

Generation Zero

**Submission on Dunedin City Council
Annual Plan 2020/2021**

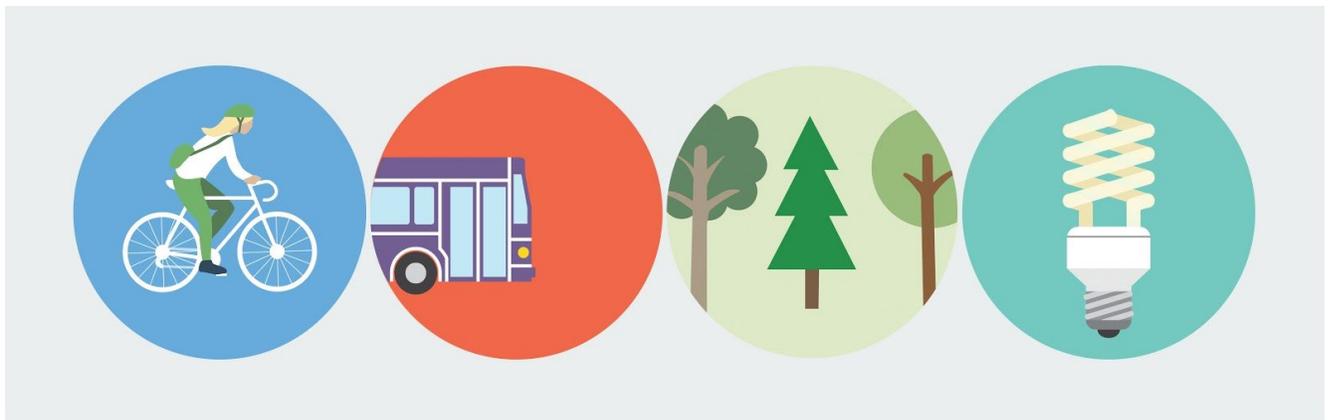
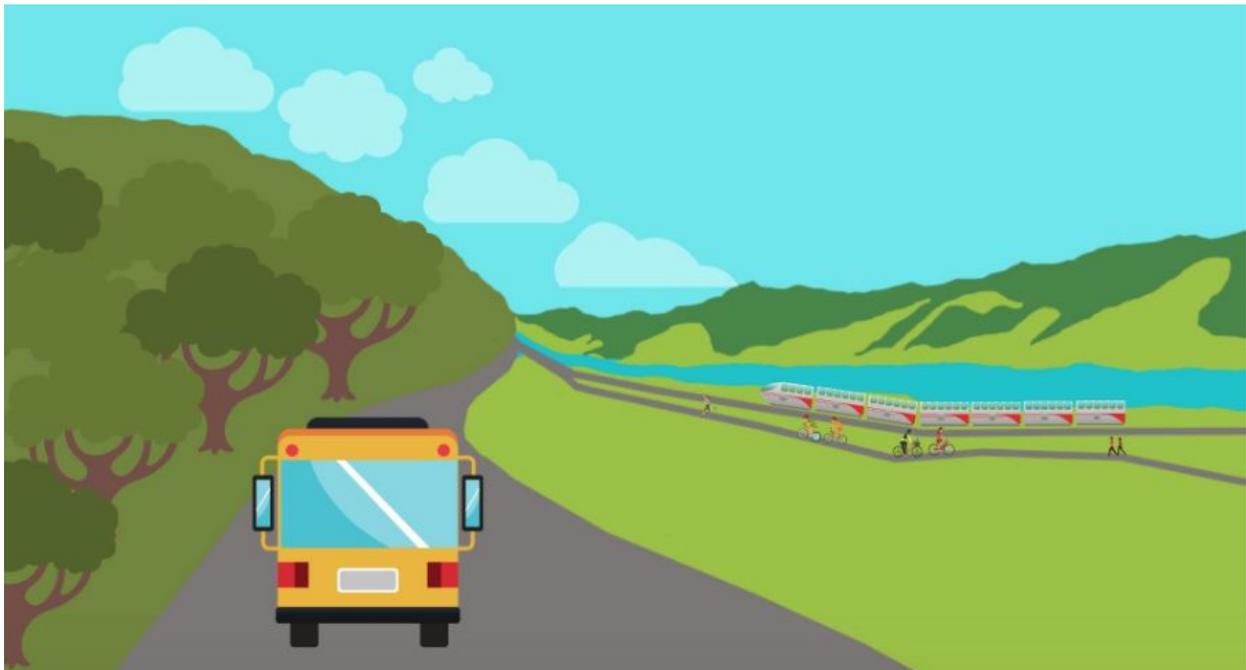


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1 PROPOSED RATING CHANGE

1.1 No rates rise, increase debt instead.

2 JOINING LGFA

2.1 Generation Zero supports the Dunedin City Council joining the LGFA.

3 WASTE MINIMISATION AND MANAGEMENT PLAN (WMMP)

3.1 DCC 2020-2021 annual plan: Waste minimisation and management plan.

In 2017, the Otago Daily Times commented that rates of contamination in Dunedin city's recycling had been among the best in the country, at only 5.7%, but has risen to 11% over the past years (Harwood, 2007). With the amount of contaminants going into the recycling stream costing the city approximately \$80,000 a year (Harwood, 2007), there is plenty of room for improvement within the Dunedin City Councils waste education system. Upon reading the 2020-2021 waste minimisation and management plan, several opportunities were presented, including the improvement to kerbside collection by the potential for a 4-bin system alongside the removal of plastic DCC bags. This circular economy approach will assist the DCC in working towards a net zero city by 2030. The estimated cost of the potential 4-bin system is \$265-\$310 (DCC annual plan), which will be included in residents' rates. Finding a way in which the cost of this system can be reduced to the price of the 3-bin system, or as close to this as possible, will show considerable advantages especially for those low income households which make up approximately 22.1% of the Dunedin population (based on NZ parliament electorate profiles data 2017, for those earning annual income of \$35,001-\$40,000 or less). Further, separating Dunedin's waste increases the quality of material collected, alongside recovering

the food and scraps thrown away by Dunedin households each year with the separate bin for food and garden organics. With Kiwis wasting approximately \$1.8 billion in food annually, the improved kerbside collection system highlights the immense opportunities Dunedin faces. However, refinements of this system include many residents, specifically those based within the city centre, may not have enough space for 4 sets of bins. This may require creative council and household solutions such as stackable crates and segregated bins. Secondly, although Dunedin residents are impressive with issues in contamination in recycling, further improvements can be made within the education system. For instance, a simple solution is placing stickers on each bin with their expected contents. This way, households won't get mixed up with the often-confused recycling expectations. Lastly, with reference to the recent closure of recycling markets in China, government and council support is needed to ensure that the recycling actually ends up somewhere, potentially through efforts to improve the supply-side aspects of recycling materials.

3.2 Additional opportunities for waste minimisation and management that aren't included in the annual plan include schemes such as the container deposit scheme and a soft plastics scheme. Importantly, adopting a container deposit scheme allows households to swap empty cans and bottles for cash, increasing household recycling and reducing litter whilst also creating job opportunities in the process. This scheme will help extract more value from plastic, aluminium and glass containers. However, it is doubtful that consumers will change their lifestyle to queue to return their empty bottles in exchange for what is often a few cents. There often has to be a suitable financial incentive or interest will be lower than expected. Specifically, this system was adopted in Victoria, Australia and is expected to half drink container litter by 2030. It is important to note that while this may be applicable in Victoria, due to the size of Dunedin it may not show the same benefits. It is therefore crucial to first understand if the benefits of this scheme outweigh the costs.

3.3 A scheme which may present greater benefits in Dunedin is a soft plastic recycling scheme, where residents can drop off soft plastics at selected stores such as supermarkets. By adopting this programme at supermarkets removes the inconvenience for households that is adopted in other schemes as it's an essential area where they typically go to at least once a

week. Being implemented in Auckland, this scheme shows great benefits at a local scale. Dunedin previously adopted this scheme, although soon cancelled this as there wasn't high demand for onshore processing of post-consumer soft plastics that meet the supply. In 2018, two onshore processing plants (Future Post and Second Life Plastics) came into effect. Moreover, a creation of another onshore processing plant will help minimise the lack of demand and cope with the growing supply from such projects. This will also create financial benefits for material recovery and local governments, reduce litter and increase job opportunities with the new infrastructure.

- 3.4 The annual plan also touched the closure of the Green Island landfill in 2023 followed by the opening of a new landfill at Smooth Hill, which was originally identified as a possible landfill site in the early 1990's. A common concern of the Smooth Hill landfill is its distance from town. Transfer stations will therefore need to be required from the city for resident's rubbish in order for this to be effective. Further, being a reasonable distance from the ocean, the landfill would attract minimal attention from birds such as seagulls, decreasing harm to wildlife and risk of contamination to waterways.
- 3.5 Dunedin council currently has a three part system - DCC rubbish bags, blue glass bin, yellow recycling in. Four-bin system seems like the most appealing idea - also the most environmentally-friendly. Doing two bins out every other week - e.g. red and yellow out one week, blue and green out another week - could be an option, though the DCC website does propose putting the green bin out weekly. Having a green bin for food and garden waste is a great way to encourage and educate about composting and its benefits.
- 3.6 Generation Zero supports reducing waste in Dunedin, and therefore the Greenhouse Gas Emissions from landfills. Generation Zero supports the introduction of a soft plastics and container deposit scheme in Dunedin

4 CHEAPER BUS FARES

4.1 Generation Zero supports the use of rates and parking charges to reduce bus fares.

Encouraging modal shift to public transport will result in many positive benefits such as a reduction in transport poverty and mitigation of Dunedin's greenhouse gas emissions.

4.2 It is important to ensure that all people in Dunedin are able to access affordable public transport to mitigate "the severe social consequences of transport poverty, not only for the people who are directly affected by it, but also for society as a whole".¹ Many studies have shown that access to "public transport can reduce absolute poverty mainly by increasing economic efficiency. Decreasing costs and fares and promoting opportunities for the marginalized people of the society" would have a positive impact on many households in Dunedin.² Reducing bus fares also reduces transport-related social exclusion:

*"the process by which people are prevented from participating in the economic, political and social life of the community because of reduced accessibility to opportunities, services and social networks, due in whole or in part to insufficient mobility in a society and an environment built around the assumption of high mobility."*³

4.3 Recycling funds raised through parking revenue will also encourage modal shift -- a key best

¹ Lucas et al. (2016) 'Transport poverty and its adverse social consequences' *Transport*, Volume 169 Issue TR6, Institute of Civil Engineers Publishing. Accessed 4 April: https://www.researchgate.net/publication/292975806_Transport_poverty_and_its_adverse_social_consequences p. 353-354

² A. Barra & C. D. Nassi, 'Considering poverty impact of fare policy studies for urban public transport' Transport Engineering Post-Graduation Program. Federal University of Rio de Janeiro, Brazil. Accessed 2 April At: <http://www.codatu.org/wp-content/uploads/Considering-poverty-impact-of-fare-policy-studies-for-urban-public-transport-A.-BARRA-C.-NASSI.pdf> Also see: Gannon, C. & Liu, Z. 1997. Poverty and Transport. TWU-23 Discussion Paper. World Bank: Washington, USA.

³ Kenyon, S., Lyons, G. and Rafferty, J. (2006) 'Transport and Social Exclusion: Investigating the Possibility of Inclusion through Virtual Mobility', *Journal of Transport Geography*, 10, p. 210

practice objective in urban and transport planning.⁴ This method of increasing public transport ridership has proven effective in Queenstown where patronage increased 64% in 2017/18 and 182% in 2018/2019, compared to Dunedin's 8% increase.⁵ Mode shift such as that experienced in Queenstown⁶ has a number of benefits including improved public health and safety, economic.

4.4 Generation Zero supports the DCC and ORC collaborating to reduce the cost of public transportation through the introduction of flat fares and fare capping.

4.5 Generation Zero supports the DCC lobbying the NZTA to change the current farebox recovery ratio. The Farebox Recovery Ratio (FRR) is not designed for growth. If a council wants to grow patronage and their public transport network, this increases costs, 50% of which must be covered by fares. This is counterproductive as increased fares make Public Transport less accessible despite any improvements to the network. The Farebox Recovery Ratio block Dunedin from meeting its public transport potential.

⁴ Global Street Design Guide, 6.5.2 Transit Networks, p. 108, accessed from: <https://globaldesigningcities.org/publication/global-street-design-guide/>

⁵ Otago Regional Council (09 August 2019) '*Bus passenger numbers at an all-time high in Dunedin and Queenstown*', Media Release. Accessed 4 April: <https://www.orc.govt.nz/news-and-events/news-and-media-releases/2019/august/bus-passenger-numbers-at-an-all-time-high-in-dunedin-and-queenstown>

⁶ Queenstown Lakes District Council, (2015) Ten Year Plan 2015-2025 Accessed 4 April: <https://www.qldc.govt.nz/your-council/council-documents/ten-year-plan-ltp> p. 50

5 COMMUNITY HOUSING

5.1 Community Housing

Dunedin's Annual Plan Consultation Document notes that “the availability of affordable and high-quality housing is one of Dunedin’s most pressing problems.” While numerous and varied factors contribute to this nation-wide problem, the recent *Housing Capacity Assessment 2019* points to two key issues facing Dunedin specifically: population growth and housing unaffordability.

The last three years has seen Dunedin’s population grow by an average of 1.3 percent per year, which is the fastest growth rate the city has seen in over 20 years. This is largely due to increased migration from the North Island, which has outpaced local residential construction, with housing supply unable to meet demand.⁷ As a result, we have seen significant house price growth, with an annual average increase of 13.6 percent.⁸ Rising house prices has resulted in many low-income and vulnerable New Zealanders struggling to find adequate housing. Only five percent of new builds were affordable for low income families in 2014, compared to 30 percent that were in the 1960’s and 1970’s.⁹ New Zealand’s social and housing sector is small compared to other jurisdictions such as Australia or the UK, and has so far struggled to meet low-income housing needs.¹⁰

Demand for community housing in Dunedin continues to outpace supply, with the number of those waiting for placement reaching 244 in 2019.¹¹ This is expected to continue to rise, due to

⁷ Nathan Stocker, “Housing Capacity Assessment: Dunedin City, January 2019,” *Dunedin City Council*

⁸ Ibid.

⁹ Kay Saville-Smith, *Revitalising the Production of Affordable Housing for Productive, Engages and Health Lives, Building Better Homes, Towns and Cities*, November 2019.

¹⁰ Alice Mills et al., “Meeting the housing needs of vulnerable populations in New Zealand,” *Transforming Cities: Thematic Research Initiative, The University of Auckland* (2015).

¹¹ Daisy Hudston, “Dunedin houses even more unaffordable,” *Otago Daily Times* (21 January 2020)

increasing house prices and an ageing population. A 2019 report released by Economic and Social Research Aotearoa, reveals that these numbers still fail to account for the full extent of the housing crisis:

The need for public housing extends well beyond the waitlist to those who are in unaffordable and substandard private rentals, the working poor who are not eligible, and those who are otherwise eligible but have been deterred by the complicated nature of the application process. If we take the definition of homelessness to include those living on the streets, in cars, on couches, in garages, and in overcrowded houses the homeless population extends well beyond this waitlist.¹²

5.2 Vulnerable groups

The United Nation's End of Mission Statement on 'the right to adequate housing in New Zealand', reveals that the lack of affordable households for low income New Zealanders is being experienced most acutely by particular groups including Māori, Pacific Peoples, single-parents (particularly single mothers), youth and vulnerable groups.¹³ Vulnerable groups include, amongst others, those with mental health problems, addictions or physical impairments, rough sleepers, the refugee population, and those leaving institutional accommodation such as prison. It is important to note that vulnerability is often linked to economic and social marginalization, and research has shown it disproportionately affects Māori. The End of Mission Statement concludes, "Māori face a much higher risk of living in inadequate housing or homelessness than many others and continue to experience the long-term impact or forced displacement leading to social and community disintegration."¹⁴

¹² Economic and Social Research Aotearoa (2019) 'Budget 2019 Report'

¹³ Leilani Farha, "End of Mission Statement: Visit of the Special Rapporteur on the right to adequate housing to New Zealand," *United Nations Human Rights Special Procedures* (19 February 2020)

¹⁴ Ibid.

These issues reveal a real need for more housing in New Zealand, particularly for low-income families. Generation Zero is pleased by Dunedin City Council's proposition to build more houses through community housing schemes, and the significant opportunities and co-benefits such an initiative offers. Case studies in Australia, Canada and the UK show that growing the community housing sector is a successful way of increasing the supply of low-cost housing and can complement government funding with other forms of investment, allowing more homes to be built than could be done with government funding alone.¹⁵

5.3 Addressing housing needs for Māori

Māori suffer some of the worst housing outcomes in New Zealand; Māori are four times more likely to live in overcrowded housing conditions, and homeownership rates were 20 percent lower for Māori than the general population in 2018.¹⁶ Further, the provision of social housing in New Zealand has tended to be designed and instigated from a monocultural perspective, with little attention paid to cultural appropriateness

A community housing project in Dunedin could include a Papakāinga model, such as the Te Puna Wai Papakāinga housing project in Wainuiomata. This project is designed to help Māori into home ownership, in a mixed-model development that will also contain rentals, houses available under a shared equity schemes, and ones that qualify for the Government's First Home Grant.¹⁷

Another example is Waimahia inlet - a partnership between the Crown, the Tāmaki collective, and community housing providers - which provides 295 housing units near Manukau Harbour.

¹⁵ Alice Mills et al., "Meeting the housing needs of vulnerable populations in New Zealand,"

¹⁶ Leilani Farha, "End of Mission Statement: Visit of the Special Rapporteur on the right to adequate housing to New Zealand."

¹⁷ Matthew Tso, "Papakāinga development to help Māori into home ownership," *Stuff News* (10 January 2020)

The project identified from the outset that they wanted to provide housing aimed at Māori and Pasifika, and champion developments that express indigenous cultural identity and narratives through urban design. The latter has the dual purpose of re-asserting kā (for mana whenua) and heightening sense of place relationships (for mana whenua and mataawaka alike).¹⁸ Research has found that more culturally attuned spatial design processes deliver better social outcomes at a neighbourhood scale.

Generation Zero advocates for working with local iwi and hapū to address housing concerns specific to Māori (both mana whenua and mataawaka communities) . Research into housing projects that utilise Te Aranga principles (Māori design values) reveals they may offer more ecological and sustainable alternatives to traditional housing models, with shared spaces addressing social problems including those arising from increasing isolation.

5.4 Poverty

The cost of housing has emerged as a significant factor contributing to the number of people living in poverty in New Zealand. Specifically in relation to child poverty, “one in seven children – or 168,500 kids – live in households with less than 50 per cent of the overall median household income” before households are factored in... and that number jumps to one in five children (or 235,400) once housing costs are taken into consideration.”¹⁹ In other words, almost 67,000 more children are in poverty as a direct result of housing costs.

By providing community housing for low-income groups, we will therefore be able to directly reduce poverty in Dunedin, and the burden of poverty on individuals and government. It will also reduce the enduring effects housing instability can have on families, such as access to basic necessities, and continued access to school and work:

¹⁸ Jade Kake and Jacqueline Paul, “Evaluating the application of Māori design principles to urban neighbourhood development projects to develop a kaupapa Māori design framework and assessment tools,” *National Science Challenges*, 2018.

¹⁹ Statistics NZ, “Child Poverty Statistics: Year ended June 2019,” (Released 25 February 2020)

“We lost our support network when we moved... When we move house so many times we have to constantly adapt to new circumstances... We have moved three times in 12 months and that has been really unsettling for our kids.”²⁰

5.5 Health

Poor housing is causing preventable injury and illness that is estimated to cost New Zealand more than \$145 million annually in accident compensation claims and hospital admissions according to research by He Kainga Oranga.²¹ These costs do not include the additional financial costs to individuals from GP visits and prescriptions, nor the associated costs to society more broadly.

Nationwide, 32 percent of homes report problems with damp or mould, with the bulk of these being rental properties and lower income households. With 20 percent of Dunedin housing stock having been built before 1920, a Presbyterian support survey identifies only 23 percent of low-income housing as passing a ‘reasonable rental standard’.²² The report also identified mental health consumers, low income families and the elderly as groups that frequently have no choice but to rent poor quality housing, which due to Dunedin’s hilly topography, often face issues of access in and around the home, access to transport routes, and nearby services and amenities.

Insulated, safe and warm homes provided by community housing schemes will ensure positive health incomes for families, and reduce health costs caused by inadequate housing for individuals and government.

²⁰ Child Poverty Action Group, “FAQ healthy and affordable housing,” (September 2015)

²¹ “Poor housing costs NZ \$145m a year: new study,” *Health Central: Pokapū hauora* (March 2019)

²² Dennis M Povey et al, “Out in the Cold, A Survey of Low Income Private Rental Housing in Dunedin 2013,” *Presbyterian Support Otago* (2014)

5.6 Sustainability

Each year in New Zealand, homes account for almost 30% of New Zealand's electricity consumption and are major contributors to greenhouse gas emissions. It is therefore an imperative to find sustainable housing solutions that address our growing carbon footprint and keep household levels of carbon emissions at a sustainable level.

In a recent report, the Intergovernmental Panel on Climate Change (IPCC) revealed that the building sector has the highest potential to reduce energy use at the lowest cost - citing up to 50 percent energy reduction in new buildings without significantly increasing investment cost.²³ Solutions include improved insulation, well designed fabrics, design features (such as appropriate orientation of housing units for solar access), low energy appliances, cooling/heating systems, water-saving devices, and incentives for building users to save water and energy.

An example of this can be seen in the Glanrhyd housing project in Wales, in which housing units are built from locally harvested material (timber sourced from a nearby valley), high levels of insulation (from recycled newspaper) and energy is generated on site (by solar panels).²⁴ In undertaking the project, various knock-on benefits have been reported, such as the ease of replacing local materials, the creation of green jobs, minimising the depletion of local natural resources, and lower living costs for inhabitants (thereby, directly reducing poverty levels).

Integrating green building in social housing can bring important environmental, social and economic paybacks to low-income inhabitants and society as a whole. Sustainability in social

²³ "Green Building: Interventions for Social Housing," *UN Habitat*
https://www.unclearn.org/sites/default/files/inventory/green_building_interventions_for_social_housing_22015.pdf

²⁴ Steven Morris, "Inside Glanrhyd," *The Guardian*,
<https://www.theguardian.com/environment/2017/jan/06/inside-glanrhyd-the-first-solar-eco-hamlet-in-wales>
(accessed 19 April 2020).

housing is also advantageous for stakeholders as money is saved in the life cycle of the housing units. By constructing healthy and sustainable social housing, close to amenities or public transport routes (thereby reducing personal car use), Dunedin can make a vital contribution to reducing its carbon emissions.²⁵

This new project also offers the opportunity for Dunedin to be a leader in providing residential solutions that acknowledge New Zealand's unique environmental landscape, and utilises sustainable building materials.

5.7 Urban density

Urban sprawl is a driver of several major challenges facing cities, including higher emissions from road transport (as there are larger distances between homes, jobs and other daily destinations) and a loss of open space and environmental amenities, with greater human intervention in environmental processes more likely to affect water quality and increase flood risk. In a report titled 'Rethinking Urban Sprawl' the OECD research group also noted that low-density urban development also increases the cost of providing key public services, and reduces housing affordability as its main drivers limit the supply of housing in key areas. Water supply, sanitation, electricity, public transport, waste management, policing and are all services that are much more expensive to provide in fragmented areas of low-density.²⁶

Generation Zero supports medium density housing as a way of addressing priorities around key issues such as liveability and sustainability in housing, as well as providing more affordable options to a wider demographic. Medium density housing is affordable to buy and

²⁵ Philippa Howden-Chapman and Ralph Chapman, "Health co-benefits from housing-related policies," *Environmental Sustainability* (October 2012)

²⁶ OECD, *Rethinking Urban Sprawl: Moving Towards Sustainable Cities*, OECD Publishing, Paris (2018).

live in, meets the requirements of a diverse community with mixed housing options, keeps New Zealand arable land for arable use and fulfils key sustainability principles.²⁷

“That’s one of the problems New Zealand has been facing; the growth in cities and moving more social housing onto the fringe of the city where there’s nothing but housing,” she says. “It doesn’t matter what mix of people you put into those locations, the reality is that low-income households rely on public services, as well as local transport, shops, community facilities and health services. Housing in and of itself isn’t enough, people need to participate as well.”²⁸

6 USING RAIL

6.1 Generation Zero is pleased that the DCC is currently considering rail options “to take pressure off our roads” and would like to remind of some of the benefits of rail. We recognise that in cases of freight, between rail and road, there are often other voices involved in the decision, such as the businesses involved, and the government. It will be an essential change in the future - the sooner the better - but we understand that there is no mandate to enforce this kind of change.

6.2 Where commuter transport is concerned, however, there is a great opportunity, especially if the funds become available, to reshape our habits and return to a more economically and environmentally sustainable option. The difference in environmental impact between road and rail is well examined, despite its modular and complex nature, and generally understood or assumed, with road users accounting for 71% of transport CO2 emissions worldwide,

²⁷ [Community Housing](http://communityhousing.org.nz/resources/article/-medium-density-housing-summit-to-respond-to-new-zealands-ranking-as-least-affordable-for-housing-in-oecd), “Medium Density Housing Summit to Respond to New Zealand’s ranking as least affordable for housing in OECD,” accessed: <http://communityhousing.org.nz/resources/article/-medium-density-housing-summit-to-respond-to-new-zealands-ranking-as-least-affordable-for-housing-in-oecd> (April 2018).

²⁸ Mary Bernadette Pinnell, “Living in a Parallel Universe: Using a pragmatic realist evaluation framework to evaluate the socio-spatial impacts of public housing renewal programmes,” *Faculty of Built Environment, University of New South Wales* (2014)

compared to the minute 1.8% of railway companies.²⁹ Considering well-to-wheel energy cost comparisons, a rail commuter transport system is sure to both reduce pollution, and to mitigate emissions.

6.3 Beyond this, there is the potential to improve connections between Dunedin's inner and outer suburbs, and to improve connections between Dunedin and the surrounding regions. Other peripheral, nonetheless significant benefits include the social benefits of a better public transport system, including the access provided to employment opportunities and to educational, health and recreational services. Public transport is also a means for social cohesion through the bringing together of diverse demographics in society.³⁰ There is the benefit of increased road safety, from decreasing the total number of cars on roads in our city, as well as the consequential reduction in road congestion, and the reduced stress put on Dunedin's parking provisions. If implemented properly, a commuter rail system should also go some way to reduce transport poverty, by being a more affordable option than the costs incurred being a car commuter.

6.4 In the future, benefits for reducing the amount of freight on the road would include public health benefits, especially for truck drivers, reductions in metal runoff and pollution, reduced cost of road maintenance, and the potential for a scheme to upskill freight employees. Gen Zero believes that this should be prioritised, but again recognises that there isn't currently the mandate to expedite the transition. In this case, as outlined above, DCC should consider the immense benefits that rail provides as infrastructure for day-to-day use, for commuters, and for tourism.

²⁹ International Energy Agency Railway Handbook 2012, *Energy Consumption and CO2 Emissions*

³⁰ Tourism and Transport Forum Australia, *The Benefits of Public Transport*, 2010

7 RATING DIFFERENTIALS

- 7.1 We support the shift of the targeted rate from \$240.50 to \$100.00 [option 1]. If lower income households face an increased financial burden due to an increase in property value - then we support the lowering of the targeted rate and offsetting the difference through the general rate.

8 CARBON ZERO 2030

Generation Zero would like to express extreme disappointment that the Dunedin City Council has not yet created a climate plan for Dunedin. Despite numerous discussions of targets and strategies, no solid plan for climate action has been produced. Time is running out. Carbon emissions need to peak in 2020.³¹ Generation Zero encourages council to have a climate plan completed and out for consultation before the end of this year. We cannot wait another year to develop a zero carbon pathway.

Generation Zero have described below a number of opportunities to include in the Dunedin climate plan. We would encourage you to consider these ideas and seek further information around the concrete steps the council can take this year to build a more climate friendly future.

³¹ International Panel on Climate change (2018), Special Report on Global Warming of 1.5 °C. Accessed on 9th April 2020: <https://www.ipcc.ch/sr15/>

Generation Zero would like you to **make renewable energy such as solar panels and wind turbines a priority** in order to ensure that Dunedin is carbon free by 2030. This has already been introduced in the likes of the Blueskin Energy Network but should be expanded on and fully adopted by the DCC. The introduction of solar panels into every newly built home as what is proposed by Generation Zero would dramatically decrease the carbon emissions produced by the city. The introduction of solar power into Dunedin homes allows the needed transition away from harmful fossil fuels and pollutants that are being used to power our cities homes. They will also decrease power costs for residents, which is vital in particular to those in community housing. Along with solar panels, the building of wind farms will increase Dunedin's energy budget and positively support the economy.³² Wind farms as detailed by the New Zealand Wind Energy Association proved large economic benefits for both businesses and individuals with creation of jobs and flow on business development.³³ Wind farms allow for Dunedin to do its part in order to reduce carbon emissions while still majorly benefiting the residents of the city.

Generation Zero encourages the Dunedin City Council to **create initiatives and projects that would facilitate the implementation of renewable energy in Dunedin** as part of Policy 5.2.1.1 of the 2GP.³⁴ We would also encourage Council to consider whether the policies regarding renewable energy in 2GP should be amended to ensure that renewable energy projects prevail over amenity concerns and are consented with minor amendments to mitigate the impact on amenity values.

Generation Zero would like you to include **energy efficiency of housing** in your climate plan. Insulating housing reduces energy consumption. For starters it means that heat is not lost via poor insulation, if a house has poor insulation it is likely the household will be consuming more energy thus, also having a higher energy bill. In doing so, it also reduces a household's carbon footprint, in turn reducing carbon emissions throughout the country. Generation Zero would like the Council to

³² Richardson., L (2019) The pros and cons of solar energy: what are the advantages and disadvantages of going solar? EnergySage. Accessed April 9 <https://news.energysage.com/advantages-and-disadvantages-of-solar-energy/>

³³ New Zealand Wind Energy Association (2013) Benefits of Wind Farms. Accessed April 9 <http://www.windenergy.org.nz/store/doc/BenefitsofWindFarms.pdf>

³⁴ Dunedin City Council, Second Generation Plan, p. 40 Accessed 9th April from: https://www.dunedin.govt.nz/_data/assets/pdf_file/0003/751278/Full-Plan.pdf

consider making every Dunedin home up to a standard that is just and fair. By insulating every house, the council can cut down Dunedin carbon emissions being released and work towards a carbon zero 2030.

Generation Zero encourages the DCC to work with the Otago Regional Council to **improve all urban waterways but continue an intense focus on the Water of Leith**. As found by the Otago Regional Council, the quality of the urban waterways is relatively poor, especially the Water of Leith which has very high E. Coli levels and is therefore unswimmable. There has also been a national increase in the number of pollutants that have been entering urban waterways such as personal care products and pharmaceuticals along with plastic pollution. Pollutants such as these and many others such as heavy metals from cars enter the waterways through our stormwater systems and from running off pavements. These pollutants are then transported straight into the ocean and impact possible ecosystems which negatively impacts the environment. The DCC should continue to improve the water quality and general aesthetics of the urban waterways for the better of the environment and enjoyment of Dunedin residents.

Generation Zero would like to **make a push to reduce heating from wood fires**. Using wood burners for a heat source during the colder months is not the most climate neutral way to warm your home. Wood fires release large amounts of CO₂ into the air and create the black soot which are contributors to the current climate rise. One of the first steps to reducing the amount of heat produced using wood fires is to reduce the need for a portion of the heat currently being consumed. This can be achieved by properly insulating properties which decreases the need for heat production in the first instance. The second steps are to move to more sustainable heating options such as geothermal heating, passive solar heating, heat pumps or solar shades. Other central Otago towns have shown great improvement through the Clean heat Clean air subsidy movement. This movement reduced emissions and increased education in these areas about how their heat sources were creating emissions as well as help and education on how they are able to help improve emissions and work towards a carbon zero 2030.

Generation Zero encourages the **minimisation and management of waste solutions throughout the Dunedin region**. Advancing towards a carbon zero future means minimising waste generation by reducing the unnecessary use of materials (particularly those that cannot be recycled), influencing

product design for improved recyclability and using treatment alternatives such as the schemes mentioned under the waste management and minimisation section, in order to reduce the need for disposal. Generation Zero believes there should be a prioritisation framework for Dunedin to maximise their reduction in greenhouse gas emissions from waste, recover materials from waste streams, alongside redirecting those materials to create new goods (highlighted in the soft plastics scheme). Although Generation Zero are ultimately impressed with the 2020-2021 waste minimisation and management plan, further implications are needed to ensure the transition towards a carbon zero 2030 is met.

Generation Zero encourages Council to **develop an adaptation strategy within the next two years**. The Council should work with the Climate Change Commission and the Ministry for the Environment to develop this plan.

Generation Zero believes that this plan should include identifying and notifying properties which are likely to be affected by sea level rise and increased flooding. A strategy for managed retreat from identified properties including planned resettlement, support mechanisms for those whose insurance has retreated, and clear guidelines around the point at which council services will be retreated from the area. The Council should also include policies to ensure community resilience and support is maintained. The plan should also incorporate modelling to ensure Dunedin's capital projects and key infrastructure (such as 3 waters) is adequately future proofed.

An adaptation plan should also investigate the impact climate change will have on our agriculture and horticulture sectors and create strategies for a just transition away from at risk farmers.

Generation Zero supports the **transition towards a more circular economy** as it delivers multiple benefits including the reduction of pressure of the environment, improving the security of the supply of raw materials, creating new jobs and boosting local economy growth. With the increase in population in larger cities (such as Dunedin) the demand for raw materials is ever-growing. However, as expected the supply of crucial raw materials is limited. Measures such as waste prevention, eco-design and re-use could save companies billions, while also reducing total annual greenhouse gas emissions. Through initiatives such as the waste minimisation and management plan alongside using sustainable practices through building schemes, the Dunedin economy seeks to keep all its resources

within a closed loop system ensuring minimal to no waste. The combination of a sharing economy, allowing existing resources to be maximised as opposed to letting them lay dormant, alongside a circular economy, ensuring the preservation of raw materials, not only complement each other but also aid in the processes of Dunedin transitioning to a carbon zero future.

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