

Equity and Going Green: Remaining Sustainable and Accessible in Vancouver

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Introduction

For the first time in human history, the global population shifted to an urban majority. As of 2014, 54% of the world's population inhabit urban areas, per a report by UN World Urbanization Prospects. (UN, 2014) By 2050, this figure is expected to grow to two-thirds. Urban sprawl poses a significant risk to our environment. According to Heinonen and Junnila, an estimated 80% of greenhouse gases (GHG) are produced by urban infrastructure. (2011) Consequently, it is important to move forward in urban development with sustainability and environmental consciousness in mind.

As of 2016, the population of Metro Vancouver is nearly two and a half million people, surpassing the national growth rate by 1.5%. (Statistics Canada, 2016) Since 2008, Gregor Robertson has been Vancouver's mayor. Robertson's goal is to reshape Vancouver's economy, infrastructure, energy and transportation systems to be environmentally sustainable. Gregor Robertson's created the "Greenest City Action Plan" as a goal for Vancouver is to become the world's greenest city. The plan includes: an increase in green jobs and companies, reduction in greenhouse gas emissions, carbon neutral buildings, increasing green transportation, reducing waste, building more green space (eg. parks, greenways, etc...), planting more trees, reducing the city's ecological footprint, reducing water consumption, improving the quality of water and air, and increasing consumption of local foods and other goods.

However, sustainability seems at times to be at odds with equity. According to Corina McKendry, "not only [are] poor countries less responsible for the GHG emissions that were causing climate change, but they were also significantly more vulnerable to the sea level rise,

food insecurity, and increasing intensity of extreme weather events that climate change would entail.” (2016) This global problem is also visible on the local scale.

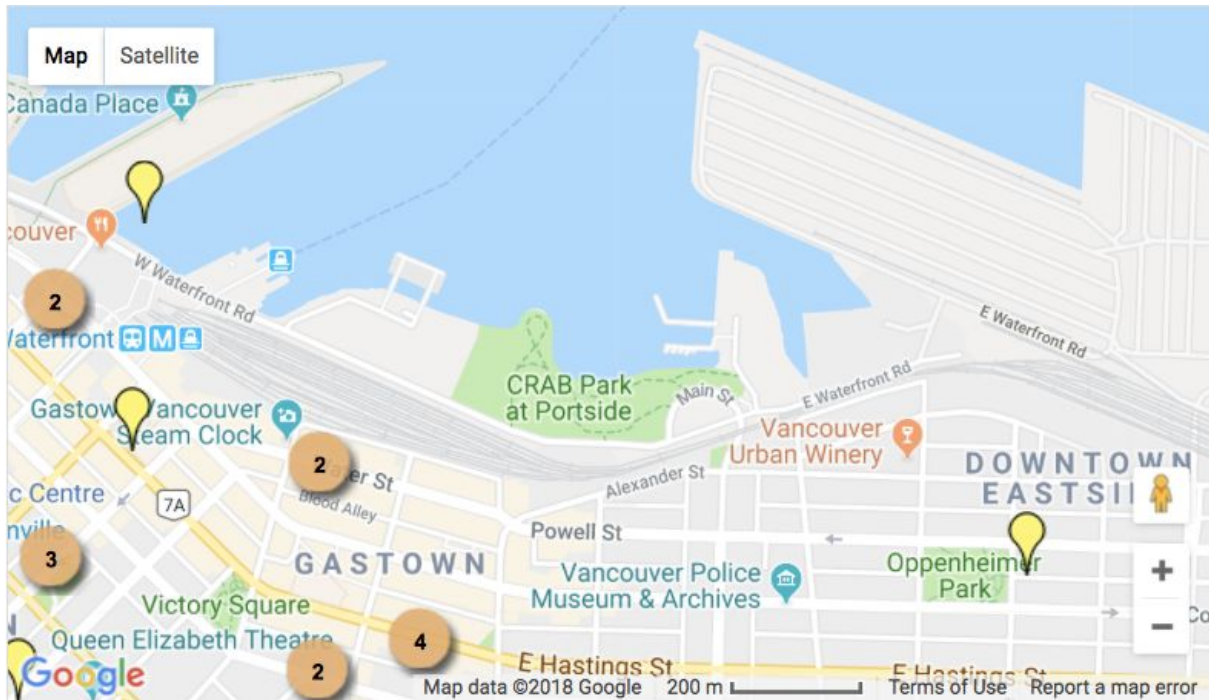


Figure 1: <https://vancouver.ca/green-vancouver/greenest-city-projects-map.aspx>

Urban green initiatives are visible in some neighbourhoods in Vancouver and not others. The map above, (Figure 1) lists projects from the Greenest City Action Plan. On the left side, sixteen projects are visible in the downtown Vancouver and Gastown area, which are areas that have been subjected to gentrification and are considerably wealthier. The Downtown Eastside, one of Vancouver’s poorer and “at risk” neighbourhoods, is the area on the right of the map. Here, there is only one project, a community garden, despite it being more or less the same size as the left neighbourhood. This is only one example of the uneven distribution of sustainability in cities like Vancouver.

As sustainable initiatives are becoming increasingly political and therefore carried out for and by those with authority and privilege, it is apparent that urban green projects are not

meeting the needs or accessible for lower class, marginalized, or disabled populations. This paper intends to examine the ways in which the Metro Vancouver area and its authorities apply and encourage sustainability. In doing so, we hope to promote awareness through a lens both critical of blame on individual consumers and cognisant of the dialectical relationship between authorities on sustainability and those for which these initiatives are simply unattainable. It is these groups that would benefit the most from an increased focus on equity in regards to urban environmental policies.

Literature Review

Urban Environmentalism and Modernism

With the advent of Vancouver's Greenest City Action Plan, the city has been actively maintaining and protecting the environment while simultaneously developing urban areas which can be seen as an effort to embrace urban environmentalism; a new form of modernism. Andy Scerri and Meg Holden (2014) explains how Vancouver's Greenest City Action Plan prompts ecological restructuring in the city, which suggests the city becomes a

manager of its own urban development; gravitating its residents towards the goal of sustainable development. However, this effort to embrace environmentalism if not structured properly can create problems. As they analyze ecological restructuring, they note that sustainable development can create four problems: ecological, economic, political and cultural. (Scerri and Holden 2014). With these four

Table 1. ER problems posed and hypotheses tested

Problem solved	Hypothesis tested		
	Weak EM	Strong EM	SD
Ecological	Economic growth will always bring about social and environmental development. 'Decouple' growth from environmental (and social) damage	Economic growth depends upon active and interventionist management of social and environmental capital. Regulate environmental and social resource depletion within a growth-oriented economy	Redefine key measure of economic activity from 'growth' to qualitative development that remains within the constraints of global ecological space. Accommodate the demands of society to the limits set by the ecosphere
Economic	Focus only on 'supply-side' leverage. Produce and distribute resources in response to 'revealed preferences'	Balance 'supply-side' with 'demand-side' leverage. Produce and distribute resources in ways that reduce the negative impacts of 'supply-side' policy on ecosphere and include social welfare criteria	'Demand-side' governed by capacity of 'supply-side' to fulfil social needs. Produce and distribute social and environmental goods in line with ethical-moral commitment to ecological footprint
Political	'Green' consumerism. Participation limited to voting. Justice is a product of policy responses to consumers' 'revealed preferences'	Liberal rights-based national environmental citizenship. Voting, referenda and recourse to 'representative' participation. Justice is a product of policy that balances responses to 'revealed preferences' with active redistribution	Participatory rights- and duties-based global ecological citizenship. 'Active' citizens involved in the policy process to redefine 'development' as human flourishing. Social and environmental justices are the twin primary concerns of policy
Cultural	Postmaterialism informed by ideal embodied in technical concept of 'EKC'	Postmaterialism informed by ideal of place-specific carrying capacity	Broad support for primacy of fair use of global ecological footprint. Redefining progress as well-being and human flourishing: capacities and capabilities within finite ecospace
Changes in these areas display cumulative	Change in policy instruments and change in policy goals	Change in the hierarchy of goals	Change in the role played by government (at any scale)

problems in mind, they suggest that ecological modernization, depending on its execution, can productively create sustainable development. It ecologically aims to double the amount of green jobs in the city by partnering up with local businesses aiming to make sustainable improvements in the city. Economically, it aims to reduce carbon emissions by developing local renewable energy systems and regulating emissions to industries. Politically, the city aims to work together with its constituents and other environmental groups to ensure the plan is implemented correctly. Finally, they note how culturally, the action plan recognizes that such development will lead to less open space available to pave way for a fair usage of the global ecological footprint (Scerri and Holden 2014). With this ability to ecologically modernize such restructuring, the study explains that Vancouver’s green action plan “aims to demonstrate that ‘Vancouver has proven that a city can grow and prosper and still become a green capital – a global leader in addressing climate change’” (Scerri and Holden 270). This allows us to look at sustainable development as a new way of urban development, co-existing with the environment and making it a part of the urban life.

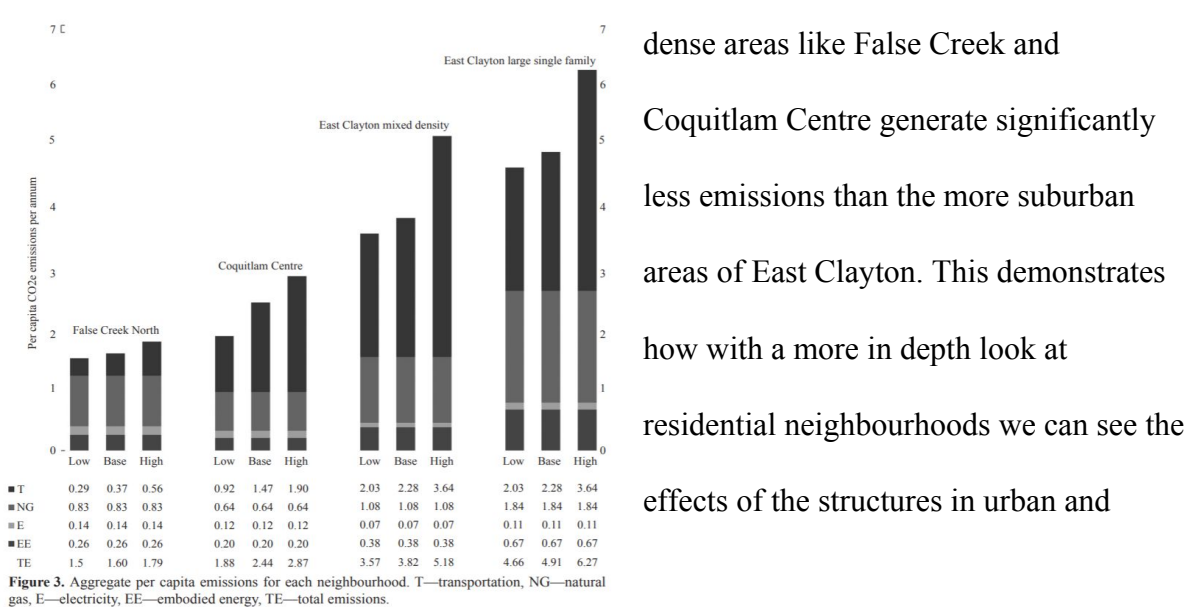
Urban Entrepreneurialism

Urban entrepreneurialism and its influence on the structure of a city plays a critical role in determining a cities greenhouse gas emissions. Jukka Heinonen and Seppo Junnila (2011) examines how urban structures directly and indirectly influence carbon emissions. They compare the dense city of Helsinki with the less dense city of Tampere and contrast their emissions. By examining the table (Heinonen and Junnila 2011)

Table 2. The annual carbon consumption per capita directly related to housing in the two metropolitan areas.

tons CO ₂ -ekv/a	Helsinki metropolitan area			Tampere metropolitan area		
	Vantaa	Helsinki	Espoo	UCT	Tampere	RCT
Population	190 000	565 000	235 000	64 000	206 000	69 000
Pop. density (inhabitants km ⁻²)	779	3010	743	84	344	21
Building and property	1.3	1.4	1.7	1.1	1.1	1.4
Maintenance and operation	1.3	1.7	1.3	1.0	1.1	1.0
Heat and electricity	3.4	3.7	4.4	3.0	3.2	4.0
Total	6.1	6.7	7.4	5.1	5.5	6.5

we can observe how more dense urban areas produce more carbon emissions (Heinonen and Junnila 2011). They show how this is in part of the fact that more urban areas are more structured to contain more public services such as public transit and how as income grows so does the rate of emissions. Yet interestingly, they also note that the relation to income and carbon emissions decelerate as it grows, while the relation to public transit is dismissed as the carbon emissions are roughly the same in Tampere. In conclusion, Heinonen and Junnila suggests that there is little correlation in regards to dense and less dense urban structures. However, it doesn't dissuade from the fact that both urban areas still produce plentiful amounts of GHG emissions due to its structure. Maged Senbel et. al (2014) looks at these urban structures more in depth by looking at variations of residential density and its relation to compact mixed use developments in Vancouver. They examine how more centralized cities tend to generate less emissions due to their tight-knit structures that rely on public transit and commercialized areas being within walking distance. In contrast, more suburban cities are prone to emissions due to the distance between each destination and the necessity of a vehicle for mobility. This study looks at four residential areas in Vancouver: False Creek North, Coquitlam Town Centre, East Clayton Mixed Density, and East Clayton Large Single Family. As we observe on this graph (Maged Senbel et.al 2014), we can clearly see how the



dense areas like False Creek and Coquitlam Centre generate significantly less emissions than the more suburban areas of East Clayton. This demonstrates how with a more in depth look at residential neighbourhoods we can see the effects of the structures in urban and

suburban areas in their GHG emissions. This also shows the influence of urban entrepreneurialism and the role of urban planning in creating these various urban and suburban areas that have such a variance in GHG emissions.

Urbanism

Graham Senft (2009) looks at how traffic congestion in Vancouver is becoming a big motivator for new sustainable development for the city. He analyzes boundaries between urban and suburban areas and looks at the behaviours to see how traffic congestion is a problem of urban development. By interviewing a bunch of residents they concluded that more urban areas tended to influence individual behaviour more negatively compared to suburban areas due to the fact that traffic congestion is less prevalent in these areas. Senft looks at how this negative behaviour is used to form a social consciousness on change in the city's infrastructure which often creates discourse on the direction as seen on this table which looks at two directions developers can take on fixing traffic congestion (Senft 2009)

Tableau I
Distinct regional discourses

	Toward Sustainability	Counter to Sustainability
Discourse	Language of sustainability – congestion is a limitation of auto-oriented systems	Language of utility – congestion is a regular reminder of restrictions on personal mobility
Transportation Planning Paradigm	Challenges the traditional paradigm by illustrating the flaw in planning primarily for the automobile	Reinforces the traditional transportation planning paradigm – congestion is a technical problem
Priorities	Transit projects, TDM measures, supply chain efficiency	Expansion of the road network – support for the Gateway Program
Tolling Debate	Some support for tolling as TDM	Opposition to tolling, or support as a funding mechanism only

We see a conflict in sustainable development as one solution is to build more roads while the other is to limit the capabilities of automobiles in favour of alternatives. What Senft looks at is how in Vancouver, there is a conflict between sustainable development being beneficial for the urban areas but not for the sub-urban areas as he puts it:

I think in Vancouver, there is a cultural component to people's transportation choices. I really believe that people's behaviours is in part shaped by what they see happening around them. There are people at work that bike or walk to work, and it makes you think. 'oh, they live as far away from work as I do, I could do that too'. Whereas out in the suburbs, you can have the exact same person with the exact same vague interests of saving the planet, but they're surrounded by people who are [saying] 'oh, they tell me to take the bus, but I have to get my kids here, and I have to be there, so what am I supposed to do? (Graham Senft 101)

Here we see that Vancouver as a city has developed a culture of urbanism with sustainability, as its residents are clearly aware and affected by the cities green initiatives. However, the natural problem with urban and suburban areas will consistently play a role in determining any future sustainable urban development as the behaviour for both residents are different in aspects of their needs. In conclusion, he notes that traffic congestion can be a big influence on sustainable change but can also do the opposite making change dependent on the regions social consciousness. He concludes by saying that sustainable development needs to bridge the gap between the urban and suburban areas for any type of productive sustainable development.

Social Production of Space and Globalization

The United Nations in there World Urbanization Prospects report of 2014 study how rapid the increasing urban population all over the world is becoming. With current projections going at approximately another 2.5 billion people living in urban areas by 2050 (United Nations 2014). The report looks at how with the rising urban populations comes at the cost of a decreasing rural population. With this data, the report analyzes how sustainable development is critical for the future of urban development as space will become a big problem for any future development. This is why the UN report takes note of that fact that only by co-existing with the environment for future urban development and focusing on areas such as renewable energy and public transportation can cities productively produce social

space for the people. Likewise as already mentioned, Statistics Canada with their 2016 Census shows that Vancouver's population has grown 6.5% since 2011, surpassing the national growth rate by 1.5% (Statistics Canada 2016). This is important to note since Vancouver's continued growth will increase along with its green initiative, paving the road in becoming a global leader and model in sustainable development.

Framing the Problem

As Vancouver is heading towards becoming a greener city, this includes many disagreements. Becoming a greener city includes environmentally sustaining the current city and accounting for the increased population. The growth in population leads to congestion, loss of prime farmland, increased social issues, inflated housing costs, debt, higher service costs and taxes, and lower quality of life (Canadians for Sustainable Society). Throughout Gregor Robertson's mayoral term, his goal was to bring out the Greenest City Action Plan. The plan is made so that people are able to live a healthy and green lifestyle while having an exponentially growing population but also to become the world's greenest city. This raises the question of the intentions from the Greenest City Action Plan and becoming the world's greenest city. These intentions are split into different aspects, environmental and social, and political and economic.

Environmental and Social

Vancouver has been heading into a greener direction which includes many social and environmental changes. Some changes are easier to adapt and some have been infuriating for the residents. Some changes were more accepted by the city such as the new compost bins, Car2Go, LED street lights, and new community gardens. On the other hand, some that were not as accepted were chicken coops in the backyard and also bike lanes (Jeff Lee, 2014). Many of the changes have shown positive results. The City of Vancouver's 2020 Action Plan

2017-2018 Implementation Update shows that there was a 20% decrease in ecological footprint, 36% decrease in distance driven per person, 26 hectares of natural area restored or enhanced, 53% increase in neighbourhood food assets, 23% decrease in solid waste sent to landfill and incineration, 25% decrease in water use in city operations, 102,000 new trees planted, 100% of stalls electric vehicle charging ready in new multi-family buildings, ecosystem approved, and 321 km of bike network in Vancouver. Overall, there have been sudden and greater impacts and results from the Greener City Action Plan for Vancouver. As mentioned, the problem that Vancouver faces is Urbanization. The plan has welcomed more tourists and immigrants into the city which brings the greater issue of the increase in prices. While immigrants move into Vancouver, the Statistics also show that there have been an increase in migration within British Columbia. In a Vancouver Sun article written by Jennifer Saltman, she writes notes that of those who moved within the province were moving away from the metropolitan areas (2018). The current affordability of houses have increased due to foreign investors, immigrants, and the upper class. Even though Vancouver is aiming to become the greenest city, most of the residents who have lived in the area for many years are almost forced to move to more rural areas where houses are more affordable. The 2020 Action Plan has brought many positive and green changes, however it has brought new urban issues into Vancouver as well.

Political and Economic

The Greenest City Action Plan was implemented to make Vancouver the world's greenest city. Besides becoming more green, it has also become a tactic for more tourists to visit and more foreigners to move into Vancouver. Canada has been known for its nature and beautiful sceneries, becoming the greenest city would be an additional benefit for advertisement for Vancouver. Aside from the advertisement tactic, being "green" is also seen

as an election strategy. An example of this are the bike lanes that have been placed on my small and busier streets. The bike lanes have become the political discussion that has been used to threaten Gregor Robertson's mayoral position. An article from CBC, "If Vancouver builds a bike lane and nobody seems to care, can it still be an election issue?" discusses the negative responses of bike lanes leading to an election issue (2018). In another article by Eric Zimmer, it talks about Wai Young using the abolishment of bike lanes as a way to gain confidence and trust of citizens to elect her for the next election (2018). As the next mayoral election which is to occur on October 20, 2018 is nearing, candidates struggle to gain more votes. As shown, the decision to make bike lanes had intentions to create a safer transportation method for bikers. The negative reactions from the citizens seems have become a trend in strategy for other mayoral candidates to earn more supporters. The 2020 Action Plan is to make Vancouver the greenest city in the world however, it may have also been intended to make more economic and political opportunities.

Government Framework

In face of a series of challenges and potential problems, such as congestion, loss of prime farmland, inflating houses, wastes, environmental issues etc., in its pursuits of the greenest city in the global context, policymakers, government officials, community staffs and all levels of people living in the the City of Vancouver should attach their great importance to taking more reasonable and effective measures to solve the emergencies. According to the Social Procurement State of Practice (2017), by the end of 2018, the City of Vancouver attempts to implement a social procurement framework and make an reasonable arrangement of the expenditures of &200 million dollars annually so as to makes the Greener Vancouver become substantial and accessible. By undertaking the social procurement practices that conducted by different organizations and programs, like Sustainable and Ethical Procurement

Program, Stated Priorities of Social Procurement Program, etc. the City of Vancouver focuses on how to provide opportunities for people with barrier to employment, how to support social companies, how to promote the aboriginal opportunities, how to increase the supplier participation and how to enrich the diversity of community, etc., which to some extent provides the huge supports for people to change their living environment, transportation facilities, income gap between the rich and the poor and completely reform their community and neighborhood. To undertake the social procurement practices to some extent provides people a clear direction to strengthen their community awareness.

Meanwhile, to solve environmental issues contributes to ensuring the continued sustainability and livability of our neighbourhoods that should be thought of as major tasks in that they are directly related to how people can build a greener city than before. Reducing the outflow of the plastic into oceans and ecosystem is one of the important measure (Plastic Statistics, 2015). For example, people should shift our thinking about waste. More measures like collection of classified refuse, urban domestic garbage's compressed and environmental processing, etc., which contributes to conserving resources, reducing waste and producing more renewable energy. In this sense, Zero Waste 2040 is a good program conducted by the local government, which increases their awareness of waste and create positive feedback among local residents. Later, in order to reduce the carbon footprint in Vancouver, more green programs should be implemented by the City so as to help everyone create greener homes. For example, in the Sustainable Programs for Business, more businesses were encouraged to reduce energy use, save money and make their business become more sustainable and accessible. Some companies even encourage their employees to get involved in bike to work weekly launched by HUB. The sponsorship of HUB is an important power for cycling and clearer air in Vancouver (Bike to Work) in that it can

significantly reduce greenhouse gas emissions and fossil fuel and further make people become healthier than before. Thus, the decision to make Vancouver go greener is not merely made by policymakers, but also is determined by the local businesses.

More importantly, I also thought that government, non-government, businesses, social companies all should consolidate their partnerships so as to make Vancouver become a greening city (City of Vancouver). John Kurucz in “Bike lanes are the bane of Vancouver resident’s existence” claims that “Hornby Street is now an absolute mess and the west end is a ghetto, Pacific Street is a nightmare and Granville Street is a big problem”(2017) all of which should completely violate the basic principle of Green city and advocates that more people should pay their attentions to bike lane construction. In the new mayor election, people also advocate that more bike lanes means less conflicts and less traffic and meanwhile it improves the public health and makes the street looks good.

However, along with the politicization of these sustainable initiatives, for people equipped with the authority and privilege, these urban green projects to some extent can meet their basic requirements for their life; while for the poor, working-class people, the marginalized and the disabled people, their voices were excluded from the mainstream. Take the housing for example. Vancouver attempts to find the solution to a super-heated housing market where the property bubble seems more serious given the increasing gap between the housing haves and have-nots (Collison, 2016). The west-coast Canadians metropolis wished to add the new tax on foreign buyers so as to curb the super-heated housing market and make more local residents able to buy their houses within a good price and the Greater Vancouver’s Real Estate Board also prefers to use some measures so that it can control the housing problems. However, for the poor people, they still cannot afford their house; while it is reported that more than 10,000-plus apartments in Vancouver are empty (Collison, 2016).

Vancouver is more like an empty city. Sian Berry, one of the London Assembly members argues that “Vancouver shows that the very rich buying up luxury flats at the expense of ordinary people is not just a London problem – it’s a growing problem all over the world” (Collison, 2016). Thus, people should pay their great attentions to interests of the poor, the marginalized and lower-income family.

All in all, along with the advancement of the industrialization and the acceleration of the urbanization, the Green city or renewable city has already attached people’s great importance. With an emphasis on the environmental-friendly and sustainable development, the green city development plan provides the effective solutions for Vancouver to face various environmental challenges. Although now Vancouver has already been thought of as one of the most liveable cities in the world, the increase of environmental footprint still confuses people. Under such circumstance, how to deal with the growing environmental footprints, how to deal with the waste and how to solve the conflicts between urban development and human progress, all should be given a careful consideration. Indeed, particularly driven by the politicization of these sustainable initiatives, to maintain the social equality and realize of aim of sustainability and accessibility in Vancouver should fully consider the interests of all neighborhood. Women, low-class family, the marginalized and disabled people all deserve attentions from the public and their initial rights of existence of being humans should be fully respected.

Conclusion and Moving Forward

Vancouver has made real progress in prioritizing sustainability, particularly since 1990. (McKendry, 2016) According to McKendry, “Vancouver has the lowest GHG emissions of any major Canadian or US city, both in terms of per capita emissions and by Gross Domestic Product.” (2016) However, she continues, “For many, to the extent that such

new developments incorporate green building practices and enable the environmentally conscious urban lifestyle desired by the creative class, Vancouver's green urban development merely serves to further "eco-gentrification" and displacement." (2016) This is only one of many equity problems facing sustainable projects in the city. Housing, as well as transport, structural GHG emissions, and waste have all been included in this paper to discuss the current literature, governance, and issues surrounding sustainable initiatives in the city of Vancouver.

In the face of the issues raised in this paper, the question remains: what can be done moving forward? The most obvious answer here is to introduce more diversity into green city planning, as well as to recognize 'bottom-up' planning as well as 'top-down' – after all, Vancouver is the birthplace of Greenpeace. Vancouver's sustainable initiative authorities must be mindful of what the cost of their work may be to those who cannot afford it, be it disengagement, non-involvement, or even displacement of populations. Manaugh et. al assert that many cities place greater responsibility on individuals rather than corporations. (2015) As such, we should pay close attention to actions such as plastic straw bans, for example, which affect individual consumers, but do not greatly affect corporations. Furthermore, the plastic straw ban also poses problems for disabled people who may require plastic straws.

Many of the problems raised above could be solved with greater diversity in visibility and opinion. The most important thing the city of Vancouver can do to integrate social equity into its green action plans is to combine the voices of experts with the real-life experiences of minority or marginalized groups, those affected most by inequitable practices.

Works Cited

“Bike to Work.” *Rightshape.com*. Retrieved from <https://www.rightshape.com/bike-to-work/>
City of Vancouver. (n.d.). (July 26, 2018).

An outline of Bike to Work Week.

Greenest City 2020 Action Plan 2017-2018 Implementation Update. Retrieved from
<https://vancouver.ca/files/cov/greenest-city-action-plan-implementation-update-2017-2018.pdf>

This document describes the Greenest City 2020 Action Plan, including outcomes and statistics.

Canadians for a Sustainable Society. (n.d.). Urban Issues - General. Retrieved July 26, 2018,
from <https://sustainablesociety.com/social/urban-issues>

The short article talks about the impacts that population growth would bring towards Vancouver. It lists the urban issues that many people face in Vancouver.

City of Vancouver. (n.d.). Greenest City 2020 Action Plan 2017-2018 Implementation Update. Retrieved July 26, 2018, from
<https://vancouver.ca/files/cov/greenest-city-action-plan-implementation-update-2017-2018.pdf>

It is an update on the progress that Vancouver has made with the Greenest City Action Plan throughout 2017 to 2018.

Collinson, Patrick. (Sep.30, 2016). Has Vancouver found the solution to a super-heated housing market?. *The Guardian*. Retrieved from
<https://www.theguardian.com/cities/2016/sep/30/vancouver-canada-house-prices-solution-super-heated-housing-market>

This article discusses the implementation and consequences of a tax on foreign housing buyers in Vancouver.

[Digital image]. (n.d.). Find Greenest City projects on a map. *City of Vancouver*. Retrieved from <https://vancouver.ca/green-vancouver/greenest-city-projects-map.aspx>
This application uses Google Maps to show viewers the various green projects across Vancouver.

Heinonen, J., & Junnila, S. (2011). Implications of Urban Structure on Carbon Consumption in Metropolitan Areas. *Environmental Research Letters* 6, pp. 1-9.
<http://iopscience.iop.org/article/10.1088/1748-9326/6/1/014018/pdf>

The study compares and contrasts greenhouse gas emissions in various metropolitan areas to see if there are vast differences or any sort of correlation.

Kurucz, John. (Oct. 26, 2017). Bike lanes are the bane of Vancouver resident's existence.

Vancouver.com. Retrieved from

<http://www.vancouver.com/news/bike-lanes-are-the-bane-of-vancouver-resident-s-existence-1.23075747>

This article discusses the political debate on the installation of bike lanes in some of Vancouver's busiest streets.

Lee, J. (2014, February 21). How green is Vancouver now? Retrieved July 26, 2018, from <http://www.vancouver.sun.com/technology/green/Vancouver/9537550/story.html>

It is an update on the progress in which Vancouver has made since the Action Plan has been implemented. It also mentions the different views towards the plan from those who are a part of the plan and the citizens.

Managh, K., Badami, M., & El-Geneidy, A. M. (2015). Integrating Social Equity into Urban Transportation Planning: A Critical Evaluation of Equity Objectives and Measures in Transportation Plans in North America. *Transport Policy* 37, pp. 167-176.

<https://doi.org/10.1016/j.tranpol.2014.09.013>

This article examines why social equity is not easily visible or lacking in transportation planning.

McKendry, C. (2018). *Greening Post-Industrial Cities*. New York: Routledge.

<https://www.taylorfrancis.com/books/9781317681328>

This book explores the political and social motives for sustainability in cities following neoliberalism.

"Plastic Statistics." (2015). Ocean Crusaders, Retrieved from

<http://www.oceancrusaders.org/plastic-crusades/plastic-statistics/>. Social

Procurement State of Practice. (December, 2017). *City of Vancouver*. Retrieval from

https://sustain.ubc.ca/sites/sustain.ubc.ca/files/GCS/2017_GCS/Final_Reports/Social%20Procurement%20State%20of%20Practice_Lupick_%202017%20GCS%20UPDA TED%20122017.pdf

It is an update on the progress in which Vancouver has made since the Action Plan has been implemented. It also mentions the different views towards the plan from those who are a part of the plan and the citizens.

Saltman, J. (2018, February 13). International migration drives Metro population growth,

while losses fuelled by draw of neighbouring areas. Retrieved July 26, 2018, from <https://vancouver.sun.com/news/local-news/metro-vancouver-population-sees-record-losses-in-latest-census-report>

The article from Vancouver Sun uses the Census in Canada to discuss the issue of citizens having to move within their province to look for more affordable homes while immigrants move into Canada.

Scerri, A. & Holden, M. (2014). Ecological Modernization or Sustainable Development? Vancouver's *Greenest City Action Plan*: The City as 'manager' of Ecological Restructuring. *Journal of Environmental Policy and Planning*, 12(2), pp. 261-279. <https://doi-org.ezproxy.library.ubc.ca/10.1080/1523908X.2013.836962>

This study looks at Vancouver's Greenest City Action Plan in depth to explore the idea of how sustainable development leads to the idea of modernizing ecologically.

Senbel, M., Giratalla, W., Zhang, K., & Kissinger, M. (2014). Compact development without transit: Life-cycle GHG emissions from four variations of residential density in Vancouver. *Environment and Planning*, 46(5), pp. 1226-1243. <https://doi-org.ezproxy.library.ubc.ca/10.1068/a46203>

This study analyzes residential areas in the Greater Vancouver areas to look for differences in emissions and why they exhibit different amounts of emissions.

Senft, G. (2009) The Conscious City: Traffic Congestion and Change Towards Sustainability in Metro Vancouver. *Urban Environment*, 3, pp. 94-107. http://www.vrm.ca/wp-content/uploads/EUE3_Senft.pdf

This study examines how traffic congestion in Vancouver can help foster an attitude for future sustainable development but also looks at how this can also lead to a more unsustainable development.

Statistics Canada. (2017). Greater Vancouver, RD [Census division], British Columbia and Canada [Country] (table) Census Profile, 2016 Census. *Statcan.gc.ca*. <http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CD&Code1=5915&Geo2=PR&Code2=01&Data=Count&SearchText=Canada&SearchType=Begins&SearchPR=01&B1=All&TABID=1>

The 2016 census looks at how the population of Vancouver has grown more than the national average from 2011 to 2016.

United Nations. (2014). World's Population Increasingly Urban with More Than Half Living in Urban Areas. *UN.org*. <http://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html>

This report by the UN examines how all across the world there is a growing urban population that will continue to grow over the years and looks at how sustainable development is the future.

Zeidler, M. (2018) If Vancouver Builds a Bike Lane and Nobody Seems to Care, Can It Still Be an Election Issue? | CBC News. *CBCnews*, CBC/Radio Canada.
www.cbc.ca/news/canada/british-columbia/if-vancouver-builds-a-bike-lane-and-nobody-seems-to-care-can-it-still-be-an-election-issue-1.4494346.

The article notes that bike lanes may have a negative effect on Mayor Gregor Robertson's election due to the negative response.

Zimmer, E. (2018). "Vancouver Mayoral Candidate Wai Young Says She'll Abolish Bike Lanes." *Daily Hive*.
dailyhive.com/vancouver/wai-young-vancouver-mayoral-campaign-2018

The article from Daily Hive writes about the mayoral candidate, Wai Young, who is using the abolishment or removal of bike lanes as a way to gain supporters.