

Wellington after Paris

Zero Carbon Capital City

SEMINAR/FORUM , WELLINGTON
15th SEPTEMBER 2018

WELLINGTON CIVIC TRUST



This half-day+ seminar tackled one of the most important issues to face present and future generations – one that will affect our city and its people for centuries to come.

The proposition to be addressed was set out in the publicity material as:

“Wellington can continue to be a vibrant place, while responding to the need to reduce emissions and adapt to a changing climate and rising sea levels. The “Wellington after Paris” Civic Trust forum offers a unique insight into the wellbeing, employment and resiliency benefits on offer when we make the transition to a carbon neutral city.”

Over the day the 120 registrants were addressed by 16 interesting and engaging presenters and had the opportunity to take part in question and answer and discussion sessions.

The material below is a summary of the content of the three sessions.

The presenters’ presentation material has been kindly provided, and is available in full on the Civic Trust website. Presenter details can also be found there.

The seminar commenced with a karakia, waita and kaikororeo from local mana whenua, Peter and June Jackson (Te Atiawa) including brief comments on the beauty of the natural environment of the city and its setting, as well as the cultural vibrancy of New Zealand’s capital city.

Session 1: Economic Transformation

Councillor David Lee

David is the Wellington City Council Portfolio Leader for Climate Change, and Technology, Innovation and Enterprise (TIE). His presentation was scene-setting for change in atmospheric greenhouse gases (CO₂, CH₄ and N₂O – carbon dioxide, methane and nitrous oxide), and climate responses to these changes including those experienced locally, such as the local effects associated with ex-tropical cyclone Gita which resulted in significant storm surges on the south coast including Makara. He also highlighted the increasing implications of sea level rise around the city's CBD, demonstrating visually the impact of a 1m sea level rise. He noted that this would affect the city's underground services and basement areas, as well as major roads and other transport systems. The issue will have major implications for New Zealand as a nation and Wellington as a city.

The city aspires to a zero carbon future, although at present it is seeking to become the country's low carbon capital. As the effects of global climate change are to a certain extent locked in already, the resilience strategy is a key element of the Wellington community's response. David considers that the Zero Carbon Bill will be a game-changer for New Zealand, with the proposed Climate Commission working on adaptation as well as the legislation setting out low carbon/no carbon aims and goals.

Wellington is already the "greenest" city in Australasia with 5.7 tonnes of carbon per head, significantly ahead of Auckland which is 7.3 tonnes per head, and producing approximately one quarter carbon per head of Australian cities. The largest greenhouse gas producing component is in our transport systems, followed by agriculture within the city boundaries, with waste, industrial emissions and stationary energy use all contributing small components. In recent years the city has pulled back from its peak emissions (in 2006), despite a population increase of 21% over the last 20 years. The Council is aiming to get to 80-100% reductions by 2050.

David provided information on recent city surveys, where 84% of people have indicated that they think the effects of climate change can be reduced, but only 10% think that we will actually successfully reduce the impacts of climate change.

One of the characteristics of Wellington is that it is a compact city, where increasing proportions of people walk or cycle to work or use public transport. Those driving to work was relatively static between 2001 and 2013. The community seems to be changing the way it sees and uses transport systems. There is a big uptake of EVs which the Council is trying to facilitate by on-street chargers. Waste management is also a success story. Buildings need a closer look now to see how low energy use can be incorporated into the overall stock.

David fielded a number of comments and questions, including questions about the loss of the city's trolley-bus system and how effectively electric public transport can be facilitated through buses and electric vehicles. A comment raised concern about congestion arising from EVs contributing to overall vehicles on the road, and thus contributing to inefficiencies for all vehicles. In response to a question about the City

Council's apparent investment in projects which will be put at risk by sea level rise, such as the airport expansion and CBD projects, David accepted there was a state of denial at present and/or a "she'll be right" state of mind. There was some discussion on the role of the insurance industry in accepting risky investments and it was agreed that that industry was likely to play a significant role in shaping city investments in future years.

Professor Arthur Grimes - Reshaping our City: Wellbeing and Sustainability

Professor Grimes holds the Chair of Wellbeing and Public Policy at Victoria University of Wellington's School of Government and is Senior Fellow at Motu Economic and Public Policy Research. His talk was entitled "Reshaping our City: Wellbeing and Sustainability", commencing with a quote from Confucius "*there is good government when those who are near are made happy, and when those who are afar are attracted*". This statement is as relevant today as it was over 2500 years ago! Noting that the Lonely Planet publication had named Wellington as New Zealand's top destination, the challenge was to keep it that way for the benefit of everyone. . Quoting the long-standing characterisation of economics as "the dismal "dismal science", Professor Grimes was critical of central government moves in the recent past to reduce the ability of local government to play a full part in the life and promotion of all aspects of the city and its functioning.

Of the four "well-beings" which used to be enshrined in the Local Government Act, Professor Grimes chose to focus on cultural and environmental well-being (the other two being economic and social). He said that the benefits of cultural events such as the Arts Festival were for local people and not just for the out-of-town visitors which the work of some economic consultants might erroneously indicate. If vibrant people want to come and live in a city, i.e. if they are attracted by the culture and the events, then the businesses will follow, together building a dynamic economy and an interesting community. Many of the smaller events such as the Jazz Festival, Diwali, Kapa Haka festival, art galleries and Cuba Dupa in combination with the biennial arts festival make living in the city a compelling experience.

Environmental well-being is tied to the concept of preserving "natural capital" in addition to human and economic capital. Natural capital sustains life and people, and can be viewed at many levels, from the local streams (many of them now encased below ground in the city), to areas of national importance within the city such as Zealandia, to the city's contribution to the global carbon budget. While the implications of environmental well-being are hugely beneficial, they may come at a cost and are not always a win-win in the short term. As a community we need to make conscious choices to forego opportunities to enable future generations to benefit from our legacy – such choices include conservation projects, safer cycleways and improved waterways.

The current government intends to reinstate responsibilities for the four well-being back into the Local Government Act, which citizens should welcome. Councils and communities will then have to think and act more sustainably, and citizens should

embrace the challenges because of the long-term opportunities and rewards this will bring.

Catherine Leining – Looking beyond net-zero targets to pathways

Catherine is a Policy Fellow at Motu Economic and Co-leader of Motu's research and engagement programme on Shaping New Zealand's Low-Emission Future. She spoke about the mitigation challenges (i.e. the contribution that we can make through reducing greenhouse gases), possible pathways, and Wellington's place in the big picture.

She explained the possible trajectories. The Paris agreement is based on actions to limit unacceptable global temperature increases, setting targets that must be met by mid-century. The year 2020 is a turning point for emissions, with reductions required to stay below 2 degrees C increase over baseline by 2100, or to achieve the preferable 1.5degree C increase. On current pledges, the 2100 increase will be 2.8 degrees. New Zealand's current overall greenhouse gas profile is dominated by the agriculture and energy sectors; at household level, this translates to food consumption generating most greenhouse gases (40%), followed by transport and household and utilities operations in equal measure (25% each). People of course are at the centre of the consumption cycle.

In Wellington, there has been a 1.9% reduction in city-wide net emissions between 2000 and 2015, despite a substantial population growth.

Catherine explained the shift in government policy from one that involved least-cost compliance with modest international responsibility targets (incremental change) to the current policy which joins the country into the global decarbonisation push (transformational change). The Productivity Commission's report was positive in this respect, recognising that appropriate policy in association with a level of technological improvements could, in principle, achieve the desired reductions within the time frame. Their assessment is hedged with many uncertainties, and indicates that success would involve working across a wide range of sectors and human behaviours, and that there were a number of pivot-points where tough decisions would be needed.

Considering the drivers for change, this lay in society, with efforts in government, business and academic and research institutions. Social breakthroughs (e.g. in behavioural norms) are as important as technological breakthroughs (e.g. in agriculture). The Productivity Commission had tested three different pathways for decarbonisation (policy driven, disruptive, and stabilising) which incorporated different assumptions about transport and electricity availability and carbon pricing. This was part of a national debate we would all have a part in. In all scenarios, the drivers of change are innovation, acceleration and leadership. A number of examples were provided to show how rapidly and effectively change can take place when the three drivers are in place.

Catherine's talk concluded with a number of reflections about where we are now, and where we need to be heading. She pointed out that Wellington city cannot reach net zero carbon acting alone, that there is no single "right" pathway, that public

engagement and education are key and that mobilisation will be needed. She provided links to a number of available resources (see presentation material) to help businesses and households learn more and take the steps that they can.

Professor James Higham – Zero Carbon Tourism

Professor Higham addressed the seminar from Norway by video link. He is Professor of Tourism at Otago University and holds a similar Chair in Stavanger and spoke on the basis of that background. Tourism is vital to the New Zealand (and Wellington's) economy, but it is energy intensive, particularly in the transport sector where global emissions already account for 23% of the global total energy-related CO₂ emissions, and this is set to double by 2050. Air travel has so far been omitted from meaningful global efforts to mitigate climate change. While aircraft are becoming more energy-efficient, these are thought to have almost reached their limits and they are locked in for decades due to the life of the planes.

Not only is the size of the international fleet increasing (a nine-fold increase in number of planes between 1970 and 2010), but so too is the kms flown (revenue passenger kilometres). There is also no simple substitute for tourists, with the carbon footprint of an overnight cruise passenger significantly greater than visitors staying in a hotel.

Professor Higham went on to discuss the need for global collective action, with tentative steps having been taken through the Paris Agreement (COP 21) but within which international aviation was a notable omission. He referred to the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), an industry initiative, which has voluntary participation until 2026. This is aimed at carbon neutrality for the industry through off-setting, but which lacks rigour and includes notable omissions and exemptions.

Using Air New Zealand as an example (as it is a leader and not a follower), Professor Higham noted a number of initiatives it has taken, including an early partnership with DOC, establishment of a Sustainability Advisory Panel and pioneering testing the use of biofuels. While zero carbon tourism remains problematic, a number of initiatives have been, and are being, taken to reduce the growth in emissions from this sector. A mix of approaches is necessary, beginning with offsetting emissions that can't be replaced, replacing high carbon sources with low or zero carbon sources, improving efficiency and avoiding carbon-intensive activities.

Session 2: Natural and Cultural Heritage

Councillor Iona Pannett – Waste-free Together for a Zero-carbon City

Councillor Pannett Chairs the Wellington Regional Waste Committee. She explained that 85,000 tonnes of waste are consigned to Wellington's Southern Landfill each

year. This equates to 0.5 tonnes per capita in Wellington city, which is roughly midway between 0.3 tonnes (Gisborne district) and Upper/Hutt City (0.87 tonnes). Wellington fares less well in its annual volume of recycling at 53 kg/capita, compared with Christchurch's 109 Kg. Globally, New Zealand ranks with the highest countries such as the USA in municipal waste generation at 700 kgs per head per annum.

Iona espoused the concept of a circular, rather than a linear economy. Instead of a "take, make and dispose" approach to natural resources, the circular economy adopts a "make, consume, enrich" approach for biological materials, or a "make, use, return" approach for technical materials with energy generation from renewable resources.

A new Wellington Region Waste Management and Minimisation Plan (WMMP) establishes targets to reduce landfill waste by one-third by 2026.

Actions to move to a circular economy includes setting and progressively increasing a national waste disposal levy, which would divert up to 3 million tonnes of waste from national landfills by 2025, with a net benefit of \$500 M to the economy, create up to 9,000 jobs and increase New Zealand's recycling rate to 60%.

Kevin Hackwell - Forests in Wellington City

Kevin is Chief Conservation Advisor, Royal Forest and Bird Protection Society. He explained that the majority of New Zealand's manageable carbon is in our natural systems and amounts to about 6.6 billion tonnes, with 64% contained in soil, and 36% in vegetation. Native forests hold 83% of the total vegetative carbon, with scrublands (7.7%) and exotic plantings (5.2%) comprising the next largest components. Cropland and pasture constitute less than 1%.

More specifically, native forests capture an average of 333 tonnes of carbon per hectare, compared with 97 tonnes for plantation forests.

Kevin's premise is that natural forest regeneration through successional scrub vegetation such as gorse, provides a much greater, and cheaper, capacity for carbon capture and sequestration, than planting schemes. In particular the benefit of pest control has demonstrated, with regeneration flourishing after successful pest control/eradication programmes.

The opportunity for Wellington is manifold, as gorse sequesters carbon at a rate of around 15t CO₂e/ha/yr. As the gorse dies out it enables native forest plant life to establish and previously depleted species to be reintroduced. The consequence of increased natural vegetation over 20,000 hectares of marginal pasture and regenerating scrub and gorse has the potential to provide a one-third offset of Wellington's (2013) 1.2M tonne carbon footprint.

Isabella Cawthorn – A to B with Less C

Most people want to “do the right thing” when it comes to reducing or eliminating their carbon footprint, but it’s difficult when we live complex lives with a need to conduct our lives in a car-oriented society. Isabella’s meme, modelled on Marge Simpson, wants to live a good life, but receives conflicting advice about how to go about it – and ends up confused and dissatisfied.

The answer, or part of it is to help Marge make sense of it all, so that doing the right thing is both practical and fulfilling.

Molly Melhuish – Zero Carbon Building Operation

New Zealand’s energy sector is a battlefield between “big electricity” and local energy initiatives. While the electricity producers are focused on economic efficiency (i.e. profit), local energy options seek maximum energy efficiency, rather than economic, efficiency.

Big electricity competes with local energy activities for capital, labour and market share. It lobbies for continued growth, while community-based energy schemes seek to lower costs and improve technical efficiency.

Energy efficiency is aided by technology developments such as clean-burning wood stoves – ideal for Wellington - in conjunction with Warm Up NZ and relaxation of air quality regulations, to reduce peak generating demand. There is a lot of scope to increase the supply of dry wood for domestic heating including recycling, planting and carbon-friendly electricity pricing.

A Residential Energy Alliance is needed to ensure the consumer’s voice is heard at government level, not just the electricity generators and distributors. Wellington City Council has zero carbon intentions. Building efficient energy production and distribution systems into its plans is essential.

Dr Andrew Alcorn – Zero Embodied Carbon Buildings

Climate change in New Zealand will bring increases in sea level, as well as higher temperatures, greater flooding, increased drought and fire risk and higher levels of ultraviolet radiation.

Signs of the effects of climate change include increased frequencies of flooding and hailstorms, high winds and temperature extremes.

New Zealand’s housing stock is approximately 1.435 M units with 80% stand-alone and the remainder mainly low-rise multi-unit apartment buildings. Much of the stock was constructed in the 1950s – 70s, with most requiring major roof and window maintenance. This provides an opportunity to introduce wall insulation and double glazing, and future proof against stronger winds and increased ambient temperatures.

Future housing stock will be smaller in size, incorporate insulation and require lower carbon content and emissions in its materials and construction. Energy generating and saving systems will be incorporated and a return to more traditional elements such as thatching and wooden shakes is also possible.

He noted the Bob Jones initiative - the move to multi-storey wooden buildings rather than concrete and steel.

Session 3 Summary: Social and Cultural Implications

Dr Russell Tregonning – Health Co-Benefits of Climate Action

Climate change is already bringing extreme weather events: heat stress, threats to food and water security, and all the associated physical and psychological diseases. Human health will become the number one climate change challenge. Disruption associated with migration will bring increasing conflict, and threats of economic collapse.

Many of the changes we need to make however will not only reduce our carbon footprint but will improve our health. Obesity has become a major threat to human health and is associated with heart disease, diabetes, and cancer. We need to exercise more and eat a healthier diet. We need to reduce the production of meat and dairy produce and increase the production of horticultural products; shift consumption into healthier and better-balanced diets. This will be better for us and for our environment.

We need transformative changes in transport. Most of the spending on roads goes into State highways. Only 3% of the 2012-2013 budget went into public transport. More public transport and fewer cars means more space for walking and cycling. And buses require more space than light rail.

A well housed population living in well insulated homes reduces energy demands and simultaneously lowers health costs as well as enhancing well-being.

Dr Tregonning covered a lot of ground in a very short time so 'well-being' didn't get the attention he clearly wished to give it. Treasury is now moving on from GDP, which simply measures levels of 'activity', and developing more qualitative and inclusive measures of the costs and benefits associated with our economic endeavours. This will give environmental and human health a greater focus in discussions about values moving into the future, a future where 'resilience' will become increasingly important.

Tom Bennion - Equity and Social Justice under Climate Change

Tom's presentation dealt with resource management and the ways in which access to and the use of resources is mediated in the legal framework. As a lawyer who is very conscious of outcomes for the communities he represents, 'equity' is inevitably a concern. Adapting to climate change poses a threat to communities who lack the resources and resilience to adapt, and delayed action in addressing issues of inequity will inevitably result in disruption and crises.

We now have very sophisticated computer models to identify key sources of carbon and methane. We can generate maps that graphically illustrate their sources, globally as well as locally. Poorer, low income, communities generate less carbon,

as do poorer countries. While contributing least to global warming it is the poorer communities who are likely to carry the greatest burden in the changes we must inevitably make.

Air Travel is a potent indicator of inequity. The carbon footprint of air travel is huge and it is wealthier people who fly. For poorer people travel is unaffordable. Movement to adapt and explore new opportunities is extremely limited.

Tom advocates for a more serious conversation about 'values' in order to mediate an equitable future that is inclusive and sustaining. To inform this conversation Tom suggests a need to provide better, and more accessible, information. While 'hard data' can substantiate claims, and is important, we need to provide visual simulations and imagery that people can relate to directly and engage with. Being inclusive enables people to become part of solutions and not just the victims of problems.

Dr Danielle Shanahan – Inspirational Futures

Dr Shanahan, like the two speakers before her, talked about the practical business of managing biodiversity within Zealandia as well as the wider outcomes for the city as a whole. Her talk illustrated how a 'local' initiative can have far reaching benefits. With the removal of predators, bird life within the sanctuary has flourished. While the numbers of some species have dramatically increased the numbers of others have fallen. However, the numbers of native birds have increased across the city and those whose numbers have fallen in the sanctuary have increased beyond it.

Dr Shanahan's talk gave credibility to the claims of Kevin Hackwell; much of Wellington's scrubby open space is being colonised by native plants seeded in by birds. More birds means more native regeneration which in turn results in more carbon sequestration. All we need is predator free habitats so our native birds can flourish outside as well as inside the sanctuary.

Dr Shanahan talked about the need to build corridors of natural habitat to provide linkages between remnants and reserves, to restore the health of waterways and rejuvenate the city's green framework. She talked about this renewal of natural habitats contributing to the resilience of the city, for both people and nature. Green open space through neighbourhoods encourages people to walk and to engage with nature and their neighbours. Local habitats make a vital contribution to people's sense of belonging, and wellbeing generally.

Dr Shanahan made constant reference to the wider benefits of the sanctuary, not least as an inspiration for initiatives occurring right across the city. Zealandia has demonstrated what's possible and the benefits are being seen and experienced everywhere. What started out as an attempt to restore a habitat and provide a sanctuary for threatened species has become the inspiration for a more sustainable, resilient, and liveable city. Many individuals and communities are now engaged in weed and pest control to provide safe habitats for our native species, while contributing to a reduction in our carbon footprint.

Jan Rivers – Social Transformation Programmes

Jan talked about how values and attitudes determine our ways of being and acting in the world. She explored, with reference to a number of leading writers and thinkers on the subject, how we need to 'reframe' our values to better reflect the imperatives of an uncertain future. Many of the threats posed by climate change can, in a different frame of reference, be seen as opportunities. As an example, Jan talked about alternative energy and its provision leading to more, rather than less, jobs.

We need clear objectives to enhance resilience within our public services - objectives supporting greater well-being. This will require a shift in values at both individual and institutional levels. Jan was able to support her contention that this shift was already underway by offering tantalising quotes from a number of prophetic thinkers. Her thesis was reassuring. There are significant changes in main stream thinking already occurring. This is posing serious challenges for politicians, and for our systems of governance. Previous speakers in this session provided lots of examples of individual and community initiatives reflecting a shift in values away from blind individualism and towards collective efforts for greater good. Many of these initiatives have had institutional support and encouragement. What Jan was able to provide was an emerging backdrop to these changes, a backdrop that is shifting our thinking to cope with a future that will be very different.

One of the thinkers Jan referred to was Nafeez Ahmed. He is an advocate for "creative thinking as a collective activity." We are inclined to think of 'creative thinking' as a solitary pursuit falling into the domain of the artist. Neoliberalism has fostered the virtues of solitude and self-sufficiency, under the banner of individualism. Such framing makes 'collective activity' an historic anachronism. It was therefore wonderful to have Jo Randerson disabuse us of this notion and provide us with an enlightened take on the role of art and the artist in collective activities as shared experience.

Jo Randerson – Community: Public Spaces and Creative Relationships

Jo is the Artistic Director of Barbarian Productions and has been instrumental in establishing the former Vogelmorn Bowling Club venue as a community space. Jo is an artist who believes that an artist's 'way of being' is accessible to everyone. She has therefore set about running projects and events with which her community can collectively engage.

Jo illustrated a very diverse range of her work with images, supported by a passionate narrative. Rather than talking about 'community' in the abstract Jo was able to convey what it means for people to 'commune', to engage with one another in activities that awaken shared feelings and meanings. Jo sees herself as a facilitator who helps individuals and groups access a creativity normally reserved for 'artists'. Jo's message is that we are all artists, we just need to find safe spaces and trusting relationships. This is what Jo facilitates. While the messages were relatively easy to grasp the nuances of the processes facilitated were rich and complex. Jo enables individuals and their communities to become participants in the creative process, to cease being disempowered observers.

Jo is exploring ways in which individuals can re-engage with their communities to meet the challenges they share. As Jo says, art anticipates the possible. Creative processes within communities can embrace the possible and bring it into being.

As we grapple with uncertain futures and adapt to the inevitable changes ahead the engagement Jo is exploring will become critical if we are to foster and sustain cohesive, inclusive and equitable relationships in our communities.

Commune - *feel in close touch with. Speak confidentially and intimately* (Oxford dictionary).

Professor Jonathon Boston

The session was chaired and summed up by Professor Jonathon Boston who focused on what he saw as the key points.

Jonathon noted that all speakers talked about the need to explore shared values in safe community spaces, and for people to articulate concerns and aspirations as these relate to wellbeing. In the process we need to reframe values and better understand the motivations that incline people towards more inclusive relationships with one another and the environment they share.

Having agreed on changes we need to make, for example the reduction of waste, we need goals and time frames. And we need a more responsive public service that listens to communities and provides leadership. And at all levels of governance we need narratives that are inclusive, inspirational, and provide hope.

The Wellington Civic Trust is grateful to all the wonderful speakers who gave of their time to make this forum a success, and for providing their presentation material for the Civic Trust website.