

Christchurch City Council
ATTACHMENTS UNDER SEPARATE COVER

Date: Thursday 20 May 2021
Time: 1pm
Venue: Council Chambers, Civic Offices,
53 Hereford Street, Christchurch

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123	39718	Andy	Buchanan	Please see attached letter	Yes



24 April 2021

Draft Ōtautahi Christchurch Climate Change Strategy
Public Information and Participation Unit
Christchurch City Council
CHRISTCHURCH

Dear Sir/ Madam

A “Net Zero Embodied Carbon” policy for Christchurch

Thank you for this opportunity to provide comment on the Draft Ōtautahi Christchurch Climate Change Strategy.

I am a semi-retired structural engineer in Christchurch, until recently Professor of Civil Engineering at the University of Canterbury. I am a specialist in the design and construction of low-carbon timber buildings.

I wish to speak to the Council on this submission when the time arises.

My main comments:

1. I support the overall thrust of the Draft Strategy, but it is **totally inadequate**.
2. The document is all about setting and communicating goals, with no evidence of what has been done, **no details of what will be done** to achieve those goals, and **no planned measurements of achievement**.
3. I note that more than half (54%) of Christchurch’s greenhouse gas emissions is from transport. I support **urgent action to reduce transportation emissions**. Much stronger incentives are needed for council staff and the public to use electric vehicles and electrified public transport. This must include continuation of cycleways, and rail commuting services from Lyttelton, Rangiora and Rolleston using existing rail lines.
4. The second largest (19%) source of Christchurch’s greenhouse gas emissions is from buildings and businesses. Much of this is **embodied carbon**.
5. A small but positive step to reduce embodied carbon emissions is for the Christchurch City Council to adopt a **“Net Zero Embodied Carbon”** policy for all new building construction in Christchurch, as outlined below.

The Draft Strategy refers **embodied carbon** in three separate goals. I quote as follows:

Author
AB

Doc. no.
Andy Buchanan submission on Draft Ōtautahi Christchurch Climate Change Strategy



Goal 1: Christchurch has net zero emissions

We have also set an ambitious target of being net carbon neutral for the Council's operations by 2030.

We also need to address the embodied carbon (carbon emitted in the production of the materials such as concrete and steel) that we use in our buildings and infrastructure, and transition towards more sustainable materials and construction techniques.

Programme 4: Adapting and greening infrastructure systems

Any new infrastructure will utilise low-energy solutions, and be designed to minimise the amount of embodied carbon in the materials used so it is as efficient and sustainable as possible.

Programme 8: Energy efficient homes and buildings

Maximise resource efficiency in our existing infrastructure and facilities, and minimise embodied carbon when designing and building new facilities and infrastructure.

These are admirable goals, but there are no examples of what's already happening, and no indication of how they might be achieved.

A "Net Zero Embodied Carbon" policy

One easily achievable goal would be for the City Council to require that all new council-funded buildings in Christchurch be NET ZERO EMBODIED CARBON, starting immediately.

The cost implications of this are minimal. The result would be a much larger number of buildings using timber or other low-carbon bio-materials rather than carbon-polluting steel and concrete. This target could easily be monitored by the use of a simple carbon calculator, such as that recently released by construction company Naylor Love: <https://www.naylorlove.co.nz/carbon/>

A recent example of a Net Zero Carbon Building is the new St Albans Community Centre, opened by Mayor Lianne Dalziel on 10th April 2021. See Appendix B for more information.

My submission to the Christchurch City Council's Climate Emergency Panel in 2019, showed how a Wood Encouragement Policy (a "Wood First" Policy) could significantly reduce the city's carbon footprint. Such a policy, similar to that adopted by Rotorua Lakes Council in 2015, also adopted by British Columbia and Tasmania, would require all building designers to show that they have considered structural wood as an option for their new buildings. A "Net Zero Embodied Carbon" policy is a further step, resulting in a similar outcome.

The City could lead with its own building projects, including the buildings it owns and leases, with some form of incentive (financial or otherwise) for private building owners to follow suit.

On behalf of PTL:

Andrew H. Buchanan PhD MS BE(Hons) CPEng
Principal

Author
AB

Doc. no.
Andy Buchanan submission on Draft Ōtautahi Christchurch Climate Change Strategy

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Appendix A: Background information:

Embodied carbon emissions vs operational carbon emissions

The two big sources of carbon emissions from the city's buildings are operational carbon and embodied carbon.

1. Operational carbon emissions result from fossil fuel used for heating and cooling the building over a life of many decades or more.
2. Embodied carbon emissions result from fossil fuel used to manufacture and transport materials used to construct the building.

In older buildings with low energy efficiency, the lifetime operational carbon can be much larger than the embodied carbon, but this is all changes for modern energy-efficient buildings, where embodied carbon becomes a bigger percentage of the total lifetime carbon emissions.

Sequestration and substitution benefits of embodied carbon

All low carbon bio-materials, such as wood, reduce embodied carbon emissions in two ways - sequestration and substitution:

1. The sequestration benefits come from the carbon which is "locked up" or "stored" in the building materials for 100 years or more, rather than being in the atmosphere.
2. The substitution benefits come from the reduction in production of traditional building materials such as steel and concrete.

MBIE Proposals for reducing carbon emissions

MBIE recently released a draft proposal for monitoring and capping the carbon emissions in new buildings. If this proposal is adopted, building consents will not be issued until the carbon impacts of each new building are (initially) monitored, and (later) held below a prescribed cap.

The Christchurch City Council could lead by example and implement a "Net Zero Embodied Carbon" policy to show how such a policy could be implemented.

Life cycle analysis (LCA)

A full life cycle analysis (LCA) quantifies both operational and embodied carbon emissions over the full lifetime of a building (cradle-to-grave), including re-use, re-cycling or disposal of the construction materials at end-of-life. The analysis often gets bogged down in the unknown disposal options in a hundred years' time. For this reason a "Net Zero Embodied Carbon" policy should concentrate on the immediate (cradle-to-gate) benefits which are needed urgently to combat the current climate crisis.

The Green Building Council

I support the submission made by the New Zealand Green Building Council to the Climate Change Commission. They support the vision of the World Green Building Council for a 40% reduction in embodied carbon by 2030 and Net Zero Embodied Carbon by 2050 for all buildings including existing buildings.

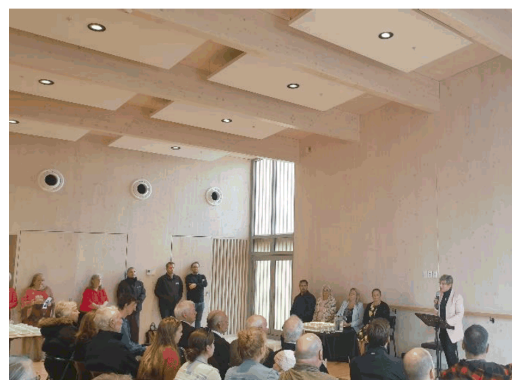


Appendix B: St Albans Community Centre - the Good Wood Story

The new St Albans Community Centre was opened on Saturday 10 April 2021 by the Mayor of Christchurch, the Hon. Lianne Dalziel. The new building sits between Colombo Street and Caledonian Road in the heart of St Albans.



The main entrance, from Colombo Street



Mayor Dalziel opening the building

This new low-carbon building is built almost entirely of wood, using modern technology. All of the walls, the floors, and the roof of the building are made of prefabricated panels of Cross Laminated Timber (CLT), consisting of cross-wise glued wooden boards. The huge structural timber panels are 100mm to 120mm thick, and up to 9 metres long. The timber floor panels are supported on timber piles and bearers, so the only concrete is in the entrance steps.

The interior faces of the CLT wall and roof panels are exposed to view, stained with an attractive whitewash. The internal doors and many other internal fittings are also made of similar wood products. The outside of the building is clad with attractive radiata pine shiplap weatherboards, giving a welcoming appearance.

The total volume of wood in the building is 293 cubic metres (which weighs 146 tonnes). The nett carbon stored in this volume of structural wood is equivalent to 179 tonnes of CO₂ emissions. This amount of carbon storage would offset the emissions from driving a typical family car almost one million kilometres.

As a comparison, if the building had been constructed of concrete rather than wood, the nett carbon balance for the structural materials would have been emissions of CO₂ rather than storage, with huge emissions equivalent to 4,400 tonnes of carbon dioxide. If we add this substitution benefit to the storage benefit, the designers' choice to build this building in wood has offset the carbon emissions from driving a family car over 20 million kilometres.

As an aside, most of the prefabricated wood for this building was imported from Austria, because the panels were not available in New Zealand. Europe was the best place to obtain the panels, satisfying the tight budget and high quality needed for the building design. For carbon accounting, the carbon costs of shipping are almost negligible, so that the carbon storage in the same volume of wood made in New Zealand would have been 179 tonnes rather than 197 tonnes, a difference of only 10%. For future buildings, a large new CLT factory will commence production later this year in Rotorua.

The good wood benefits of this building far outweigh any concerns about the source of the wood. This building has assisted the Christchurch City Council in meeting its climate change goals, resulting in a beautiful new building which is durable, resilient, and ready for use by the local community.

Architects:	Christchurch City Council architects, led by Crispin Schurr
Structural Engineers:	PTL Structural Consultants, led by Daniel Moroder
Quantity Surveyors:	WT Partnership, led by Duncan Bourne
Builder:	Watts and Hughes Construction, foreman Josh Stavropoulos
Carbon calculator:	Naylor Love Construction Ltd.

For more information contact Andy Buchanan,

Author
AB

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Andy Buchanan submission on Draft Ōtautahi Christchurch Climate Change Strategy

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#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
12	39120	Aira	Punio	<p>Kia ora, my name is Aira (Ira) Punio. I am a Filipina migrant and currently a second-year student at the University of Canterbury. I am writing this feedback for this draft to express my interest in our city's draft against climate change.</p> <p>First of all, thank you very much for your unwavering effort to serve our community by encouraging everyone to participate and have them say. This is an important topic that everyone must need to put into consideration and there is no perfect timing to act on climate change but now, at present.</p> <p>I have an opportunity with our urban planning class to have read the draft for 'Otautahi Christchurch Climate Change Strategy 2021' and as for a student like me, it made me realise that I - upon reading the draft it raises up some self-inflicted question(s):</p> <ol style="list-style-type: none"> 1. This draft has a significant positive impact for all people who live in Otautahi, yet it might cause confusion as I saw that there might be difficulty understanding a plan with limited information and time frames. 2. Programme 1 has a clearly potential to accomplish if the City Council will start to connect with different ethnicity groups and student groups around the city. 3. As there is more housing development rising within the city, adding more accessible bus routes might have a significant impact to lessen private cars around the city. In addition, active participation by each suburbs neighbourhood can spread out the information about this strategic campaign and a potential opportunity to hear more innovative recommendations <p>Again, I would like to thank you for your time and attention. I am looking for the success of this campaign as it would mean a lot to all the people who live in Christchurch.</p> <p>Kind regards,</p> <p>Aira Punio</p>	Yes

Draft Otautahi Christchurch Climate Change Strategy Submission

Kari Hunter

25 Apr 2021

Thank you for the opportunity to respond on this extremely important issue, and for the work that has gone into this draft.

The bigger picture

I agree with much of what is in the Strategy. However, I think our Climate Change Strategy needs to go beyond how to make incremental emissions reductions while largely continuing with business-as-usual. Therefore I want to see the following changes:

- A realistic concrete vision of our zero-carbon sustainable – where possible regenerative – future in which everyone's needs can be met.
- A strategy and planning for how we can get there.

I want a society where all of us in Aotearoa can have our most important needs met. I also want us to take responsibility for the effects we have beyond our borders, in the rest of Aotearoa and the world.

The Climate Emergency is one the biggest threats ever to the well-being of people in Christchurch. In more vulnerable parts of the world, it is already the cause of at least hundreds of thousands of deaths (according to the WHO), and suffering and displacement for many more.

The effects of climate change lag decades behind their causes. It can be hard for many of us to fully grasp the severity of the climate crisis. Nonetheless, the effects are real, and the Council's strategies must be based in the science.

We need to get to very low emissions as fast as possible, both because all emissions are causing harm, and because there are risks of passing tipping points. Due to the uncertainties, our adaptation approach needs to take into account a range of possible impacts, including less likely but more severe ones. Also, adaptation and mitigation must be solved in an integrated way.

I suggest a target of at most 20% emissions (at least 80% reductions) by 2030, as recommended by Oxfam.

We cannot rely on markets as they usually run to create the integrated long-range solutions we need to meet everyone's needs without further damage to the environment. We need the council to take a lead role in planning and implementing more of these solutions. Until we have got our emissions down to zero, I would like to see this funded more from remaining high-emissions activities.

There is a big programme needed. This will take more resources than you have. Convince central government that you must be able to gather more revenue. Make it progressive, and based on emissions.

Minor point:

In various places, the phrase “embodied carbon” could be ambiguous – use terms like “embodied emissions” and “stored carbon” or similar?

Programme 5: Carbon removal and natural restoration

I agree with this:

“Our biodiversity and ecosystems will be increasingly threatened by climate change. By protecting and expanding natural areas in our district, we will help capture carbon dioxide, while benefiting natural ecosystems and biodiversity.

The Council’s preference is for us all to reduce our emissions as much as possible.”

For a sustainable future, the aim must be to find ways to get remaining emissions down to zero. I agree that regenerating forests, restoring wetlands and enriching soil carbon can provide other important benefits for our local communities, and are a great idea. In terms of carbon capture, they should be a way to undo some of the damage already done by past emissions, not a way to permit future emissions.

There are many places where planting trees may improve the resilience and amenity of an area, providing food, reducing erosion, and protecting the city from some of the effects of the heating climate. However, we cannot keep planting trees indefinitely. It is not a way to sustainably offset future emissions. Also, trees, particularly some of the fast growing species, are vulnerable to fires and pests, both of which can be expected to become increasing hazards as a result of climate change. Trees do not represent reliable permanent carbon sequestration.

I agree with the focus areas. I would add:

- Enrich soil carbon where it has been degraded. This is important, both for holding carbon and for improving resilience. Allowing more growth and deeper roots can help – we need less of our parks to be short-cut lawn – more long grass and polycultures please.
- Increase plant cover of all levels – more and richer ground covers, bushes, grasses, etc, both on council-managed land and private land. Rich grasslands can have advantages in holding a higher portion of their carbon underground than do forests, which can store it more durably in the event of wildfires.
- Consider limiting paving and other non-plant ground covers, both on Council-managed and private land. Consider soil health and soil carbon and where these could be improved by limiting herbicides and pesticides.
- Support domestic rain-water storage, and require it for new residential builds. This could help residents maintain growth in drier future summers if we have to be more sparing with ground-water supply.

Programme 6 : Economic transformation and innovation - Goal 3: We have a just transition to an innovative, low-emission economy

I agree with these points:

“We will support economic transformation in renewable energy, transport, health, food and technology to provide new jobs and a more diverse, resilient and sustainable economic base for Christchurch.”

“A just transition to a low-emission economy will require support for people employed in sectors impacted by rapid change.”

As a wealthy country and city with high GHG emissions (by world standards) we do not need continual economic growth. We need our economy to be oriented to ensuring that limited resources are used wisely and sustainably to meet everyone's real needs and well-being goals in ways that do not cost the Earth. The rest of the world and future Christchurch citizens need us to stop imposing

harm on them. We need to take responsibility for our emissions, even when they are produced elsewhere and embodied in products we consume.

We need to prioritise important needs like clean air, clean and adequate water, nourishing food, a hospitable environment and climate, shelter, opportunity for education, health care, cultural and social lives. This will require a far-reaching, integrated plan. It is very unlikely that the market running more or less as usual can provide this level of planning and integration, let alone in a way that provides a just transition.

A just transition can be well-supported by recognising and increasing support for work that is already low in emissions, especially work that makes large contributions to well-being. This includes fields like teaching, care of elders and others, many of the arts, etc, that already exist. I anticipate a need for more people working in regenerative agriculture and horticulture, as we eliminate reliance on fossil fuels, artificial nitrogen fertilisers, and unsustainable intensive animal husbandry (in favour of sustainable lower animal numbers integrated into restorative farming practices).

In order for people to be able to get to work practically by zero-emissions means, these transitions need to be integrated with urban design and rural land-use, and a housing strategy. This requires long-term planning, which must start now.

In order to cut our reliance on high-emissions international freight (import and export), we need to plan for a more local economy, in which we supply more of our own local needs, and our exports are focussed less on high-volume goods.

We cannot continue to have an economy with a heavy reliance on mass international tourism. High levels of international travel are inconsistent with getting emissions down as necessary.

The Council should not continue to support high emissions activities, including those that our Council-owned companies are involved in. For instance:

- There should be no expansion of airports to accommodate more air traffic locally or in Tarras or elsewhere. Instead, air traffic needs to be drawn down.
- Our port should stop supporting the export of coal.

I support the focus areas listed for this programme; however, we need to go beyond these with strong Council leadership.

Programme 7: Low-emissions transport system (Goal: Christchurch has net-zero emissions)

“We will make significant changes to our transport infrastructure to help meet our emissions targets. To halve our emissions in the next decade, we need to dramatically reduce the kilometres travelled in fossil fuel-powered vehicles. We will promote alternatives such as active and public transport.”

I support this, except that we should be aiming to reduce our emissions to more like 20% (80% reduction in emissions) in this decade.

I am concerned that CCC LTP did not seem to have prioritised funding and time frames for this to an extent compatible with the stated emissions targets, let alone the lower emissions we should be going for.

Our aim should be to make it possible for us all to have safe (protected from motor traffic), reasonably direct, pleasant routes to cycle etc everywhere in Christchurch as soon as possible. This is a necessary step to encouraging many more people to use active transport. It should take higher

priority than restoring roads for motor vehicles.

I have been appreciating some really good cycle ways that have been developed in recent years (e.g. Antigua St, Ferry Rd, Domain Tce, Annex Rd, Frankleigh St, Roker St). It should be possible to get fully connected routes established for a large part of the city within a year or two – by quick and temporary methods like road cones, portable fencing etc initially. These can be made more permanent over the next few years.

Improve way-finding so that people can easily find their nearest and most direct cycle routes.

There is a place for some EVs, but we cannot eliminate emissions by replacing our fleet.

Stop Tarras; draw down air traffic. Consider how to support lower emissions shipping via the port.

Programme 10: Sustainable food system

Reliable access to nourishing food is a basic need for everyone. This must be done by zero-emissions means that restore rather than degrade soils. As it is likely to become more challenging with climate change, it is important to get more resilient systems in place now, both to help hold carbon in our living city and food systems, and to make it more resilient in the face of increasing droughts etc.

I strongly support the CCC making sustainable food systems one of its top priorities in an integrated plan for a zero-carbon regenerative future.

I support all the points in this programme, particularly:

“Christchurch has an opportunity to become an international hub and leader in agri-tech research, to develop solutions that help the agricultural sector produce food with the lowest possible emissions, and crops that are resilient to the changing climate. We will support sustainable food production to improve people’s health and wellbeing, while restoring the natural environment.”

“Reduce agricultural greenhouse gas emissions and improve food security.”

I support all the focus areas. I am concerned that the specific actions described, while good, do not seem to be on a scale needed for the task of ensuring food security for all long term.

Agricultural emissions are a significant part of Aotearoa's GHG emissions. We need to reverse this. Our food-growing can instead operate by regenerative practices that can build and hold soil carbon, become more fertile without ongoing artificial nitrogen fertilisers, and be better able to hold water against droughts.

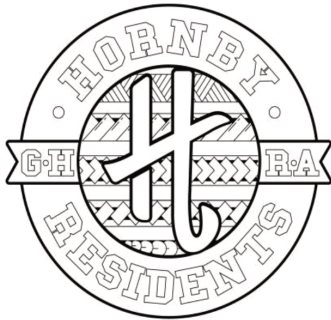
There is a capacity to grow much more food within the city, and make us less reliant on food imported into the district. This would reduce emissions from transport, support resilience in the face of future climate disruptions, and in many cases may improve health and well-being.

As I understand it, the MfE's standards for acceptable levels of soil contaminants assumes that city-dwellers will only eat small amounts of home-grown food. This means if we eat a lot of food out of our local gardens, even if they meet these standards, our diets could be exceeding safe levels of contaminants. In addition to this, there are areas that have high levels of contaminants from past land-use, not all of which is or can be well-known without testing. I've become aware that there is a real issue with contaminated land in Christchurch; for instance, people have been growing their own vegetables and fruit for years, only to find that their soil lead levels are too high to be safe. I recommend supporting people who want to grow food in community and private gardens to get free or cheap soil contamination testing, and support remediation where feasible.

I strongly support the Council protecting highly productive soils against further soil contamination,

against erosion, against urban sprawl, against excessive incursions of building and paving footprints.

#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
167	39779	Ross	Houliston	Greater Hornby Residents Association	Research/Submissions Officer	Refer attached submission	Yes



26/4/2021.

Climate Change Submission.

We will keep this brief and to the point.

First of all Climate Change needs to be taken seriously, and this does not only include that spoken about by the scientists, but, should include the effect of The Alpine Fault, as any impact through this will have a serious impact on Christchurch, as will be explained.

A 2 degrees temperature rise will possibly see sea level rise reaching as far inland as Marshlands Rd. It will have a devastating effect on roading throughout this area, as well as around the Motukarara to Little River area.

The Alpine fault scenario will have a definite bearing on our local climatic situation, as it could cause flooding throughout Christchurch. While some may not see this as climate change, I can assure you, those living in it will!

The Alpine Fault could see aggregate being brought down our rivers in vast volumes, from the glacial beds, and flooding our rivers to the stage that the rivers may breach the stop banks.

The Alpine fault is also predicted to cause severe shaking throughout the Canterbury plain and Christchurch, which will cause liquefaction in the areas that we have allowed to be built on. ie. Swamp land such as Halswell and around the East including Marshlands Rd. After all it was not called this for no reason!

I think at this time enough said. It is time to think, moving forward, and to rework where housing and industry should be built.

We request talking rights to address our submission.

Thank you.

Ross Houliston.

Research/Submissions Officer.

G.H.R.A.

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
67	39626	Brian	Reid	<p>The entire premise that this plan is based on have already been proven to be false. Atmospheric carbon dioxide levels do not drive the earths climate.</p> <p>Plant stomata records indicate that the atmospheric carbon dioxide levels have been at least as high as now in the last 2000 years.</p> <p>The ice core data shows that atmospheric carbon dioxide levels FOLLOW temperature changes showing the reverse causal link, that rising temperatures increase atmospheric carbon dioxide levels. From first principals it has been shown that the absolute values of atmospheric carbon dioxide levels from ice core samples is not accurate, as borne out by other more accurate proxies.</p> <p>The atmospheric carbon dioxide concentrations have been much higher (of the order of 16 times higher) in the past with similar temperatures to now.</p> <p>The only thing that links a causal effect of atmospheric carbon dioxide concentrations and temperature are the IPCC models which have not passed any validation tests. The models are so bad they could not even predict past events.</p> <p>The slight warming we have had since the mid 1800's is to be expected since exiting about the coldest period that we have had since the end of the last glaciation about 11,000 years ago. Why is such a miserable cold anomaly period being used as a reference?</p> <p>NASA has images that show that the highest carbon dioxide concentration increases are from rainforest areas that are a long way from substantial human emissions. The majority of increase in atmospheric carbon dioxide concentrations is natural.</p> <p>NASA have shown that the earth has greened with the natural increase in atmospheric carbon dioxide concentrations that we experienced. With increased atmospheric carbon dioxide concentrations plants use less water and grow faster. Thus plants are less drought prone with higher atmospheric carbon dioxide concentrations. We are now feeding more people with less land usage.</p> <p>Sea level rises are not unexpected, nor are they unusual. Sea levels have risen much faster, and slower, in relatively recent times.</p>	Yes

				<p>There is climate change. Change is about the only constant with climate.</p> <p>NASA have predicted that with the various sun and orbital cycles that we are heading for a colder spell as less solar energy reaches the earth. It would be extremely foolhardy to increase the cost of keeping warm in these conditions chasing measures that at best would have negligible effect but in reality will have no effect on climate. These measures will have huge negative consequences.</p>	
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#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
107	39699	Eric	Pawson	<p>The draft strategy is not yet fit for purpose: it has no mechanisms to measure and track progress against the council's own emissions targets (net zero by 2045, with 50 percent reduction by 2030). Instead, it is a series of broad programme areas, not linked to the targets in readily accountable ways. If the strategy is reworked to meet the targets, it would then be consistent with the Climate Change Commission's approach at the national level (which, ironically, the council has criticised for lack of ambition).</p> <p>The strategy should be reworked as follows:</p> <p>1 stating clear targets for five yearly periods (2025, 2030 etc), with mechanisms for assessing progress against targets and means of adjusting policies and plans accordingly (ie closing the loop)</p> <p>2 engaging Christchurch citizens in this assessment process through citizen assemblies to advise on progress and assist in devising required adjustments. This is not a job for the proposed 'climate leadership group' alone: climate policy and actions must be devolved if they are to earn public legitimacy. The city has a good engagement record to draw on (eg Share an Idea, Regenerate's engagement on OARC futures)</p> <p>3 making use of 'exemplar organisations' that are leaders in behaviour change (eg CCC itself, and the two universities), with specified ways in which their experiences can be shared and incorporated into the overall strategy</p> <p>4 ensuring that schools are engaged in the exemplar process, in order to put the energy of the climate strikers to best use, and as a means of tackling the intractable issue of personal transport emissions</p> <p>5 placing more emphasis on climate change adaptation: this is where the rub will be felt by citizens in coming years. Again, the city has experience to build on, notably the process of managed retreat that occurred in the red zones, which proved to be far messier than intended, and therefore something to be learned from.</p>	Yes

#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
149	39747	Elliott	Hughes	Generation Zero	Spokesperson	Please see attached document for our full position on the proposed strategy.	Yes

Generation Zero

The Ōtautahi Christchurch Climate Change Strategy 2021 comes at a critical time in our journey towards a net-zero city. In order to make a fair contribution towards New Zealand's 2030 NDC and to work towards our goal of a net-zero city by 2045, we must accelerate our efforts to reduce emissions. We support the work programs set out by the city council in the draft climate change strategy. However, we urge the council to develop quantifiable targets for each work program, commit to bolder 'first steps' and show leadership by working closely with partner organisations where possible.

In particular, we believe the council should develop a clearer pathway to a net-zero emissions Canterbury. We were disappointed to find that the proposed strategy does not outline how the council intends for Canterbury to meet its net-zero by 2045 goal. By providing a clear pathway to this target the council could more clearly signal future policy changes to the community. While we understand that such a pathway might take time to develop, we urge the council to at least declare an interim 2030 target for emissions reductions. Such a target would increase transparency and send a clear signal that the council will take actions to create a lower carbon Ōtautahi.

Programme 1: Building the foundation - partnerships and resourcing

Generation Zero supports the concept of programme one and would like to offer a few suggestions on how to move forward. We encourage the council to ensure that representation on any stakeholder body represents the diverse nature of our community. Iwi voices must be recognised, as well as youth and representatives of marginalized communities. Secondly, we encourage the council to include representatives from those who will most be affected by climate change. For example, a stakeholder body should include members from the suburbs of Christchurch which are most vulnerable to climate change and members who represent occupations that are likely to be impacted by climate change. Quite often the impacts of climate change on those who work outdoors or outside typical times are overlooked by non-representative stakeholder groups.

To maximise transparency, the council should ensure that the material released to and the workload required of stakeholder groups is reasonable. Transparent programmes need not only to be physically accessible, but also mentally accessible. Stakeholder groups should be given broad leeway to consider all aspects of council policy, but (unless representatives are compensated appropriately) the tasks

required of such a body must be achievable by an average person with average work flexibility and time available. Otherwise, such groups are likely to be dominated by those with the most time and flexibility, which may not represent the wishes of the broader community.

Programme 2: Understanding the local effects of climate change

Generation Zero strongly supports gathering and communicating climate risk data to the general public. Consequently, we support Programme Two and acknowledge the existing work that is being undertaken in this area. However, we would once again like to highlight the importance of providing transparent information in addition to simply collecting it. Where the climate risks are uncertain or difficult to understand without specialised knowledge, material should be presented in a manner that enables the average user to understand without excessive effort.

Furthermore we urge the council to inform the community of potential risks at all stages of the information gathering process, even when potential impacts are uncertain or poorly understood. Although Generation Zero understands that the council may be concerned that unclear information could lead to excessive concern among citizens, we must stress the importance of including the community in the risk analysis from the very beginning. Keeping citizens ignorant of the potential impacts of climate change on their communities will ultimately harm citizens and diminish trust in the council.

We therefore urge the council to develop innovative strategies to reach people with climate risk information, as the current approach to information sharing is not accessible to the average resident. We urge the council to study international best practices and develop a broad-spectrum approach to communicate climate risk information. For example, the council could partner with local schools or adult education providers to provide climate risk education to target communities.

Programme 3: Proactive climate planning with communities

Generation Zero agrees with the concept of programme three. As with programme two, we urge the council to include community input at all stages of the adaptation process. In addition, we encourage the council to look beyond youth education programs and consider developing climate communication strategies that specifically target adult community members.

We support the council leading consultations with healthcare providers and other stakeholders, although we note that this policy focus will need to be revised in light of recent announcements. We also ask that the council considers how to include third sector groups in its consultation strategy. NGOs and community organisations

may be able to support and facilitate climate communication and provide an interface between the council and the community.

Programme 4: Adapting and greening infrastructure

Generation Zero supports programme four and appreciates the efforts to build stronger iwi partnerships within the programme. Improving iwi partnerships will build the council's ability to fulfill Te Tiriti and, by fully incorporating the views of all stakeholders, will likely lead to better infrastructure provision and improved outcomes. We support the council's efforts to increase tree cover and provide green infrastructure more generally. However, such policies would be greatly improved if clear targets were set. Quantifiable targets would send a strong signal to the community and enable greater transparency and accountability. For example, the council could adopt a policy to increase total tree cover by 20% by 2030.

We further recommend that the council includes an additional focus area: improving climate resiliency. Superior stormwater management systems will reduce the risk of flooding and greater tree cover will mitigate the impact of heat waves, so green infrastructure can help reduce the harm caused by climate induced extreme weather events. As a result, we urge the council to include a specific extreme weather event/climate risk reduction policy focus within the green infrastructure programme. Encouraging policymakers to consider low probability high risk events explicitly will likely lead to superior infrastructure design and potentially avert costly losses from climate induced extreme weather.

Programme 5: Carbon removal and natural restoration

To offset unavoidable emissions (e.g. those from certain industrial processes) the council has correctly identified that it will be necessary to offset emissions by increasing afforestation. We support the council's attempts to situate afforestation programmes in the Greater Christchurch area, which enable our community to more fully realize the co-benefits of increasing biodiversity and increased recreational amenity. We also support the council's proposed strategy to partner with local community groups. However, partnership opportunities will bring the greatest benefits when they utilize each organisation's unique strengths. In particular, to ensure sufficient afforestation, the council must be prepared to contribute significant financial resources to this project. It appears unlikely that community groups will have sufficient means to deliver the scale of afforestation that will be necessary.

We also urge the council to develop a clear long-term plan for afforestation in Christchurch and Bank's Peninsula. While the exact level of afforestation necessary is currently unclear, by developing a reasonable estimate for required carbon

sequestration (this could be derived from the Climate Change Commission's advice) the council could improve its ability to invest in an efficient fashion. We urge the council to prioritize developing a carbon sequestration strategy that sets quantifiable targets and develops a clear timeline. Focusing only on current opportunities will likely lead to inefficient provision of this public good, with afforestation increasing only in an ad-hoc and unplanned fashion.

Finally we support the council's focus on maximising the co-benefits of increased afforestation. We believe, when this is coupled with clear targets for carbon sequestration, this will maximise efficiency and benefits to the community. It is critical that the council first develops a clear plan for total carbon sequestration, however, so that the core purpose of the program is fulfilled while also capturing all possible co-benefits.

Programme 6: Economic transformation and innovation

We support the council's efforts to increase innovation and support a just transition to a low-carbon economy. Such efforts should not be considered a substitute for robust climate action, but rather as measures to lower the cost of transition to firms and individuals. In particular, we support the council's proposed focus on increasing access to retraining and life-long learning. Such measures can improve individuals wellbeing and the economic dynamism of labour markets. To increase access, we recommend the council partners with education providers such as the Ara Institute and also encourages council owned companies to consider how they can support job retraining programs that would increase the flexibility and relevance of their workforce. From our engagement with CHL subsidiaries we understand that many of these organisations are concerned about the increasing age of their workforce, so job retraining and ongoing education programs could potentially also reduce emerging labour shortages if well designed.

Programme 7: Low-emission transport system

In order to reach net-zero by 2045, the council has correctly identified that it must rapidly reduce transport emissions. We support the council's proposed next step and the focus on developing low-emission pathways. In order to determine the necessary level of investment in public and active transport infrastructure the council should set quantifiable mode-shift targets. By setting robust targets for public and active transport uptake, the council will reduce uncertainty for business and individuals considering their future transport solutions. For example, if the council signals it will actively support commuter public transport, businesses will be able to plan for a future where more workers utilize public and active transport and less require parking for private vehicles. Furthermore, clear mode-shift targets will help

council members develop a clear long-term strategy for public and active transport investments.

Additionally we urge the council to explicitly adopt a holistic approach to encouraging public and active transport usage. For example, in order for individuals to effectively use sustainable transport modes, they must live in areas where such transport modes are available and effective. Development policy should be transit-oriented, to ensure that new houses are built near amenities. Policies that increase density and housing supply in high-demand areas near transport hubs (e.g. Riccarton) will support active and public transport use. Incorporating language that reflects a holistic approach to increasing sustainable mode usage would again provide certainty to individuals and businesses that investments near public and active transport corridors will be supported by council policy and improve outcomes in the long term.

Finally we urge the council to embrace cooperation with partner agencies and councils to maximise efficiency and improve outcomes. The current approach to public transport suffers from the highly balkanized nature of the system, where initiatives adopted at the regional council level are not supported by the city council and vice versa. We encourage the council to take a leadership role in developing a more collaborative approach, where councils work together to ensure that the physical infrastructure and timetabling for public transport reflects the goals and targets set by both organisations. Therefore we encourage the council to include in its climate change strategy an explicit focus on developing a more collaborative approach with partner councils and central government.

Programme 8: Energy efficient homes and buildings

As demand for electricity and low carbon energy grows, increasing the energy efficiency of our built infrastructure will reduce transition costs and improve outcomes for residents. We support the intent of programme eight. However, we remain concerned that the current strategy lacks vision and will not adequately address the needs of our community. In particular, we were disappointed to see the council seeming to take credit for Warmer Kiwi Homes (a centrally funded programme). This appears disingenuous and calls into question the commitment of the council to supporting homeowners to reduce emissions.

In order to genuinely improve energy efficiency and create warmer, dryer homes for community members, the council should commit to a more substantive 'first step'. While promoting existing resources may have marginal effects, the council should consider instead taking action that has a greater potential impact. For example, providing additional top-up funds for Warmer Kiwi Homes could reduce barriers to entry (a strategy that has already been pursued in Auckland) and increase coverage of the scheme. If such a scheme was combined with efforts to further

promote Warmer Kiwi Homes then this could be highly effective in reducing medical costs for families, improving residents' quality of life and cutting carbon emissions.

We support the council's proposed focus areas, but note that the council should not limit itself to 'investigating' or 'advocating' for more efficient policies. Instead, the council should think creatively about options to encourage greater home generation of energy and increase energy efficiency. For example, the council should encourage CCHL firms to facilitate greater uptake of home generation where possible (e.g. by waiving connection fees for home generation infrastructure). While advocating for good policy at the central government level is beneficial, the council should also ensure that it is fully utilizing all available policy levers at the local level to achieve its climate change goals.

Programme 9: Towards zero waste

Generation Zero supports in part programme nine and appreciates the intent behind it. We find the focus areas to be lacking in tangible actions and we are concerned that the current proposed action is not as bold as it ought to be. We recognise that waste is not a major source of emissions in Christchurch and the existing work that the council has done in this area (in particular, the 2020 zero waste plan). However, we still feel that there are more solid commitments the council could make in this area. For example, it is important to start thinking about how our city and its residents will carry out daily activities following upcoming legislative changes, which will greatly restrict the use of single use plastic products. How will the City Council aid local businesses through this change and how will our City's amenities cater for zero waste lifestyles?

Programme 10: Sustainable food system

We support the council's policy of encouraging a more resilient food system. However, we believe the council's current strategy lacks both focus and a clear emphasis on maximising the benefits of resilient food systems. For example, the proposed focus on protecting highly productive soils will likely lead to inefficient choices unless it is coupled with a clear vision for the future use of this land. Land use should be guided by the greatest need in the community - for example, highly productive inner city land should clearly not be protected for agricultural use.

Consequently, we urge the council to adopt a holistic approach to land protection that seeks to mitigate the causes of urban sprawl rather than attempting to enforce a blanket protection of agricultural land. More efficient zoning policy will support the council's other goals (such as increased use of public and active transport) and protect high value agricultural land. By enabling development within existing urban

boundaries, better zoning policy will reduce demand for housing at the border of Christchurch and consequently help protect high productivity land.

We support the council's attempts to encourage more urban food production. However, we urge the council to take bolder action to encourage community gardens and other amenities. For example, the council could partner with existing groups and provide capital or land to enable the formation of new or expanded community gardens. We understand that the proposed first steps are necessarily limited by resource capacity, but we believe that the council should aim higher than the current proposal. Greater ambition will provide a clearer signal to the community that the council is responding to existing demand for a more resilient, sustainable and lower-carbon Ōtautahi.

Summary:

The proposed programmes outlined in this document lack both quantifiable targets and bold first actions. The current strategy does not provide a firm signal to communities that their desire for strong climate action is being acknowledged or met. The council must take a leadership role by collaborating effectively with partner organisations, setting firm targets and adopting sufficiently bold 'first steps'. Generation Zero supports the initiatives outlined in this draft document, but we do not currently believe that it reflects the urgency clearly demonstrated by the council's declaration of a climate emergency.

Ngā Mihi,

Generation Zero

For further information please contact Elliott Hughes

#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
161	39771	Tremane	Barr	Safer Technology Aotearoa New Zealand Society	Secretary	Please see attachment	Yes

25/04/2021

Submission on Ōtautahi Christchurch Climate Strategy

Organisations Name: Safer Technology Aotearoa New Zealand Society

Submitters Role: Secretary

Number of Members: 200

Yes - We would like the opportunity to speak to the hearings panel about the STANZ submission.

Introduction

The Safer Technology Aotearoa New Zealand Society (STANZ) was created in 2020 to help inform, educate and advocate in the public interest including, but not exclusively, to policy makers, regulatory bodies, educationalists, the medical and scientific community as well as local, regional and central government, about the safe use of technology.¹

STANZ in general agrees with the goals outlined in the Ōtautahi Christchurch Climate Strategy 2021 for Christchurch. However, STANZ wants to make the central point that under Goal 3 and Programme 6 that the move away from resource intensive and high greenhouse emission industries needs to include digital and wireless technology which includes Information and Communication Technology (ICT), Cloud computing and wireless communications through the 4G and increasingly 5G systems cell phone transmitter technology, mobile smart phone use and the infrastructure and data centers required to run them (both locally and globally). Just when we need to be moving as a society to reduce greenhouse gas emissions this sector of the economy is massively increasing its requirements for energy outstripping the growth in renewable energy sources with it being reliant on increasing numbers of coal fired power stations in other countries e.g., China.

STANZ recommends that the CCC needs to take seriously the ICT, Cloud computing and mobile communications systems massively increasing energy requirements and increasing greenhouse gas footprint. The CCC needs to develop a plan that moves toward economic transformation and innovation that is part of a sustainable climate future for Christchurch that does not include mobile wireless 4G/5G systems.

STANZ recommends that the most energy efficient ICT system is a wired system that is not reliant on energy intensive wireless transmissions like 4G and 5G (and eventually 6G). Wired ICT systems are also faster and more secure.

STANZ outlines in this report why smart phones reliant on 4G and 5G (and 6G) mobile phones are resource intensive and high emission technologies that are incompatible with a goal for a climate sustainable society. The smartest mobile phone communication system for the future is to move to so-called "dumb phones" (e.g., Nokia) that only need the existing 2G/3G system which require much

¹ <https://www.safertechnology.co.nz/about/>

less energy than the 4G, 5G and eventually 6G systems. This would also reduce emissions from globally located cloud computer centres required to provide computing services that smartphones need to work both locally and globally.

STANZ agrees with the French High Council on Climate report that the 5G system will increase greenhouse gas emissions.² STANZ recommends that the CCC opposes the increasing rollout and use of use of 4G and 5G mobile phone systems as to such time they can be proven safe for the climate, people and the environment.

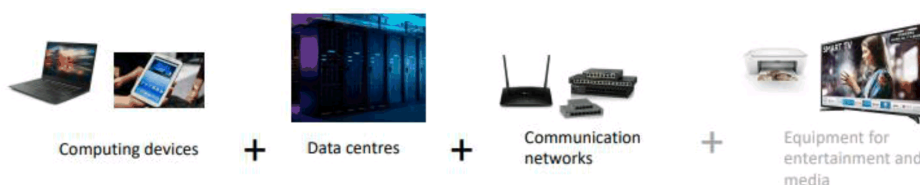
1. Information & Communication Technology Carbon Emissions

The CCC climate change strategy needs to address a key component of the modern economy in the form of the digital and wireless economy (or ICT - Information & Communication Technology) and its growing greenhouse gas emissions profile. Both the production and use of ICT equipment has a tremendous impact on our environment in terms of the raw materials required to make them and the energy consumption to power them both locally and globally. Not to mention its end-of-life disposal costs and risks of pollution. The amount of electricity consumed by the ICT sector make this a major contributor to the current and future levels of carbon and greenhouse gas emissions with alarming forecasts if measures are not taken to reverse its effects. As the volume and variety of ICT devices in usage has grown, controlling the costs and environmental impact associated with these products has become of paramount importance.³



What is the ICT sector?

ICT = information and communication technology



In a recent United Nations Environmental Program (UNEP) report on Greenhouse Gas Emissions in the ICT sector it notes that there are ways of assessing carbon impacts from ICT, websites, and mobile phone apps.⁴

² <https://www.hautconseilclimat.fr/en/>

³ <https://ictfootprint.eu/>

⁴ <https://c2e2.unepdtu.org/wp-content/uploads/sites/3/2020/03/greenhouse-gas-emissions-in-the-ict-sector.pdf>



Tools for measuring carbon impacts

Commercial or Free	Name of the tool	Objective	More about the tool
Free	Ecoindex	Measure the carbon footprint of websites	www.ecoindex.fr
Free	Self-assessment tool	To obtain the approx. climate change and primary energy footprint of an ICT-based organization	www.ictfootprint.eu
Commercial	CO2 neutral website	Calculate CO2 emissions from website and reduce a similar amount of CO2 through climate projects	www.co2neutralwebsite.com
Commercial	CAST Green IT index	Measure software's environmental effect based on how efficiently it carry out intended actions, and how robust it is	www.castsoftware.com
Commercial	Greenspector	Performance measuring tool for mobile apps	www.greenspector.com
Commercial	Ecochain	Activity-based footprinting at the product, company, and value chain level	www.ecochain.com

The key points from the UNEP report show that:

- Trends in the ICT sector are heading in the direction of turning the sector into a significant contributor to global GHG emissions.
- A call for optimizing the ICT sector for energy efficiency – UN Environment's United for Efficiency.
- A call for more estimates of the GHG impacts of ICT devices and ICT solutions, with open, transparent data.
- A call for prioritizing sustainable human-computer interaction: "sustainability through design", and "sustainability in design".

It has been estimated that ICT related CO₂ emissions “from 2012 to 2015 went from emitting 6 million tons of CO₂ to 30 million tons. In other words, CO₂ production quintupled in just 3 years, which was equivalent to adding 5 million cars on the roads. Up to 90% of this consumption was attributable to wireless communication network technologies!”⁵

On top of this it is estimated that the energy consumption of ICT is increasing by 9% every year. Because digital technologies are recognized as essential for economic and social development, digitalization appears as an absolute need for all countries and companies. It is also considered as a way to reduce energy consumption in many sectors. However, direct environmental impacts as well as indirect environmental impacts (rebound effects) related to the growing use of ICT are constantly underestimated. Currently the ICT industry is resource intensive and growing in its greenhouse emissions all the time.

1.1 An increasingly energy-gulping digital world

The fast expansion of ICT leads to a rapid increase of its direct energy footprint. This footprint includes the energy used for the production and the use of ICT equipment (servers, networks, terminals). This direct footprint has been increasing by 9% per year. Compared to 2010 the direct energy consumption generated by 1 euro invested in digital technologies has increased by 37%. The energy intensity of the ICT sector is growing by 4% per year, in stark contrast to the trend of global

⁵ <https://ehtrust.org/wp-content/uploads/Wireless-Technologies-Ethical-Risk-Analysis-Working-Paper-2021.pdf>

GDP's energy intensity evolution, which is declining by 1.8% per year. The explosion of video uses (Skype, streaming, etc.) and the increased consumption of frequently renewed digital equipment are the main drivers of this inflation.

Andrae & Edler of Huawei Technologies, On Global Electricity Usage of Communication Technology: Trends to 2030 Challenges 2015 estimates that in the worst-case scenario, that ICT electricity usage could contribute up to 23% of the globally released greenhouse gas emissions by 2030.⁶

And these figures are from before the Covid-19 Pandemic which has driven a massive increase in the use of video calls, remote working from home and online streaming of entertainment e.g., Netflix etc.

"Behind each byte we have mining and metal processing, oil extraction and petrochemicals, manufacturing and intermediate transports, public works (to bury the cables) and power generation with coal and gas. As a result, the carbon footprint of the global digital system is already 4% of global greenhouse gas emissions, and its energy consumption rises by 9% per year."

— Jean-Marc Jancovici, President of The Shift Project, member of the French High Climate Council.⁷

Action Point - 1

The CCC needs to develop a plan that moves toward economic transformation and innovation that is part of a sustainable climate future for Christchurch that does not include mobile wireless 4G/5G systems.

2. 4G, 5G & 6G Driving Massive Increase in Energy Demand

The unbridled energy consumption of our wireless revolution, 4G, 5G (and soon 6G) and the Internet of Things (IoT) is contributing to climate change. 5G requires millions of new cellular antennas called "small cells" - basically shorter/smaller cell towers - to be built in neighbourhoods directly in front of our homes. These 5G antennas are to connect with billions of new wirelessly connected "smart" devices referred to as the Internet of Things. Telecommunication companies are well aware that 4G/5G will increase overall global energy consumption and with-it greenhouse gas emissions.

David Bruno, an expert in electromagnetic pollution, obtained a document from the National Frequencies Authority (ANFR) concerning the installation of an Orange relay antenna site in Marseille. According to him, "the colossal power of 5G antennas is to be feared". He analysed the Orange document and found the 5G relay antennas in the 3400 to 3800 MHz band will by themselves emit electromagnetic radiation twice as strong as the sum of the relay antennas of 2G, 3G and 4G technologies combined and in the near future, people living near relay antennas will be exposed to power density levels in W / m², at least 3 times higher than those of today.⁸

The demand for mobile phone technology is outstripping any increase in efficiency. The energy consumption will rise sharply due to the ever-increasing IoT energy demands at every stage of the lifecycle particularly for 5G equipment, from device manufacture to data centers to wireless data transmissions, and networks. It is estimated that:

⁶ <https://doi.org/10.3390/challe6010117>

⁷ <https://ehtrust.org/wp-content/uploads/5G-and-Climate-Change-Flyer-EHT.pdf>

⁸ <https://ehtrust.org/climate-change-and-5g/>

- 70.2 million “small cell” tower bases will be installed by 2025.
- 500 billion devices are expected to be connected to the Internet by 2030.
- 8.9 billion mobile phone subscriptions worldwide by 2024.
- 60% growth a year in production of wireless peripherals (Wi-Fi/ Bluetooth speakers, appliances, wearables).
- 7-fold increase in mobile data traffic globally projected between 2017 and 2022.
- In economics, the Jevons Paradox is when technological progress increases the efficiency with which a resource is used, however demand and consumption increase as well. Thus- the end result is overall increased use of the resource, despite efficiency gains and with-it increased greenhouse gas emissions.

A typical 5G base station consumes up to twice or more the power of a 4G base station. Energy costs can grow even more at higher frequencies, in order to fuel the higher number of antennas and the denser layer of small cells. In addition, the computer facilities needed to support local processing and new internet of things (IoT) services provided on mobile devices will add to the overall network power usage. Although exact estimates differ by source, the general industry consensus is that 5G will double to triple energy consumption for mobile operators, once the new 5G network installations have been completed.

“A lurking threat behind the promise of 5G delivering up to 1,000 times as much data as today’s networks is that 5G could also consume up to 1,000 times as much energy.”⁹

In a report released in November 2020 it was estimated that there will be a massive increase in the power needs of the world’s mobile technology with it more than doubling by 2030. This report is a joint study by InterDigital, a mobile and video technology research and development company, and ABI Research, with it focussed particularly on the 5G ecosystem.¹⁰ Among its key points are:

- Over the next 10 years 5G will usher in aggressive growth in energy consumption. In 2020, the overall energy footprint of the global wireless ecosystem, including network infrastructure and end use devices, topped 19.8 million tons oil equivalent (Mtoe) per year. By 2030, consumption is expected to grow to 51.3 Mtoe – a number equivalent to all the energy to be consumed throughout Sweden, or roughly the same amount of energy to be consumed by all the households in the United Kingdom that year.
- Connected devices will grow exponentially as enterprises begin widescale deployment of IoT and 5G-enabled devices. This will result in a whopping 37% increase in overall total energy consumption by 2030 and spotlights the importance of device-side energy management to tackle the CO2 emissions associated with mobile devices.
- Communications service providers (CSPs) must deploy an array of new network architectures to support a proliferation of end devices to provide the best 5G user experience. These architectures include a network of millimeter-wave base stations, virtualization radio access network (vRAN), massive multiple input and multiple output (MIMO) antenna with beamforming, carrier aggregation, dynamic spectrum sharing, network slicing, and edge servers and gateways, and will unlock new capabilities, and new

⁹ <https://ehtrust.org/climate-change-and-5g/>

¹⁰ <https://www.datacenter-forum.com/datacenter-forum/5g-will-prompt-energy-consumption-to-grow-by-staggering-160-in-10-years>

layers of complexity, that result in much higher energy consumption in cellular networks than at present.

- As 5G usurps LTE (4G), energy consumption is expected to increase 61 times between 2020 to 2030 due to the energy demands of powerful network elements like massive MIMO and edge servers, the proliferation of 5G cell sites.
- Power consumption of the 5G network is expected to soar due to active network elements like energy-hungry baseband units, remote radio heads, small cells, and core networks.

It needs to be kept in mind that this massive increase in energy use will not just be limited to the actual running of the 5G infrastructure itself, but will also need to include the actual running of the ICT servers themselves that provide the services demanded by mobile users e.g., Facebook, YouTube, Twitter, Instagram, Google, Skype/Zoom, emails, movie videos on demand, games and music etc. At a time when we should be focussed on using less energy intensive, efficient and sustainable options 4G/5G technology is absolutely the wrong direction to be heading in.

As one physicist has put it:

The 5G revolution that the cell phone industry is so proud about is likely to prove to be an ecological disaster that could easily wipe out the Carbon emissions savings of the Paris accord.¹¹

2.1 French High Council on Climate

The French governments High Council on Climate issued a report in December 2020 on CONTROLLING THE CARBON IMPACT OF 5G. It states that 5G will increase greenhouse gas emissions in the next decade and that a moratorium would be preferable as these new frequencies have not been subject to a prior environmental assessment particularly in regard to 5G carbon emissions. It also notes that this should not be a substitute for a full assessment of all the environmental (including the material footprint), health, economic, financial, and social impacts, which should have been carried out beforehand.

For the purposes of this submission, we will just list its first recommendation on the need to clarify climate issues prior to the deployment of new wireless technologies such as 5G (and remember work is going on to develop 6G for 10 years' time which will be even more energy intensive):

"Assess new technologies from a climate perspective before deciding on measures accompanying their deployment, in the same way as the economic, financial, social, health and environmental impacts (including the material footprint) of new technologies are evaluated before deciding on any measures accompanying deployment. Such an assessment should have been conducted for 5G before deciding to allocate the necessary frequencies."

STANZ believes that the CCC should read and follow the recommendations carried in this French report. STANZ also believes that there should be an immediate moratorium on 5G in Aotearoa until such time it has had a thorough and independent assessment of its potential environmental, climate and human health impacts.

¹¹ <https://blogs.timesofisrael.com/the-green-dilemma-of-5g-densification/>

The Executive Summary of this report can be found in English here:

https://www.hautconseilclimat.fr/wp-content/uploads/2020/12/hcc_rapports_5g-en.pdf

"Behind each byte we have mining and metal processing, oil extraction and petrochemicals, manufacturing and intermediate transports, public works (to bury the cables) and power generation with coal and gas. As a result, the carbon footprint of the global digital system is already 4% of the global greenhouse gas emissions, and it's energy consumption rises by 9% per year."

– Jean-Marc Jancovici, President of The Shift Project, member of the French High Climate Council

2.2 State of New Hampshire Final Report of the Commission to Study the Environmental and Health Effects of Evolving 5G Technology

STANZ would like to point out to the CCC that other jurisdictions are taking the risks from 5G very seriously and include for reference some information from the State of New Hampshire (USA) report from their Commission to Study the Environmental and Health Effects of Evolving 5G Technology:

What the Commission learned early on in its work is that you cannot talk about 5G without talking about the earlier generations 3G and 4G. Then the Commission embraced the concept of the Internet of Things (IoT) which is a world in which all electronic devices communicate via electromagnetic waves. This led to discussion of routers and other internal technologies. The devices receiving and sending signals via electromagnetic waves also became part of the discussion. So as the presentations and discussions went on, the Commission concluded that all things emitting radio frequency (RF) radiation needed to be considered together because of the interaction of all these waves. At the heart of the discussion was the research as to whether non-ionizing radiation causes biological effects on humans as well as other living organisms, either animal or plant. No one argues that ionizing radiation from the high energy and frequency ultraviolet, x-ray, and gamma ray end of the electromagnetic spectrum are a danger to all living things. Of concern to the Commission, and internationally, are the electromagnetic waves in the microwave range of energy and frequency. There is mounting evidence that DNA damage can occur from radiation outside of the ionizing part of the spectrum. We heard arguments on both sides of this issue with many now saying there are findings showing biological effects in this range. This argument gets amplified as [5G] millimeter waves within the microwave range are beginning to be utilized.

Full report and recommendations here:

<http://www.gencourt.state.nh.us/statstudcomm/committees/1474/reports/5G%20final%20report.pdf>

2.3 5G Satellites and IOT

Currently underway is the deployment of tens of thousands of 5G satellites destined for low earth orbit by various private operators approved by the FCC. MBIE have already given Space X permission to transmit data to and from its satellites in NZ aerospace in the 5G spectrum. However, there has been no assessment of the impact on the climate (let alone on the ozone layer of the planet) from all of the rocket launches it will take to put in place and maintain these satellites. It is estimated that these satellites will last on average about 5 years as their batteries lose capacity to store power from their solar panels. This means that it will require a constant re-placement of the old and defective

satellites creating a treadmill of rockets emitting greenhouse gases and other toxic emissions on a continual basis. These 5G rocket launches will contribute to the:

- depletion of the ozone layer
- pollution from rocket launches (exhaust gases, black carbon, alumina, toxic chemicals)
- vast increase in energy consumption through the actual use of the 5G terrestrial and off-world satellite infrastructure
- climate impacts from manufacturing & disposal of all IOT connected “things” & infrastructure

A low carbon future demands that NZ does not participate in allowing the use of these satellites 5G microwave radio frequency radiation data transmissions in our atmosphere. Here is a list of companies that are actively planning to launch and operate large constellations of satellites in low orbit around the earth. The purpose of these satellite networks is to provide Internet and/or cell phone service everywhere on earth, as well as to facilitate the Internet of Things. All will shoot focused beams of radiation at the earth from phased array antennas.

SpaceX

SpaceX, based in the United States, already has approval to operate 12,000 satellites and has filed applications for 30,000 more. More than 1,300 have already been launched. At least initially, these satellites are for Internet only and will not communicate directly with cell phones. Subscribers will purchase a small rooftop dish and a Wi-Fi router. Beta testing by an estimated 10,000 subscribers in the U.S., Canada, U.K., Germany and New Zealand is already happening.

OneWeb

OneWeb, based in the United Kingdom, has already launched 148 satellites, and plans to begin providing service after it has 250 satellites in orbit. Initial service will be to northern latitude regions, including the UK, Europe, Greenland, Canada, and Alaska.

Telesat

Telesat, based in Canada, has increased its planned number of satellites from 117 to 1,671. It, too, is marketing its service to businesses. Its customers will include cruise ships, airlines, and governments. Telesat intends for its satellites to replace terrestrial fibre networks for long-distance communication.

AST & Science

This company, based in the U.S., is designing its satellites to communicate directly with cell phones. While this company does not plan to have as many satellites as its competitors, the power levels of its communicating beams will be much greater. Its application to the FCC specifies a maximum EIRP (effective radiating power) of up to 79.2 dBW, or more than 83,000,000 watts per beam.

Omnispace

This company, partnering with Lockheed Martin and the U.S. military (maybe even NZ's own RocketLab), is also designing its satellites to communicate directly with cell phones. Its brochure boasts that it will “enable the Internet of Things on a massive new scale. Omnispace has an experimental license from the FCC and has not revealed how many satellites it plans to operate.

Amazon

Amazon's application to operate 3,236 satellites was approved by the FCC last July.

Lynk

Like Omnispace and AST & Science, Lynk is designing its satellites to communicate directly with cell phones. Like AST & Science, Lynk has an experimental license from the FCC and has not revealed how many satellites it plans to operate.

Facebook

Facebook is planning to launch a constellation of small, 150-pound satellites, called CubeSats. It too has an experimental license from the FCC and has not revealed how many satellites it plans to operate.

Action Point – 2

STANZ recommends that there be a moratorium on the use and continued roll-out of the 5G system in Christchurch as to such time it can be proven safe for the climate, people and the environment. The CCC needs to lobby central government to help make this a reality.

Action Point – 3

STANZ recommends that the CCC follow a similar process to the French High Council on Climate and assess new mobile phone 4G & 5G technologies from a climate perspective including the economic, financial, social, health and environmental impacts (including the material footprint).

3. Dumb Phones are the Smartest Future for Gen Less

The CCC needs to address the question of what is the best wireless communication technology future that consumes the least energy in order to help meet the Councils climate change goals. The Gen Less TV advertisements ask people to make their own positive choices to help the climate. What they do not highlight is that one of best choices an individual can make is to have a dumb phone not a smart phone.¹²



The massive growth in the mobile phone industry over the past 25 years has led to a massive increase in greenhouse gas emissions to power it. The advent of so-called smart phones from 2007 onwards has seen a massive increase in the consumption of the natural resources to make them and the electrical power to run the Cloud based data processing systems services that people want to use e.g. social media. The 4G system from 2014 onwards has helped facilitate this massive increase in mobile phone data use and this is only expected to increase massively again with the rollout of 5G.¹³

“Our energy calculations show that by 2015, wireless cloud will consume up to 43 TWh, compared to only 9.2 TWh in 2012, an increase of 460%. This is an increase in carbon footprint from 6 mega tonnes of CO₂ in 2012 to up to 30 mega tonnes of CO₂ in 2015, the equivalent of adding 4.9 million cars to the roads. Up to 90% of this consumption is attributable to wireless access network technologies, data centres account for only 9%”¹⁴

¹² <https://www.androidauthority.com/best-dumb-phones-1117854/>
<https://genless.govt.nz/>

¹³ [https://www.cesc.kth.se/polopoly_fs/1.647732.1600689929!/ceet_white_paper_wireless_cloud_v2%20\(1\).pdf](https://www.cesc.kth.se/polopoly_fs/1.647732.1600689929!/ceet_white_paper_wireless_cloud_v2%20(1).pdf)

¹⁴ <https://ehtrust.org/wp-content/uploads/5G-and-Climate-Change-Flyer-EHT.pdf>

Action Point - 4

The CCC need to directly address the fact that so-called wireless mobile technologies are increasingly contributing to global greenhouse gas emissions which cannot be allowed to continue on a business-as-usual model. In order to protect the environment, the CCC needs to do a full life-cycle assessment (environmental, climate and social) analysis of how Christchurch can have wireless communication devices without endangering the climate and environmental and human health in general. STANZ recommends a move to the new “dumb phones” on the 2G/3G systems to help mitigate any risk to the climate while providing for basic mobile communication needs.

In reality the most climate friendly future is not through a society based on an Internet of Things that is mobile and wireless. The most climate friendly future is a digital future that is primarily wired (or fibre) with an absolute minimum of use and exposure to wireless radio frequency radiation. Particularly as wired (fibre) ICT systems require much less energy use to communicate the same amount of data with no risk to human health and the environment.

4. SUMMARY

In summary STANZ has identified that the CCC needs to take into account the fact that the mobile wireless digital economy is resource intensive and a high greenhouse emitting sector of the economy that is unsustainable for the climate. Just when we need to be moving as a society to reduce greenhouse gas emissions the mobile wireless 4G/5G sector of the economy and its supporting ICT and Cloud infrastructure is massively increasing its requirements for energy and massively increasing its greenhouse gas emissions all of which will only make climate change worse. As such, STANZ recommends that the CCC consider taking action on the areas identified by STANZ in this submission:

Action Point - 1

The CCC needs to develop a plan that moves toward economic transformation and innovation that is part of a sustainable climate future for Christchurch that does not include mobile wireless 4G/5G systems.

Action Point – 2

STANZ recommends that there be a moratorium on the use and continued roll-out of the 5G system in Christchurch as to such time it can be proven safe for the climate, people and the environment. The CCC needs to lobby central government to help make this a reality.

Action Point – 3

STANZ recommends that the CCC follow a similar process to the French High Council on Climate and assess new mobile phone 4G & 5G technologies from a climate perspective including the economic, financial, social, health and environmental impacts (including the material footprint).

Action Point - 4

The CCC need to directly address the fact that so-called wireless mobile technologies are increasingly contributing to global greenhouse gas emissions which cannot be allowed to continue on a business-as-usual model. In order to help protect the climate, the CCC needs to do a full life-cycle assessment (environmental, climate and social) analysis of how Christchurch can have wireless communication devices without endangering the climate and environmental and human health in general. STANZ recommends a move to the new “dumb phones” on the 2G/3G systems to help mitigate any risk to the climate while providing for basic mobile communication needs.

BIBLIOGRAPHY

The Cloud Begins With Coal – Big Data, Big Networks, Infrastructure, And Big Power. An Overview of the Electricity Used by the Global Digital Ecosystem

https://www.tech-pundit.com/wp-content/uploads/2013/07/Cloud_Begins_With_Coal.pdf

Assessing ICT global Emissions Footprint: Trends to 2040 & Recommendations

Abstract

In light of the concerted efforts to reduce global greenhouse gas emissions (GHGE) per the so-called Paris Agreement, the Information and Communication Industry (ICT) has received little attention as a significant contributor to GHGE and if anything is often highly praised for enabling efficiencies that help reduce other industry sectors footprint. In this paper, we aim at assessing the global carbon footprint of the overall ICT industry, including the contribution from the main consumer devices, the data centers and communication networks, and compare it with the to the total worldwide GHGE. We conduct a detailed and rigorous analysis of the ICT global carbon footprint, including both the production and the operational energy of ICT devices, as well as the operational energy for the supporting ICT infrastructure. We then compare this contribution to the global 2016-level GHGE. We have found that, if unchecked, ICT GHGE relative contribution could grow from roughly 1–1.6% in 2007 to exceed 14% of the 2016-level worldwide GHGE by 2040, accounting for more than half of the current relative contribution of the whole transportation sector. Our study also highlights the contribution of smart phones and shows that by 2020, the footprint of smart phones alone would surpass the individual contribution of desktops, laptops and displays. Finally, we offer some actionable recommendations on how to mitigate and curb the ICT explosive GHGE footprint, through a combination of renewable energy use, tax policies, managerial actions and alternative business models.

<https://www.sciencedirect.com/science/article/abs/pii/S095965261733233X>

“Lean ICT: Towards Digital Sobriety”: New Report on The Environmental Impact Of ICT

The energy consumption of Information and Communication Technologies (ICT) is increasing by 9% every year. It is possible to limit this growth to 1.5% per year by moving to sober digital practices.

<https://theshiftproject.org/en/article/lean-ict-our-new-report/>

A Study of the Environmental Impact of Wired and Wireless Local Area Network Access

Abstract:

This paper presents a life cycle assessment of the energy and emission intensity of wired and wireless local area network access. Following a cradle-to-grave approach, the energy consumed and greenhouse gas emissions in the manufacture of Ethernet switches and Wi-Fi access points (including the extraction of raw materials, component manufacturing, assembly, and transportation) as well as during their actual usage are evaluated. The results show that while the manufacturing stage is responsible for a significant fraction of the overall energy consumption, the usage phase accounts for most of the emissions.

<https://ieeexplore.ieee.org/document/6490245>

On Global Electricity Usage of Communication Technology: Trends to 2030

Abstract

This work presents an estimation of the global electricity usage that can be ascribed to Communication Technology (CT) between 2010 and 2030. The scope is three scenarios for use and production of consumer devices, communication networks and data centers. Three different scenarios, best, expected, and worst, are set up, which include annual numbers of sold devices, data traffic and electricity intensities/efficiencies. The most significant trend, regardless of scenario, is that the proportion of use-stage electricity by consumer devices will decrease and will be transferred to the networks and data centers. Still, it seems like wireless access networks will not be the main driver for electricity use. The analysis shows that for the worst-case scenario, CT could use as much as 51% of global electricity in 2030. This will happen if not enough improvement in electricity efficiency of wireless access networks and fixed access networks/data centers is possible. However, until 2030, globally generated renewable electricity is likely to exceed the electricity demand of all networks and data centers. Nevertheless, the present investigation suggests, for the worst-case scenario, that CT electricity usage could contribute up to 23% of the globally released greenhouse gas emissions in 2030.

<https://www.mdpi.com/2078-1547/6/1/117>

Le Monde: [The deployment of 5G in France is increasingly coming up against ecological concerns](#)

Fierce Wireless [“5G base stations use a lot more energy than 4G base stations: MTN”](#) April 3, 2020

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
76	39642	Sheralee	MacDonald	<p>The principles and goals are good to see, but it certainly doesn't reflect that the Council declared a Climate and Ecological Emergency in 2019. Our total emissions are rising, our per capita emissions are still ~7.1 t/CO2e (global average 4.3 t/CO2e) and I'm sorry to say that this draft Climate Change Strategy doesn't give me any confidence that changes will be made and that we will meet our targets of achieving net zero greenhouse emissions by 2045 (excluding methane), and to halve our emissions by 2030, from 2016-17 levels.</p> <p>The strategy needs to have more interim and area specific SMART goals and targets to measure progress against and be held accountable for. 2030 is too late.</p> <p>I like the action programme approach but again it is important to put some more specific goals/targets and timeframes around each one, and prioritise the resources needed to make progress in the areas that will have most impact. Same with the Council's proposed next steps for each of the action programmes (most of which aren't very inspiring by the way!). By when, what the impact will be, and who is taking the lead responsibility.</p> <p>PLEASE outline detailed targets (especially for transport emissions and offset programs) in order to increase accountability.</p> <p>The programmes need to estimate and measure the impact of their actions (on targeted emission reductions or other measures) so that time and effort can be prioritised. It will be important to report on what is working and what isn't and make changes if needed to ensure that we meet the targets and how to hold each other to account.</p> <p>1. Building the foundation - partnerships and resourcing - ensure that partners and representatives that aren't well resourced (time/\$), are supported to be involved to ensure a just transition for all. Next step: Establish a Climate Leadership Group. By when? ASAP! And get CCHL companies to commit to their own targets, actions and investments to achieve.</p> <p>2. Understanding the local effects of climate change This should be a living document. Don't wait for it to be 'complete' before doing anything.</p> <p>3. Proactive climate planning with communities</p>	Yes

				<p>Climate change education should be supported in ALL schools - not just coastal and low-lying inland ones. Some \$ will be needed to support community partners and others to engage to ensure a just transition and that climate justice is fully understood and acted on.</p> <p>4. Adapting and greening infrastructure systems The intent is good but it all seems incremental. What impact will these changes have? The next steps seem focused on wetlands etc but doesn't mention other infrastructure investments. How does this match up with LTP investment for the next 10 years? Improving water and energy efficiency surely must have a high impact on emissions and with all the infrastructure upgrades and new builds planned, new and better ways of doing this that significantly reduce emissions MUST be a priority.</p> <p>5. Carbon removal and natural restoration How many hectares/acres do we need to have planted by when? What impact on carbon removal (t/CO2E) will this have per annum?</p> <p>6. Economic transformation and innovation The CCC, CCHL companies and Greater Chch Partnership partners all have incredible buying power and in looking for low emission solutions themselves, could be a path to market. Govt procurement isn't mentioned in this area at all. Perhaps some targets could be set around this as part of the focus area "Enable the use of technology and rapid prototyping of innovative ideas that will transition Christchurch into a low-emission city."</p> <p>7. Low Emission Transport Yes, there are some good things already happening - but why is the next step 'Complete the Christchurch Transport plan'?! SURELY by now you have a fair idea of what needs to happen to reduce our transport related carbon emissions (54% of total, 36% being land transport)?! I expected some really bold statements and actions in here and am disappointed that the focus areas don't. Do you have any sub-targets under this heading that you can share and propose the actions to meet those? e.g. All Chch public transport zero carbon emissions by 2028? CCC (and all CCHL companies) petrol use reduces from XXXXXX L/yr to XXX L/yr by 2025 (and so on for each year?). In terms of aviation and water transport (the remaining 18%?), can CCC compel CCHL companies Port of Lyttelton and CIAL to set targets and plans to help transition these industries to lower carbon? Can there be incentives set to encourage more lower emission vehicles into our city/region (or penalise higher emission vehicles)? Please be bolder and more specific - otherwise what is even the point of having strategies/goals/plans. Constraints create innovation and change in behaviour.</p> <p>8. Energy Efficient Homes and Buildings</p>	
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				<p>The broad focus areas are fine but again, no targets, not specifics, no drive. Increase by how much by when? Decrease by how much by when? How do we know what's working/what's not? How do you lead and encourage/incentivise best practice building and energy efficiency investments beyond minimum code?</p> <p>The next step is weak and uninspiring "Promote awareness of resources available to communities and businesses to assist with energy efficiency efforts." EECA and CCC have been doing that for nearly 30 years. What has the impact been? What are the results? What else could we try that will result in significant reductions?</p> <p>9. Towards Zero Waste</p> <p>- Good. At least there are some concrete targets and plans in the Waste Management and Minimisation Plan. But again, if you could articulate what emissions reduction would result from what activities, then people could more clearly understand the impact of their change in behaviour. And communicate the impact - good or bad. If we're not doing well enough, what else do we need to do? Get people to commit to doing the right thing re waste at the point of purchase - Community Based Social Marketing (https://cbsm.com/about)</p> <p>A key problem in waste from consumption is the idea that continued GDP growth for our city/region is aspirational. If this comes with increased waste and environmental impact then surely growth is bad. A big mindshift but some cities are embracing 'doughnut economics'. How might CCC and CCHL companies lead by example in not measuring success in terms of GDP/financial growth, but by valuing emission reduction and waste reduction more?</p> <p>10. Sustainable Food System</p> <p>Again, the Council's next step of planting 500 fruit trees is uninspiring. What specifically would help us reduce how much in terms of emissions from our food system? Do we want to increase the amount of food being grown at home to reduce distribution emissions? Do we want less food waste at the dump so want to encourage people to waste less food or home compost? This programme of work mentions focus areas saying 'support, encourage, promote, reduce' but doesn't say how and what will have greatest impact. Is it really planting 500 fruit trees?!?!?</p>	
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#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
94	39680	Anthea	Madill	Sustainable Ōtautahi Christchurch	Secretary	<p>Submission on Christchurch City Council Draft Ōtautahi Christchurch Climate Change Strategy</p> <p>from:</p> <p>Sustainable Ōtautahi Christchurch Inc.</p> <p>Submission prepared by: SŌC Executive</p> <p>Email contact: Colleen Philip Chairperson</p> <p>We would like to speak to the Hearings Panel about our submission. Also see accompanying document for our formatted submission.</p> <p>SŌC formed in 2005 from the merger of Sustainable Cities Trust and Christchurch-Ōtautahi Agenda 21 Forum. Former members of both those groups are involved, along with a new generation of Ōtautahi-Christchurch people, who work towards the bold vision of Ōtautahi-Christchurch people “practising, living and demonstrating sustainability in all that they do.”</p> <p>Introduction</p>	Yes

						<p>Thank you for the opportunity to submit on the Christchurch City Council Draft Ōtautahi Christchurch Climate Change Strategy. SŌC commends the CCC for its goals around reducing the environmental contribution of our city to global carbon emissions and strongly supports the principles listed in this strategy.</p> <p>SŌC agrees with the importance placed on organisations of Christchurch and Banks Peninsula working together for positive environmental outcomes as this is the main focus of our work in Ōtautahi. But we feel that the council under estimates the potential they have for influencing positive change in the city.</p> <p>In 2019, the Christchurch City Council declared a Climate and Ecological Emergency and the draft strategy states they will act boldly and display the strong leadership required to address the climate challenges and opportunities for the district. We feel that the framework (principles and goals) of the strategy are on track and we believe the work programmes cover all the areas required, but the details of specific actions are lacking substance. The only programme that has sufficient detail for going forward is the waste area with the Waste Management and Minimisation Plan to guide progress.</p> <p>We also feel that to minimise confusion, the local examples listed in the strategy in the section “What is already happening” should be limited to those the council is directly responsible for.</p> <p>In this submission we include some of our recommendations for areas of improvement as well as emphasise the things within the strategy that have our full support.</p> <p>Goal 1 Net Zero Emissions Christchurch</p> <p>The CCC has set its first target as 50% reduction by 2030. This is nearly a decade away and SŌC believes there should be a goal for 2025 to measure our progress by. It is good to see domestic air travel emissions included in the reckoning, but the contribution of international emissions should also be included - even if only those of Christchurch residents. SŌC supports the CCC commitment to reach net zero for its own operations by 2030.</p>	
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					<p>There should be an action programme of periodic audits to see how the city is doing at implementing the strategy and address any areas where insufficient progress has been made. There should be implementation plans following on from the strategy. We don't want to see the strategy ticked off and put on the shelf.</p> <p>Goal 2 We understand and are preparing for the ongoing impacts of climate change</p> <p>Storm surges should be mentioned in the description of this goal as they have the potential to bring forward the effects of sea level rise by decades.</p> <p>Goal 3 We have a just transition to an innovative low-emission economy</p> <p>SŌC strongly supports this goal due to the potential for the lower-paid to be more adversely affected by the transition. There must be a strong focus on making sure the transition is just.</p> <p>Goal 4 We are guardians of our natural environment and taonga</p> <p>SŌC suggests that the "Be transparent" principle on page 9 should become "Be transparent and frank". It should be made clear to the community at every opportunity the dire situation that we face. We have been reticent to talk frankly about the effects of climate change for too long.</p> <p>Programme 1: Building the foundation</p> <p>We agree that an important part of the strategy is to develop a communications and behaviour change programme.</p> <p>The Council's education programmes should be designed to work alongside public facing organisations and campaigns that are already in place rather than attempting to build these from scratch, which would result in duplication and further disperse the available funding. There is a network that can be used to spread a streamlined and targeted climate change education programme. This includes adult education organisations such as the community gardens association, Envirohub, U3A branches,</p>	
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					<p>the Canterbury Workers Educational Association as well as the Council's public libraries and education programmes at Environment Canterbury. The Council should take a leading role in this as many community organisations are run on volunteer time.</p> <p>We agree that the Council needs to focus on minimising their own emissions. We feel that the Council's Sustainable Procurement Policy should be playing a larger role in this area. Despite it being mentioned often by the Council, in practice it appears there are little tangible outcomes from this that are visible to the public. The Council and CCHL have an opportunity to greatly reduce the city's emissions through setting easy and realistic expectations for contractors. For example regulations around single use plastics and sustainable transport. For example requirements for contractors could include larger companies having in house sustainability officers and environmental policies, this could then lead to more businesses placing importance on environmental outcomes.</p> <p>Programme 2: Understanding local effects of climate change</p> <p>It is good to see the emphasis in the document on ensuring vulnerable groups are supported.</p> <p>It also needs to be recognised that the whole of Christchurch is impacted by changes that occur at local community level e.g. coastal areas are directly impacted by sea level rise but all Christchurch residents and ratepayers are impacted. It is especially important that if all Christchurch ratepayers are to help with paying for adaptation or future potential compensation that the conversations about these matters include people outside of the specific communities.</p> <p>The results of the climate change risk assessment should be publicised widely to ensure the community realises the effects of climate change will be.</p> <p>Programme 3: Proactive climate planning</p> <p>We are happy to see the council working in conjunction with nationwide education programmes for students and feel there is potential for linking local resources such as</p>	
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					<p>community organisations and the Christchurch City Library mobile programmes. Climate change needs to be embedded in all aspects of learning, not just on the side. More respect needs to be given to youth voices in climate discussion.</p> <p>Programme 4: Adapting and greening infrastructure</p> <p>Living among native plants and natural ecosystems is important to wellbeing. Promoting ecological regeneration and wellbeing is an important part of responding to the ecological crisis which is inextricably linked to the climate crisis.</p> <p>Efficient water management is essential and should be considered as part of this strategy.</p> <p>There is a proposal for Christchurch to be named a 'National Park City'. Council could lead a discussion on this idea. It would serve to focus people's thinking on the opportunities we have in Christchurch to bring nature into the urban environment more holistically and effectively. A major problem in people recognising the urgency of climate action is the disconnection from nature of so many (particularly those in urban environments).</p> <p>When increasing tree cover across the city native species should be used preferentially for their biodiversity benefits, better adaptation to local conditions and resistance to fire.</p> <p>The use of stormwater tanks for detention and/or home use should be encouraged or made mandatory for new builds, as they are for hillside suburbs.</p> <p>Programme 5: Carbon removal and restoration</p> <p>In 'Next Step' more wetlands could be restored in the lower Heathcote / Ōpāwaho floodplain also.</p> <p>Programme 6: Economic transformation and innovation</p>	
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					<p>SŌC strongly supports the redefining of measures of progress to better reflect social, cultural, economic and environmental wellbeing.</p> <p>We believe that the goal of carbon neutrality should focus first on reduction before offsetting is considered. Offsetting should be used only to cover the carbon that is not able to be feasibly reduced. The Council's Sustainable Procurement Policy could be a strong driving force in this area with expectations set high for CCHL / Council owned companies. Any offsetting that does take place should be within Canterbury and with native plants.</p> <p>The Councils claims to support innovative programmes around the city need to go beyond design challenges and workshops to proactively support tangible projects that have the potential to have wide reaching high impact. What about engaging with current innovative thinkers as a next step priority? For example, transition engineers.</p> <p>Climate change response is a priority for projects funded by the Sustainability Fund but we believe the fund needs increasing to reflect need. Community driven projects are frequently the most cost effective way of achieving outcomes with in-built community support.</p> <p>Programme 7: Low-emission transport system</p> <p>Enabling an efficient public transport system with incentives to use it must be a priority. Work closely with Environment Canterbury on this work. SŌC supports the development of an effective public rail system in the region.</p> <p>SŌC believes the CCC needs to put the '10 minute city' lens over Christchurch ['Our Space'] and constantly remain conscious of what this requires and how to achieve it.</p> <p>Restrictions on free parking near the city centre could be used to speed up the transition to using public transport for commuting. The CCC could also provide Park and Ride facilities (especially for cycles) in the outer suburbs.</p>	
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					<p>Programme 8: Energy efficient homes and buildings</p> <p>Street lighting is not just about cost and energy use. Research about the impact on our invertebrates must be factored in. Council declared a climate and ecological emergency. Just having a cost and even a carbon reduction lens on some actions is not good enough and can be counter productive. We must be aware of our anthropocentric tendencies as a species and be aware of the impacts of even our climate mitigation/adaptation actions impacts on other species trying to survive on our planet.</p> <p>We want Council to support people prepared to make lifestyle/housing choices that are responsive to the climate crisis. Regulatory and attitude changes to support for example tiny houses should be expedited. Currently there appear to be rules and other bureaucratic barriers. We have people in our organisation wondering whether there is in fact “generational drag” in Council. People in positions of power and with the ability to block change who are still too comfortable within the twentieth century paradigms that brought us to the situation we are in now.</p> <p>When creating new housing areas the streets should be designed to be cycle and public transport friendly from the outset. The layout of sections should be such that houses can have a sizable roof area facing north for optimal insolation.</p> <p>Programme 9: Towards zero waste</p> <p>We strongly support the promotion of the “sharing economy”. There are initiatives in the community already. The examples used in the strategy document are a very narrow range of what is possible and we urge more imagination and listening to community conversations about this. Liaise with people attempting these types of initiatives and act as an enabling agency for them.</p> <p>We feel that ‘promoting how people can find new uses for things that would otherwise be treated as waste’ should be reworded - the concept of a circular economy is more fitting here: keeping materials and resourcing in use.</p> <p>The Council should be promoting and supporting circular economy systems that are already available and able to be rolled out in the city, for example container return</p>	
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					<p>schemes through Again Again and/or providing their own system (in line with the Government's CRS that is currently in the design phase).</p> <p>It would be good to see communities have access to things like sharing sheds, tool libraries, toys, sporting equipment, sewing machines etc and community gardens, pantries and compost. All new subdivisions could have an area for this embedded at the planning stage.</p> <p>Programme 10: Sustainable food system</p> <p>We strongly support the protection of highly productive soils. This is hugely important and recent history in Christchurch shows we are not doing this well at all. We have had a lot of development on productive soils and housing developments continue to be announced in areas of concern. This is an example to us in this strategy of rhetoric not matching reality. This concerns us deeply as it is one of the indicators it seems that perhaps this climate strategy is not yet a 'whole of Council' focus. There are other areas of council control and work that impact here. We have had developer-led developments and need to address things more effectively.</p> <p>We need to get some more checks and balances related to climate impact into decision making. Housing developers should have to make climate impact reports on each development as well as their company overall. This should include the impact on our food security in the face of the climate crisis.</p> <p>Conclusion</p> <p>In conclusion we find the Draft Strategy somewhat underwhelming. The fundamental framework is very good but we need a real action plan with tangible steps towards the goals that have been set. We need the Council to show real leadership here.</p> <p>While we understand the need for adaptation to climate change, we believe it is still a priority to focus on prevention.</p>	
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						<p>We note the amount of consultation happening in April in Canterbury and remind councillors and others that organisations like SÖC run on the work, time, and energy of mostly volunteers. Our time being unpaid is not value-less; it is priceless. There is a serious concern being expressed amongst our members and others in the community about the amount we have been asked to do in 2021, and the commitment to genuine consultation when the overload on our people appears to have been essentially ignored by the agencies concerned.</p>	
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**Submission on
Christchurch City Council
Draft Ōtautahi Christchurch
Climate Change Strategy**

from:

Sustainable Ōtautahi Christchurch Inc.

www.sustainablechristchurch.org.nz

Submission prepared by:
SŌC Executive

Email contact:
Colleen Philip
Chairperson

We would like to speak to the Hearings Panel about our submission

SŌC formed in 2005 from the merger of Sustainable Cities Trust and Christchurch-Ōtautahi Agenda 21 Forum. Former members of both those groups are involved, along with a new generation of Ōtautahi-Christchurch people, who work towards the bold vision of Ōtautahi-Christchurch people “practising, living and demonstrating sustainability in all that they do.”

Introduction

Thank you for the opportunity to submit on the Christchurch City Council Draft Ōtautahi Christchurch Climate Change Strategy. SŌC commends the CCC for its goals around reducing the environmental contribution of our city to global carbon emissions and strongly supports the principles listed in this strategy.

SŌC agrees with the importance placed on organisations of Christchurch and Banks Peninsula working together for positive environmental outcomes as this is the main focus of our work in Ōtautahi. But we feel that the council under estimates the potential they have for influencing positive change in the city.

In 2019, the Christchurch City Council declared a Climate and Ecological Emergency and the draft strategy states they will act boldly and display the strong leadership required to address the climate challenges and opportunities for the district. We feel that the framework (principles and goals) of the strategy are on track and we believe the work programmes cover all the areas required, but the details of specific actions are lacking substance. The only programme that has sufficient detail for going forward is the waste area with the Waste Management and Minimisation Plan to guide progress.

We also feel that to minimise confusion, the local examples listed in the strategy in the section “What is already happening” should be limited to those the council is directly responsible for.

In this submission we include some of our recommendations for areas of improvement as well as emphasise the things within the strategy that have our full support.

Goal 1 Net Zero Emissions Christchurch

The CCC has set its first target as 50% reduction by 2030. This is nearly a decade away and SŌC believes there should be a goal for 2025 to measure our progress by. It is good to see domestic air travel emissions included in the reckoning, but the contribution of international emissions should also be included - even if only those of Christchurch residents. SŌC supports the CCC commitment to reach net zero for its own operations by 2030.

There should be an action programme of periodic audits to see how the city is doing at implementing the strategy and address any areas where insufficient progress has been made. There should be implementation plans following on from the strategy. We don't want to see the strategy ticked off and put on the shelf.

Goal 2 We understand and are preparing for the ongoing impacts of climate change

Storm surges should be mentioned in the description of this goal as they have the potential to bring forward the effects of sea level rise by decades.

Goal 3 We have a just transition to an innovative low-emission economy

SŌC strongly supports this goal due to the potential for the lower-paid to be more adversely affected by the transition. There must be a strong focus on making sure the transition is just.

Goal 4 We are guardians of our natural environment and taonga

SŌC suggests that the “Be transparent” principle on page 9 should become “Be transparent and frank”. It should be made clear to the community at every opportunity the dire situation that we face. We have been reticent to talk frankly about the effects of climate change for too long.

Programme 1: Building the foundation

We agree that an important part of the strategy is to develop a communications and behaviour change programme.

The Council’s education programmes should be designed to work alongside public facing organisations and campaigns that are already in place rather than attempting to build these from scratch, which would result in duplication and further disperse the available funding. There is a network that can be used to spread a streamlined and targeted climate change education programme. This includes adult education organisations such as the community gardens association, Envirohub, U3A branches, the Canterbury Workers Educational Association as well as the Council’s public libraries and education programmes at Environment Canterbury. The Council should take a leading role in this as many community organisations are run on volunteer time.

We agree that the Council needs to focus on minimising their own emissions. We feel that the Council’s Sustainable Procurement Policy should be playing a larger role in this area. Despite it being mentioned often by the Council, in practice it appears there are little tangible outcomes from this that are visible to the public. The Council and CCHL have an opportunity to greatly reduce the city’s emissions through setting easy and realistic expectations for contractors. For example regulations around single use plastics and sustainable transport. For example requirements for contractors could include larger companies having in house sustainability officers and environmental policies, this could then lead to more businesses placing importance on environmental outcomes.

Programme 2: Understanding local effects of climate change

It is good to see the emphasis in the document on ensuring vulnerable groups are supported.

It also needs to be recognised that the whole of Christchurch is impacted by changes that occur at local community level e.g. coastal areas are directly impacted by sea level rise but all Christchurch residents and ratepayers are impacted. It is especially important that if all Christchurch ratepayers are to help with paying for adaptation or future potential compensation that the conversations about these matters include people outside of the specific communities.

The results of the climate change risk assessment should be publicised widely to ensure the community realises the effects of climate change will be.

Programme 3: Proactive climate planning

We are happy to see the council working in conjunction with nationwide education programmes for students and feel there is potential for linking local resources such as community organisations and the Christchurch City Library mobile programmes. Climate change needs to be embedded in all aspects of learning, not just on the side.

More respect needs to be given to youth voices in climate discussion.

Programme 4: Adapting and greening infrastructure

Living among native plants and natural ecosystems is important to wellbeing. Promoting ecological regeneration and wellbeing is an important part of responding to the ecological crisis which is inextricably linked to the climate crisis.

Efficient water management is essential and should be considered as part of this strategy.

There is a proposal for Christchurch to be named a 'National Park City'. Council could lead a discussion on this idea. It would serve to focus people's thinking on the opportunities we have in Christchurch to bring nature into the urban environment more holistically and effectively. A major problem in people recognising the urgency of climate action is the disconnection from nature of so many (particularly those in urban environments).

When increasing tree cover across the city native species should be used preferentially for their biodiversity benefits, better adaptation to local conditions and resistance to fire.

The use of stormwater tanks for detention and/or home use should be encouraged or made mandatory for new builds, as they are for hillside suburbs.

Programme 5: Carbon removal and restoration

In 'Next Step' more wetlands could be restored in the lower Heathcote / Ōpāwaho floodplain also.

Programme 6: Economic transformation and innovation

SŌC strongly supports the redefining of measures of progress to better reflect social, cultural, economic and environmental wellbeing.

We believe that the goal of carbon neutrality should focus first on reduction before offsetting is considered. Offsetting should be used only to cover the carbon that is not able to be feasibly reduced. The Council's Sustainable Procurement Policy could be a strong driving force in this area with expectations set high for CCHL / Council owned companies. Any offsetting that does take place should be within Canterbury and with native plants.

The Council's claims to support innovative programmes around the city need to go beyond design challenges and workshops to proactively support tangible projects that have the potential to have wide reaching high impact. What about engaging with current innovative thinkers as a next step priority? For example, transition engineers.

Climate change response is a priority for projects funded by the Sustainability Fund but we believe the fund needs increasing to reflect need. Community driven projects are frequently the most cost effective way of achieving outcomes with in-built community support.

Programme 7: Low-emission transport system

Enabling an efficient public transport system with incentives to use it must be a priority. Work closely with Environment Canterbury on this work. SŌC supports the development of an effective public rail system in the region.

SŌC believes the CCC needs to put the '10 minute city' lens over Christchurch ['Our Space'] and constantly remain conscious of what this requires and how to achieve it.

Restrictions on free parking near the city centre could be used to speed up the transition to using public transport for commuting. The CCC could also provide Park and Ride facilities (especially for cycles) in the outer suburbs.

Programme 8: Energy efficient homes and buildings

Street lighting is not just about cost and energy use. Research about the impact on our invertebrates must be factored in. Council declared a climate and ecological emergency. Just having a cost and even a carbon reduction lens on some actions is not good enough and can be counter productive. We must be aware of our anthropocentric tendencies as a species and be aware of the impacts of even our climate mitigation/adaptation actions impacts on other species trying to survive on our planet.

We want Council to support people prepared to make lifestyle/housing choices that are responsive to the climate crisis. Regulatory and attitude changes to support for example tiny houses should be expedited. Currently there appear to be rules and other bureaucratic barriers. We have people in our organisation wondering whether there is in fact "generational drag" in Council. People in positions of power and with the ability to block change who are still too comfortable within the twentieth century paradigms that brought us to the situation we are in now.

When creating new housing areas the streets should be designed to be cycle and public transport friendly from the outset. The layout of sections should be such that houses can have a sizable roof area facing north for optimal insolation.

Programme 9: Towards zero waste

We strongly support the promotion of the "sharing economy". There are initiatives in the community already. The examples used in the strategy document are a very narrow range of what is possible and we urge more imagination and listening to community conversations about this. Liaise with people attempting these types of initiatives and act as an enabling agency for them.

We feel that 'promoting how people can find new uses for things that would otherwise be treated as waste' should be reworded - the concept of a circular economy is more fitting here: keeping materials and resourcing in use.

The Council should be promoting and supporting circular economy systems that are already available and able to be rolled out in the city, for example container return schemes through Again Again and/or providing their own system (in line with the Government's CRS that is currently in the design phase).

It would be good to see communities have access to things like sharing sheds, tool libraries, toys, sporting equipment, sewing machines etc and community gardens, pantries and compost. All new subdivisions could have an area for this embedded at the planning stage.

Programme 10: Sustainable food system

We strongly support the protection of highly productive soils. This is hugely important and recent history in Christchurch shows we are not doing this well at all. We have had a lot of development on productive soils and housing developments continue to be announced in areas of concern. This is an example to us in this strategy of rhetoric not matching reality. This concerns us deeply as it is one of the indicators it seems that perhaps this climate strategy is not yet a 'whole of Council' focus. There are other areas of council control and work that impact here. We have had developer-led developments and need to address things more effectively.

We need to get some more checks and balances related to climate impact into decision making. Housing developers should have to make climate impact reports on each development as well as their company overall. This should include the impact on our food security in the face of the climate crisis.

Conclusion

In conclusion we find the Draft Strategy somewhat underwhelming. The fundamental framework is very good but we need a real action plan with tangible steps towards the goals that have been set. We need the Council to show real leadership here.

While we understand the need for adaptation to climate change, we believe it is still a priority to focus on prevention.

We note the amount of consultation happening in April in Canterbury and remind councillors and others that organisations like SŌC run on the work, time, and energy of mostly volunteers. Our time being unpaid is not value-less; it is priceless. There is a serious concern being expressed amongst our members and others in the community about the amount we have been asked to do in 2021, and the commitment to genuine consultation when the overload on our people appears to have been essentially ignored by the agencies concerned.

#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
93	39679	Sandy	Brinsdon	Canterbury District Health Board	Team Leader, Community and Public Health	Submission is attached	Yes

Canterbury

District Health Board

Te Poari Hauora o Waitaha

Item 3

Attachment C

Submission on Draft Ōtautahi Christchurch Climate Change Strategy

To: Christchurch City Council

Submitter: Canterbury District Health Board

Attn: Sandy Brinsdon
Community and Public Health

Proposal: The strategy is a long-term framework for Christchurch's climate change journey. It aims to be part of a wider conversation about what we can all do to reduce greenhouse gases and respond to the effects of climate change.

SUBMISSION ON Climate Change Strategy, CCC

Details of submitter

1. Canterbury District Health Board (CDHB).
2. The submitter aims to reduce potential health risks by several means including early engagement through submissions. This is an example of a situation where we believe it is important to ensure the public health significance of potential adverse effects of a strategy are adequately considered during policy development.

Details of submission

3. We welcome the opportunity to comment on the Draft Climate Change Strategy (the Strategy). The future health of our populations is reliant on a responsive environment where all sectors work collaboratively, and this strategy has an important role to play.

General Comments

4. Climate Change is something the CDHB is very cognisant of. CDHB is a signatory to the “Environmentally Sustainable Health Care: Position Statement” prepared in 2019 for South Island DHBs. The Position Statement recognises the significant impact of Climate Change and identifies what the health sector can do to contribute to reduce the risk from climate change. The background paper that supports the Position Statement aims to inform the commitment, statements, and actions of the South Island District Health Boards in their efforts to achieve an environmentally sustainable health system. The final position paper has been signed off by four of the five South Island DHBs.
5. Health, disease and overall wellbeing are influenced by a wide range of factors, such as climate change, which lie beyond the health sector (see figure 1). These are often referred to as the ‘social determinants of health’¹.

¹ Public Health Advisory Commission. 2004. *The Health of People and Communities. A Way Forward: Public Policy and the Economic Determinants of Health*. Public Health Advisory Commission: Wellington.
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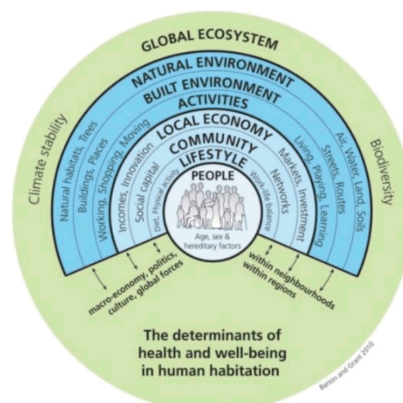


Figure 1. Barton and Grant's Health Map

6. CDHB supports the Strategy and the strong focus CCC is putting on climate change. While the Strategy does outline some co-benefits around air quality, housing and extreme heat events it is missing the opportunity to outline much wider co-benefits on health and wellbeing when addressing climate change². As an example, transport mode shift that has the potential to reduce Greenhouse gas emissions and improve air quality will also reduce non-communicable diseases (NCDs) such as diabetes and cardiovascular disease by increasing physical activity and reducing obesity. Reducing rates of NCDs like these will have enormous positive effects on the communities wellbeing.
7. Another strong example of the link between non-communicable diseases and Climate Change is highlighted by a report³ on the linkages between Type 2 Diabetes and Climate Change, in the 21st century. Both are rapidly accelerating and are fuelled by changes in the way we live. The impacts and solutions are multi-faceted, for example the impact of heat waves and extreme weather events on the health outcomes of people with diabetes; the impact of climate change on food security and type 2 diabetes risk; and the impact of rising obesity levels and diabetes via such things as active transport and good urban planning. This is a local and global problem. A recent New Zealand report⁴ predicts that within the next 20 years, the number of people with type 2 diabetes will increase by 70-90% up from around

² *Climate Change and Health in New Zealand. Climate Change Policy Statement. New Zealand College of Public Health Medicine. 2013*

³

<https://ncdalliance.org/sites/default/files/rfiles/IDF%20Diabetes%20and%20Climate%20Change%20Policy%20Report.pdf>

⁴

- 228,000 to 390,000-430,000 and will absorb approximately 10% of the Vote Health budget.
8. The identified goals and programmes of action in the CCC Strategy are all relevant. The challenge for CCC is that the listed focus areas and next steps are not bold enough to drive change. They focus more heavily on existing progress. Without clear budget commitments and priorities assigned to the programmes of actions it will be difficult for CCC to meet the identified targets in the Strategy. Specific comments and recommendations on the individual programmes of action are provided below.
 9. CDHB does not believe there is a strong enough equity lens across the strategy. The Goals include discussions of 'just transitions' and being guardians of the natural environment. What is not clearly articulated is how to manage the complexity and challenges that exist between who is affected by climate change and who is paying to reduce the impact. CDHB recommends including this discussion and identify how CCC is looking to address this in the most equitable way and what involvement there can be in the decision-making process. For example, the Strategy notes that all Council's decision-making reports have a section considering the impacts on Climate Change and CDHB recommends this also includes an equity assessment.
 10. The Strategy agrees that partners are needed to deliver the goals and programmes outlined. Climate Change is not the domain of any one sector and therefore it would be useful if the Strategy outlined further some of the existing partnerships that CCC is part of. While the strategy outlines where this fits into the bigger picture (page 31) the detail is largely focused on CCC and internal policy links. CDHB recommends developing further the linkages more with other local, regional and national networks and strategies.
 11. The CDHB recommends a 'Health in All Policies' (HiAP) approach is used to address the climate crisis and developing actions to reduce the impact of climate change. CDHB and CCC have a long history of working together in this way and an intersectoral approach to public policy development has consistently shown value.
 12. While the Strategy identifies existing relationships with Ngai Tahu CDHB recommends that CCC ensure te Tiriti o Waitangi is central to the strategy through more than seeing Māori as just one of many stakeholders. The Waitangi Tribunal

states⁵ in their Ko Aotearoa Tēnei (Wai 262) report: "...that it is for Māori to say what their interests are, and to articulate how they might best be protected." It is the responsibility of all sectors to prioritise Maori health and wellbeing and the collaboration required around Climate Change provides opportunities to truly enact this.

Specific Comments

Programme One: Building the foundation

13. The key feedback for this program area has been outlined above (point 10). CDHB recommends that the Strategy is clear about existing relationships and how they fit together along with ensuring equity is part of decision making. An additional comment would be to make this bolder by explicitly having a council apply a weighting against the climate change and equity impact in their decision-making process. This is stronger than just asking for it to be identified in papers going to council.

Programme Two: Understanding the local effects

14. The next step is too broad- 'complete climate change risk assessment'. This work will be ongoing and should not delay action that can be done now. Having some idea of timeframes around these actions in this strategy will also help the community to understand priorities.

Programme Four: Adapting and Greening infrastructure

15. This action needs to be clearer about how extensive this adapting and adopting of green infrastructure will be. CDHB recommends that asset management plans do more than just 'consider' green infrastructure but are required to identify viable solutions wherever it is possible.

Programmes Five and Six: Carbon removal and natural restoration/ Economic Transformation

⁵ New Zealand. Waitangi Tribunal. (2011) Ko Aotearoa tēnei : a report into claims concerning New Zealand law and policy affecting Māori culture and identity. Te taumata tuatahi. (Waitangi Tribunal report 2011). <https://www.waitangitribunal.govt.nz>

16. Fully realising the expectations under this programme is going to require allocating budget. The CDHB queries how this strategy will allocate and prioritise budget to each programme of action CDHB recommends that such allocation is clear in the Long Term Plan currently being completed.

Programme Seven : Low-emission transport system

17. There are many benefits of pushing a change in mode share as noted in points 6 and 7 above. While low emission vehicles are an important part of this it is more important to move populations to less reliance on individual motor vehicles. The infrastructure savings and health benefits alone make this a sensible move alongside climate change impacts. CCC should be bold in moving to be a city supporting and enabling active transport including public transport, walking and cycling. The current process of looking at each cycleway suburb by suburb means the whole system is at risk. Consultations should focus on how to minimise local community concerns while delivering strong city-wide policy.

Programme Eight: Energy efficient homes and buildings

18. The CDHB recommends the action on this be strengthened. There is a significant amount of work CCC can be doing in the space around building and development requirements, as noted in the strategy under 'what's already happening'. This needs to be bolder and CCC seen to be leading this discussion by identifying how actions in this area can positively impact on addressing climate change. Warm and efficient homes is another clear co-benefit area with strong wellbeing outcomes as well as reduction in effects on climate change.

Conclusion

19. The CDHB does wish to be heard in support of this submission.

20. Thank you for the opportunity to submit on CCC Climate Change Strategy

Person making the submission



Dr Anna Stevenson
Public Health Specialist
Date: 23/04/2021

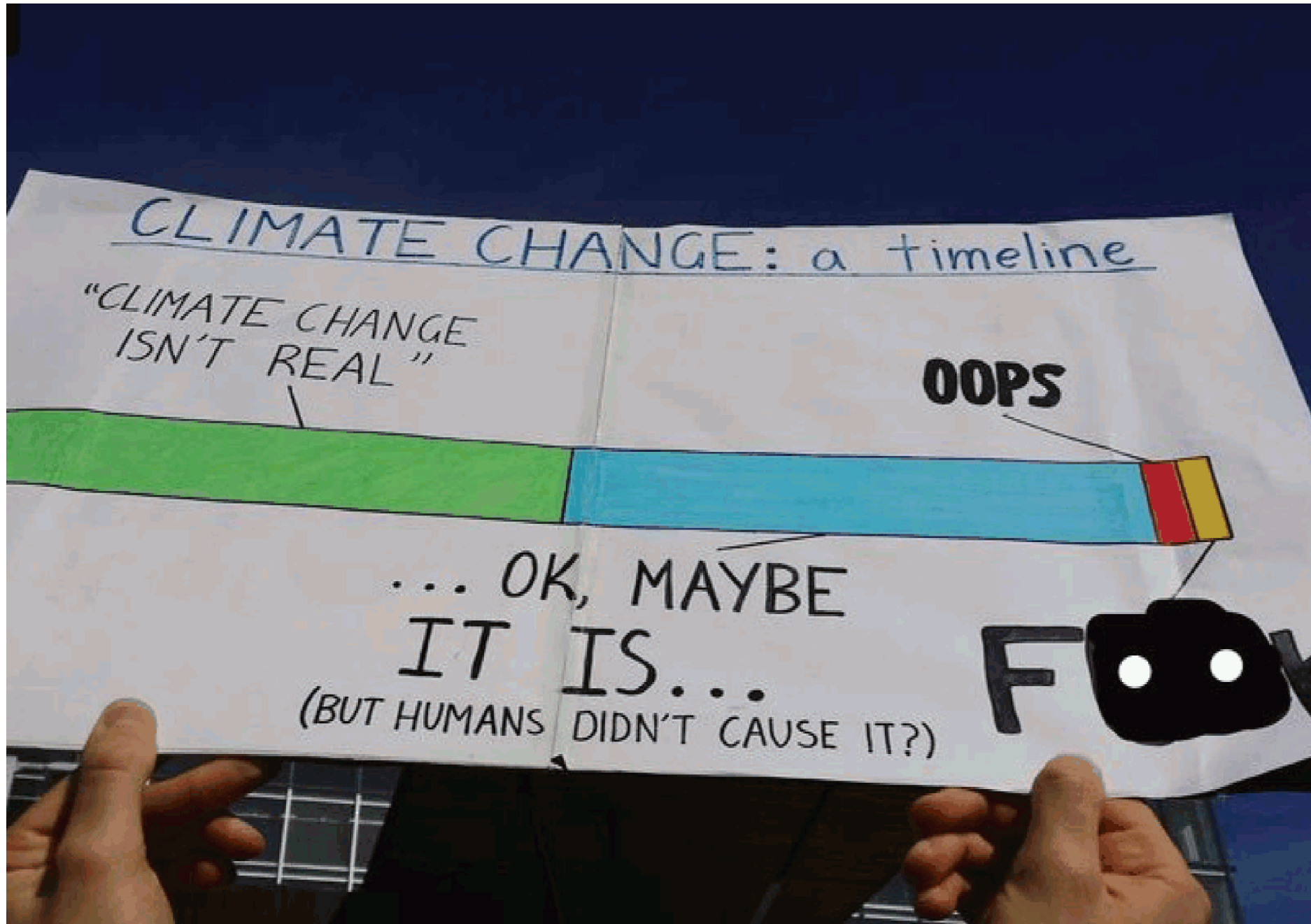
Contact details

Sandy Brinsdon
For and on behalf of

#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
90	39675	Liza	Sparrow	Sumner Community Residents' Association	Co-Chair	<p>This submission is being made on behalf of SCRA (Sumner Community Residents' Association). As a committee representing a community of approximately 5,000 residents we would like to talk to the Hearings Panel on the risks to Sumner and Taylors' Mistake communities in the likely event of a flood and unlikely event of a tsunami and/or earthquake (AF8) resulting in rock roll and rock fall. All events may lead to Sumner and Taylors being shut off from emergency responders for several days.</p> <p>Luckily our community has effective retreat zones in the surrounding hills. We therefore would like CCC and CDEM to consider supporting our community to be resilient, prepared, self sufficient in the case of a natural disaster.</p> <p>We believe as a residents' association we are in a position to coordinate with local emergency responders, businesses, residents and visitors to coordinate an education campaign and to install containers/buildings in retreat zones to store comms, food, water, blankets and which also provide shelter.</p> <p>We would like to ensure that all decisions made on the effects of local climate change be done in conjunction with affected communities. We feel it is important for all options to be explored especially when issues such as retreat are considered.</p> <p>We would appreciate the chance to submit on this issue.</p> <p>Regards</p> <p>Liza Sparrow</p> <p>Co-Chair</p>	Yes



						SCRA	
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#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
148	39746	Cora	Scott	School Strike 4 Climate Ōtautahi	member and organizer	<p>As a city, we must do everything we can to reduce our carbon footprint and make it easier for the citizens of Ōtautahi to lower their carbon footprint. Christchurch city council must invest in green infrastructure if we want to achieve our goals of net zero emissions by 2045 and halving emissions by 2030. This green infrastructure should be focused around sustainable transport, aka buses, bike lanes and not prioritizing cars on the road. We must also focus on educating young people about sustainability, climate change, and the impacts of central and local government decisions.</p> <p>It's difficult growing up fearing our leaders do not have a sufficient plan to deal with the impending climate crisis. It is disillusioning and disheartening. Through this climate strategy, you have the chance to prove to us, your future generation and Ōtautahi's population that you have a comprehensive, ambitious plan to tackle this crisis. We must halve our emissions by 2030 and achieve net-zero by 2050 in line with the 1.5-degree aim. You have the chance to be leaders in the climate change space, so please, make the right choice.</p> <p>The strategy itself places too little focus on reducing emissions and too much on mitigating and offsetting them. Mitigation is not a long term solution and there should not be too great a focus on this. Much of the strategy also relies on promises and plans of plans. Timelines and specific pathways need to be created promptly so that we can have an assurance that the council will meet their goals.</p> <p>We feel that this submission process is quite inaccessible, especially to those with limited time and energy, who in many cases will be worse impacted by the climate crisis. This includes people living in low socio-economic areas, who often work long shifts and do not have the time or energy to meaningfully engage with your submissions process as it stands now.</p> <p>At first sight, it feels too content-heavy - putting the burden on the wider public</p>	Yes

					<p>to read, understand, then give feedback on your climate strategy. We feel this is too high an expectation and will exclude a larger demographic of the population. The conversation around climate change needs to be inclusive of everyone, so we highly suggest alternative methods of engagement around this, that make the conversation accessible, as well as making the submission process simpler to follow.</p> <p>The language and terminology used is often complex and inaccessible to both youth and less-educated adults, making it harder to engage these demographics. Furthermore, it often relies on the reader having a large amount of background knowledge meaning they have to take extra time to research and/or understand what is being said. Information is often convoluted and provides little clarity.</p> <p>Could add that the language and terminology used is inaccessible to youth as well as less educated people which is bad</p> <p>We demand that the Council honor Te Tiriti o Waitangi while making decisions on climate change.</p> <p>Te Tiriti refers to the three principles of partnership, participation, and protection when it comes to the relationship between tangata whenua and the government. Therefore, when it comes to decisions on climate change, we demand that the government ensures that tangata whenua voices are at the forefront of those decisions; especially when it comes to Māori environmental, cultural, social, and economic interests.</p> <p>We demand that the Council lower emissions in order to limit the global temperature rise.</p> <p>It's said that the best way to stop a bathtub from overflowing is by first turning off the tap, and the same goes for our emissions. Under the Paris Agreement, the NZ Government has promised to reduce our emissions in order to limit a global temperature rise to 1.5°C above pre-industrial levels. Therefore, we demand that they keep this promise by doing everything in their power to lower our emissions,</p>	
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						<p>listening to what science has to say about achieving the 1.5C goal.</p> <p>We demand that the Council invest in a just transition for all workers affected by Covid-19.</p> <p>When it comes to transitioning to a thriving, carbon neutral future, nobody can be left behind. Therefore, we demand that the government work towards a just transition for all people in unsustainable jobs and industries, as well as those who have lost jobs due to Covid19. This means immediate investment in retraining, and the provision of alternative jobs in clean, sustainable industries that don't harm our planet and its ecosystems which we depend on for survival</p> <p>We demand that Christchurch City Council invests more into green transport infrastructure.</p> <p>Transportation in Christchurch makes up the largest percentage of our greenhouse gas emissions at roughly 50%. We appreciate that there is currently some investment in cycleways and decarbonising our buses around the city, however, there are still significant improvements to be made in order to reduce the number of gas-guzzling cars on the road. Therefore, we demand that Christchurch City Council invests more into green transport infrastructure, including free public transport and other incentives to get people out of cars and forms of transport with high greenhouse gas emissions.</p> <p>We demand investment in climate education in Christchurch and throughout Aotearoa.</p> <p>As young people, we feel that we and future generations need to be equipped with the knowledge to help us to deal with the ongoing climate crisis. Many of today's children don't know the extent of the crisis, and won't until it is too late. Anyone that does not know about, or does not try and make a significant change to the current climate crisis is not helping. The only way to change this is to educate people on what is happening before it is too late. Therefore we demand that more of an emphasis is placed on climate education in schools; and also for</p>	
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					<p>an increase in the funding of climate education programs both in Christchurch and throughout Aotearoa.</p> <p>We demand that Christchurch City Council and Christchurch Holdings Limited immediately halts the development of the Tarras airport proposal.</p> <p>In the escalating climate crisis, there is no room for airport expansion and investment in other high emitting projects which directly contradict the promises made when the government declared a climate emergency. The last year has also shown us that the stability of industries such as tourism isn't guaranteed, therefore we should base our decisions on what is guaranteed: that if we fail to act on the climate crisis, we will fail to safeguard a livable future for us and our children.</p> <p>Goal 1</p> <p>The emissions targets are good, but they could be better. The IPCC special report on achieving a 1.5 °C warmer world indicates a global need to halve emissions by 2030 and to achieve net-zero emissions by 2050. These goals importantly include methane, and use a 2010 baseline. In contrast, the Council's Draft Strategy appears to have a weaker target regarding methane, and a slightly less stringent baseline of 2016-17. This is the bare minimum. As a wealthy nation that has historically contributed more than its fair share of emissions, we should be playing a greater role in reducing global emissions. We want Christchurch City Council to adopt a target consistent with a 1.5 °C world by including methane in the total emissions reductions targets, in which Christchurch's contribution reflects our wealth and privilege, and using a baseline of 2010 or earlier as the bare minimum.</p> <p>Goal 2:</p> <p>Support for communities affected by climate change must acknowledge that lower-income communities be less resilient as they will feel the impacts of a changing environment more keenly. The council must allocate more resources</p>	
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						<p>and funding towards these communities so that they do not get left behind.</p> <p>Goal 3:</p> <p>The narrow definition of ‘just’ that has been used in the climate change strategy excludes social-cultural and environmental factors of climate justice as well as only mentioning strategies for mitigation rather than pathways through which we can adapt which are all key factors that cannot and should not be overlooked. The transition must include social, cultural, economic and environmental factors within mitigation AND adaptation.</p> <p>Goal 4:</p> <p>The council must replenish natural environments by replanting trees and restoring wetlands. However, it is also necessary to recognize that emission mitigation strategies are not a substitute for emission reduction strategies, and that tree’s and wetlands can not be relied upon indefinitely to remove carbon dioxide from the atmosphere.</p> <p>Programme 1:</p> <p>Collaboration with community groups must highlight youth voices, and be an accessible and safe space for youth. Youth are the key stakeholders, the ones who will inherit our planet, and thus they cannot be spoken over. We recommend that the council work with schools to set up student orientated groups that provide a space in which youth are empowered to take action. We also ask that they further involve youth by providing students with more education and clarity on both the science and the council’s proposals concerning climate change.</p> <p>Programme 2:</p> <p>This plan has merit however there is a risk that focusing on these triggers will prevent flexibility and timeliness when taking action. For example, if previously</p>	
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					<p>identified triggers do not become apparent until it is too late to act.</p> <p>Programme 3 and 5:</p> <p>There must be more of a focus on wildfire risk as we are susceptible to them particularly on the Port Hills, as was shown during the Port Hills fires. Strategies must be implemented to protect communities from fire risk and prevent fires, for example by providing a budget and plan to replant the Port Hills with fire retardant species. As a retreat from coastal and river areas occurs, vacated areas should be used for riparian plantings designed to protect from hazards such as sea-level rise and flooding, sequester carbon and restore biodiversity.</p> <p>Programme 4:</p> <p>At present, the council's plan for sustainable infrastructure is too narrow. We recommend that they widen the scope of their plan to also focus on intensifying the city to prevent urban sprawl, building up instead of out, and maximising the capacity of the land. More communal gardens and urban forests would help remove the need for land-intensive private homes and help bring communities together.</p> <p>Programme 6:</p> <p>Industries directly affected by climate change will not be the only ones needing support. While an economic transition is hugely important, there must be support for a social and cultural transition as people and communities are forced to adapt and change, so that no one is left behind.</p> <p>Programme 7:</p> <p>More focus is needed on cycleways. Pre-existing ones must be maintained and expanded, especially the ones that have sudden ends in unsafe locations and new cycleways must be built to connect pre-existing ones to create an accessible network across the city. Companies should be made to incentivise public</p>	
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					<p>transport and sustainable transport such as biking, electric bike, electric cars and walking. Connecting green modes of transport such as walking, biking and busing so that users can cross between modes according to their needs. Reinstate and create new electric train infrastructure for passenger use.</p> <p>Programme 9:</p> <p>Being zero waste is not just about recycling already used products, but also about limiting waste produced altogether. We recommend that the council provide an incentive for businesses to pursue lower waste options such as sustainable packaging, (e.g. for food) and to lower overall consumption. Change needs to come from the businesses that are providing services to communities and producing large amounts of rubbish. Without this leadership, it is a greater challenge for individuals to lower their waste production.</p> <p>Programme 10:</p> <p>The council must consider how development may impact /harm the production of food, We recommend that the fertility of soils and their potential for the production of mahinga kai is taken into account when considering the development of subdivisions and expansion of the city. In this way, we protect our fertile soils.</p>	
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As a city, we must do everything we can to reduce our carbon footprint and make it easier for the citizens of Ōtautahi to lower their carbon footprint. Christchurch city council must invest in green infrastructure if we want to achieve our goals of net zero emissions by 2045 and halving emissions by 2030. This green infrastructure should be focused around sustainable transport, aka buses, bike lanes and not prioritizing cars on the road. We must also focus on educating young people about sustainability, climate change, and the impacts of central and local government decisions.

It's difficult growing up fearing our leaders do not have a sufficient plan to deal with the impending climate crisis. It is disillusioning and disheartening. Through this climate strategy, you have the chance to prove to us, your future generation and Ōtautahi's population that you have a comprehensive, ambitious plan to tackle this crisis. We must halve our emissions by 2030 and achieve net-zero by 2050 in line with the 1.5-degree aim. You have the chance to be leaders in the climate change space, so please, make the right choice.

The strategy itself places too little focus on reducing emissions and too much on mitigating and offsetting them. Mitigation is not a long term solution and there should not be too great a focus on this. Much of the strategy also relies on promises and plans of plans. Timelines and specific pathways need to be created promptly so that we can have an assurance that the council will meet their goals.

We feel that this submission process is quite inaccessible, especially to those with limited time and energy, who in many cases will be worse impacted by the climate crisis. This includes people living in low socio-economic areas, who often work long shifts and do not have the time or energy to meaningfully engage with your submissions process as it stands now.

At first sight, it feels too content-heavy - putting the burden on the wider public to read, understand, then give feedback on your climate strategy. We feel this is too high an expectation and will exclude a larger demographic of the population. The conversation around climate change needs to be inclusive of everyone, so we highly suggest alternative methods of engagement around this, that make the conversation accessible, as well as making the submission process simpler to follow.

The language and terminology used is often complex and inaccessible to both youth and less-educated adults, making it harder to engage these demographics. Furthermore, it often relies on the reader having a large amount of background knowledge meaning they have to take extra time to research and/or understand what is being said. Information is often convoluted and provides little clarity.

Could add that the language and terminology used is inaccessible to youth as well as less educated people which is bad

1. **We demand that the Council honor Te Tiriti o Waitangi while making decisions on climate change.**

Te Tiriti refers to the three principles of partnership, participation, and protection when it comes to the relationship between tangata whenua and the government. Therefore, when it comes to decisions on climate change, we demand that the government ensures that tangata whenua voices are at the forefront of those decisions; especially when it comes to Māori environmental, cultural, social, and economic interests.

2. **We demand that the Council lower emissions in order to limit the global temperature rise.**

It's said that the best way to stop a bathtub from overflowing is by first turning off the tap, and the same goes for our emissions. Under the Paris Agreement, the NZ Government has promised to reduce our emissions in order to limit a global temperature rise to 1.5°C above pre-industrial levels. Therefore, we demand that they keep this promise by doing everything in their power to lower our emissions, listening to what science has to say about achieving the 1.5°C goal.

3. **We demand that the Council invest in a just transition for all workers affected by Covid-19.**

When it comes to transitioning to a thriving, carbon neutral future, nobody can be left behind. Therefore, we demand that the government work towards a just transition for all people in unsustainable jobs and industries, as well as those who have lost jobs due to Covid19. This means immediate investment in retraining, and the provision of alternative jobs in clean, sustainable industries that don't harm our planet and its ecosystems which we depend on for survival

1. **We demand that Christchurch City Council invests more into green transport infrastructure.**

Transportation in Christchurch makes up the largest percentage of our greenhouse gas emissions at roughly 50%. We appreciate that there is currently some investment in cycleways and decarbonising our buses around the city, however, there are still significant improvements to be made in order to reduce the number of gas-guzzling cars on the road. Therefore, we demand that Christchurch City Council invests more into green transport infrastructure, including free public transport and other incentives to get people out of cars and forms of transport with high greenhouse gas emissions.

2. **We demand investment in climate education in Christchurch and throughout Aotearoa.**

As young people, we feel that we and future generations need to be equipped with the knowledge to help us to deal with the ongoing climate crisis. Many of today's children don't know the extent of the crisis, and won't until it is too late. Anyone that does not know about, or does not try and make a significant change to the current climate crisis is not helping. The only way to change this is to educate people on what is happening before it is too late. Therefore we demand that more of an emphasis is placed on climate education in schools; and also for an increase in the funding of climate education programs both in Christchurch and throughout Aotearoa.

3. **We demand that Christchurch City Council and Christchurch Holdings Limited immediately halts the development of the Tarras airport proposal.**

In the escalating climate crisis, there is no room for airport expansion and investment in other high emitting projects which directly contradict the promises made when the government declared a climate emergency. The last year has also shown us that the stability of industries such as tourism isn't guaranteed, therefore we should base our decisions on what is guaranteed: that if we fail to act on the climate crisis, we will fail to safeguard a livable future for us and our children.

Goal 1

The emissions targets are good, but they could be better. The IPCC special report on achieving a 1.5 °C warmer world indicates a global need to halve emissions by 2030 and to achieve net-zero emissions by 2050. These goals importantly include methane, and use a 2010 baseline. In contrast, the Council's Draft Strategy appears to have a weaker target regarding methane, and a slightly less stringent baseline of 2016-17. This is the bare minimum. As a wealthy nation that has historically contributed more than its fair share of emissions, we should be playing a greater role in reducing global emissions. We want Christchurch City Council to adopt a target consistent with a 1.5 °C world by including methane in the total emissions reductions targets, in which Christchurch's contribution reflects our wealth and privilege, and using a baseline of 2010 or earlier as the bare minimum.

Goal 2:

Support for communities affected by climate change must acknowledge that lower-income communities be less resilient as they will feel the impacts of a changing environment more keenly. The council must allocate more resources and funding towards these communities so that they do not get left behind.

Goal 3:

The narrow definition of 'just' that has been used in the climate change strategy excludes social-cultural and environmental factors of climate justice as well as only mentioning strategies for mitigation rather than pathways through which we can adapt which are all key factors that cannot and should not be overlooked. The transition must include social, cultural, economic and environmental factors within mitigation AND adaptation.

Goal 4:

The council must replenish natural environments by replanting trees and restoring wetlands. However, it is also necessary to recognize that emission mitigation strategies are not a substitute for emission reduction strategies, and that tree's and wetlands can not be relied upon indefinitely to remove carbon dioxide from the atmosphere.

Programme 1:

Collaboration with community groups must highlight youth voices, and be an accessible and safe space for youth. Youth are the key stakeholders, the ones who will inherit our planet, and thus they cannot be spoken over. We recommend that the council work with schools to set up student orientated groups that provide a space in which youth are empowered to take action. We also ask that they further involve youth by providing students with more education and clarity on both the science and the council's proposals concerning climate change.

Programme 2:

This plan has merit however there is a risk that focusing on these triggers will prevent flexibility and timeliness when taking action. For example, if previously identified triggers do not become apparent until it is too late to act.

Programme 3 and 5:

There must be more of a focus on wildfire risk as we are susceptible to them particularly on the Port Hills, as was shown during the Port Hills fires. Strategies must be implemented to protect communities from fire risk and prevent fires, for example by providing a budget and plan to replant the Port Hills with fire retardant species. As a retreat from coastal and river areas occurs, vacated areas should be used for riparian plantings designed to protect from hazards such as sea-level rise and flooding, sequester carbon and restore biodiversity.

Programme 4:

At present, the council's plan for sustainable infrastructure is too narrow. We recommend that they widen the scope of their plan to also focus on intensifying the city to prevent urban sprawl, building up instead of out, and maximising the capacity of the land. More communal gardens and urban forests would help remove the need for land-intensive private homes and help bring communities together.

Programme 6:

Industries directly affected by climate change will not be the only ones needing support. While an economic transition is hugely important, there must be support for a social and cultural transition as people and communities are forced to adapt and change, so that no one is left behind.

Programme 7:

More focus is needed on cycleways. Pre-existing ones must be maintained and expanded, especially the ones that have sudden ends in unsafe locations and new cycleways must be built to connect pre-existing ones to create an accessible network across the city. Companies should be made to incentivise public transport and sustainable transport such as biking, electric bike, electric cars and walking. Connecting green modes of transport such as walking, biking and busing so that users can cross between modes according to their needs. Reinstate and create new electric train infrastructure for passenger use.

Programme 9:

Being zero waste is not just about recycling already used products, but also about limiting waste produced altogether. We recommend that the council provide an incentive for businesses to pursue lower waste options such as sustainable packaging, (e.g. for food) and to lower overall consumption. Change needs to come from the businesses that are providing services to communities and producing large amounts of rubbish. Without this leadership, it is a greater challenge for individuals to lower their waste production.

Programme 10:

The council must consider how development may impact /harm the production of food. We recommend that the fertility of soils and their potential for the production of mahinga kai is taken into account when considering the development of subdivisions and expansion of the city. In this way, we protect our fertile soils.

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
82	39663	Richard	Suggate	<p>In May 2019 the Christchurch City Council declared a climate and ecological emergency. This strategy lack a sense of urgency and commitment that you would expect to see in response to an 'emergency' . The implementation measures are often random, insubstantial and timid and tactical rather than strategic. If the Council really believes there is an emergency, then allocate the planning resources to complete this strategy in a way that measures the risks, determines the outcomes and has measurable and timely actions that create strategic change.</p> <p>Programme 1: Building the foundation</p> <p>A Christchurch Citizens Assembly should be established to advise the Council on implementation of this Strategy, or at least make sure the 'Climate Leadership Group' is fully representative not just of elites.</p> <p>Programme 2: Understanding local effects of climate change</p> <p>Completing a risk assessment is an important step, but it would be desirable to complete it prior to completing the implementation steps for this Strategy, as it should inform future decision-making.</p> <p>Programme 3: Proactive climate planning.</p> <p>Proactive climate planning with communities is a good programme but it should cover much more than just coastal planning. The increased likelihood of floods, droughts and fires and Council and community response, should all be planned for through collaborative engagement.</p> <p>Programme 4: Adapting and greening infrastructure</p> <p>Habitat improvement at Bexley (Ōtākaro Avon River Corridor Regeneration Area) is only one of many projects that need to be initiated and should also be spelled out in the Strategy. There are multiple opportunities across the City and the Peninsula for Council intervention to establish large scale natural regeneration. The traditional infrastructure system also needs 'greening'. Drainage, sewage, roading, utilities can all benefit from 'green' design to reduce emissions and absorb CO2.</p>	Yes

				<p>Programme 5: Carbon removal and restoration</p> <p>I completely support indigenous planting and there are many ways Council can encourage it and work in partnerships. Indigenous restoration is more than just planting - it also includes natural regeneration and weed and pest control. The Council should be providing strong incentives to landowners to leave areas to regenerate where this will improve catchments, biodiversity and provide a carbon income.</p> <p>Programme 6: Economic transformation and innovation</p> <p>Educational and promotional events are useful, but direct Council intervention is possible through the district plans and by-laws to discourage economic activities that generate adverse environmental effects and emissions. Taking strong intervention in the transport area to discourage private vehicle usage and free-up public transport will have beneficial economic consequences through increased efficiency (reduced travel times and less congestions).</p> <p>Programme 7: Low-emission transport system</p> <p>Amend this to read "Complete the Christchurch Transport Plan to understand pathways to reduce emissions, refine options and implement progressive measures to achieve the level of reductions we are seeking."</p> <p>Programme 8: Energy efficient homes and buildings</p> <p>The text is very aspirational about 'we will design..'. But what is the Council going to do. Private and commercial owners of buildings will do what they wish to do through income and personal desires being affected by a mix of regulations and financial incentives. To change this takes more than just education. The by-laws and the district plan also should be used. There should be a commitment for all Council buildings and infrastructure to be more energy efficient and incentives for solar panels to be installed on roofs.</p> <p>Programme 9: Towards zero waste</p> <p>Implementation of the Council's Waste Management and Minimisation Plan is a specific and detailed action and I support it.</p> <p>Programme 10: Sustainable food system</p> <p>This programme is unfocussed and has one token implementation action (which I support). There is much more that could</p>	
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				be done. e.g. Strong support for Enviro-Schools, and Community Gardens. District plan protection for high value productive soils. The encouragement of farming practices that produce food in a way is sustainable and minimises green house gas emissions and nitrogen getting into waterways and aquifers.	
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#	SubID	First name	Last name	Name of organisation	Your role within organisation	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
102	39693	Rob	Kerr	Ōtākaro Regeneration Company	Director	Please see attached document	Yes

Submission on CCC Climate Change Strategy 2021

Ōtākaro Regeneration Company

Preamble

We commend Christchurch City Council in developing the Climate Change Strategy. Although we have a number of significant concerns regarding the strategy as it stands; the general direction of travel towards a comprehensive programme is supported.

Key points of submission

A A Lack of ambition

While the strategy includes a principle of 'being bold', and Council's previous setting of a zero net emission target by 2045 and declaration of a climate emergency is supported, the actual strategy is weak, vague and does not provide any ambition or accountability.

Council have resolved that addressing the threat posed by Climate Change as an emergency, however it fails to set out a roadmap, establish targets and milestones or establish any reporting or monitoring. Instead, there are promises and platitudes. This is a business as usual strategy for an extraordinary threat that needs a new type of response.

The strategy not sufficiently tangible or ambitious to provide any assurance that the strategy will be successful. It needs to be recast significantly.

RECOMMENDATIONS:

- REVISE STRATEGY TO SET BOLD AND AMBITIOUS TARGETS FOR THE COUNCIL AND WIDER PARTNERS, SECTORS AND COMMUNITIES
- ASSERT RESPONSIBILITIES AND ACCOUNTABILITIES FOR EVERYONE WHO NEEDS TO TAKE ACTION IN THE CITY. DO NOT RESILE FROM STATING CLEARLY WHO NEEDS TO DO WHAT.

B Whose strategy is this?

A series of changing references (us/we) and unclear statements leads to confusion on the purpose of this strategy. Is it for the Council as an organisation, or is it for the City of Christchurch? The answer is unclear with many mixed messages. The city is crying out for leadership and it is time for the Council to step up and lead the city – not just the organisation.

The strategy acknowledges that the 'Council cannot do it alone' but then fails to provide any mechanism for the city to work together to address the existential threat that we face. A climate leadership group is not broad or wide enough to enlist the full collaboration of the city's residents again is a BAU response to the threat.

A new approach is required that captures the whole community: It is time a new cross-sector and cross-community forum was established as a citizen's jury to drive and make the key decisions on climate change mitigation and adaptation.

RECOMMENDATIONS:

- WE STRONGLY RECOMMEND THAT THE CITY COUNCIL STEP UP AND PROVIDE CITY WIDE LEADERSHIP INSTEAD OF AN INWARDS LOOKING STRATEGY THAT ADDRESS ONLY WHAT THE COUNCIL AS AN ORGANISATION DOES.
- RE-POSITION THE STRATEGY AS CLEARLY FOR THE WHOLE CITY.
- STATE WHAT YOU EXPECT OF THE OTHER STAKEHOLDERS IN THE CITY.
- SET UP A CITIZENS JURY TO GUIDE AND DECIDE HOW WE SHALL FACE THESE CHALLENGES.

C No outcomes defined:

What are the outcomes (Specific and measurable) which are being sought? Who is accountable for achieving them? Who is going to going them and how often?

The strategy is loose, vague and full of nice platitudes, but no specific outcomes set out to be achieved. The statements that 'we need everyone to do their part' is somewhat patronising and not helpful when the strategy fails to define what everyone's part needs to be , and what outcomes 'we' are all seeking to achieve.

Outcomes should be linked to the national strategy: what contribution is Christchurch to make to the national outcomes set out by the Climate Change Commission. For the avoidance of doubt, this should be hard and specific measures set against a milestone with a single party accountable for meeting this target.

RECOMMENDATION:

- CLEARLY SET OUT THE OUTCOMES THAT ARE SOUGHT BY THE STRATEGY AND HOW THEY WILL CONTRIBUTE TO NATIONAL TARGETS AND OUTCOMES
- IDENTIFY WHO IS RESPONSIBLE FOR ACHIEVING THEM.

D No accountability or roadmap:

For all strategies, but particularly this one when the stakes are so high, we would expect that tight and focussed monitoring against targets on progress as a core part of the strategy. This should be incorporated in an overall roadmap which shows the steps along the way in which the city needs to be achieving in order to face the challenges we have ahead.

It is too late to leave it to the individual programmes to work this out as that is both further time lost, but also there is no cohesion or accountability across the overall strategy.

Regular reporting to the city on progress, risks and obstacles to success are also critical to ensure that we can review and adapt the strategy over time.

RECOMMENDATION:

- INCORPORATE ROBUST AND SMART TARGETS AND MILESTONES TOWARDS THE OUTCOMES
- ESTABLISH A ROBUST MONITORING AND REPORTING PROGRAMME THAT SHOWS WHAT IS HAPPENING.

- DEVELOP A ROADMAP INCORPORATING THE OUTCOMES AND MILESTONES BY WHICH PROGRESS CAN BE MEASURED AND ALL HELD TO ACCOUNT.

E No financial assessment.

We understand the well established practice of shying away from stating the financial implications of a strategy however the idea of deciding a strategy and then working out the financial implications has always led to a failure to deliver or on-going delay and confusion.

What is required to deliver this strategy. How much will it cost and who is going to pay. How does this compare with no action?

The continued tactic of avoiding the financial consequences of a strategy will lead to further underinvestment. How can you know if the strategy is the best approach if you do not understand how to pay for it? How can the Council or any partner commit to the strategy without understanding the implications?

Continuing to avoid this crucial matter is not being bold or providing leadership: quite the opposite.

RECOMMENDATION:

- SET OUT THE ROUGH ORDER COSTS OF IMPLEMENTING THE STRATEGY FOR ALL PARTIES, INCLUDING THE IMPACT ON HOUSEHOLDS, BUSINESSES AND ORGANISATIONS
- BE BOLD ENOUGH TO SET OUT WHAT THE BURDEN WILL BE.

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
77	39648	Zhongheng	Wu	<p>I am a Year 8 student at Intermediate. My name is Zhongheng Wu. We looked at the environment plan in class and I have a few suggestions for it:</p> <p>- Programme 2: I think you should survey students to see what we think. Because in the future when we grow up we will be the ones running Christchurch. We all have a vision for what we can strive for!</p> <p>- Programme 7: "Christchurch has high levels of private car use and low level use of public transport. " There is a reason why large numbers of people never ride on public transport. Because it is not convenient. The only reason people use private cars is because they are more convenient. You can go out without having to wait for the bus. I have used the bus a few times in the past. Every time I had to wait for a long time, and I rarely see a bus half full. There's almost always less than half of the seats used. So my suggestion for this is to consider using smaller buses that come more frequently. We can use big buses on more popular routes. That's another thing you can do -- research how many people actually ride what buses and what are the popular routes.</p> <p>Another solution for the low emission transport system is to encourage people to buy private cars that are fuel efficient, hybrid, or electric. And the council should start a programme to educate drivers on how to save energy and drive safely and efficiently.</p> <p>- Programme 10: There is one problem you did not address in here - Plastic packaging. Plastic over-packaging is everywhere. It is toxic to our environment, and this problem is deteriorating every day. For example, we wrap carrots in plastic even though we all know it's not the best way to keep them fresh. There are alternatives. The easiest is paper bags. We already use them to hold mushrooms, so why not expand their use?</p> <p>To make paper bags carry heavy loads, we can add strong biodegradable fibre to them. Many people are already using reusable bags for shopping. However, that's not enough because the manufacturers of foods and other goods are still using too much plastic in their manufacturing and end products.</p>	Yes

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
137	39735	Brent	Thompson	<p>Climate change is one of the greatest threats facing today's children. Not only will they have to cope with the direct consequences of sea level rise and an increasingly unstable climate, such as loss of land and property and reduced food productivity, they will also be forced to contend with increasing competition for essential resources such as fresh water, and likely conflict and mass migration as parts of the world become uninhabitable.</p> <p>I would like to take this opportunity to express my support for the proposed goals of reducing carbon dioxide emissions by 50% from 2016/2017 baseline by 2030, and achieving net zero by 2045. I regard these targets as bare minimum, and would strongly support more ambitious targets, particularly by 2030, as eliminating the final 50% over 15 years will be much harder than the first 50% over 9 years. Stronger Action between now and 2030 will result in lower cumulative emissions in total, and also avoid placing the burden unfairly on future generations.</p> <p>I broadly support all the programs 1 to 10, but I would like to draw particular attention to the importance of reducing vehicle km driven in program 7, Low-Emissions Transport System. The third focus area; "improving the attractiveness of sustainable transport modes compared to driving" is of the utmost importance. Electric vehicles are essential for decarbonising transport, but without also reversing the growth in vehicle numbers and km driven, it will be impossible to make the necessary reductions by 2030.</p> <p>Anywhere that vehicles remain strictly necessary, those vehicles should be electric. I would like to see the council's own fleet reduced in size and switched to electric wherever possible before 2025. That will set an example for other businesses and the public to follow, as well as ensuring that more electric vehicles hit the second hand market a few years later.</p> <p>In conclusion, the draft Climate Change Strategy is an excellent start, but strengthening ambitions and actions can only make it better.</p>	Yes

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
79	39651	David	Grogan	<p>I would like to see more aggressive measures - 25% methane reduction by 2045, will this target achieve sub 2 degrees warming?</p> <ul style="list-style-type: none">• Install more pedestrian priority (zebra) road crossings. Currently it is faster and safer for people in my office to drive for lunch then it is to walk 500m.• Reduce grass and verge cutting and replace with wildflower planting. Examples in Europe have shown these areas act as a carbon sink, increase insect populations and save tax payers money.	Yes

#	SubID	First name	Last name	Comments - Please be as specific as possible to help us understand your views	I'd like to speak
8	39100	Dhianne	Estinozo	<p>Kia ora! My name's Dhianne and I have lived in Christchurch for 16 years now. I moved here when I was 12 years old and have always felt lucky to be living in this city. I am currently studying at the University of Canterbury and have a keen interest in urban planning and city policies. I think Christchurch has great potential to be a more sustainable city. I like the optimism and inclusiveness of this climate change strategy. I think it's great that we have a target for 2031. However, there is a few things I would like to address in this draft:</p> <p>- It's a bit vague especially when it comes to addressing the biggest contributor to Christchurch's emission footprint which is our public transport. How are you going to address the private car use? Many residents are moving further away from the city centre, including Rangiora and Darfield because they can't afford to buy houses in the city. This will cause more people to use private cars. How will we address this issue?</p> <p>- There is a current stigma about using public transport in Christchurch. How are gonna shift this stigma? How are the employees, especially the executives and managers of the Council going to work at the moment? Are they using public transport or using private cars? Are they setting an example for the residents of Christchurch?</p> <p>- The long term goal of 2031 is great. But is there specific goals of when we need to achieve certain things? Just like building a house, we need to know specific dates/years of which area needs to be done. As realistically, this can't be achieved in one go. There needs to be a series of plan and specific timelines for this.</p> <p>- It's not very clear why we are closing the Riccardo Bus lounge and how this will help with Climate change.</p> <p>-How will you communicate the achievements to the public? I think placing it in the newspaper, radio news or social media for the general public will be a great idea. The information you have isn't very accessible unless someone is really looking for it.</p> <p>-I think it's great idea including the energy efficient homes and buildings but how will you do this? Especially for low socio-economic families.</p> <p>-I also think planting fruit trees is a great idea. Which schools and community locations will these be located? Will it be easily accessible to everyone? What about the low socio economic places (or food deserts) of Christchurch? Will they get first</p>	Yes

				<p>priority?</p> <p>Thank you for taking the time to read out my concerns. I have more questions but I don't want to overwhelm you. Please don't hesitate to contact me if you require any information.</p>	
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Development Contributions Policy Submission

#	SubmissionID	First name	Last name	Do you have any comments about the policy review?	I'd like to speak
13	39515	Peter	Scholes	The differential between residential and business should be increased. There is no cost to business as rates are a taxable expense. As Hornby / Hei Hei / Sockburn have no cycle-way can we please be excepted from the active travel rate. Can the uniform annual gen CH charge be decreased to \$50. Everyone benefits from public transport so everyone should pay for it. The rebates within the four avenues should be stopped as it is not working. A new development charge should apply starting at 10 times the rates for all un-developed land. The things about Moncks Bay and main Road development should be payed for by the people in the area, because the benefits to greater Christchurch is small to nil. Also, by paying for it the community will own it and keep it safe. Main South Road needs some improvements both to the road surface and landscape, between Spring Road and Hornby Mall. Because most of Christchurch use this road and benefit from it all of Christchurch should pay for this improvement. I have a feeling with the "beneficiary should pay principle" that Hornby and Hei Hei's community will have to pay the cost for there new pool and service centre by them self and still contribute to Halswell's and Riccarton's service centre and pool. I thank Councillor and staff for taking the time to read my submission.	Yes

