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A CLIMATE EQUITY FRAMEWORK FOR THE CITY OF NEW WESTMINSTER

Recommending Climate Equity
Indicators and Methodology to Guide
the City's Climate Action

Prepared by: Lekha Tlhothalemaje, UBC Sustainability Scholar, 2021
Prepared for: Leya Behra and Nayel Halim, City of New Westminster

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Executive Summary

Since declaring a climate emergency in 2019, the City of New Westminster has renewed its efforts to address climate change with a particular focus on equity. Vulnerable people—including those who are disabled, racialized, elderly, immigrants and Indigenous—experience the impacts of climate change disproportionately and are more susceptible to the potential burdens of climate action. It is essential to employ an equity lens in all climate action so that people of all backgrounds and identities are included in the move to a more just and sustainable future.

Recognizing the importance of integrating climate equity into the City's work, this project:

- 1) Surveys the current literature on climate equity in North America as reference and inspiration for New Westminster in its own climate initiatives.
- 2) Offers recommended climate equity indicators and recommended next steps for the City. These indicators, included in the table below, will be used to create and implement policies that tackle the challenges of climate change while attending to the needs of the most vulnerable members of the community. The next steps will help the City formalize its climate equity framework.

Climate and Environmental Indicators	Built Environment & Mobility Indicators
Flood Risk	Access to solar PV systems
Fire Risk	Households equipped with central AC
Air quality	Transportation cost burden
Tree canopy cover	Energy cost burden (energy poverty)
Urban Heat Island index	Bikeability
Heat vulnerability	Access to public transit
Proximity to green space	Traffic density
Proximity to waste sites	Access to EV charging infrastructure
Pesticide use	Commute time
Drinking water quality	

In this project, equity is defined as *just and fair inclusion into a society in which all can participate, prosper and reach their full potential*. Climate equity involves working towards the just distribution of the benefits of climate actions and alleviating unequal burdens created or worsened by climate change. It is essential to create targeted policies and initiatives to tend to the varied needs and priorities of diverse New Westminster residents. The move towards climate equity is in the early stages in Canada, however more jurisdictions are incorporating these values into their climate plans. There is great potential for New Westminster to be at the forefront of this movement and set the precedent for climate equity in the country.

Introduction

Recognizing the urgency of taking action to help keep global warming below 1.5 degrees Celsius, the City of New Westminster (the City) declared a climate emergency in 2019. The City has adopted the greenhouse gas reduction (GHG) targets outlined by the Intergovernmental Panel on Climate Change. City Council endorsed a [2020 Climate Action Budgeting Framework](#) for the City's 2020 budget process, and established Seven Bold Steps to guide the process with the goal of moving New Westminster towards a zero carbon future by 2050.¹ The vision for this plan is to create "a vibrant, compassionate, sustainable city that *includes everyone*." Indeed, The City recognizes that environmental and climate change affect groups and individuals differently, impacting vulnerable people disproportionately. Thus, an important aspect of addressing the climate emergency is incorporating equity into climate action. This project aims to create a climate equity framework that will provide indicators for evaluation, thus guiding the city towards its climate action goals while ensuring that all people can be fully included in the move towards a greener and more equitable future.

It is evident that the impacts of climate change are experienced disproportionately by the world's most vulnerable and marginalized people.² This is true at scales both large and small. It is essential to address equity when tackling the monumental challenges of climate change mitigation and adaptation. Indeed, the City must work to build all people's resilience to climate change, so that the burdens of climate change are borne more equitably across the population. Equity is both an objective and a process; it is something that must be considered at all stages of work and is a lens with which to evaluate the success of any initiative. Integrating equity into climate action strategies helps the City assess how people are affected and, subsequently, develop more comprehensive strategies to address their priorities. In its [2019-2022 Strategic Plan](#), New Westminster committed to applying a social equity lens to its work throughout the municipality. This project is an important step in engaging with equity in the sustainability realm of the organization.

¹ This framework was developed for initial use in 2020 and continues to be part of New Westminster's budgeting framework going forward.

² Lisa Reyes Mason and Jonathan Rigg, *People and Climate Change: Vulnerability, Adaptation, and Social Justice*, 2019, <https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=2089344>. Jafry, Tahseen, Michael Mikulewicz, and Karin Helwig, eds. *Routledge Handbook of Climate Justice*. London: Routledge, 2018. <https://doi.org/10.4324/9781315537689>.

This project lays the groundwork that will help inform the development of the City's broader climate equity framework. This two-part paper provides:

- (1) A review of other North American city's climate equity plans and frameworks with a summary of important themes and lessons. An analysis of various North American city's climate change equity plans will provide knowledge on best practices, focusing on the intersection of climate change and equity. There is a long history of environmental justice and climate justice work in North America, however the incorporation of equity considerations into local governance is a relatively new phenomenon. Furthermore, the concept of climate equity indicators is also relatively novel, and thus the City is greatly inspired by the work of cities such as San Diego, CA and Richmond, VA which have designed thoughtful climate equity frameworks.
- (2) Recommendations for how such designs could be implemented in the New Westminster context along with recommended indicators and methodology. After conducting an analysis of equity frameworks and plans across various cities, this study localized this information to a New Westminster context. Recommended climate equity indicators were developed in order to determine how to address the needs of the City's vulnerable communities and measure the possible inequitable burdens these groups face. These recommended indicators will further support the City in identifying gaps in existing climate action programs and policies, while generating the opportunity for new approaches to be tested. This is an initial step in the long-term plan to approach climate action work in ways that incorporate diverse perspectives and address the concerns of the City's most vulnerable.

Defining Equity

The definition of equity used in this project is: *just and fair inclusion into a society in which all can participate, prosper and reach their full potential*. This work aims to address structural and institutional systems that result in disparate vulnerability to harms and burdens for certain groups. Furthermore, equitable work strives to correct past harms and prevent unintended consequences of future action. Climate equity, specifically, is concerned with working towards the just distribution of the benefits of climate actions and alleviating unequal burdens created or worsened by climate change.³

There are four types of equity that will inform this work:⁴

1. **Procedural equity:** Inclusive, accessible and authentic engagement and representation in decision-making. This increases the civic engagement opportunities of communities that are disproportionately impacted by climate change. It also creates processes that are transparent, fair and inclusive in developing and implementing any program, plan or policy.
2. **Distributional equity:** Fair distribution of benefits and burdens across all segments of a community, prioritizing resources for communities that experience the greatest inequalities, face disproportionate impacts, and have the greatest unmet needs.
3. **Structural equity:** Decisions are made with a recognition of the historical, cultural and institutional dynamics and structures that have routinely advantaged privileged groups. Focuses on closing the gap so that factors such as race and economic status can no longer be used to predict life outcomes and outcomes for all groups are improved.
4. **Transgenerational equity:** Decisions consider generational impacts and do not result in unfair burdens on future generations. This is particularly pertinent with climate change, as present-day actions (or non-actions) will undoubtedly affect subsequent generations.

³ City of San Diego, 'San Diego's Climate Equity Index Report', accessed 29 July 2021, https://www.sandiego.gov/sites/default/files/2019_climate_equity_index_report.pdf

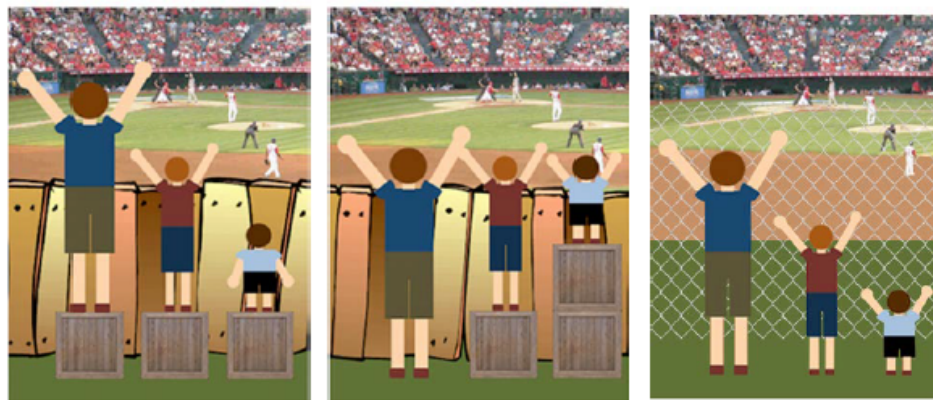
⁴ Sara Meerow, Pani Pajouhesh, and Thaddeus R. Miller, 'Social Equity in Urban Resilience Planning', *Local Environment* 24, no. 9 (2 September 2019): 793–808, <https://doi.org/10.1080/13549839.2019.1645103>.

City of Richmond, 'What Is RVAgreen 2050?', RVAgreen 2050, accessed 29 July 2021, <https://www.rvagreeen2050.com/what-is-rvagreeen-2050>.

City of Saskatoon, 'Equity Toolkit for Projects, Saskatoon, Saskatchewan', <https://pub-saskatoon.escribemeetings.com/filestream.ashx?DocumentId=137570>

Jurisdictions across North America have overlapping, but varied definitions of equity. Some common and relevant themes across other jurisdictions' definitions of equity are:

- **Equality versus equity:** Equity is different from equality in that equity acknowledges the differing vulnerabilities people within a community face. Equality action assumes that everyone will benefit from the same supports, whereas equity action affords people the support they need, which varies according to their circumstances, leading to a more just environment for all. The image below from the City of Ottawa's *Equity and Inclusion Lens Handbook* helps visualize the difference between these concepts.⁵ The final image reveals a system in which systemic barriers have been removed, allowing all people equal opportunities and fair treatment.



(1) Equal treatment

(2) Equitable treatment

(3) The removal of systemic barriers

- **Correcting historical harms:** Equity goals must consider how certain populations have been historically discriminated against and/or harmed. As a result of these past disparities, certain groups may be more vulnerable and have less access to resources in the present day. Equity initiatives must take care to address the needs of these vulnerable groups.
- **Addressing underlying structural and institutional systems:** Because of power systems that benefit certain groups, some groups of people—for example, people with disabilities, racialized groups and immigrants—are systematically disadvantaged. Equity initiatives must address this on the structural scale. Climate action tends to focus on individual action, but the inclusion of equity recognizes that these disparities are created and felt on a systems level.
- **Considering the intersection and compounding of various factors (intersectionality):** Factors such as race, ethnicity, age, mental or physical

⁵ City of Ottawa and City for All Women Initiative, 'Equity & Inclusion Lens Handbook', accessed 29 July 2021, https://documents.ottawa.ca/sites/documents/files/ei_lens_hb_en.pdf

disability, national origin, language, Indigeneity, socio-economic status, sexuality, gender and religion affect people's lived experiences.⁶ It is always important to consider how compounding challenges related to people's identity and background may affect how people experience the effects of climate change and how they experience different benefits related to climate action.

- **Recognizing that equity is not a static characteristic, but a process:** Equity should be intertwined in all stages of climate policy-creation and action. Indeed, without equity considerations, climate action is incomplete.

Background of New Westminster

In recent months, New Westminster has invigorated its focus on both equity and climate action. This section will provide some brief background on New Westminster's recent efforts in these realms in order to provide context for this project, which exists at the intersection of these two critical initiatives.

Community Profile

New Westminster is a very diverse city, with increasingly higher population of visible minorities and immigrants. The most recent census of 2016 reported that 34.9% of the population were immigrants and 34.8% of the population reported having visible minority status.⁷ Moreover, 3.3% of the population reported having aboriginal identity and 25.3% of residents spoke a non-official language at home.⁸ These statistics reveal the myriad of different identities and experiences New Westminster residents have. Furthermore, 15.6% of New Westminster residents were identified as low-income.⁹ Many of these low-income residents may also be minorities and/or immigrants. Given this variety of experiences and identities, it is more important than ever to explore people's varied experiences of climate change and understand the underlying inequities in this community. New Westminster's diversity is one of its greatest qualities, so the City must take great

⁶ Kimberlé Crenshaw, *On Intersectionality: Essential Writings* (New York: The New Press, 2017).

⁷ City of New Westminster, 'Multiculturalism and Inter-Cultural Relations', accessed 2 August 2021, https://www.newwestcity.ca/social_planning/multiculturalism.

⁸ Ibid.

⁹ City of New Westminster, 'Provincial Housing Needs Report Program: Understanding Housing and Homelessness in New Westminster - A Housing Needs Report 2021 – 2031,' 7 December 2021, https://ehq-production-canada.s3.ca-central-1.amazonaws.com/7f5aabd0b0759f6f92449b7f10ba133ea3402dc5/original/1626299175/085b4c5fceed3a814939669429b97f6f_HNR_Report_to_Council_July_12_2021.pdf?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIBJCUK4Z04WUUA%2F20210810%2Fca-central-1%2Fs3%2Faws4_request&X-Amz-Date=20210810T223138Z&X-Amz-Expires=300&X-Amz-SignedHeaders=host&X-Amz-Signature=2260148eb9bda6ff4c2a43c6f6a98fb937c98594d082cee53a3d099cc7b5dd79

care to recognize the different climate burdens that people may be facing and deal with them equitably.

Climate Action

New Westminster's climate action is driven by the [2019 Seven Bold Steps](#), a framework developed in response to declaring a Climate Emergency in March of the same year. The seven steps are (1) carbon free corporation, (2) car light community, (3) carbon free homes and buildings, (4) pollution free vehicles, (5) carbon free energy, (6) robust urban forest, and (7) quality people-centered public realm. This framework will inform the development of the City's Community Energy & Emissions Plan (CEEP), a strategy to help conserve energy in the areas of transportation, buildings and solid waste. It will guide New Westminster towards achieving its 2050 emission reduction targets. This plan also aligns with the regional British Columbian and Canadian climate plans, and thus supports the country's commitment to reach net zero carbon by 2050.¹⁰

Another significant initiative is [Empower Me](#), a program offering through Energy Save New West (ESNW) which informs newcomers to the City about energy programs, policies, and services. Empower Me provides energy efficiency education and support to diverse, multilingual, and hard to reach communities in New Westminster. The program, designed for and delivered by members of diverse communities, engages with and supports marginalized groups to save energy and broaden their awareness of the City's energy initiatives and strategic policies. This is an important environmental equity initiative, which recognizes that new immigrants may not have access to valuable energy-related information and engages with them in more accessible and community-led ways.

Equity Action

As mentioned earlier, a central theme in the city's [Strategic Plan](#) is working towards equity in all spheres of the City. This work is being formalized through the Diversity Equity Inclusion and Anti-Racism (DEIAR) Framework. This project's focus is both internal and external—striving towards a more just community for both government employees and residents of New Westminster. This project is still in its early stages, but provides an indication of the type of equity work the City is engaged in. Currently, the DEIAR project team is preparing for the public engagement portion of the process. And, they have already done an extensive

¹⁰ British Columbia, 'cleanBC,' 2, accessed 10 August 2021,

https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_2018-bc-climate-strategy.pdf.

Canada, 'Pan-Canadian Framework on Clean Growth and Climate Change: Canada's Plan to Address Climate Change and Grow the Economy,' accessed on 10 August 2021,

https://publications.gc.ca/collections/collection_2017/eccc/En4-294-2016-eng.pdf.

literature review of other cities' DEI/ DEIAR work. They plan to use information from the public engagement and the literature review to design a training plan, which will then be used to design the final framework. This framework will help all levels and departments within the City incorporate equity into their work.

Additionally, the City is in the process of creating an Equity Key Performance Indicator Framework to measure its commitment to diversity, inclusion, equity and anti-racism throughout the organization. This framework will be used as an intermediary tool in 2021-2022 while the city implements the DEIAR framework and its corresponding key performance indicators (KPIs). The broad categories of this indicator are (A) developing equity by creating community representation in all city recruitments, (B) developing equity by changing city policies and procedures, and (C) developing equity by changing the city's service delivery and programs. The city is thus committed to working towards greater inclusivity, diversity and equity both internally and externally through its engagement with the community.

Canadian Climate Equity Context

The movement towards climate equity is in its infant stages in Canada. However, municipalities all over the country are beginning this important work in earnest. Following Climate Emergency Declarations in the late 2010s, several municipalities rolled out climate action plans to address this issue. Many of these recent plans specifically address climate equity. On a larger scale, there does not seem to be strong federal policy or direction on this topic. Indeed, from an initial scan, it seems that Canada's national-level climate policy is primarily focused on GHG emission and reaching net zero carbon by 2050. Thus, it is more important than ever for cities to set a high precedent in incorporating equity considerations into their climate action.

A recent research report from Simon Fraser University provided a summary of climate equity action in Canada.¹¹ The researcher analyzed over 50 municipal climate plans for 24 climate equity themes and did an in-depth analysis of seven cities. The study found that approaches to climate equity varied greatly across municipalities depending on how climate change was affecting the region. It also notes that only 63.2% of cities mentioned equity in their plans and within that percentage, only a few had concrete actions they were planning to take to work

¹¹ Ashley Armitage, 'Climate Action Equity in Canada' (SFU School of Resource and Environmental Management, February 2021).

towards a more equitable city. Interestingly, the report noted a hesitancy to use words such as ‘decolonization’, ‘anti-racism’ and ‘recognition justice’ in these plans, leading to non-specificity in defining vulnerable populations and equitable goals. This work reveals that many Canadian cities are beginning to think about climate equity more concretely but there is much more work to be done in this domain. Essential to continuing this work is creating specific climate equity plans and actions, using precise language to explain what equity means to the municipality and thinking explicitly about anti-racism and decolonization.

The climate equity landscape in Canada is still a work in progress. This means that New Westminster could be at the forefront of this movement, setting precedent and inspiring other Canadian cities to champion this aspect of climate work in meaningful ways. Climate equity work is both imperative to creating a just and fair society and an opportunity to approach climate change in new and justice-focused ways that foster healthy and sustainable communities.

Lessons from Other Cities

Scaling up to a North American context, many other cities are renewing their efforts at climate equity work. As cities come to recognize the urgency of addressing the climate emergency, they are revising their climate goals to match the seriousness of the moment. Alongside GHG emissions targets, local municipalities are also trying to center the experiences and voices of their most vulnerable. This revived governmental focus on climate and environmental justice has resulted in the creation of numerous climate equity plans from various North American cities. This section will summarize some lessons gathered from these documents.

This study analyzed the climate and climate equity plans from several Canadian cities, including Vancouver, Ottawa, Saskatoon and Saanich, and a few American cities, including Richmond, VA, Portland, OR, Seattle, WA, San Diego, CA, Chicago, IL and Providence, RI. The study also examined a project that used a gender-based analysis plus (GBA+) lens to consider how different populations in British Columbia are impacted by climate change.¹² Lastly, the study referred to the Canadian Urban Sustainability Practitioners (CUSP) Network’s work on climate

¹² This lens allowed researchers to examine how considerations of sex, gender, race, ethnicity, age, and mental or physical ability (among other identity factors) intersect to influence how different populations in B.C. are affected by climate change. According to the paper, “GBA+ is an approach that identifies people’s diverse social identities and complex living realities. The lens is intended to bring attention to the role that structural forces play in producing and reproducing discriminatory policies and practices, institutions and systems which lead to the marginalization of certain populations and identities.”

equity. The study gleaned many valuable lessons for climate equity work and the creation of a climate equity framework.

Some key lessons and best practices identified in this literature include the following:

Foster community input and participation

It is essential that the community be involved at every stage of the process—in both the creation of the framework and the implementation of climate equity policies. The city should encourage people from all walks of life to participate in these processes, providing compensation for people’s time and expertise, if possible. For example, in Richmond, VA, the community was involved at every stage of creating their climate plan, RVAgreen 2050.¹³ Their seven community priorities were decided in consultation with members of the community and grassroots organizations. An integral component of the procedural equity pillar is engaging with people in fair, transparent and inclusive ways. One strategy to ensure that the study includes traditionally underrepresented groups is to create a stakeholder map with people who may be affected by these climate equity plans. It then becomes necessary to engage with these identified community stakeholders to see if there are other people or groups that should be included in this map. The earlier that the public is included in this process, the better. It is especially important to hear from the city’s most vulnerable community members so that these perspectives are included when designing policies.

Take an interdisciplinary approach

Climate equity work takes place at the intersection of three considerations: fulfilling the needs of marginalized communities, reducing GHG emissions and pollution, and increasing community resilience to climate change. Thus, it is important to think about this issue in ways that exist at these intersections. People from various departments within the City must be brought together to create collaborative climate equity plans that will be implemented at all levels and within all sectors of the municipality. This does not always have to be done in formal ways—it is possible to create small internal measures that would help keep climate equity themes in mind as programs across the City are implemented.

Treat climate equity as a process and continue to ask questions

Climate equity cannot be an afterthought—it must be considered at all stages of the process. Several cities created equity toolkits to help policymakers and city planners integrate equity into their work. See, for example, the [Saskatoon Equity Toolkit](#), the [Seattle Racial Equity Toolkit](#) and the [Richmond Equity Screening](#)

¹³ City of Richmond, ‘What Is RVAgreen 2050?’

[Tool](#).¹⁴ Included below (Diagram A) is the process that the City of Richmond is using to create RVAgreen 2050, their equity-centered climate action and resilience planning initiative.¹⁵ There is a great emphasis on community engagement. This example reveals the importance of continual community engagement and checking in with communities throughout the process.

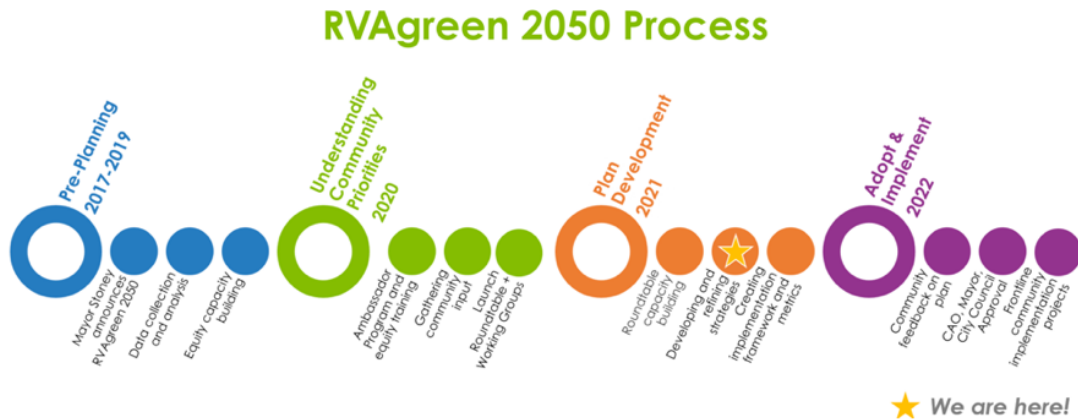


Diagram A

Collaborate with trusted community partners

Many cities collaborated with community partners for outreach and implementation. This is an impactful way to reach out to more members of the community and partner with groups who are doing similar work. There are many ways to do this. One example is Vancouver’s work with Evergreen, a local NGO working to create more livable and green cities, to survey residents on climate equity.¹⁶ They received input from over 300 people and used that to create a list of recommendations for the city. Another example is Seattle’s environmental justice fund, which provides grant opportunities for local organizations who are doing environmental justice work in the community.¹⁷ For example, in 2020, they funded Got Green, a community-led organization to support climate resilience

¹⁴ City of Saskatoon, ‘Equity Toolkit for Projects’, accessed 29 July 2021, <https://pub-saskatoon.escribemeetings.com/filestream.ashx?DocumentId=137570>.

City of Seattle, ‘Racial Equity Toolkit to Assess Policies, Initiatives, Programs, and Budget Issues’, accessed 29 July 2021, https://www.seattle.gov/Documents/Departments/RSJI/RacialEquityToolkit_FINAL_August2012.pdf

City of Richmond, ‘Equity Screening Tool’, accessed 29 July 2021, <https://static1.squarespace.com/static/5e5d14a607547560c855c76a/t/606b77aec3df3c39619552b9/1617655726903/RVAgreen+2050+Equity+Screening+Tool+rev.1.15.2021.pdf>.

¹⁵ City of Richmond, ‘What Is RVAgreen 2050?’

¹⁶ Angela Han, Sarah Farina, and Nida Iqbal, ‘Climate Risks - Engaging Vulnerable Populations’ (Evergreen, 2020), https://www.evergreen.ca/downloads/pdfs/Evergreen_Climate_Risks_Report_2020_FINAL.pdf.

¹⁷ City of Seattle, ‘Environmental Justice Fund’, accessed 2 August 2021, <https://www.seattle.gov/environment/equity-and-environment/equity-and-environment-initiative/environmental-justice-fund>.

planning and educational workshop at the intersection of climate justice, health, displacement, and emergency. Regardless of the approach, partnering with community groups allows the City to interact with more people—many of whom may be traditionally under-represented in community engagement—and to collaborate with organizations doing similar work who may have expertise and experience in the realm of climate equity or environmental justice.

Incorporate Indigenous People’s perspectives and knowledge

Given that many of us reside on the traditional, ancestral and unceded territories of Indigenous People, it is important to make space for Indigenous People and First Nations governments to share their experiences and knowledge.¹⁸ In Winnipeg, for example, part of their climate plan includes meeting regularly with the Indigenous Advisory Council to get feedback on actions and plans.¹⁹ Winnipeg’s vision includes the idea that “The aspirations for climate change action in [the city] are grounded in traditional worldviews of Indigenous Peoples and in harmony with their distinctive spiritual relationship with the land and natural resources.” Thinking about climate action in equity-minded and decolonial ways offers many opportunities for meaningful structural change and more sustainable futures.

Apply a targeted universalism approach

In ‘Centering Social Equity in Climate Action Planning’, the author writes of targeted universalism that “outcome-oriented and the processes are directed in service of the explicit, universal goal.”²⁰ Indeed, this approach begins by addressing the needs of those who are most vulnerable to climate change or experiencing disparate outcomes. Doing so will yield benefits for everyone. Portland has adopted this approach—they are thinking specifically about how people of colour and low-income people are being disproportionately affected by climate change.²¹ Thus, their initiatives are especially sensitive to the needs and priorities of these groups. This approach recognizes that some people are more vulnerable than others, and thus require greater government attention to

¹⁸ Indigenous Climate Action, ‘Decolonizing Climate Policy in Canada: Report from Phase One’ (Indigenous Climate Action (ICA), 2021), https://static1.squarespace.com/static/5e8e4b5ae8628564ab4bc44c/t/6061cb5926611066ba64a953/1617021791071/pcf_critique_FINAL.pdf.

¹⁹ City of Winnipeg, ‘Winnipeg’s Climate Action Plan’, accessed 2 August 2021, <https://winnipeg.ca/sustainability/PublicEngagement/ClimateActionPlan/pdfs/WinnipegsClimateActionPlan.pdf>.

²⁰ Melissa Marquette, ‘Centering Social Equity in the Climate Action Planning Process: Lessons for Richmond, Virginia’, *Master of Urban and Regional Planning Capstone Projects*, 1 January 2020, https://scholarscompass.vcu.edu/murp_capstone/23.

²¹ City of Portland, ‘Climate Action Through Equity’, accessed 2 August 2021, <https://www.portland.gov/sites/default/files/2019-07/cap-equity-case-study-web29jul.pdf>.

meet their needs, ultimately resulting in a community where everyone has more equal opportunities.

Include quantitative and qualitative data

Quantitative climate equity indicators are useful to measure progress over time and simplify complicated sets of data in accessible ways. However, equity is not simply a measurable, objective quality and these indicators do not reveal the full picture. Thus, it is important to also gather qualitative data on the City's progress. Direct community feedback helps capture underlying challenges, illuminates specific priorities and needs, and provides insight on cultural norms and nuances that are difficult to capture quantitatively. This information could be gathered through surveys, interviews and focus groups. Gathering both quantitative indicators of equity and qualitative responses to climate action will help paint a more comprehensive picture of how well the City is doing in meeting the needs of its most vulnerable.

Research disparities in the community

It is a good idea to initiate this work by developing a better understanding of representative vulnerable populations and community groups. Previous research has shown that climate change vulnerability often falls along lines of race, ethnicity, socio-economic class, Indigeneity, gender, sexuality, religion, age, immigration status, and mental/ physical disability.²² In order to fulfill the needs and ensure the wellbeing of a society's most vulnerable, it is necessary to have some idea of who these people are. This is another opportunity to collaborate with local organizations, who may also be working with vulnerable people in the city. In Richmond, VA, the plan specifically mentions the disparate climate change impacts racialized people face; for example, people of colour are more likely to live in areas with less tree canopy coverage and less greenspace, resulting in greater heat vulnerability in the warm months.²³ Another example is the Evergreen-Vancouver collaboration which investigated elderly people's experiences of climate change and heat vulnerability.²⁴ As the survey of Canadian climate plans mentioned, very few cities were explicit about themes such as racism, anti-Indigeneity and ableism, etc., but it is always good to clearly

²² Jennifer Dobai, Manuel Riemer, and Bianca Dreyer, 'Sustainability Justice in the Context of Municipal Climate Action Planning: Key Consideration' (Viessmann Centre for Engagement and Research in Sustainability, 3 September 2020), <https://researchcentres.wlu.ca/viessmann-centre-for-engagement-and-research-in-sustainability/assets/documents/sustainability-justice-in-the-context-of-municipal-climate-action-planning-key-consideration.pdf>.

²³ City of Richmond, 'Equity Screening Tool', accessed 2 August 2021, <https://static1.squarespace.com/static/5e5d14a607547560c855c76a/t/606b77aec3df3c39619552b9/1617655726903/RVAGreen+2050+Equity+Screening+Tool+rev.1.15.2021.pdf>.

²⁴ Han, Farina, and Iqbal, 'Climate Risks - Engaging Vulnerable Populations'.

acknowledge the places where there is room for improvement and to recognize the people who are marginalized within the community.

Ensure access to information and participation

As part of the procedural equity pillar, it is important to make participation in this climate equity movement as accessible as possible. Translating material into various relevant languages is one way to relay information to broader swaths of the population. Another strategy is to coordinate community engagement to support accessibility, such as meeting in central places that are easy to access, compensating people for their time, promoting widely to let people know about the engagement, and offering alternative forms of engagement (e.g., online/ mail-in surveys or telephone interviews). This may be difficult, depending on the diversity of the community and the resources allocated to this project, but is a useful lesson to keep in mind.

Recommended Climate Equity Indicators for New Westminster

This section will propose and justify potential climate equity indicators aligned with the New Westminster context. The Applied Economics Clinic recommends four indicator categories:²⁵

- **Outcome indicators:** measures in absolute terms
- **Distributional dimensions:** examines outcomes by dimension
- **Process metrics:** assesses inclusion and representation
- **Structural metrics:** looks at systemic accountability

This project will focus primarily on the outcome indicators and the distributional dimensions and secondarily on the other two. The section below will provide

- (1) A longlist of 19 recommended outcome indicators (subcategorized into climate & the environment and built environment & mobility)
- (2) A summary of distributional dimensions (subcategorized into health and demographic & identity)
- (3) A section on process and structural metrics that may inform the development of climate initiatives.

Measuring these indicators will provide a good start to understanding possible climate inequity in a New Westminster context. Layering these outcome indicators on top of distributional dimensions will provide insight into the specific factors that are leading to this inequity. For example, in other contexts, layering age on top of heat vulnerability revealed that older people are more likely to be vulnerable to heat.²⁶ Or, layering median income on top of tree canopy cover may reveal that poorer people tend to have fewer trees in their neighbourhoods.²⁷ These findings will assist in creating more targeted policy that will lead to greater climate equity in the City.

²⁵ Elizabeth A Stanton and Bryndis Woods, 'AEC Climate and Social Equity Framework' (Applied Economics Clinic, 2020),

<https://static1.squarespace.com/static/5936d98f6a4963bcd1ed94d3/t/5f84b6d06f28c226eb38d8d9/1602533079258/AEC%2BEquity%2BFramework%2BProtocol%2B%287%29.pdf>

²⁶ Han, Farina, and Iqbal, 'Climate Risks - Engaging Vulnerable Populations'.

²⁷ City of Richmond, 'Climate Equity Index'.

Outcome Indicators

Climate & Environmental Indicators

Indicator	Definition	Justification
Flood risk	The percent of the neighbourhood boundary that falls in the combined coastal and freshet floodplain and would be impacted by coastal flooding (e.g., sea level rise or storm surge).	Risk relating to flooding relates to a community's adaptive capacity, which may vary. Some populations have more limited resources to prepare for floods or recover after them. ²⁸
Fire risk	The percent of the neighbourhood boundary that falls within areas marked as very high fire severity.	Risk relating to wildfires is an important equity concern because wildfires are particularly devastating for vulnerable populations, which are likely to have lower adaptive capacity and less resources for recovery. ²⁹
Air quality	The percent of the neighbourhood boundary that has above average health risk due to poor air quality according to the BC Air Quality Health Index (determined by looking at particulate matter (PM _{2.5}), ground-level ozone (O ₃) and nitrogen dioxide (NO ₂)).	Air quality is an essential climate equity indicator as the negative effects of air pollution disproportionately affect marginalized and vulnerable communities. ³⁰ This includes people who, for example, live in proximity to polluting facilities, major roadways and trains, are exposed to smoke from wildfires, or live in buildings without centralized filtered air.

²⁸ Blair Felmate, Marina Moudrak, and Kathryn Bakos, 'Climate Change and the Preparedness of Canadian Provinces and Territories to Limit Flood Risk' (University of Waterloo: Intact Center on Climate Change, 2020), <https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2020/11/Provincial-Territory-Flood-Report.pdf>.

²⁹ Ryan Richards, 'Before the Fire: Protecting Vulnerable Communities From Wildfire', Center for American Progress, 25 July 2019, <https://www.americanprogress.org/issues/green/reports/2019/07/25/472639/before-the-fire/>.

³⁰ UNEP, 'Young and Old, Air Pollution Affects the Most Vulnerable', UNEP, 16 October 2018, <http://www.unep.org/news-and-stories/blogpost/young-and-old-air-pollution-affects-most-vulnerable>.

<p>Tree canopy cover</p>	<p>The percent of the neighbourhood boundary with tree canopy coverage.</p>	<p>In addition to mitigating extreme heat, trees also help provide cleaner air, capture carbon dioxide, contribute to greater wildlife biodiversity and mitigate flood risk.³¹ Marginalized communities are less likely to have trees in their neighbourhoods, thus designating tree canopy cover as an equity concern.</p>
<p>Urban Heat Island (UHI) index</p>	<p>The mean surface temperature of the neighbourhood boundary. A UHI is an urban area that is significantly warmer than its surrounding rural area generally due to human activity.</p>	<p>UHIs are an extreme health risk, thus assessing which neighbourhood boundaries are most affected by this effect will help protect vulnerable populations.³²</p>
<p>Heat vulnerability</p>	<p>The percent of the neighbourhood boundary in which people are more vulnerable to heat. Exposure to heat describes the likelihood that a person will encounter heat, how hot it is, and for how long.</p>	<p>As New Westminster faces higher temperatures, it is important to evaluate different populations' vulnerability to these increasingly dangerous conditions so that their exposure can be minimized leading to less disparate health outcomes.</p>
<p>Proximity to green community recreation areas</p>	<p>The number of green recreation areas (parks, open space, beaches, athletic fields) within one kilometer of the neighbourhood boundary.</p>	<p>Access to green spaces leads to positive health outcomes and a greater sense of community. Previous research has found that more vulnerable communities are less likely to have access to green space,</p>

³¹ Mary Jane Starr, 'The Importance of Urban Tree Canopy', Text, *Canadian Geographic* (blog), 12 October 2013, <https://www.canadiangeographic.ca/article/importance-urban-tree-canopy>.

³² US EPA, 'Heat Islands and Equity', Overviews and Factsheets, 6 November 2019, <https://www.epa.gov/heatislands/heat-islands-and-equity>.

		thus making it an equity concern. ³³
Proximity to waste sites	The average distance to the nearest waste site (hazardous waste generators and facilities, facilities with documented toxic releases, solid waste sites and facilities and cleanup sites) for each neighbourhood boundary.	Marginalized communities are more likely to live close to waste sites, thereby facing higher exposure to potentially dangerous chemicals and pollutants, and leading to negative health outcomes. ³⁴ Thus, it is important to assess the extent to which different neighbourhood boundaries are exposed to these hazardous sites.
Pesticide use	The total kilograms per square kilometre of selected pesticides used in production-agriculture for each neighbourhood boundary.	Being exposed to pesticide sprays can lead to negative health outcomes. Monitoring disparities in which neighbourhood boundaries have pesticide exposure can help reveal potential inequities.
Drinking water quality	The average concentration of contaminants within drinking water systems in each neighbourhood boundary.	Access to clean and safe water is essential for community health. Evaluating the range of contamination in drinking waters across New Westminster could help reveal inequities in the city and create more focused policies to ameliorate these disparities. The City's water is provided through one system, but there may be differences on a household scale (depending on pipes, etc.)

³³ Viniece Jennings, Lincoln Larson, and Jessica Yun, 'Advancing Sustainability through Urban Green Space: Cultural Ecosystem Services, Equity, and Social Determinants of Health', *International Journal of Environmental Research and Public Health* 13, no. 2 (February 2016): 196, <https://doi.org/10.3390/ijerph13020196>.

³⁴ Jafry, Mikulewicz, and Helwig, *Routledge Handbook of Climate Justice*.

Built Environment and Mobility Indicators

Indicator	Definition	Justification
Access to solar PV systems	The percent of people per neighbourhood boundary that have access to and use New Westminster's solar gardens.	An important part of a just energy transition is incorporating more vulnerable people and ensuring they also have access to new energy technology. Solar PV and battery systems also help build resilience and address emergency preparedness in the event of a power outage. ³⁵
Households equipped with central AC	The percent of households equipped with central air conditioning in each neighbourhood boundary.	As extreme heat events become more regular in New Westminster, access to in-household central AC is becoming a more important equity indicator. People with AC are less likely to experience negative health outcomes during these events. ³⁶
Transportation cost burden	The average annual cost of transportation as a percent of the median household income.	Transportation is one of the largest expenditures for many working households, thus measuring this burden can reveal a great deal about equity in New Westminster.
Energy cost burden (energy poverty)	The average annual cost of energy as a percent of the median household income for each neighbourhood boundary.	Like transportation and housing, energy costs may be a burden to households in New Westminster. Thus, getting a sense of which neighbourhood boundaries

³⁵ U.S. Solar Energy Technologies Office, 'Solar and Resilience Basics', Energy.gov, accessed 2 August 2021, <https://www.energy.gov/eere/solar/solar-and-resilience-basics>.

³⁶ Natalie R. Sampson et al., 'Staying Cool in a Changing Climate: Reaching Vulnerable Populations during Heat Events', *Global Environmental Change* 23, no. 2 (April 2013): 475–84, <https://doi.org/10.1016/j.gloenvcha.2012.12.011>.

		are facing a higher burden may assist in improving energy equity in the City.
Bikeability	The average bikeability score for each neighbourhood boundary.	Alternative modes of transport are an important part of greening the City. Thus, measuring different neighbourhood boundary's access to bikeable paths is an important equity concern.
Access to public transit	The average distance to the nearest transit stop (including bus stops and the SkyTrain).	This is an equity concern because transportation is a necessity for most people and thus living in proximity to these routes is essential for social and economic well-being.
Traffic density	The total traffic volume by total road length for each neighbourhood boundary.	Neighborhood boundaries with higher traffic density are likely subject to higher transit burdens and are potentially more exposed to pollution from vehicles. Thus, this is an important equity consideration.
Access to electric vehicle charging infrastructure	The number of publicly available charging stations per neighbourhood boundary.	As New Westminister creates infrastructure to support the proliferation of EVs the city, it is important to provide equal access to these stations across the city.
Commute time	The percent of a neighbourhood boundary population with a commute time over the regional average (26 minutes in British Columbia). Alternatively, the City could also measure the average commute time for each neighbourhood boundary.	Commute time is an important equity concern because longer commute times result in people having less time for other activities. Populations who cannot afford to live near their place of work or schools are most affected by this, leading to greater inequity in the New Westminister community

Distributional Dimensions

Health Dimensions

These indicators include cancer fatalities, healthy food access, low infant birth rate, heart attack fatalities, asthma, diabetes, obesity, chronic obstructive pulmonary disease, coronary heart disease, high blood pressure, kidney disease, poor mental health, and poor physical health.

Other North American studies have found that low-income communities and communities of colour tend to be disproportionately affected by health conditions relating to climate change and environmental impacts.³⁷ People who live in proximity to highly polluted areas like highways and industrial buildings are more likely to develop health conditions like asthma and cancer.³⁸ Thus, it is important to look at the health dimensions of climate equity to understand which populations in New Westminster are more vulnerable. Climate change is a risk amplifier, and thus people with health conditions are more likely to be affected by climate or environmental change. Assessing how health and environmental indicators intersect will, again, help create more targeted and specific policy to mitigate the effects of climate change on more vulnerable and marginalized communities. These health indicators may help identify underlying factors such as low access to healthcare, environmental factors and social or economic barriers to accessing healthcare.

Demographic and Identity Dimensions

These indicators include disability, unemployment, educational attainment, linguistic isolation (households that are limited English-speaking households), digital access, median income, poverty rate (according to Canadian cut-offs), change in income (five-year annual percent change in median household income), household cost burden (median housing cost as a percent of median income), over-crowdedness, age, gender, and race.

In other cities, many of these indicators have been found to correlate with disparate exposure to climate or environmental hazards.³⁹ Thus, gathering this data will help New Westminster assess which populations are more vulnerable to

³⁷ L Rudolph, S Gould, and J Berko, 'Climate Change, Health, and Equity: Opportunities for Action' (Oakland, CA: Public Health Institute, March 2015), <http://www.phi.org/wp-content/uploads/migration/uploads/application/files/h7fjouo1i38v3tu427p9s9kcmhs3oxsi7tsg1fovh3yesd5hxu.pdf>.

³⁸ Vann R. Newkirk II, 'Environmental Racism Is Real, According to Trump's EPA', The Atlantic, 28 February 2018, <https://www.theatlantic.com/politics/archive/2018/02/the-trump-administration-finds-that-environmental-racism-is-real/554315/>.

³⁹ City of Richmond, 'Climate Equity Index'.
Williams-Rajee and Evans, 'Climate Action through Equity'.

various climate and environmental hazards. In their preliminary research, Metro Vancouver has gathered 49 indicators on climate equity and equity more generally.⁴⁰ The map below (Diagram B) shows the overlap between flood risk and demographic equity (an amalgamation of eight demographic factors). This preliminary research indicates a correlation between being socially disadvantaged and being vulnerable to floods. These sorts of intersections unveil the systemic inequalities that underlie climate inequity.

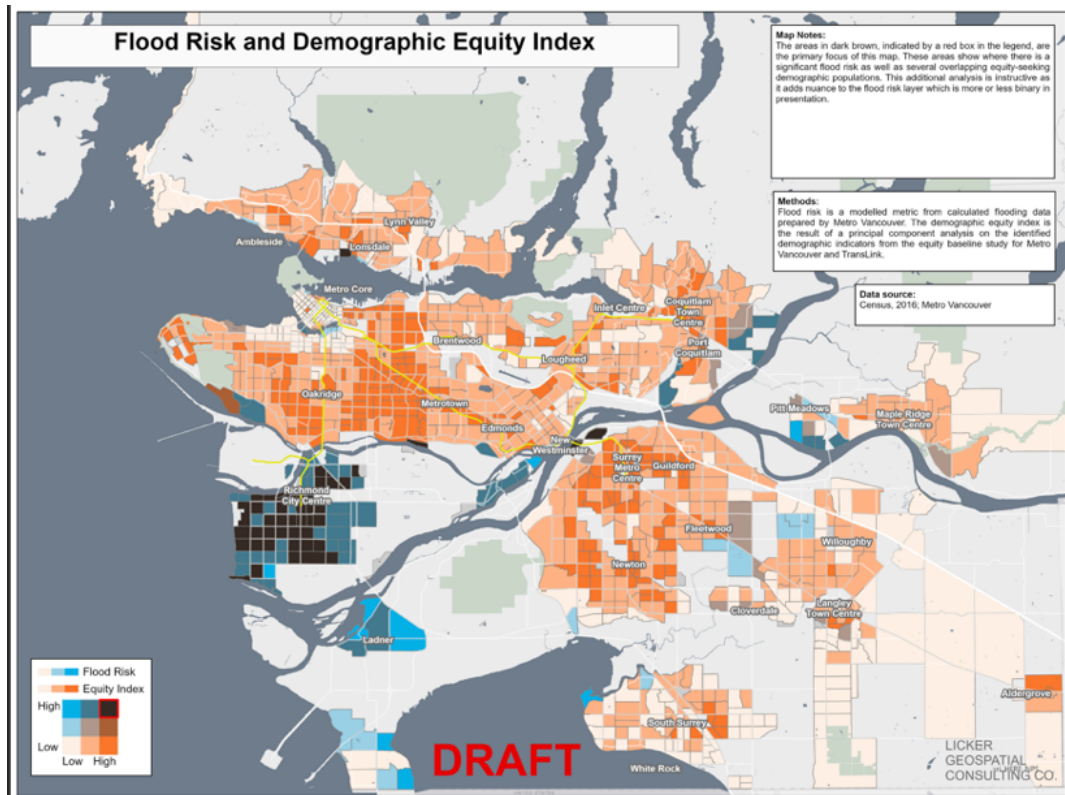


Diagram B

⁴⁰ Keltie Craig Consulting, 'Social Equity & Regional Growth Study: Considerations for integrating social equity into regional planning and Metro 2050' (Metro Vancouver Regional District, 2020), <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/MVSocialEquity-RegionalGrowthStudy.pdf>.

Process and Structural Metrics

The focus of this project is thinking of climate equity indicators for specific outcomes. However, it is also important to incorporate equity concerns in *process*—both in the implementation of this project and in climate action in general. As mentioned above, process metrics measure inclusion and representation and structural metrics look at systemic accountability. These metrics are more difficult to measure than the outcome indicators. However, there are many guiding questions that City staff can ask themselves as they create climate plans and implement climate action.

Included in **Appendix B** is a preliminary Climate Equity Toolkit for New Westminster modelled on other cities' efforts, but more connected to climate and New Westminster.⁴¹ This toolkit is intended to guide climate action at every step of the process. It can be used for existing programs and in the development of new ones. It comprises of sets of questions that the city staff should ask itself in order to make the climate programming as equitable and fair as possible. Much of the language is aimed specifically at vulnerable populations because equitable climate action should aim to increase opportunities and minimize harms for these communities in particular—in line with the targeted universalism approach. This is a helpful tool as it is immediately actionable; City staff can implement these questions into their policy creation and action design right away.

This Climate Equity Toolkit is divided into five sections:

1. **Initial phase:** project team make-up, the community desire for this action and the intended results.
2. **Engagement and communications:** methods of engagement with stakeholders.
3. **Research and feasibility:** available research, assumptions and consulting local experts.
4. **Implementation and outcomes:** implementation strategies, informing the public of the initiative and possible partnerships in the community.
5. **Ongoing considerations, evaluation and accountability:** continued monitoring of equity concerns in the initiative and ways that the City can continue to be accountable to the community.

⁴¹ Julie Neslon and Lisa Brooks, 'Racial Equity Toolkit: An Opportunity to Operationalize Equity' (Government Alliance on Race and Equity, 2016), <https://www.racialequityalliance.org/wp-content/uploads/2015/10/GARE-Racial-Equity-Toolkit.pdf>.

City of Seattle, 'Racial Equity Toolkit to Assess Policies, Initiatives, Programs, and Budget Issues'.

City of Richmond, 'Climate Equity Index'.

City of Saskatoon, 'Equity Toolkit for Projects'.

Recommended Methodology for Creating a Climate Equity Framework

1. Complete a literature review [completed]

This literature review looks internally at New Westminster's climate, equity and climate equity work thus far, and externally by examining other North American cities' work on climate equity. This provided lessons for the project, as well as valuable background context for the broader trend towards climate equity in a North American context. This may create opportunities for collaboration on creating a climate equity framework with departments within the city and with other cities doing similar work.

2. Undertake background research on vulnerable communities in the city

Conducting a preliminary inquiry into which groups or individuals are most vulnerable in the community will help in the engagement phase. This approach allows the researchers to have a general idea of which marginalized groups they need to consider in their outreach efforts. Other cities have identified that vulnerability often falls along lines of race, gender, sexuality, age, religion, socio-economic status, disability, immigration status and Indigeneity. This can be achieved by reaching out to community leaders, council members and community groups and asking them for their first impressions of this project and its potential impacts to community members.

3. Create a preliminary list of indicators [completed]

Initiate this project with a good idea of the types of indicators that will be included in the framework. Of course, every city is different and so this list of indicators may evolve over time. Such equity frameworks need to be iterative in nature to account for changing demographics, dynamics and community trends. This list will be used to provide community interviewees with an idea of what this climate equity framework might look like. However, with input from community members and city staff, the list will develop over time.

4. Engage with community members

Community engagement is a fairly large undertaking, but it is essential to keep the community informed about this project and to hear their input as much as possible. Of course, it would be ideal to talk to as many people as possible, but meaningful community engagement requires a great deal of preparation, time and resources. This engagement involves both an informational component, in which participants will be informed about the climate equity framework and the city's work on climate and equity and an interview component, in which

participants will be asked for their input on the indicators. The purpose is to see if the indicators match their experience of the city and to see if they think any considerations are missing.

Below are some lessons for community engagement from other projects in the City and other cities in North America who are doing similar work:

- Vary the medium of engagement: Some possible options are surveys (online, paper or telephonic), one-on-one interviews and focus groups. Surveys are more accessible and require less time for the participant to fill out. However, interviews and focus groups offer an opportunity to engage more deeply with the participant. The method of engagement can be decided in consultations with community leaders and representatives so that it is accessible for their community as possible.
- Partner with community groups to extend your reach: Working with local organizations (such as religious organizations, non-profits or activist groups) may allow access to people from vulnerable groups the City is hoping to hear from. If they are approached by a trusted intermediary, they may be more willing to participate in the community engagement. While doing this, the City must try to make this as reciprocal a relationship as possible. It is not ideal to always go to community groups with requests, so think about ways that New Westminster can reciprocate these groups or individuals for giving up their time and sharing their knowledge and expertise.
- Compensate participants for their time to the extent the City is able: an important aspect of this work is hearing from the most vulnerable people in the community, many of whom may find it difficult to make the time to be interviewed. They may be low-income, working multiple jobs or not have accessible public transport. Thus, the city should try to compensate them for taking time out of their day to be interviewed or surveyed. This could be monetary compensation or something like providing food at the focus group.
- Offer opportunities for engagement in languages other than English and French: this will allow people from different backgrounds and people with varying grasps of English or French to give their input more comfortably and to express themselves more freely. Additionally, it is good to use language that is accessible to most people—try not to be too technical or academic. If this sort of language is unavoidable, it will be useful to have a short description or definition attached. These strategies will hopefully open up this space to people from marginalized communities who might be dissuaded by inaccessible language.

5. Compile a final list of indicators

Using the preliminary list, staff input and the results from the community engagement stage, create a final list of indicators. Consider these requirements for each indicator:⁴²

1. They must be equity focused.
2. They must be climate focused, i.e., connected to the city’s broader climate plans.
3. There must be a clear connection between the indicator and climate equity.
4. The data should be available from a reliable and trustworthy source.
5. The data should be updated frequently so that the indicator can be tracked over time.

6. Determine the analysis tool/ model to be used

Given that this is a relatively new topic, tools to analyze climate equity are still in their formative stages. The table below compares the strategies of San Diego, CA,⁴³ Richmond, VA,⁴⁴ and the City University of New York (CUNY)⁴⁵ model.

City	San Diego	Richmond	CUNY
Strategy	This climate equity tool compares census tracts within the city. A climate equity index (CEI) score between 1 and 100 is given to each of the 297 tracts based on 35 standardized indicators, allowing them to compare across areas. They can measure these CEI scores over time to see how the city improves.	This climate equity index is in the form of an interactive GIS map. Users are able to layer various indicators on top of each other to see how they interact (for example, race and heat vulnerability). There is no score as with the other two tools, but the user can visualize disparate impact with various variables.	This equality indicator tool compares people within the city along lines of race (but would work with other social categories such as gender). It compares the most and least advantaged group within specific categories and then create a score based on the ratio between these two groups. This ratio is measured over time to see how equality between groups improves

⁴² City of San Diego, ‘San Diego’s Climate Equity Index Report’ (San Diego, CA, 2019), https://www.sandiego.gov/sites/default/files/2019_climate_equity_index_report.pdf.

⁴³ Ibid.

⁴⁴ City of Richmond, ‘Richmond, VA - ArcGIS Online’, accessed 2 August 2021, <https://cor.maps.arcgis.com/home/index.html>.

⁴⁵ City University of New York Institute for State and Local Governance, ‘Methodology – Equity Indicators’, accessed 2 August 2021, <https://equityindicators.org/methodology/>.

Note that CUNY is offering to partner with cities to implement their equity tool in local contexts. It may be worthwhile to reach out to them to see if they would be interested in collaborating with New Westminster (equity@islg.cuny.edu)

<p>Pros</p>	<ul style="list-style-type: none"> • Census data is often collected by geographic area (in this case tracts), so the data is organized in an accessible way. • This tool also allows the city to visualize the data on a map, which is perhaps easier to engage with than a number or a graph. 	<ul style="list-style-type: none"> • Creates a visual representation of inequality, which is useful for sharing this information to a more general audience. • Moreover, this tool allows for comparison along many lines (for example, race, income, education level, age, etc.). Thus, the city can get a better idea of the factors that result in higher vulnerability for a population or person. 	<ul style="list-style-type: none"> • This method is useful for exploring a certain social dimension of equality/ equity. • This tool is useful because it acknowledges the systemic barriers that affect people differently according to a specific social category and tackles the issue with that in mind.
<p>Cons</p>	<ul style="list-style-type: none"> • This method does not account for social difference in its analysis. This may overlook specific racial, class-based or gendered dimensions of inequity in the city. • Note: social difference can be layered on top of these results at a later stage through graphs or visuals, but it is not included in the raw CEI number. 	<ul style="list-style-type: none"> • Much detail can get lost in a visual, leading to false perceptions and possibly misdirected action. • The map is a great tool but is perhaps more useful as an initial scan of inequity rather than as an index to monitor progress over time. 	<ul style="list-style-type: none"> • Requires specific data about social factors, which may not be available (for example, there is no race category in New Westminister’s most recent census data). • This method was not designed with climate equity in mind—it is a more general equality measuring tool, so may not be appropriate in this context.

This document will pull primarily from the **San Diego model**, given its versatility. Also, the data that New Westminister has available currently is most adaptable to this model. Of course, there is certainly space to bring in components of the other two models in future climate equity work. All these methods of analysis have potential. The model that New Westminister ultimately chooses will be determined by data access and by the types of results the City is hoping to obtain. Whichever model is most useful to create targeted policies and actions that will lead to a more just and sustainable city for all.

7. Collect and standardize the data

Hopefully, most data will be sourced from government studies, including the census, health data and environmental assessments. However, if this information is not easily available, the City may have to conduct its own data-gathering process. Ideally, the data should be collected at the regional level of interest (in the case of New Westminster, the neighbourhood boundary level). The process of standardization will be discussed in more detail in the next section (General Methods for Data Analysis).

8. Create a mechanism to keep the data updated

An important aspect of this process is keeping the data regularly updated. Some information, like fire risk for example, is updated every day. However, many cities lack mechanisms or resources to continually update information on things like heat vulnerability or bikeability. Thus, an essential component of creating a climate equity framework is building in mechanisms for updating. Some ways to do this include:

- Partnering with city organizations or NGOs who are equipped to collect this data.
- Collaborating with a consultancy organization that could focus all their energy on keeping these indicators updated.
- Designating this duty to a city employee, who would be responsible for sourcing or collecting this data every year.

General Methods for Data Analysis

Each indicator will involve a different method of analysis. More details about these methods are included in **Appendix A**. However, this section will provide some basic information about processing and standardizing the data so that it can be interpreted in a consistent way across all indicators.

ArcGIS

This mapping tool is essential for assessing difference across neighbourhood boundaries. Often data is categorized in larger areas than neighbourhood boundaries. ArcGIS is useful for calculating the area of a neighbourhood boundary that is subject to that hazard. For example, drinking water contamination levels are assessed at specific sampling sites that encompass multiple neighbourhood boundaries. ArcGIS is useful to calculate the overlap between sampling areas and neighbourhood boundaries and create weighted averages of specific variables.

Standardization

This process borrowed from San Diego might be helpful in collecting and standardizing the data.⁴⁶ Once the data are collected and localized to a neighbourhood boundary level, they are standardized by finding the z-score for each indicator within each neighbourhood boundary. The z-score is the number of standard deviations a value is from the mean, i.e., how far away the value is from the average. An example of this would be calculating the z-score of tree canopy cover in Queensborough. Thus, a table would begin to form with indicators in the rows and neighbourhood boundaries on the columns with z-scores in the center.

$$Z_{ij} = \frac{x_{ij} - \mu_i}{\sigma_i}$$

Where,

x_{ij} = value for the indicator i for neighbourhood boundary j
 μ_i = average for indicator i
 σ = standard deviation for the indicator i

Thereafter, a total climate equity score is calculated by averaging the z-score for each of the neighbourhood boundaries (i.e., by finding the average of each column in the table).

	Neighbourhood boundary 1	Neighbourhood boundary 2	Neighbourhood boundary n
Indicator 1	z-score 1-1	z-score 1-2	z-score 1-n
Indicator 2	z-score 2-1	z-score 2-2	z-score 2-n
Indicator n	z-score n-1	z-score n-2	z-score n-n
	Average	Average	Average

The final step is to index the average z-scores on a scale (in this example, it is 0-100) for each of the neighbourhood boundaries so that they are more easily understood by the lay person. This will also be helpful in measuring progress over time. On this scale, neighbourhood boundaries performing the best score the highest (100) and those performing the worst, score the lowest (0). Scores for the in-between neighbourhood boundaries are given relative to these two extremes.

$$Score_j = \frac{(index_{max} - index_{min})}{(z_{max} - z_{min})} * (z_j - z_{min}) + index_{min}$$

Where,

$Score_j$ = CEI score for neighbourhood boundary j
 $index_{max}$ = maximum possible index value (100)
 $index_{min}$ = minimum possible index value (0)
 z_{max} = maximum value for all average z-scores
 z_{min} = minimum value for all average z-scores
 z_j = mean z-score for neighbourhood boundary j

⁴⁶ City of San Diego, 'San Diego's Climate Equity Index Report'.

Incorporating Dimensional Analysis

Once the data have been processed and standardized, it is easier to layer over demographic and health dimensions on top of these findings. For example, San Diego created a stacked bar graph to show the percent of people of colour by census tract performance.⁴⁷ This revealed that tracts with more people of colour are more likely to perform poorly on climate equity. Such insights that can help New Westminster create better policy to improve climate equity for everyone.

Helpful Sources of Data

Appendix A has a detailed list of the available data, but the sources outlined below are more general useful resources for this project.

- [2016 New Westminster census data](#)
- [Indicators of Climate Change for British Columbia \(2016 update\)](#)
- [Community health and climate change \(Vancouver Coastal Health\)](#)
 - Technical report: [Mapping spatial patterns in vulnerability to climate change-related health hazards](#)
- [Canada's historic climate data](#) (open source)
- [Canada Open Data](#)
- [Maps of New Westminster](#)
- [BC Community Health Data: New Westminster](#)
- [Census tracts](#) and [Neighbourhood boundaries](#) in New Westminster

Conclusion

Incorporating climate equity into New Westminster's climate action has never been more important. As observed during the heat wave of July 2021 in which 18 New Westminster residents died, climate change is deadly and affects vulnerable people disproportionately.⁴⁸ It is not possible to work towards minimizing carbon emissions and *then* focus on climate equity—the City must strive towards these objectives simultaneously. As the impacts of climate change become more and more apparent, New Westminster is taking important steps towards creating a more resilient, sustainable and just community. This project lays the foundation for assessing and tending to the needs of the city's most vulnerable residents through climate equity evaluation and action in order to ensure that no New Westminster resident is left behind in the journey towards a sustainable future.

⁴⁷ Ibid.

⁴⁸ Theresa McManus, 'New West First Responders Report at Least 18 Sudden Deaths in Heat Wave', New West Record, 30 June 2021, <https://www.newwestrecord.ca/local-news/new-west-first-responders-report-at-least-18-sudden-deaths-in-heat-wave-3922001>.

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Appendix A: Detailed Description of Recommended Indicators

Flood Risk

Definition	The percent of the neighbourhood boundary that falls in the combined coastal and freshet floodplain and would be impacted by coastal flooding (e.g., sea level rise or storm surge).
Available Data	<ul style="list-style-type: none"> • Map of Provincial Floodplain: 2007 Map of the New Westminster’s floodplain. This map does not take into account sea level rise, but does show the ‘floodbox’ region of the city around the river [not updated] • Surging Seas Seeing Choices: Predicts how the sea will rise as the global average temperature rises due to climate change. Uses this research paper as a reference. [not updated] • Flood Management New Westminster: New Westminster’s flood management plans
Method	Use ArcGIS to calculate the total area of each neighbourhood boundary that is under flood risk according to the map as a percentage of the total area.

Fire Risk

Definition	The percent of the neighbourhood boundary that falls within areas marked as very high fire severity.
Available data	<ul style="list-style-type: none"> • Fire Danger Rating BC: A fire danger rating (i.e., the risk of a wildfire starting) for the province of British Columbia which is updated daily at approximately 2 pm. Rated from very low to extreme. The map is scaled quite small, so it might be difficult to find data for specific neighbourhood boundaries of New Westminster. [updated daily] • Seasonal Outlook BC: A monthly update of wildfire outlook in British Columbia [updated monthly] • B.C. Wildfire Dashboard: A map of active fires in British Columbia [updated daily]
Method	Use ArcGIS to calculate the total area of each neighbourhood boundary that is under wildfire risk according to the map as a percentage of the total area. Could create an average of wildfire risk by monitoring the fire danger risk over a period of time.

Air Quality

Definition	The percent of the neighbourhood boundary that has above average health risk due to poor air quality according to the BC Air Quality Health Index (determined by looking at particulate matter (PM _{2.5}), ground-level ozone (O ₃) and nitrogen dioxide (NO ₂))
Available data	<ul style="list-style-type: none"> • Current air quality data map BC: Map showing air quality in British Columbia that is updated every 60 minutes. Air quality determined by the positions of the stations, thus there is not separated data for each neighbourhood boundary. [updated every hour] • Air Zone Management Response BC 2019: A summary of air quality in British Columbia for 2019. Has broken up the region into seven smaller air zones and ranked them from green to red. [updated yearly] • Status of Fine Particulate Matter in B.C. 2016-2018: Summaries of Canadian Ambient Air Quality Standard achievement status for fine particulate matter in British Columbia air zones, as well as both the annual and 24-hour PM_{2.5} levels at individual monitoring stations [updated daily] • GitHub link to an R package that helps calculate air quality metrics according to Canadian Ambient Air Quality Standards • FireSmoke Canada: Provides daily forecasts on wildland fires and concentrations of PM_{2.5} smoke particles [live updates] • Vancouver Coastal Health Community Health and Climate Change Ground Level Ozone in New Westminster: A storymap showing vulnerability to ground-level ozone in New Westminister rated from very low to very high. It also maps exposure to ground level ozone, sensitivity to ground-level ozone (by looking at age and pre-existing health conditions), and adaptive capacity to ground-level ozone in the city. It then summarizes all these considerations in one map.
Method	Use ArcGIS to calculate the total area of each neighbourhood boundary that is classified under each category of air quality as a percentage of the total area. Would have to look at average air quality or create averages from the available data.

Tree canopy cover

Definition	The percent of the neighbourhood boundary with tree canopy coverage.
Available data	<ul style="list-style-type: none">• Tree inventory for East and West New Westminster from the Open Data set. [updated monthly]
Method	Calculate the area of each neighbourhood boundary categorized as tree canopy as a percentage of all land cover types.

Urban Heat Island Index

Definition	The mean surface temperature of the neighbourhood boundary. An urban heat island is an urban area that is significantly warmer than its surrounding rural area generally due to human activity, such as pollution levels, differences in infrastructure and how well the surfaces in each environment absorb and emit heat. ⁴⁹
Available data	<ul style="list-style-type: none">• There is no data currently available
Method	The first step is to detect urban heat islands. There are several methods to accomplish this; two broad methods include map-based image analysis and digital infrared radiation thermometers. See this paper by Martin et al on " An Alternative method to characterize the surface heat island ". Also see this NASA training on satellite remote sensing for UHIs. The second step is to calculate the area of each neighbourhood boundary found to be a UHI as a percentage of the total area.

Heat vulnerability

Definition	The percent of the neighbourhood boundary in which people are more vulnerable to heat. Exposure to heat describes the likelihood that a person will encounter heat, how hot it is, and for how long. ⁵⁰
Available data	<ul style="list-style-type: none">• There is no data currently available for New Westminster, specifically• Canadian Climate Atlas: A map containing predictions for extreme weather, such as very hot (over 30°C), number of heat waves, very cold days (under -30°C), heavy precipitation, etc.) in Canada. This resource

⁴⁹ Definition from Metro Van + <https://www.urbanheatislands.com/home>

⁵⁰ Definition from: https://map.toronto.ca/maps/html/tph_hvmap/AboutMap_TPH_HVMap.htm

	<p>contains city-level summaries of these predicted conditions.</p> <ul style="list-style-type: none"> • Vancouver Coastal Health community health and climate change Storymap: This Storymap has a section for heat vulnerability which maps parts of the region (unclear if New Westminster is included) from very low to very high heat vulnerability
Method	<p>As with UHIs, the first step is to identify the areas of the city in which people are more vulnerable to heat. See this heat vulnerability index map from Toronto for inspiration. It does not include a methodology but may be helpful in New Westminster's efforts. Heat vulnerability may also be determined more qualitatively by asking people about their experiences; populations that tend to be more vulnerable are elderly and young people, houseless people, low-income people, people who work outside, people without air conditioning, and people with chronic illnesses or disabilities. Ontario's efforts are useful to examine in this regard. The second step is to calculate the area of each neighbourhood boundary that are more vulnerable to heat as a percentage of the total area or the number of people found to be more vulnerable to heat as a percentage of the population of the neighbourhood boundary.</p>

Proximity to green community recreation areas

Definition	<p>The number of green recreation areas (parks, open space, beaches, athletic fields) within one kilometer of the neighbourhood boundary.</p>
Available data	<ul style="list-style-type: none"> • Park greenspaces: map of park greenspaces in the City • Parks: map of parks in the City • Parks, Recreation and Community School Programming: a listing and map of Parks, Recreation and Community School Programming and supports, with an emphasis on low-cost, free and affordable services • Sports fields: a map of various types of activity fields including those used for softball, soccer, rugby, football, and lacrosse
Method	<p>Using ArcGIS, apply a one-kilometer buffer around each recreation area, lay this on top of neighbourhood boundary</p>

	lines, and then count the number of green spaces that overlap with each neighbourhood boundary.
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Proximity to waste sites

Definition	The average distance to the nearest waste site (hazardous waste generators and facilities, facilities with documented toxic releases, solid waste sites and facilities and cleanup sites) for each neighbourhood boundary.
Available data	<ul style="list-style-type: none"> • Zoning in New Westminster • Land use: Represents what a parcel of land is currently being used for • Land Use Industrial
Method	Using ArcGIS, calculate the average distance to the nearest waste site from each neighbourhood boundary. The City can also create a weighted average for each neighbourhood boundary by weighing the average distance of population neighbourhoods by its population.

Pesticide use

Definition	The total pounds per square mile (lb/mi ²) of selected pesticides used in production-agriculture for each neighbourhood boundary.
Available data	<ul style="list-style-type: none"> • This data is not currently available
Method	First, create a list of pesticides of concern by filtering for hazard and volatility. Then, match production pesticide use to each neighbourhood boundary using a match file in ArcGIS. Thereafter calculate the area of pesticide use as a percentage of the total area of the neighbourhood boundary. See this example from the California CalEnviroScreen 3.0 which maps pesticide use in the region

Drinking water quality

Definition	The average concentration of contaminants within drinking water systems in each neighbourhood boundary.
Available data	<ul style="list-style-type: none"> • Water quality data: Reports with water sample tests [updated monthly] • 2020 Annual water quality report: Annual summaries of water quality in new Westminster. Note that the reports are completed using sample sites as reference and there may be fewer than one site per neighbourhood boundary.

Method	Identify drinking water boundaries based on the sampling sites in the city. Then, associate drinking water contaminant data with each system and create average concentrations for each contaminant and system. Thereafter, reallocate the systems boundaries to the neighbourhood boundary scale and obtain a percentile score for each contaminant and neighbourhood boundary. The final indicator will be calculated as the sum of the percentiles for all contaminants. See this example from the California CalEnviroScreen 3.0 which maps drinking water contaminant results in the region
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Access to solar PV systems

Definition	The percent of people per neighbourhood boundary that have access to and use New Westminister's solar gardens.
Available data	<ul style="list-style-type: none"> • Electricity generating stations in BC • Urban Solar Gardens in New West: Information about New Westminister's solar gardens, including current power, energy over the course of the month and CO₂ saved.
Method	Calculate the total number of households per neighbourhood boundary who have access to and use the city's solar power network as a percentage of the neighbourhood boundary's total household number

Households equipped with central AC

Definition	The percent of households equipped with central air conditioning in each neighbourhood boundary.
Available data	<ul style="list-style-type: none"> • This data is not currently available
Method	Calculate the total number of households per neighbourhood boundary which have access to central AC as a percentage of the neighbourhood boundary's total household number

Transportation cost burden

Definition	The average annual cost of transportation as a percent of the median household income.
Available data	<ul style="list-style-type: none"> • Metro Vancouver housing and transport cost burden index: An index of housing and transportation in Metro Vancouver. There is specific data on New Westminister (but only an aggregated city level, i.e., not on a neighbourhood boundary level)

	<ul style="list-style-type: none"> • A report on the above study: A 2015 report on the Metro Vancouver housing and transport burden index. This includes data sourcing and methodology • Housing data for the city is included in the census
Method	First aggregate energy expenditure and median household after-tax income by neighbourhood boundary. Divide the total energy expenditure by the total median household after-tax income to get the energy cost burden (multiply by 100 to get a percentage) for each neighbourhood boundary.

Energy cost burden (energy poverty)

Definition	The average annual cost of energy as a percent of the median household income for each neighbourhood boundary.
Available data	<ul style="list-style-type: none"> • City Energy Use Through Time: summary of energy usage in New Westminster [updated annually] • Energy consumption: details of energy usage for each property in New Westminster [updated annually] • CUSP's Energy Poverty and Equity Explorer tool: A mapping tool that shows the distribution of energy poverty in Canada
Method	<p>Calculation according to CUSP:</p> $\text{Energy cost burden [\%]} = \frac{\text{Energy expenditure [\$]}}{\text{After-tax income [\$]}}$ <p>National median = 3% Households experiencing energy poverty >=6%</p> <p>First aggregate energy expenditure and median household after-tax income by neighbourhood boundary. Divide the total energy expenditure by the total median household after-tax income to get the energy cost burden (multiply by 100 to get a percentage) for each neighbourhood boundary.</p>

Bikeability

Definition	The average bikeability score for each neighbourhood boundary.
Available data	<ul style="list-style-type: none"> • Greenways in New West: cycling routes within the city connecting communities and major parks in New Westminster • Metro Vancouver bikeability map: A 2011 map showing the bikeability of the Metro Vancouver region
Method	The bikeability map linked above is out of date but may provide insight into what a bikeability tool might look like. The

	<p>creators of the map outline the process of creating a bikeability index in this journal article:</p> <p>Winters, Meghan, Michael Brauer, Eleanor M Setton, and Kay Teschke. "Mapping Bikeability: A Spatial Tool to Support Sustainable Travel." <i>Environment and Planning B: Planning and Design</i> 40, no. 5 (October 2013): 865-83. https://doi.org/10.1068/b38185.</p>
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Access to public transit

Definition	The average distance to the nearest transit stop (including bus stops and the SkyTrain).
Available data	<ul style="list-style-type: none"> • Map of New West bus stops • SkyTrain Stations
Method	Use ArcGIS to calculate each household's distance to the nearest transit stop, then find the average for the neighbourhood boundary

Traffic density

Definition	The total traffic volume by total road length for each neighbourhood boundary.
Available data	<ul style="list-style-type: none"> • Traffic volumes: Average weekday daily two-way traffic volumes at midblock points between the years 2006 and 2018 inclusive
Method	Using ArcGIS and traffic volume data, measure the total traffic volume by total road length for each neighbourhood boundary

Access to Electric Vehicle (EV) charging infrastructure

Definition	The number of publicly available charging stations per neighbourhood boundary.
Available data	<ul style="list-style-type: none"> • Map of EV charging stations: A map of EV charging locations around the world
Method	Using ArcGIS to overlay EV charging infrastructure over neighbourhood boundaries and count how many chargers are available in each

Commute time

Definition	The percent of a neighbourhood boundary population with a commute time over the regional average (26 minutes in British Columbia).
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	Alternatively, the City could also measure the average commute time for each neighbourhood boundary
Available data	<ul style="list-style-type: none"> • Commuting Patterns - Workers who work in New Westminster • Commuting Patterns - Workers who live in New Westminster • Southwest BC public transit stats (moovit insights): moovit insights public transit index has found statistics on commute patterns in Southwest British Canada. They use this data to compare the region to other areas of the country and the world. There is not much information on their data sourcing, so it is not clear how reliable this information is. • TransLink trip diary: A resource that looks at transport on a household level for Metro Vancouver [last updated in 2017]
Method	Gather commute patterns data on a neighbourhood boundary level. From this data, find the total number of people whose commute time is over the national average as a percentage of the total number of commuters in the neighbourhood boundary.

Health

Definition	Health indicators for each neighbourhood boundary. Some important indicators include cancer fatalities, healthy food access, low infant birth rate, heart attack fatalities, asthma, diabetes, obesity, chronic obstructive pulmonary disease, coronary heart disease, high blood pressure, kidney disease, poor mental health, and poor physical health.
Available data	<ul style="list-style-type: none"> • BC community health data: New Westminster's health data collected by BC Center for Disease Control. This data is aggregated on a city-level, so does not reveal the possible disparities between neighbourhood boundaries
Method	The method may differ from indicator to indicator. Perhaps this is best done in consultation with the New Westminster Health Department [Fraser Health?]. If data is not available on a neighbourhood boundary level, the City may take weighted averages for larger/ different areas depending on their overlap with neighbourhood boundaries to correct the scale.

	<p>Some examples of specific indicator parameters from San Diego:</p> <ul style="list-style-type: none"> • Asthma rates: the rate of emergency department visits due to asthma expressed as an age-adjusted rate per 10,000 individuals • Cancer fatalities: the five-year average percent of deaths within each census tract that are cancer related • Low infant birth weight: the percent of full-term births (37 weeks of gestation) within each census tract with a birthweight less than 2,500 grams
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Demographics and Identity

Definition	Demographic and identity data that can be layered on top of other indicators. Some important indicators include disability, unemployment, educational attainment, linguistic isolation (households that are limited English-speaking households), digital access, median income, poverty rate (according to Canadian cut-offs), change in income (five-year annual percent change in median household income), household cost burden (median housing cost as a percent of median income), over-crowdedness, age, gender, and race.
Available data	<ul style="list-style-type: none"> • New Westminster census: online version and New Westminster Open Data version

Appendix B: New Westminster Climate Equity Toolkit

Initial Phase

1. Who is included in the project team?
 - a. Is this team representative of the City of New Westminster? If not, what steps can be taken to ensure that the team includes a diversity of perspectives?
2. Who should the initiative serve? Consider who is of the greatest need and who could benefit the most.
3. What are the intended results and outcomes of the action?
 - a. Do these goals represent equity concerns?
4. What should the initiative's eligibility criteria include?
5. What are the short- and long-term needs of residents from different groups (e.g., racialized people, elderly people, people with disabilities, etc.) and how does this initiative address them?
6. How will the initiative contribute to more equitable access to resources, services, or benefits? How will the city deliver an initiative that is inclusive, accessible, authentic, and representative?
7. How does the initiative respond to the needs of a historically underserved community?
8. What are the costs or risks of not taking equity issues into account in this initiative?
9. What are the benefits of addressing equity issues through this initiative?
10. Does the initiative prioritize areas vulnerable to the impacts of climate change?
11. Has the community asked for this initiative?

Engagement and communications

1. Has the City considered approaches that will minimize the burden of engagement and help ensure that everyone is fully able to participate?
2. How are the traditionally underrepresented groups in this sphere and how can the City better reach them?
3. Does the City have additional budgets to meaningfully engage stakeholders? For example, compensation for Indigenous Elders or Knowledge Keepers.
4. Has the City considered which people and groups may be missed by only using certain methods?
 - a. What other methods could be used to engage these groups?
5. Which employees, departments, or community organizations have experience in/with these specific communities? Can they help the City do outreach?

- a. If working with community organizations, how can the city make the relationship more reciprocal?
6. Is there a history or current sensitive matters—between the City and the community, or between communities—that needs to be considered? Has trust been built (or broken) as a result of past activities?
7. Have the target audiences already been consulted in the past on the same/similar topic? What were the findings at that time? How will they feel about being engaged on this topic again? Will this cause engagement burnout?
8. How do individuals and groups want the City to include them? Can they be contacted to ask prior to engagement? Consider that there may be significant diversity within groups.
9. Does the pace, format, and language of the engagement accommodate everyone, including participants who are least likely to speak up and for whom the information may be new?
10. Are the insights from groups with lived experience of systemic barriers and inequities reflected in the final product?
11. How will the City report back the findings to the full diversity of people who were involved in the engagement activity?
12. Has the City been respectful and culturally sensitive with all their engagement? Particularly with Indigenous engagement, it is important to check in and receive permission to use this knowledge.
13. Does engagement help foster effective long-term relationships and trust between diverse communities and the government?

Research and feasibility

1. What current research, background information, statistics, or demographic data would help the City understand the people or communities that face systemic barriers and inequities in relation to the initiative?
 - a. Can that information also help the City identify what is needed to ensure they will benefit?
2. Has the City checked existing policies that may inform how it addresses equity in this initiative?
3. Does the City's research identify specific areas where it may be unintentionally limiting equity and inclusion?
4. Is the City making assumptions that it needs to verify? How will it verify them?
5. Can the City consult local experts or community members for its research? Can this be done early on or more than once throughout the project?
6. How does this initiative harm or burden people outside of the City?

Implementation and Outcomes

1. What specific communication strategies are needed to inform the community about the initiative?
2. How will communication materials get out to the community organizations and networks that serve diverse populations? How will the city ensure materials and information are relayed on to and understood by people the City is reaching out to?
3. Is the communication about the initiative accessible to all?
 - a. Are there concepts, terms or images that may be difficult to understand or culturally specific that need to be added or adjusted to make the communication more accessible?
4. What human and financial resources are needed to develop and deliver the initiative in a way that incorporates an equity lens?
5. What barriers are there to people accessing the initiative? Has the City mapped out and tried to mitigate these barriers?
6. Has the City identified and recruited key partners that are needed to make the initiative successful? What role will each partner play in the rollout?
7. Does this initiative generate burdens, either directly or indirectly, to vulnerable or historically disenfranchised groups?
8. Does this initiative support vulnerable communities through workforce development, contracting opportunities or increased diversity of employees and staff across sectors?
9. Does this initiative distribute resources across the City?

Ongoing considerations, evaluation and accountability

1. How will the City measure the extent to which the initiative improves equity and access? What indicators will be or have been developed to show that the initiative benefited the desired audiences?
2. What methods is the City using to evaluate the initiative?
3. Is the City gathering feedback from the community? Is it as easy as possible for people to provide feedback? Is their privacy protected when they do so?
4. Does the City validate the findings with the community so as to minimize bias?
5. Has the City considered how it may report the findings to the community, and particularly to people who participated in the evaluation process?
6. When undertaking a review of the initiative, what opportunities are there to enhance equity and inclusion? How can these lessons be incorporated into subsequent iterations of the initiative?
7. How will the City be accountable to its residents? Is it clear who is accountable to whom and for what?
8. How will the City continue to partner and deepen relationships with communities to make sure the work to advance equity is working and sustainable for the long haul?