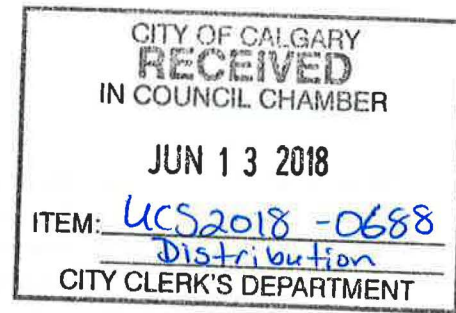




Sustainable  
Calgary



**Submission to the Standing Policy Committee  
Utilities and Corporate Services**

**Climate Resilience Strategy and Action Plans**

**June 13, 2018**

**Submitted by Dr. Noel Keough on behalf of Sustainable Calgary Society**

First of all I would like to congratulate all of the city staff that brought this report together. It has been a pleasure to be a part of the consultation process over the past year. I can say that I support all of the actions proposed in the Climate Mitigation Plan.

What I would like to bring to the attention of the committee though, are areas of the report that I suggest need attention and strengthening. If there is one word I would use to describe the report, it would be *timid*. Though I support all of the proposed actions I do not think these actions are enough to confront the threat that climate change poses to the long-term health, vibrancy, prosperity - in other words the sustainability - of our city and the regional and global ecosystems that support us.

I would like to raise seven critical issues.

1. **Governance:** there were a wide range of citizens engaged in the process of creating this report – City of Calgary staff, business leaders, academics and representatives of social, environmental and economic NGOs. But on page 6 of the **Strategy** under the Governance section, the report states that the city will *‘work with Industry to establish a Climate Resilience group that will aim to meet the above-mentioned objectives’*. Of course the city has to work with industry. My objection is that in this section of the report and I would suggest, implied in the remainder of the report, there is little space for civil society or academia to contribute.

**Recommendation: The report should explicitly recognize the unique contributions that civil society organization and academic researchers make to the success of tackling climate change and explicitly invite them around the governance table.**

2. **Consumption-based emissions.** This is an issue I raised during the stakeholder consultations this past year. On page 7, the **Mitigation Action Plan** states that *‘consumption emissions can as much as double the total community-wide GHG*

*inventory*'. This refers mostly to the energy required to produce all of the things we consume on a daily basis to live as we do. Calgary is arguably the most affluent city on the planet. Our income far outstrips that of any other Canadian city and even of very wealthy cities like Oslo, Norway. That affluence allows us to purchase consumer goods, from large houses and vehicles, to exotic fruit from the other side of the planet.

Producing and transporting all of this stuff, has an enormous carbon footprint, and as the report notes, an accounting of this carbon would likely double Calgary's per capita GHGs. Why is this important? First of all, omitting these emissions from the analysis and the **Mitigation Action Plan** allows the report to claim that we can meet our 2050 emissions targets with the actions proposed in this report.

In fact, implementing all of these actions will only get us half way to that target if we include the other 50% of emissions the report suggests are missing in the analysis. Second, that omission allows us to deceive ourselves that relatively conventional technological fixes, are enough, that we can carry on more or less with business as usual with no adjustments to behaviour or material consumption.

Including the other 50% of emissions would force us to acknowledge the reality that behaviour change, reduced material consumption and perhaps no growth economic scenarios need to be on the table. Our position on this point is supported by a recent peer reviewed article in the journal Sustainability: Science, Policy, Practice (Alfredsson et al, 2018) entitled '*Why achieving the Paris Agreement requires reduced overall consumption and production*'

**Recommendation: The analysis supporting the report should incorporate the consumption emissions into its analysis and revise the action plan accordingly.**

3. I want to call attention to the **Transportation** section of the report in particular. In my opinion, this report is written with a clear bias to the automobile.

Figure 4, page 9 of the **Mitigation Action Plan** shows that transportation emissions as of 2016 were approximately 6 MtCO<sub>2</sub>e. If we extrapolate that over 30 years we have a total of 180 MtCO<sub>2</sub>e to 2050. Page 26 of the report projects a savings by substitution of fuel types and conversion to electric vehicles of 60 Mt CO<sub>2</sub>e - a 33% saving.

Page 28 of the report claims a potential savings from low and zero carbon transportation modes of only 2.3 MtCO<sub>2</sub>e (2.1 MtCO<sub>2</sub>e from transit and a mere 0.2 MtCO<sub>2</sub>e from more walking and biking) If that analysis holds true we are essentially saying that more transit, more walking, more biking is inconsequential to GHG reductions.

But lets take a closer look. Imagine, if we were able to substitute walking and biking for 33% of the vehicle kilometres travelled in the next 30 years. With no substitution of electric for combustion engines at all, that would be a reduction of 33% in emissions. Thirty-three percent in 30 years is not a heroic reduction. It would mean bringing the vehicle miles travelled in Calgary down to the levels already the norm across Scandinavia.

We know, for example, Copenhagen already has more bikes entering the city centre than cars.

**Recommendation: the report should revisit the assumptions for uptake of active transportation modes and revise the action plan accordingly.**

4. This brings us to the next point. This report has not factored in **externalized costs**. What does that mean? We know that there are significant health benefits (and health cost savings) from more active lifestyles – walking, biking, running to catch the train. Health care is the biggest single component of the average Calgarians gross tax bill (municipal, provincial and federal taxes)

There is plenty of evidence of the health benefits of active modes of transportation. Just this week colleagues at the University of Calgary published a peer reviewed (peer review is the gold standard in research) article in The International Journal of Environmental Research and Public Health. The authors found that ‘Interventions that promote healthy weight through the design of neighborhoods that support and enhance the effect of physical activity and diet-related interventions could have a significant population health impact.’ (McCormack, et al, 2018a).

Another 2017 study of 250,000 people from the same journal found that ‘Cycle commuting was associated with a lower risk of Cardiovascular disease, cancer, and all cause mortality. Walking commuting was associated with a lower risk of cardiovascular disease’ It found that cycling to work can reduce your risk of heart attack and cancer by almost 50%!! (Celis-Morales, et al 2017)

A study of 400,000 people reported in the International Journal of Hygiene and Environmental Health found that ‘neighbourhood walkability within one-kilometer street catchment was beneficially associated with... lower blood pressure outcomes... as well as reduced hypertension risk’ (Sarkar, et al, 2018)

The analysis supporting this **Mitigation Action Plan** values all those health care benefits at 0. For this reason alone, I would suggest the analysis is systematically biased toward the automobile. Accounting for these benefits would significantly lower the cost (increase the net return) per tonne of emissions savings of transit, walking and biking in relation to fuel substitution and Electric conversion of automobiles.

**Recommendation: the report should use the best existing methods (The UN HEAT model for example) to estimate cost savings and injury and mortality avoidance (something more than zero) and use this information to revise the action plan accordingly.**

5. On page 31, the **Mitigation Action Plan** proposes that **land use planning** improvements beyond the MDP will result in a reduction of 7 MtCO<sub>2</sub>e of GHGs. I would point out to the committee that in conversations with the stakeholder group it was acknowledged by City of Calgary staff that the analysis had not been able to capture

potential synergies associated with more compact land use. More compact land use saves money in building energy usage, and also reduces car dependence resulting in more walking and biking which promotes more compact design, reducing car dependence etc. etc. This virtuous circle of benefits is under-estimated in this Mitigation Action Plan. And as a result, the potential savings due to more compact land use is undervalued. This represents a bias against more compact land use as a priority action item and steers the action agenda away from consideration of more aggressive actions to reduce sprawl than is currently contemplated in the MDP.

We know from the literature the importance of compact land use in promoting the active modes of travel, that in the studies above, have been shown to be highly beneficial to health outcomes.

Just this past month I was one of several University of Calgary researchers to submit an article for peer review to the journal Health Promotion and Chronic Prevention in Canada. The paper reviewed hundreds of studies across Canada over the past 20 years and found that 'Within the Canadian context there is preliminary evidence suggesting that the built environment is associated with a range of health and injury in adults' (McCormack et al, 2018)

Another 2018 study by University of Calgary researchers published in the International Journal of Environmental Research and Public Health states that 'Our review findings reinforce the need for synergy between transportation planning, urban design, landscape architecture, road engineering, parks and recreation, bylaw enforcement, and public health to be involved in creating neighbourhood environments that support physical activity' (Salvo et al, 2018)

Another study in the same journal reporting on a study of the impacts of bicycle network construction in New Zealand found that 'Annual benefits for health in the intervention cities were estimated at 34.4 disability-adjusted life years (DALYs) and two lives saved due to reductions in cardiac disease, diabetes, cancer, and respiratory disease.' Reductions in transport-related carbon emissions were found to have an 11:1 cost benefit. For every dollar invested, eleven dollars were saved. ((Chapman et al, 2018)

As another example of the related cost savings, Sustainable Calgary's recent study of Affordable Living in Calgary demonstrated the significant transportation cost savings available to Calgarians, and the increase in housing choice and affordability that increased transit and active mode infrastructure could provide. (Keough, 2011)

**Recommendation: The Action Plan team should apply more robust methodologies to estimation of the synergistic effects of more compact land use and revise the action plan accordingly.**

6. Too many of the action statements in the report use the word 'support', 'enable', 'investigate', 'prepare', 'develop a program', 'prepare a report'. We have known that climate change is a clear and present danger 30 years. In our opinion this Mitigation

Action Plan requires **hard targets for action** that the community can rally behind. It is not clear that the actions proposed will achieve the reports 2050 reduction estimates. As an example of a document with clear action targets I recommend the Citizens Agenda prepared by Sustainable Calgary in 2005 after consultation with 2000 Calgarians. The report identifies 12 priority policies and actions for a more sustainable Calgary.

[http://sustainablecalgary.org/wp-content/uploads/2012/03/Citizens\\_Agenda\\_2006\\_color\\_lores.pdf](http://sustainablecalgary.org/wp-content/uploads/2012/03/Citizens_Agenda_2006_color_lores.pdf)

7. As noted earlier the City of Calgary civil servants have done an admirable job of managing the consultation and report production. However, one of the key reasons why the results of the report are flawed in my opinion is the **lack of diversity around the stakeholder table**. Imagine Calgary 20 years ago set the gold standard for participation with the range of citizens and city staff who contributed. This Mitigation Action Plan process was highly technical and engineering oriented. This expertise is vital to the process. But other valuable expertise was missing.

For example, Calgary Neighbourhoods has a team of dedicated professionals with intimate knowledge of communities across the city and a professional expertise that can bring the social and cultural dimensions of change to the table. We also have an abundance of expertise in the social sciences at our post-secondary institutions – psychologists, sociologists, anthropologists, public health researchers. This expertise was missing in this consultation. As a result we have an analysis that speaks to the wheel-house of engineers - technical fixes - but shies away from important elements of the solution – e.g. behaviour change. We propose more energy efficient homes, but avoid discussion of how big a home we actually need. We discuss electric vehicle uptake but avoid questions like how big a truck do you need or how many vehicles does your household require.

There is a rapidly growing research literature on this topic. One example is the just-released report European Commission-funded report of the of the Green Lifestyles, Alternative Models and Upscaling Regional Sustainability which ‘explored the complex interactions and links among economic, social, cultural, political and technological factors influencing sustainable lifestyles and transformations to a green economy across societal levels’ (Viqueira, 2018)

**Recommendation: Before adoption this report should be shared with academics and practitioners with expertise in the social sciences so that a more robust strategy for promoting behavior change can be incorporated into the strategy. The Mitigation Action Plan team, in consultation with Community Neighbourhoods, should host a consultation with this group of stakeholders to understand the opportunities that exist for actions beyond technical fixes.**

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