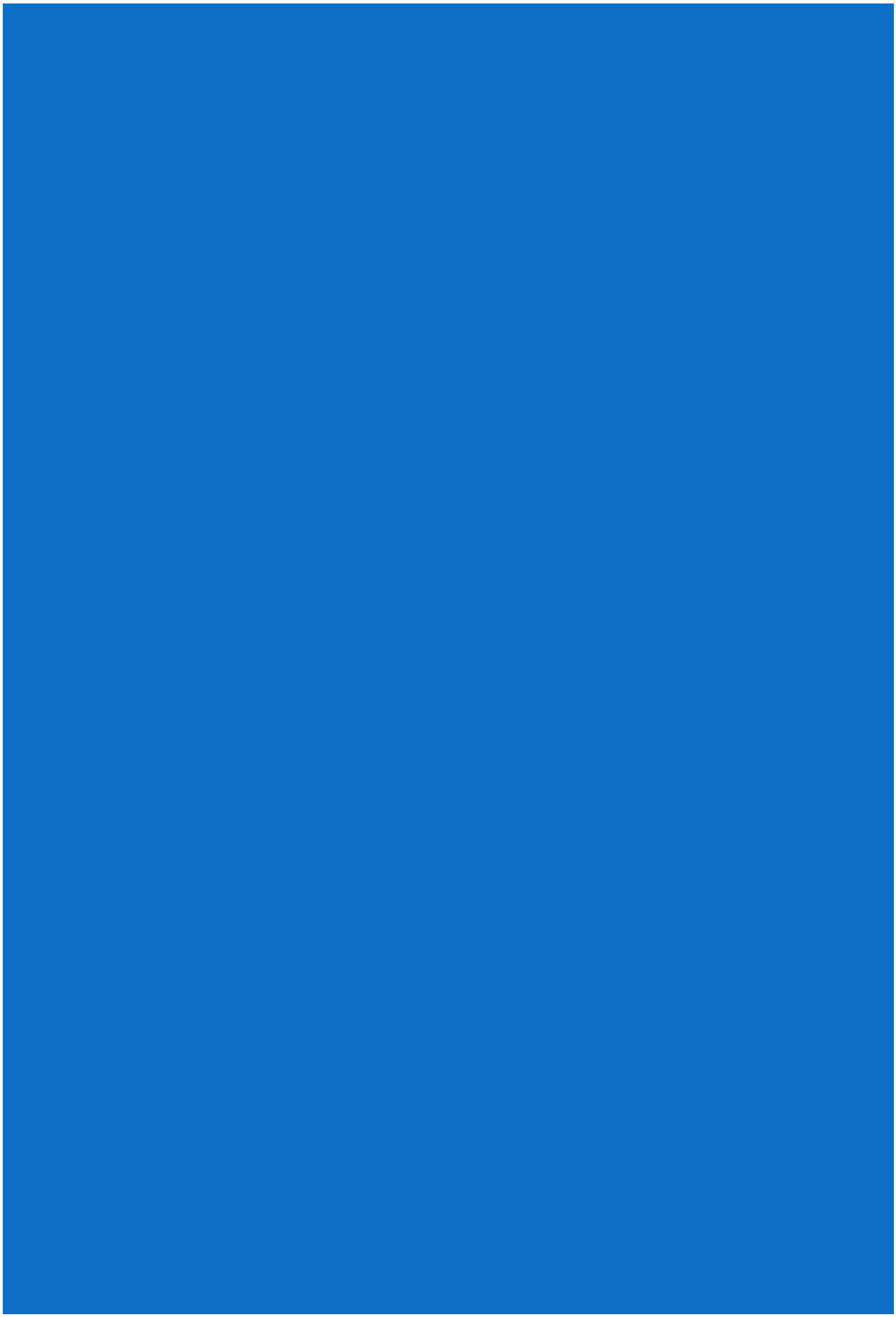
J There is a lack of time dedicated for new initiatives and collaboration.

K The data and science are challenging to translate and engage people in imagining a future

L Translating ideas and talking common language between different stakeholders

Principles to design/develop, implement and evaluate collaborative urban planning processes for low-carbon living

A	Learning from experience and accepting change
B	Establish and maintain trust and respect throughout the process (this includes: transparency, honesty, communication, implementation frameworks, rules of engagement, among others).
C	All stakeholders, including the community declare commitment and realistic objectives at the beginning of the process
D	Transparency is essential.
E	Identify stakeholders and what value they obtain and contribute
F	Shared ownership, responsibility and accountability.
G	Carry out open, transparent and comprehensive communication throughout the process
H	Compensation for participation
I	Identifying the knowledge gap.
J	Incorporate evaluation of results throughout the process
K	Fair and transparent Involvement with all types of participants (for example: citizens, government, community, all stakeholders, etc.) so that everyone has their say and is involved and responsible.
L	Build trust among stakeholders
M	A clear, transparent framework for engagement that includes all stakeholders and contains rules for engagement.
N	Ownership of decisions and outcomes



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