CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Report Date: April 16, 2019
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VanRIMS No.: 08-2000-20
Meeting Date: April 24, 2019

TO: Standing Committee on City Finance and Services

FROM: General Manager of Planning, Urban Design and Sustainability and General Manager of Engineering Services

SUBJECT: Climate Emergency Response

RECOMMENDATIONS

A. THAT Council adopt a new City-wide long-term climate target of being carbon neutral before 2050 as a complement to the target of 100 per cent of the energy used in Vancouver coming from renewable sources before 2050.

B. THAT Council adopt the target that by 2030, 90 per cent of people live within an easy walk/roll of their daily needs, and direct staff to report back by Fall 2020 with a strategy to achieve the target ("Big Move #1").

C. THAT Council accelerate the existing sustainable transportation target by 10 years, so that by 2030, two thirds of trips in Vancouver will be by active transportation and transit, and direct staff to report back by Fall 2020 with a strategy to achieve the target ("Big Move #2").

D. THAT Council adopt the target that by 2030, 50 per cent of the kilometres driven on Vancouver's roads will be by zero emissions vehicles, and direct staff to report back by Fall 2020 with a strategy to achieve the target ("Big Move #3").

E. THAT Council adopt the new target that by 2025, all new and replacement heating and hot water systems will be zero emissions, and direct staff to report back by Fall 2020 with a strategy to achieve the target ("Big Move #4").

F. THAT Council adopt the target that by 2030, the embodied emissions in new buildings and construction projects will be reduced by 40 per cent compared to a 2018 baseline, and direct staff to report back by Fall 2020 with initial actions to achieve this target including recommendations to remove regulatory barriers to

mass timber construction and initial requirements for embodied emissions reductions (“Big Move #5”).

G. THAT Council adopt the target that by 2030, restoration work will be completed on enough forest and coastal ecosystems in Vancouver and the surrounding region to remove one million tonnes of carbon pollution annually by 2060, and direct staff to report back by Fall 2020 with initial actions to achieve the target, including potential partnership opportunities (“Big Move #6”).

H. THAT Council direct staff to begin implementing the Accelerated Actions as described in Appendix A and report back to Council with an overall progress report by May 2020.

I. THAT Council direct staff to proceed with the development of a carbon budgeting and accountability framework for corporate and city-wide carbon pollution that meets the objectives described in this report.

J. THAT Council direct staff to proceed with the formation of the Climate and Equity Working Group according to the objectives, process, timelines, participants and budget described in this report.

K. THAT Council direct staff to proceed with the development of Vancouver’s next environmental plan, Greenest City 2050, which will incorporate the work from this Climate Emergency Response report, as well as broader environmental sustainability objectives, and report back on the recommended strategy that will be integrated and coordinated with the City-wide Plan.

L. THAT Council direct staff to integrate the six (6) Big Moves in this report into the development of the City-wide Plan recognizing there will be further development and refinement of the Big Moves which will be informed by and coordinated with City-wide planning.

REPORT SUMMARY

In January 2019, Vancouver City Council unanimously approved a motion recognizing the climate emergency that the planet faces; acknowledging that Vancouver needs to do more to reduce carbon pollution in response to that emergency; and asking staff for recommendations on how to ramp up the City’s climate actions in line with efforts to limit global warming to 1.5°C. The 1.5°C limitation is a guiding target in the Paris Agreement, and it represents a level of global warming that would avoid the worst impacts of climate change and avoid overwhelming society’s capacity to adapt.

To ramp up the City’s actions to align with 1.5°C, this report offers two complementary approaches:

1. A set of six (6) “Big Moves” that would guide the City of Vancouver’s work in response to the climate emergency. The Big Moves are intended to direct staff to pursue the City’s key opportunities to meet the objective of limiting warming to 1.5°C. While they are all intended to be technically achievable, they will push the limits of what staff think can be accomplished in the next decade and staff realize that there will likely be political, financial and “pace-of-change” challenges to their implementation. If staff are directed to

pursue the Big Moves, any identified challenges, along with possible solutions, will be included in the reports being brought back for Council's consideration.

Walkable city

Active transportation and transit

Zero emissions vehicles

Heat pumps

Embodied carbon

Negative emissions

If Council endorses the Big Moves, staff will begin the analysis and engagement that is required to understand the challenges and opportunities with each, and to develop a comprehensive implementation and funding strategy. Depending on the nature of the challenges that emerge, and what we learn from our engagement process, staff may explore potential adjustments to the Big Moves, so long as they maintain consistency with the 1.5°C objective.

2. A package of 53 Accelerated Actions that build on the climate action the City has taken to date are also outlined in the report appendices. These are aligned with the Big Moves, as most will help move towards them. The reason for having these accelerated actions is, in part, to have some quick-starts to move forward on while the planning work on the Big Moves proceeds.

   To further align with Vancouver's efforts of limiting warming to 1.5°C, this report also recommends an updated 2050 target and a set of objectives for the City's carbon budgeting and accountability framework. Lastly, this report recommends an approach for a new Climate and Equity Working Group that will help to ensure that equity has a central place in the City's climate emergency and sustainability work.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

On January 16, 2019, Council approved a motion recognizing climate change as an emergency and directed staff to:

- Review the City's climate change targets in the context of the latest research from the Intergovernmental Panel on Climate Change and the objective of limiting global warming to 1.5°C.
- Establish a carbon budgeting approach for the City that is consistent with the 1.5°C objective.
- Establish a Climate and Equity Working Group to provide guidance and support for the City's efforts to respond to the climate emergency.
- Add new actions to reduce carbon pollution that align the City's efforts with the 1.5°C objective.

This report provides the staff response to the January 16, 2019, climate emergency motion.

The recommendations in this report build on a long history of climate planning and action at the City of Vancouver. Highlights include:

- Clouds of Change (1990)
- Transportation Plan (1997)
- The Climate-Friendly City (2005)
- EcoDensity (2008)
- Greenest City Action Plan (2011)
- Transportation 2040 (2012)
- The Strategic Approach to Neighbourhood Energy (2012)
- Healthy City Action Plan (2014)
- The Renewable City Strategy (2015) and Renewable City Action Plan (2017)
- The Zero Emissions Building Plan (2016)
- The Electric Vehicle Ecosystem Strategy (2016)
- The Zero Waste Strategy (2018)
- The Climate Change Adaptation Strategy (developed in 2012 and updated in 2018)

The climate emergency response directly supports the forthcoming Resilient Vancouver Strategy, which recommends objectives and actions to build resilience to major shocks and stresses impacting Vancouver now and in the future. Many of the impacts of those shocks and stresses (e.g., floods and extreme weather) are the result of inadequate mitigation actions.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The City Manager recommends approval of the foregoing.

REPORT

Context

a. The Risks of Climate Breakdown

The threat of climate breakdown has been clearly documented by the world's scientists. Vancouver is already experiencing the impacts of 1°C of warming, including more severe storms, flooding, and forest fire smoke. Every degree of warming will increase those impacts and make it increasingly difficult, and eventually impossible, to adapt.

Even half a degree is significant. The Intergovernmental Panel on Climate Change (IPCC) compared the impacts from climate change in a world with 2°C of warming to one with 1.5°C and found the following:

- As many as 457 million more people exposed to climate risks and related poverty.
- Twice as many people suffering from water scarcity.
- Twice as many plants and three times as many insects losing their habitat.
- An ice-free Arctic every 10 years instead of every 100 years.
- The exposure of 2.6 times as many people to extreme heat at least every five years.
- Double the decline in global fisheries.

The impacts of climate change do not plateau at 2°C, so any warming beyond that would mean even more severe impacts. For context, even if the commitments made by Paris-signatory countries to date were being met, the world would be on track for more than 3°C of warming by the end of this century. That degree of warming would cause a worldwide economic, environmental and social catastrophe.

b. Limiting Global Warming to 1.5°C

The signatory countries to the Paris Agreement (including Canada) have committed to keeping global warming below 2°C, and as close to 1.5°C as possible. In October 2018, the Intergovernmental Panel on Climate Change (IPCC) released a major report making a clear case to strive for 1.5°C. The IPCC report also laid out the actions required to achieve that objective.

To limit global warming to 1.5°C, the necessary changes to global energy and economic systems will be immense and will require an unprecedented degree of technological change and cooperation. Global net carbon emissions will need to be reduced to 45 per cent below 2010 levels by 2030, net zero by 2050, and net negative in the second half of the century.

Cutting carbon pollution that quickly will require rapid and far-reaching transitions in energy systems, land use, transportation and buildings. Fossil fuels will ultimately need to be replaced through significant improvements in energy efficiency and a rapid shift to renewable energy and other zero emissions energy sources. In addition to reducing emissions, large quantities of carbon will need to be removed from the atmosphere (e.g., through reforestation projects, projects that enhance carbon storage in aquatic ecosystems, and projects that capture and store carbon from wood waste combustion).

In addition to reducing and removing emissions (mitigation), governments also need to better prepare for the anticipated impacts of climate change (adaptation). While both mitigation and

adaptation are critical responses, this report is focused on mitigation, as per the guidance in Council's climate emergency motion. Through the course of developing this report, several new priority adaptation actions were identified. They are included in Appendix B and progress will be reported as part of the City's Adaptation Strategy.

c. Growing Number of Climate Emergency Declarations

In Canada and around the world, there is a growing movement of hundreds of local governments recognizing the emergency that climate change represents, accelerating their own actions, and calling on provincial/state and national governments to also ramp up their responses. Given the world's increasingly urbanized population is on the front lines of the fight against climate change, the world's urban population will disproportionately experience the effects of global warming. Collectively we have the ability to influence the directions that senior governments take in responding to the climate emergency. As a leading city within this movement, Vancouver is well positioned to help define next steps for those cities, so that we are all well aligned with the objective of limiting warming to 1.5°C.

For a list of cities declaring a climate emergency see Appendix C.

d. Government of BC Ramping Up Climate Action

In December 2018, BC released its new climate plan, CleanBC. Phase one of the plan is designed to put the province on track for 75 per cent of the reductions it needs to meet its 2030 target (a 40 per cent reduction below 2007 levels). The specific policies in CleanBC are leading examples in North America and globally, and they provide an excellent foundation for Vancouver to align its efforts with.

In launching CleanBC, Premier Horgan emphasized the need to work together to transition away from fossil fuels to renewable energy. With the work Vancouver is doing on buildings, transportation and waste, the City is well positioned to play a leading role in that effort.

To learn more about CleanBC and supportive policies from the Government of Canada, see Appendix D.

e. Local and Regional Governments Ramping Up Climate Action

Metro Vancouver (Metro) is in the process of developing Climate 2050, which is intended to be the regional response to climate change—both in terms of reducing carbon pollution and preparing for the impacts of climate change. Metro is also beginning work on the next phase of the Regional Growth Strategy, and TransLink is embarking on an update of the Regional Transportation Strategy (RTS), which will both guide how people live, work and move around the region. Local governments across the region and province continue to adopt climate policies of their own (e.g., the Energy Step Code and electric vehicle-readiness requirements for new construction).

The updates to those regional plans will continue to impact Vancouver directly through the expectations they set for the City, and indirectly through the expectations they set for other local governments within the region. Vancouver's response to the climate emergency is an opportunity to help take a leadership role and shape that regional picture. The higher the degree of alignment between the City and the region, the more likely the collective regional response to the climate emergency will align with the objective of limiting global warming to 1.5°C.

f. Reducing Carbon Pollution has Multiple Benefits

There is no question that carbon pollution needs to be rapidly reduced and reach net negative levels by the second half of the century to effectively fight climate change. No single jurisdiction can solve the problem on their own, so success depends on everyone contributing to the solution. That said, fighting climate change is not the only reason to reduce carbon, as most of the solutions being pursued in an urban context offer multiple benefits including improved heath and air quality, greater community resilience, economic development and reduced costs. See Appendix E for a more detailed discussion.

Aligning Vancouver Targets with 1.5°C (Recommendation A)

Council's climate emergency motion directed staff to "increase targets and accelerate timelines for actions in line with the IPCC call for 45 per cent reductions in GHG emissions over 2010 levels by 2030, net zero emissions by 2050". This section focuses on aligning the targets.

a. Scope 1 and 2 Emissions

Vancouver's efforts to fight climate change have focused on addressing the sources of carbon pollution the City has the greatest influence over: residential and commercial buildings, the vehicles on our roads, and our landfill. These sources (also referred to as scope 1 and scope 2 emissions) are reported in the City's annual emissions inventory and accounted for 2.6 million tonnes of carbon pollution in Vancouver in 2017 (the latest year for which data is available). The scope of Vancouver's inventory aligns with the priority sectors in the Global Protocol for Cities (a globally recognized carbon accounting standard used by hundreds of cities).

For buildings, transportation and solid waste, the City's current targets for reducing carbon emissions and using renewable energy are as follows:

	2020	2030	Before 2050
Percentage of energy from renewable sources (including hydro power)	No target	55%	100%
Reduction in carbon pollution (relative to 2007)	33%	50%	At least 80%

Vancouver's 2030 carbon target (50 per cent below 2007) is largely consistent with the global reductions needed to limit warming to 1.5°C (45 per cent below 2010). Converting Vancouver's target to the same base year for consistency, the City's 2030 target is equivalent to 49 per cent below 2010 levels. Based on the City's experiences and economic modelling, achieving the 50 per cent target by 2030 is achievable yet very challenging.

For 2050, the IPCC research points to a need for zero net carbon emissions on a global basis. Vancouver's current 2050 carbon target is "at least 80 per cent below 2007". While this looks like a 20 per cent difference from the IPCC research, the actual gap is expected to be smaller because the City will need to exceed the 80 per cent carbon reduction target in order to achieve the 100 per cent renewable energy target. Staff anticipate that transitioning to 100 per cent renewable energy will result in carbon pollution being reduced by approximately 75 per cent in 2040 and more than 95 per cent in 2050.

Staff recommend maintaining the 2030 targets and modifying Vancouver's 2050 target to be "carbon neutral" instead of "at least 80 per cent below 2007 levels". If approved, the actions needed to achieve this revised target would be included within Big Move 6.

b. Beyond 2050 to Negative Emissions

In addition to reaching net zero carbon emissions by 2050, the IPCC research concludes that global net negative emissions will be necessary in the second half of the century. Examples of how negative emissions could be achieved include reforestation projects, projects that enhance carbon storage in aquatic ecosystems, and projects that capture and store carbon from wood waste combustion.

The sixth Big Move in this report (recommendation G) is intended to begin Vancouver's work on negative emissions such that the City is helping to sequester approximately 1 million tonnes of carbon pollution annually by 2060. Based on initial analysis of the IPCCs research, the 1 million tonnes is aligned with the objective of limiting global warming to 1.5°C.

c. Beyond Scope 1 and 2 to Embodied Carbon

The City also bears some responsibility for the emissions that are released through the production and transportation of goods and materials used in Vancouver (referred to as scope 3 emissions). Based on the City's analysis of these additional sources of carbon pollution, priority opportunities include transitioning to lower-carbon building and construction materials, and encouraging residents and restaurants to shift to more plant-based diets, which are less carbon intensive to produce.

To begin addressing Vancouver's scope 3 carbon emissions, Big Move #5 is focused on the embodied emissions in new buildings and construction projects, including a target that by 2030, those sources be reduced by 40 per cent as compared to 2018 typical practice. The Big Move is supported by a number of specific projects in the accelerated actions.

Further, Project 13.b in the table of Accelerated Actions will begin work on the emissions associated with food consumption in Vancouver, and the City's efforts to shift to active transportation and transit will reduce the embodied emissions in vehicles, if the number of vehicles in the City declines. At this point, staff are not recommending targets for other sources of embodied carbon, such as those associated with food and vehicles.

d. Helping Developing Jurisdictions Transition to Renewable Energy

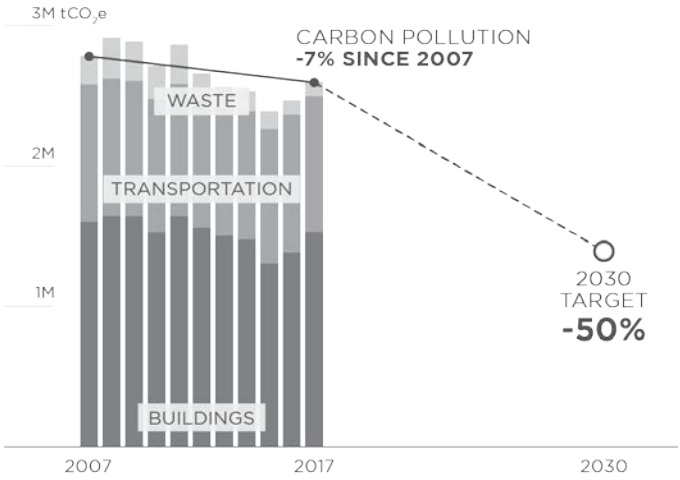
To fully be aligned with 1.5°C, jurisdictions that are wealthy by global standards (including Vancouver) need to support emissions reductions in jurisdictions without the same resources to improve energy efficiency and transition to renewable energy. Without a willingness to provide this support, it is highly unlikely that developing jurisdictions will have the resources to transition fast enough.

The underlying rationale for wealthier jurisdictions providing support is that we continue to have much higher per capita emissions, and we have accumulated a great deal of our wealth through the burning of fossil fuels since the beginning of the last century. Developing jurisdictions have contributed comparatively little to global emissions and are the least equipped to reduce emissions and prepare for its impacts.

What Vancouver's role could be in helping developing jurisdictions transition to renewable energy is not well defined. Project 14.i in the accelerated actions is intended to begin the work of figuring out what that role could be.

Vancouver Needs to Accelerate Progress to Align with 1.5°C

While the City's 2030 target is aligned with the objective of limiting global warming to 1.5°C, our progress towards the target is not. As shown in the following chart, Vancouver's emissions from buildings, transportation and solid waste have declined by an average of 19,000 tonnes per year over the past decade. Though we are moving in the right direction (while accommodating significant population and economic growth), progress needs to be accelerated significantly.



To get on track for the City's 2030 target, Vancouver's emissions need to drop by 1.2 million tonnes. That's an average of 92,000 tonnes per year over the next decade—a five-fold increase from the past decade. For context, approximately 92,000 tonnes of reductions could be achieved individually by each of the examples below:

- Switching 15 per cent of vehicle trips per year on Vancouver's roads to active transportation and transit.
- Replacing 35,000 gasoline cars owned by Vancouver residents with electric cars.
- Replacing 22,000 furnaces with heat pumps.
- Switching the downtown district energy system to renewable energy.

To reduce city-wide carbon pollution by 92,000 tonnes every year, the City will need to pursue all of these opportunities and more. The City actions needed to pursue these opportunities are presented later in the report and are covered by Recommendations B to H.

Ramping Up Vancouver's Actions to Align with 1.5°C

To ramp up the City's actions to align with 1.5°C, this report offers two complementary approaches, a set of six Big Moves and a package of Accelerated Actions. The Big Moves and Accelerated Actions are intended to use the range of tools available to the City, which can be grouped into investment tools, regulatory tools, and advocacy tools:

- *Regulatory Tools*: Where the City uses its authorities under the Vancouver Charter to establish the rules that guide resident and business decisions that support zero emissions outcomes. These would typically have minimal direct cost for the City.

- *Investment Tools*: Where the City invests directly in equipment and infrastructure to reduce carbon pollution, and where the City provides financial incentives to encourage residents and businesses to choose zero emissions options.
- *Advocacy Tools*: Where the City works with other governments and utilities to encourage them to apply their regulatory and investment tools to support zero emissions outcomes.

It is important to consider the full range of tools because the selection will depend on the barrier that is being addressed, and it will have implications for how costs and benefits are distributed. These tools are discussed in Appendix F.

a. The Big Moves (Recommendations B to G)

The Big Moves are intended to pursue the key opportunities where the City's tools will be critical and the reductions are adequate to align the City's work with the objective of limiting warming to 1.5°C. The objectives are also intended to be easier to understand than traditional climate targets like a 50 per cent cut in carbon pollution. They are all intended to be achievable, while pushing to the limits of what staff think can be accomplished in the next decade in partnership with other levels of government.

Big Moves #1 through #4 will accelerate and expand the City's existing work on buildings and transportation, Big Move #5 will begin important work on reducing the embodied emissions from building and construction materials, and Big Move #6 will begin the work of establishing the City's role in pursuing negative emissions.

In terms of the 1.2 million tonnes of reductions targeted for 2030 from buildings, transportation and solid waste, Big Moves #1 through #4 would achieve 1.1 million tonnes.[1] The remaining 0.1 million tonnes plus a 0.1 million tonne buffer would be addressed by two key provincial policies that are reducing the carbon intensity of transportation fuels and the gas grid:

- The Renewable Gas Standard will require 15 per cent of the gas in FortisBC's distribution network to come from renewable sources by 2030, which will help reduce an additional 135,000 tonnes of carbon pollution in Vancouver. Depending on how it is designed, this Standard could also help the district energy systems in Vancouver convert to renewable heating options. The City is helping to support meeting this requirement by using renewable gas in its facilities and looking for opportunities to generate more renewable gas.
- The Low Carbon Fuel Standard will require a 20 per cent cut in the carbon intensity of transportation fuels in BC by 2030, which will help reduce an additional 38,000 tonnes of carbon pollution in Vancouver. The City is helping to support meeting this requirement by using renewable fuels in our fleet, and exploring opportunities to be a producer of such fuels.

If the Big Moves are approved by Council, staff will begin the analysis and engagement that is required to understand the challenges and opportunities with each, and to develop the detailed plans, policies, and funding strategies they will need. As part of that work, staff will assess the costs and benefits in greater detail and develop high-level financial strategies. Depending on the nature of the challenges that emerge and what we learn from our engagement process, staff

[1] The emissions targeted by Big Move #5 are scope 3 emissions, so while they are important contributions, they do not count directly against the 1.2 million tonnes targeted for 2030. Big Move #6 is not expected to be sequestering material amounts of carbon pollution in 2030.

may explore potential adjustments to the Big Moves, so long as they maintain consistency with the 1.5°C objective. All of this information would come back to Council for further consideration.

The following pages describe each Big Move, including the objective staff will work toward, an initial estimate of carbon reduction potential, key actions that will likely be required for the Big Move to be successful, how the Big Move links to existing City work, and which departments will lead the work.

Big Move #1	**A walkable city**  By 2030, 90% of people live within an easy walk/roll* of their daily needs. *(Recommendation B)* **Walking or other pedestrian-scale mobility devices like wheelchairs.*
Carbon Reduction Potential	By making it easier for people to walk/roll instead of driving, 153,000 tonnes/year of carbon pollution could be reduced by 2030 (13% of the targeted reductions).
Description	Success for this Big Move will mean more "complete neighbourhoods" that have daily destinations, such as shops, services, jobs, parks, schools and community centres, within walking/rolling distance of where people live. For context, approximately 45% of residents live within an easy walk/roll of their daily needs today. Achieving this goal will require sensitively introducing more housing choices and essential amenities to neighbourhoods across the city. To create truly walkable neighbourhoods that are livable, compact and complete, the streets and pathways linking these daily needs will need to be safe, comfortable and attractive for walking, rolling and cycling, and supported by good access to frequent transit. Complete neighbourhoods will support local businesses, a diversity of households, healthier lifestyles, more social interaction, and reduced energy use and carbon emissions.
Links to Existing Work	The City has a long history of planning for complete and compact communities where it is easy to walk/roll between home and most daily destinations. Many of our most desirable communities, such as the West End, Southeast False Creek, Kitsilano, and Grandview-Woodlands, provide a rich mix of land uses and safe, connected and comfortable streets and pathways. Upcoming planning initiatives, such as the City-wide Plan, the Broadway Plan and Jericho Lands, provide opportunities to expand our approach to creating and enhancing walkable communities and pilot new strategies to accelerate our transition to a truly walkable city. Walkable and complete communities will also support the City's resilience work because people can more easily help each other and access resources during emergencies. It also supports and enhances efforts to create more diverse and affordable housing choices.
Responsible Departments	• Led by Planning, Urban Design and Sustainability • Supported by Engineering and Development, Buildings and Licensing

Big Move #2	**Safe and convenient active transportation and transit**
	By 2030, two thirds of trips in Vancouver will be by active transportation and transit, which would be 10 years earlier than currently planned. *(Recommendation C)*
Carbon Reduction Potential	By making it safer and more convenient for people to choose active transportation and transit to move around the city, 141,000 tonnes/year of carbon pollution could be reduced by 2030 (12% of the targeted reductions). This would be in addition to the 153,000 tonnes in Big Move #1.
Description	Success for this Big Move will require a significantly improved transit capacity and efficiency, better-connected active transportation networks city-wide, and continued expansion of high-quality reliable transit across the city and region. Efforts will continue to focus on increasing affordable and safe transportation choices with access for all, and addressing gaps in the network, particularly in underserved areas. Achieving this will necessitate investment in a spectrum of improvements, from local upgrades throughout the city, to completing major projects, such as the Broadway Subway to UBC, 41st Avenue B-Line and the Granville Bridge greenway. Through this work, the number of trips people need to take in cars will decline as will the length of many vehicle trips. New policy tools will also be important with mobility pricing providing a good example because of its ability to encourage fewer vehicle trips during our most congested times of day and to provide the funds needed to expand and improve the transit and active transportation networks. While this Big Move is focused on trips that originate in Vancouver, it will provide an opportunity to engage with partners across the region to help shape Metro Vancouver's Climate 2050 plan and the Regional Transportation Strategy.
Links to Existing Work	The City has a long history of prioritizing active transportation and transit for a mix of reasons, such as enhanced livability, reduced congestion, affordability, improved air quality, more active lifestyles, and reduced carbon pollution. Pursuing this move will build upon Transportation 2040, which was approved in 2012 and has helped the City succeed in seeing 50% of daily trips by active transportation or transit. These efforts reduce needs for cars which can also enhance affordability of daily living in Vancouver.
Responsible Departments	• Led by Engineering • Supported by Planning, Urban Design and Sustainability

Big Move #3	Pollution-free cars, trucks and buses
	By 2030, 50% of the kilometres driven on Vancouver's roads will be by zero emissions vehicles. *(Recommendation D)*
Carbon Reduction Potential	The rapid transition to electric and other zero emissions vehicles would reduce Vancouver's carbon pollution by 283,000 tonnes per year by 2030 (24% of the targeted reductions).
Description	Success for this Big Move will mean almost all new light-duty vehicles will need to be zero emissions towards the end of next decade. For light-duty fleets where vehicles are replaced more frequently (e.g., taxis, car shares, ride-hailing, etc.), almost all of these vehicles will need to be zero emissions by 2030. The transition for medium- and heavy-duty vehicles will be slower, but rapid progress will still be needed in some key market segments (e.g., in transit, where TransLink has already made a commitment for all new buses to be zero emissions by 2025). To achieve this scale of transition, there are at least three tools the City will likely need to rely on heavily: 1) expanding residential, commercial and public charging infrastructure, 2) parking policies that encourage and eventually require zero emissions vehicles, and 3) zero emissions zones that discourage and eventually ban polluting vehicles from specific areas or corridors. The timing for any zero emissions vehicle requirements and how those would be phased in for different types of vehicles would need to be explored. The City could also require any remaining gas stations to transition to zero emissions charging/fueling stations between 2030 and 2040. As the City considers these types of parking policies and zero emissions areas, it will be important to ensure that all residents and businesses have equitable access to zero emissions transport choices, and convenient and robust charging or fueling infrastructure for vehicles. This Big Move also introduces a challenge for Big Move #2 because it will result in a significant decline in gas tax revenue, which is a primary source of financing transit in the region. The work to support this Big Move will include developing a better understanding and forecasting of this challenge, exploring potential solutions that secure long term transit funding (e.g. congestion charging), and working with senior governments and partners to implement those solutions.
Links to Existing Work	This Big Move would accelerate and expand upon Vancouver's Electric Vehicle Ecosystem Strategy, which has guided investments in public charging infrastructure and ensured that new buildings are ready for electric vehicles. It would also link well to the City's efforts to electrify its own fleet, which has resulted in the largest electric vehicle fleet in Canada. Given that this links to the City's support of TransLink's Low Carbon Strategy towards fossil-free buses, it will be important to consider the people moving capacity of zero emission vehicles and buses as we monitor this Big Move.
Responsible Departments	• Led by Engineering • Supported by Development, Buildings and Licensing; Planning, Urban Design and Sustainability Park Board; and Real Estate and Facilities Management

Big Move #4	**Zero emissions space and water heating**  By 2025, all new and replacement heating and hot water systems will be zero emissions. *(Recommendation E)*
Carbon Reduction Potential	Ensuring that new and replacement space and water heating systems are zero emissions will reduce Vancouver's carbon pollution by 552,000 tonnes/year in 2030 (46% of the targeted reductions).
Description	Success for this Big Move will mean that by 2025, all space and water heating in new buildings and those replaced in existing buildings would be zero emissions. Heat pumps are expected to be an important solution is this transition. They are over 200% efficient at capturing heat from the air, ground or waste sources. They also cool buildings, which will be especially important as climate change causes hotter summers. The City's Neighbourhood Energy Utility will also need to get 100% of its energy from renewable sources by 2030 (currently 70%). For this Big Move to succeed, the Zero Emissions Building Plan for new construction will need to be sped up. New construction is critical because one quarter of the floor space in 2030 will be built over the next decade. Building that new floor space with zero emissions space and water heating starting as early as 2021 avoids the need to retrofit in the future. For existing buildings, the City will need to develop a Zero Emissions Retrofit Strategy to transition space and hot water heating to zero emissions. Furnaces and boilers last 15–25 years, while hot water heaters last closer to 10 years. Every time they are replaced is an opportunity to upgrade to zero emissions. A successful Retrofit Strategy will include sustained incentives (potentially through a Vancouver Climate Trust) and investments in industry capacity-building to support voluntary adoption of zero emissions space and water heating before 2025. Ultimately, there will need to be regulations that require zero emissions heating equipment when it is replaced (in the same way higher efficiency furnaces are already required when an old one is replaced). While 2025 is the key date to meaningfully bend the emissions reduction curve, moving this quickly will have implications on factors such as costs and business' ability to adapt to new opportunities. Success will depend on understanding where there are concerns and finding effective ways of addressing them. Also critical will be a jobs transition roadmap. In addition, careful consideration and analysis of the use of incentives is required in order to preserve affordability and avoid displacement of existing residents, particularly in aging rental buildings.
Links to Existing Work	Implementation of Zero Emissions Building Plan (2016) is ongoing. The City continues to require energy efficiency upgrades when a building is retrofitted, which help make the switch to zero emissions heating more affordable. The Neighborhood Energy Utility has been providing low-carbon heat and hot water to customer base in Southeast False Creek since 2010, and expansion is underway to parts of Mount Pleasant, North East False Creek and the False Creek Flats. The City has transitioned boilers to heat pumps at a growing number of its own facilities, including City Hall. This Big Move also supports the Vancouver Housing Strategy by ensuring homes are healthier and have lower energy costs.
Responsible Departments	• Led by Planning, Urban Design and Sustainability • Supported by Development, Buildings and Licensing; Engineering; and Real Estate and Facilities Management

Big Move #5	**Lower carbon construction materials and designs**  By 2030, the embodied emissions in new buildings and construction projects will be reduced by 40% compared to a 2018 baseline. *(Recommendation F)*
Carbon Reduction Potential	By reducing the embodied carbon emissions in new construction projects, 78,000 tonnes/year of carbon pollution could be reduced by 2030. This reduction does not count against the 1.2 million tonnes the City is targeting because nearly all embodied emissions are not included in the City's current inventory.
Description	Success for this Big Move will mean a shift in construction practices to: use more mass timber and low carbon concrete, rely more on prefabricated and modular construction, eliminate spray foam insulation with high-carbon blowing agents, and use more recycled aggregate and asphalt. Further, a shift in design practices to less underground parking and the retention or re-use of existing materials will also be outcomes of this Big Move. In addition to reducing carbon pollution, these outcomes have the potential to support BC's sustainable forest sector and our economy, improve seismic resilience, and open up more affordable construction options, specifically around mass timber and reduced parking. The first phases of implementation of the Zero Emissions Building Plan have resulted in a significant reduction in operational GHG emissions for new construction. However, the embodied emissions of a new building are significant and can typically be equivalent to (and sometimes two times greater than) the operational emissions from that same building. Initial work towards this Big Move is expected to include removing regulatory barriers to increased mass timber construction and introducing requirements for lower embodied emissions. As with the Zero Emissions Building Plan, the work to achieve the target cannot depend on regulations alone. To recognize the steep learning curve for many designers, developers and building occupants, the work will include incentives for early adopters, industry capacity-building and City leadership. The City will need to work with regional, provincial, national and international partners to improve standards and protocols for embodied emissions accounting in order for this work to be successful.
Links to Existing Work	Embodied carbon in construction is a relatively new area of consideration for the City. The most recent update to the Green Building Policy for Rezoning requires developers to report embodied carbon in their projects and the City has been using lower-carbon concrete and higher rates of aggregate and asphalt recycling.
Responsible Departments	• Led by Planning, Urban Design and Sustainability and Engineering • Supported by Development, Buildings and Licensing; and Real Estate and Facilities Management

Big Move #6	**Restored forests and coasts**
	By 2030, restoration work will be completed on enough forest and coastal ecosystems in Vancouver and the surrounding region to remove one million tonnes of carbon pollution annually by 2060. *(Recommendation G)*
Carbon Reduction Potential	Through reforestation and coastline rehabilitation, the materials planted will be capable of removing and sequestering at least one million tonnes of CO2 per year by 2060. The reductions will be minimal in 2030 because ecosystems take time to recover and grow once any planting is complete.
Description	Conserving, restoring, and creating forest and coastal ecosystems will remove large amounts of carbon from the atmosphere and sequester it as vegetation and in the soil as organic matter. Natural shorelines also increase resilience to sea level rise associated with climate change. In addition to carbon sequestration benefits, forests and coastal ecosystems (e.g., eelgrass meadows and salt marshes) play an important role in supporting cultural practices and providing ecosystem services and resilience to people and wildlife, both in Vancouver and in the surrounding areas. Success for this Big Move will mean: • Increasing Vancouver's tree canopy, especially in underserved communities. • Collaborating with the Musqueam, Squamish and Tsleil-Waututh Peoples to restore lands. • Partnering with Environment and Climate Change Canada, Fisheries and Oceans Canada, BC Ministry of Environment, Metro Vancouver, Port of Vancouver, Vancouver Aquarium, and others to conserve and restore coastal ecosystems, such as the eelgrass meadows of Spanish Banks. • Improving water quality of receiving waterbodies to a standard that supports marine life water quality objectives. • Large-scale restoration of shorelines and subtidal zones along False Creek, the Fraser River, English Bay, Burrard Inlet and Trout Lake. • Conservation of large tracts of coastal forest, such as the Coastal Douglas Fir Biogeoclimatic Zone, which is a rare local forest ecosystem.
Links to Existing Work	The City has some experience in these types of carbon sequestration projects through the Greenest City Action Plan, although carbon has never been a primary reason for the projects (e.g., tree canopy goals and the New Brighton Park Shoreline Habitat Restoration Project). The Rain City Strategy, Urban Forest Strategy, Climate Change Adaptation Strategy, Resilient Vancouver Strategy, and Biodiversity Strategy also support actions related to this Big Move. This Big Move would be a significant expansion of scale of the City's work in this field.
Responsible Departments	• Led by Planning, Urban Design and Sustainability • Supported by Park Board and Engineering.

b. The Accelerated Actions (Recommendation H)

The climate emergency will not pause while the Big Moves take time with engagement to develop into robust strategies. In order to respect that urgency, staff have also developed a set of Accelerated Actions that build on existing work and can move forward without delay.

Many of the Accelerated Actions are expected to become important elements in the Big Moves as they develop, but they can be safely initiated concurrent with that work. They may need to be strengthened to adequately support a Big Move and they may need to be complemented with other actions. This work can be seen as ‘no-regrets’ as it is very unlikely that any of the Accelerated Actions would stop making sense even after the Big Moves are developed.

Several of the Accelerated Actions address sources of carbon pollution not covered by any of the Big Moves. Of note are Accelerated Actions 12.a and 13.b, which relate to the emissions from our food system. Growing, processing and transporting our food are material sources of carbon emissions, but at this time, staff do not have a clear enough picture of how much they can be reduced or what the most appropriate roles are for the City to articulate a meaningful Big Move for food consumption. Staff will continue to monitor and pursue this opportunity as these plans are reviewed and updated.

The full list of Accelerated Actions is contained in Appendix A. Each action includes a short description of the action and how it reduces carbon pollution, information on whether the action is a next step or a new action, what the next milestone in the project would be, and which departments are responsible for the action.

Given the large number of Accelerated Actions, the next milestone for most of them is a report back to Council to provide a more thorough opportunity to understand and discuss them. Some of those reports will be for single Accelerated Actions, and in other cases staff will bundle Accelerated Actions into logical groupings or the Big Moves.

Carbon Budgeting (Recommendation I)

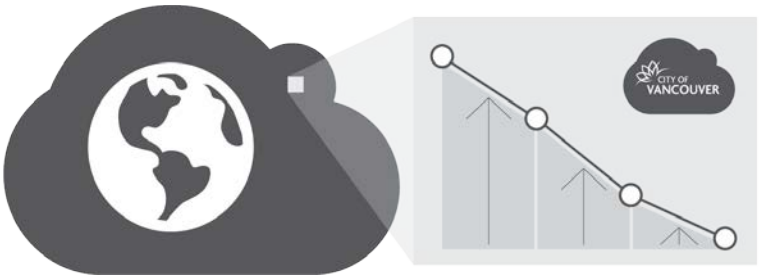
In January 2019, Council directed staff to “establish a remaining carbon budget for corporate and community emissions commensurate with limiting warming to 1.5°C, re-evaluate how to best measure such emissions, and report annually on the expenditure of the City of Vancouver’s remaining carbon budget”.

The field of carbon budgeting is nascent and definitions vary by jurisdictional context. A review of existing national and sub-national carbon budgets showed two main groups of approaches:

a. Remaining Carbon Budgeting

These approaches focus on total present and future GHGs in the atmosphere, rather than reductions from chosen "baselines". They typically look at the remaining amount of carbon “room” left in the atmosphere before there is an unacceptable risk of a global temperature threshold being exceeded. This room is continuously decreasing due to the carbon we emit, leading to approaches that budget the remaining allowable carbon. In practice, a jurisdiction takes a portion of that global room and sets immediate and medium-term multi-year budgets, leading eventually to their maximum allowable carbon limit.

Examples: UK, London, Australia, New Zealand



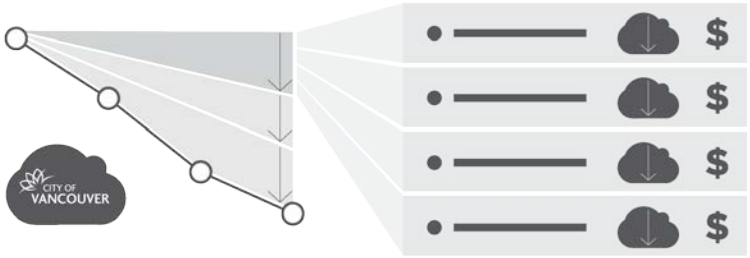
An advantage of multi-year budgets is that they focus on efforts to reduce long-term accumulation of emissions in the atmosphere, rather than fluctuations in the rate of emissions due to near-term factors (e.g., weather; economic and investment cycles).

> *A cumulative multi-year goal is a commitment to reduce, or control the increase of, cumulative emissions over a target period to a fixed absolute quantity. Cumulative multi-year goals are often referred to as "carbon budgets." This type of multi-year goal is framed as a fixed-level goal because it is not defined in reference to a base year or baseline scenario.*
>
> *- Mitigation Goal Standard, World Resources Institute*

b. Carbon Reduction Accounting

These approaches add up carbon-reduction contributions (likened to GHG "spending") to achieve a cumulative reduction against a chosen target. They focus on transparency in investments, programs and policies that lead to emissions reductions.

Examples: Oslo, London, British Columbia (TBD)



To achieve this, they can be broken down by sector or program, and include such information as time period, cost, contributions to carbon goals, and responsibility. Because they are additive, an advantage is that any gap in achieving the necessary reductions against the target becomes visible, demanding a response.

> *[Oslo's] climate budget is a tool to convert a city's climate goals into concrete, annual, measurable action. It establishes a maximum GHG emissions level for the budget year, based on the city's emissions goal. The budget details the city's proposed short-term, emissions-reduction actions to stay within the maximum amount, their projected impact, and cost. It is a distinct part of the city's overall budget and moves through the city's usual budgeting process, from proposal to adoption, implementation, and after-action assessment.*
>
> *- Game Changers Report, Carbon Neutral Cities Alliance*

Overall, carbon targets reframed as maximum "budgets" can help enforce more rigorous approaches to managing carbon. They can list carbon impacts and ownership line-by-line. They can allocate and transfer carbon between different sources to balance out the big picture (see the Improved Accountability section). Reassessed, a carbon budget periodically gives opportunities for course corrections where necessary. Carbon budgets can help clearly communicate the impact of carbon-reduction efforts to the public, the City organization, and stakeholders. While more transparent, any budget requires accountability on implementation, with potentially some form of consequence (and mechanism to redress) if budgets are not met.

Objectives for Vancouver Approach

Staff will work to develop carbon budgets for Vancouver's corporate and community emissions. Final approaches may draw elements from both approaches discussed previously. A carbon budget is only useful if it helps to guide appropriate, agile, and accountable effort to reduce emissions. As such, any shift to a budget approach for Vancouver's City-corporate and community emissions should aim to meet the following objectives:

- Improved Transparency
- Better Data
- Better Forecasting
- CleanBC Alignment
- Improved Accountability

These objectives are detailed in Appendix G, along with sample considerations to be resolved in developing a carbon budget approach.

Next Steps

If approved, an approach for corporate emissions will be developed and implemented first, to confirm the objectives are being met, and to test if it can be replicated for community emissions. Developing the corporate approach now aligns well with the forthcoming Green Operations Plan refresh. If multi-year budgets are set, the first budget cycle (e.g., 2019–2022) can be used to refine carbon budget approaches.

Nearly all City departments will be involved (e.g., Planning, Urban Design and Sustainability; Finance, Risk and Supply Chain Management; Engineering Services; Real Estate and Facilities Management; Technology Services). Staff will report back with an update on the carbon budget approaches to Council, in line with the progress update on climate emergency measures in 2020.

Climate and Equity Working Group (Recommendation J)

Climate change shocks and stresses do not affect all groups in our community equally. Those that have been affected by systemic vulnerabilities and inequity are often at greater risk from the impacts of climate change and often have the fewest resources to respond and adapt. In Vancouver, climate change impacts, such as extreme heat and poor air quality from wildfires, are already being felt disproportionately.

In parallel, we know that it's critical to engage with and support systemically excluded and low-income populations as we transition from fossil fuels to renewable energy. That transition can be

undertaken in ways that improve social equity and affordability, while alleviating issues such as “energy poverty”. For example, convenient public transit helps reduce carbon emissions and air pollution while also supporting affordable mobility for all residents.

In the U.S., a growing number of cities are advancing equity in parallel with their climate action work, using input from Climate and Equity Committees. Portland, Seattle, and Washington, D.C., have each applied an equity lens to their climate work, to minimize the impacts of climate change on systemically excluded populations and ensure that new policies do not negatively impact vulnerable populations, while also identifying ways to support greater equity through climate action. Similarly, the Canadian Urban Sustainability Network recently completed a study that identified the significant extent of energy poverty across the country and highlighted the need for equity considerations in climate plans.

Social Policy is currently developing an Equity Framework to formalize the City’s equity-focused work and to promote access, inclusion, cultural safety, and public participation for all staff and residents, and across all City areas of business. Creating a Climate and Equity Working Group would provide an early opportunity to use the tools of the Equity Framework to engage with systemically excluded and low-income residents on the City’s climate and sustainability work, ensuring that the actions put forward in Greenest City 2050 and ongoing response to the climate emergency improve social equity.

The Climate and Equity Working Group will coordinate with the City-wide Plan effort regarding equity conversations as both programs develop. It will also be an important opportunity to incorporate a gendered intersectional lens into the City’s climate actions and the Climate Adaptation Strategy.

More details of the Climate and Equity Work group can be found in Appendix H.

Greenest City 2050 (Recommendations K and L)

Vancouver’s current environmental strategy, the Greenest City Action Plan, extends to 2020. All ten of the goal areas are relevant for Vancouver’s Climate Emergency Response. The ten goals are:

1. Climate and Renewables
2. Green Buildings
3. Green Transportation
4. Zero Waste
5. Access to Nature
6. Clean Water
7. Local Food
8. Clean Air
9. Green Economy
10. Lighter Footprint

Because of the strong links between the climate emergency and the City’s broader sustainability work, the climate emergency response will be most effective if it is embedded within the next phase of the Greenest City Action Plan and integrated with the upcoming City-wide Plan. To enable this coordination, staff are seeking approval from Council to begin the creation of Vancouver’s next environmental action plan, Greenest City 2050.

If approved, staff will report back on the Greenest City 2050 in coordination with the City wide Plan reporting structure. Further, staff will integrate the six Big Moves in this report into the development of the City-wide Plan which will address a broad diversity of policy areas including land-use, transportation, economy, social, environment, parks, culture, sustainability, climate change, infrastructure, and place-making/urban design with lenses of reconciliation, resiliency and equity. The City-wide Plan will provide an “umbrella” for integrated, long-range strategic

policy across these areas and a framework to support more detailed implementation strategies in specific areas such as climate change. This framework would enable a coordinated system of progress monitoring, investment, policy review and adaptation over time to achieve community, Council and corporate goals.

Climate Emergency Engagement

Within the 90-day window kicked off by Council's climate emergency motion on January 19, 2019, engagement efforts have focused internally and on organizations where the City has established relationships. The internal engagement included meetings and workshops with staff from Planning, Urban Design and Sustainability; Engineering; Development, Buildings and Licensing; Real Estate and Facilities Management; Social Policy; Park Board; Legal Services; Finance; and Intergovernmental Relations.

The primary external engagement was a half-day workshop on February 25, which was attended by 112 individuals from local businesses, environmental non-governmental organizations, community associations, labour organizations, academia, and other levels of government. During the event, staff collected nearly 900 ideas during sixteen breakout sessions, which focused on new and existing buildings, neighbourhood energy systems, zero emissions vehicles, active transportation and transit, the City's corporate leadership, embodied carbon, and climate equity.

Implications/Related Issues/Risk

Financial

Should Council approve the recommendations of the Climate Emergency Response, staff will report back by the Fall of 2020 with a comprehensive implementation and financial strategy for the recommended Big Moves and Accelerated Actions. When developing the strategy, staff will strive to optimize the City's regulatory, financial and advocacy tools, considering the City's financial and operational capacity within the context of the City's service planning, capital planning and budget framework and the financial impacts (costs and savings) for the City's residents and businesses, utilities, and other levels of government.

If any of the Big Moves is ready for Council's consideration before the Fall of 2020, staff will report back with an implementation and financial strategy that contemplates any links to the Big Moves still under development. Any Accelerated Actions brought forward in advance of the comprehensive implementation and financial strategy will be supported by a similar evaluation, including a consolidated assessment of any initiative proposed as part of the 2020 budget.

Human Resources

The Accelerated Actions can start to be advanced to their next milestones with existing staff capacity. Depending on the proposed next steps at those milestones, there may be staff implications, and staff will include any required staff resource as part of the annual budget process.

Advancing the Big Moves from their current form to robust implementation strategies will be a significant undertaking that transects across departments. It will also require additional engagement with the public, other governments, utilities, business, labour, academia and NGOs to ensure a wide variety of perspectives are reflected as the Big Moves are developed. Additional or reallocated staff will likely be required and as the Big Moves are developed staffing needs will be brought for approval as necessary.

Legal

Staff will engage Legal Services to confirm, if necessary, the legal authority for the City to implement any of the Big Moves, Accelerated Actions or any specific step or activity contemplated in either one. If the City does not have the legal authority under the Vancouver Charter to implement one or more of the foregoing, and if at such time the City still wishes to pursue such action, staff will engage Legal Services to work collaboratively with the Province for the specific legal authority under the Vancouver Charter.

Conclusion

The world is at a tipping point between a climate disaster and a renewable, more equitable future. By choosing to act, Vancouver is choosing optimism and hope over despair and darkness. The transition will take time and will be challenging, but many cities around the world and even some Vancouver neighbourhoods are already thriving as low carbon communities. Through a thoughtful transition Vancouver can continue to move toward a healthier, more communal, more secure, greener and more affordable future and in doing so be a beacon for other cities to follow.

* * * * *

Appendix A – Accelerated Actions

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
1 <u>City-wide Planning</u> Use city-wide planning and quick-start housing actions to advance green buildings and sustainable transportation objectives.	a. Sustainable Mode Splits: Expand policies and actions that lead to communities with very low motor vehicle reliance (e.g., 15–20% of daily trips) by ensuring: a) most daily household destinations are within walking or biking distance and/or within walking distance of rapid transit; b) requirements for parking reflect this; and c) that the allocation of public space supports walking, cycling and transit. Pilot this approach on major development sites and planning areas, such as the Jericho Lands and Broadway Area Plan, by setting neighbourhood-specific mode-split targets and showcasing integrated multi-modal land use and transportation planning that can be learned from and replicated throughout the City.	Compact, livable communities not only produce healthier and happier residents, but reduce costs and greatly reduce dependence on fossil fuels through a reduction in vehicle ownership and kilometres travelled by vehicle.	Next Step	Report back to Council on progress. Target Q4 2020.	PDS, ENG
	b. Infill Pilot Program: Investigate feasibility and details of a pilot program in RS and RT zones to incentivize new types of infill housing that reduce climate change impacts and improve unit accessibility. The pilot will be based on the Character Homes Incentive Program as a model for introducing housing choice and meeting public interest objectives.	To be eligible for incentives, the infill housing would need to be near-zero emissions, and there could also be an opportunity to reduce embodied emissions.	New Action	Study feasibility. Report back to Council with details and process (summer 2019).	PDS
	c. Small Townhouse Pilot Program: Investigate feasibility and details of a townhouse pilot program on large lots in low-density areas to demonstrate construction and design approaches that reduce climate change impacts and improve unit accessibility.	To be eligible for the pilot program, the townhomes would need to be near-zero emissions, and there could also be an opportunity to reduce embodied emissions.	New Action	Study feasibility. Report back to Council with details and process (summer 2019).	PDS

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
	d. Barriers to Low Embodied Carbon: Review existing zoning regulations and design guidelines to identify how the existing regulatory framework requires and incentivizes the construction of low-density buildings with high embodied carbon (e.g., lots of concrete), and investigate how those requirements and incentives could be removed to enable low-carbon building construction. Examples include regulations and guidelines that limit above-grade floor area and therefore require or encourage below-grade living space (basements) and underground parking, both of which require more concrete.	The embodied emissions from building materials, such as concrete and foam plastics, can be significant in the overall life-cycle emissions of a building. By identifying and removing incentives for construction with high embodied carbon and enabling construction methods with low levels of embodied carbon, the City can help to reduce those emissions sources.	New Action	Study feasibility. Report back to Council with details and process (summer 2019).	PDS, DBL
	e. City-wide and Area-Specific Plans: At the time of their development or during review, city-wide and area-specific plans should make provisions to advance near-zero emissions buildings. This could include considerations such as articulating access to sunlight for neighbouring buildings at the block scale, allowances for simplified low-carbon building forms, and roof alignment and design allowances to enable solar energy.	Large-scale planning exercises can foster community expectations and create opportunities for low-carbon building forms and features, such as high levels of insulation, mass-timber, and roof top solar. Mass timber may also be a key to more affordable multi-unit residential buildings.	New Action	Report back to Council by Q4 2020.	PDS, DBL

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
	f. Expanded Goals for Design Guidelines: Gather data and expand the factors considered in the development of design guidelines so that in addition to livability and neighbourhood impacts, we consider cost, climate change mitigation, and seismic resilience, if/when warranted. Pilot this approach by integrating consideration of data and these other factors into the development of new or revised design guidelines for a specified form/development type. Initially constraining this to a specific set of guidelines will reduce the variables and support higher quality data. The resultant guidelines could include alternate approaches to built form, incentives, or conditional approval paths for projects that are designed to achieve near-zero building standards in addition to livability and affordability outcomes.	Design guidelines for new developments are established to maintain livability for both new and existing residents, but can lead to complex building forms that may have significant implications for construction cost, energy efficiency, and embodied carbon.	New Action	Report back to Council by Q4 2020.	PDS, DBL
2 Zero Emissions Areas Explore zero emissions transformational areas.	a. Zero Emissions Areas: Begin engaging residents and businesses on zero emissions areas, where access by combustion engine vehicles are restricted or deterred, and active transportation and zero emissions transit are encouraged, in order to explore innovative emissions reduction programs. Identify areas of the City where these approaches can be explored, and identify replicable lessons for city-wide implementation.	Zero emissions areas encourage a broader shift to zero emissions vehicles, including for goods movement. They can also be designed to encourage active transportation. The areas also offer air quality, health and noise benefits for residents.	New Action	Report back to Council on initial engagement by Q4 2020.	PDS, ENG, DBL, CEC

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
3 <u>Land Use Incentives for Green Buildings</u> Use land-use tools to encourage zero emissions buildings, zero emissions space/water heating equipment, and low-carbon materials.	a. Time-limited pre-regulatory Density Bonus incentives for Zero Emission buildings: Explore defining buildings that deliver near-zero operational and/or low embodied carbon emissions as an amenity, so that they can be subject to the density bonus provision under Section 165.2(1) of the Vancouver Charter. If Council defines these buildings as an amenity, this would allow staff to explore and report back on specific opportunities to allow time-limited density bonuses for a wider range of green buildings, including zero emissions commercial and institutional buildings, and buildings with low embodied carbon. Incentives would be in place until equivalent regulatory requirements come into effect. Staff would ensure that any recommended short-term bonus programs are aligned with provision of rental and non-market housing and other community goals.	The early stages of transformational change often involve higher costs and uncertainties than continuing with conventional approaches. In order to gain experience and drive down these costs, incentives are temporarily required while new practices and products are normalized. Defining low-carbon buildings as an amenity would allow staff to introduce time-limited pre-regulatory policies and amendments to the Zoning and Development Bylaw that would allow for modest density bonuses for a wider range of green buildings, including zero emissions commercial and institutional buildings and buildings with low embodied carbon.	New Action	Report back to Council (Q2 2019).	PDS, DBL
	b. Deep Emissions Retrofits: Explore land-use tools that help property owners and managers undertake deep emissions retrofits of existing buildings. This could include revised district schedules that would allow increased usable space in existing buildings in exchange for the deep emissions, and possibly for seismic resilience retrofit.	This would better ensure an equitable distribution of the health, comfort, resilience and operational cost savings of low-carbon buildings. Careful consideration and analysis of the use of increases in usable space to encourage retrofits are needed to preserve affordability and avoid displacement of existing residents.	New Action	Report back to Council by Q2 2020.	PDS, DBL

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
	c. Improved Floor Space Incentives for Zero Emissions: Explore floor space exclusion for near zero emissions detached and small multifamily buildings that is streamlined and enhanced relative to City's current approach. Current wall-thickness and mechanical-space exclusions for near zero emissions buildings require additional work for small builders and staff. Simplifying this with a temporary outright exclusion would simplify the process and would allow for consideration of modest additional floor space for early adopters of near zero emissions design approaches.	The early stages of transformational change often involve higher costs and uncertainties than continuing with conventional approaches. In order to gain experience and drive down these costs, incentives are temporarily required while new practices and products are normalized. While this approach is already being used by other local governments in the region, careful consideration is required to ensure this does not undermine efforts to increase housing supply in traditional single family neighbourhoods.	Next Step	Report back to Council with recommendations by Q4 2019.	PDS, DBL
4 Financial Incentives for Zero Emissions Buildings and Equipment Implement incentives to make it easier and more affordable to advance zero emissions new buildings and zero emissions space/water	a. Financial Incentives for Existing Building Energy Retrofits: Explore options for deep energy retrofits of existing City and private buildings in connection with Council's motion to allocate $5 million of Capital Plan funding. Options will include: 1) accelerate the transition of existing City buildings to near zero and zero emissions; 2) enhance the capacity of for non-profit housing operators to access significant provincial and federal capital improvement funding; and 3) through a new collaborative approach, leverage provincial funding and energy utility administrative capacity to effectively provide additional resources to Vancouver homeowners and building operators to make deep emission reduction retrofits to their buildings. This includes pilot projects in partnership with the provincial government to retrofit affordable market rental housing and non-market housing.	Meaningful energy retrofits of existing buildings are more challenging than implementing similar measures in new construction, necessitating the provision of financial incentives. Measures are in place and will be strengthened to ensure retrofit incentives do not result in the displacement of existing residents.	New Action	Report back to Council by Q2 2019.	PDS, REFM, FIN

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
heating equipment.	b. Climate Trust: Explore the creation of a Vancouver Climate Trust, which would have the objective of providing ongoing investments to reduce emissions from existing buildings. The Trust will continue the work started in 4a and coordinate with the Low Carbon Cities Canada initiative announced in the 2019 federal budget. Staff will evaluate potential funding streams as part of the exploration process, including the possibility of a one-time charge on new developments in the City that would be proportional to their anticipated emissions.	Staff will need to explore the balance of decreasing maximum allowed emissions limits, the introduction of embodied emissions limits, and the impacts of a potential charge to offset any remaining emissions to ensure that existing housing affordability or the viability of new developments is not materially impacted. In addition, staff will need to ensure that any new investment minimizes the displacement of existing residents.	New Action	Report back to Council by Q2 2020 in conjunction with recommended updates to Green Building Policy for Rezoning.	PDS, FIN, DBL
	c. Heat Pump Permits: Make it more affordable and easier to get a permit for heat pumps. Options to explore include reducing the permit fee to a fixed and nominal amount (as is currently done for solar permits), moving to an online permitting system where feasible, allowing heat pumps to be installed in front yards, and publishing a list of heat pumps that meet the City's noise limits. The applicability of successful solutions to other key zero emissions technologies, such as electric vehicle charging and solar panels, will be considered.	Electric heat pumps are typically over 200% efficient, result in almost no carbon emissions due to the nearly 100% renewable electrical grid in BC, and can provide both heating and cooling, thereby increasing resilience to climate changes. Because heat pumps are a new technology for most existing homes, installations and the permitting process can be more complex. Simplifying the process is essential to accelerate the voluntary installation of heat pumps.	Next Step	Report back to Council by Q1 2020 if required.	PDS, DBL

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
5 <u>Zero Emissions Building Standards</u> Accelerate the implementation of the Zero Emissions Building Plan.	a. New Zero Emissions Buildings: Explore opportunities to set lower carbon emissions limits for new construction faster than laid out in the Zero Emissions Building Plan. Any proposed changes to those limits would be based on the appropriate research and consultation, and would work within established timelines for policy and bylaw updates. To continue encouraging the development of Passive House buildings, that standard would continue to be a recognized compliance option.	Every building built to zero emissions today means one less building requiring expensive retrofits in the future. Accelerating this work will save carbon emissions and money.	Next Step	Report back as part of recommended updates to VBBL and Green Building Policy for Rezoning by Q2 2020.	PDS, DBL
	b. Improved Compliance: Develop the tools, processes, and resources to ensure that the carbon emissions limits for new detached and multi-family residential buildings are being complied with and that developers and builders have support to meet them. One key option to be explored is a requirement for a heating permit for new detached homes and low-rise buildings (an approach used in other Lower Mainland municipalities).	The City does not currently review or inspect the sizing, performance specification or quality of installation of many of the mechanical systems that are essential to reducing GHG emissions in new construction. New policy or regulation without compliance only punishes responsible developers and builders.	New Action	Report back as part of recommended updates to VBBL by Q2 2020.	PDS, DBL

Category		Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
6	Neighbourhood Energy Transition the City-owned Neighbourhood Energy Utility to 100% renewable energy and expand the system.	a. Renewable Energy Supply: Transition the Neighbourhood Energy Utility (NEU) to 100% renewable energy before 2030. This could include a mix of expanded sewer heat recovery, waste heat recovered from data centres, thermal energy storage, bio-fuels (e.g., renewable natural gas), hydrogen, or other renewable energy sources. Currently, 70% of the NEU's energy comes from renewable sources, and opportunity exists to transition to a higher blend of renewable energy in future years.	By transitioning to 100% renewable energy, NEU-connected buildings will not need to rely on fossil-based natural gas for space and water heating. Factoring in the long-term growth of the utility, transitioning to a 100% renewable energy target could eliminate an additional ~10,000 tonnes of CO2 per year by the mid 2030s, above and beyond the current 70% renewable energy target for the NEU (current 70% target would net ~24,000 tonnes per year reduction at build-out of the customer base).	Next Step	Adoption of 2030 100% renewable target subject to evaluation using the NEU's existing investment decision framework and competitiveness with other low carbon energy options for buildings	ENG
		b. Expand Service Area: Evaluate feasibility for expansion of the City-owned NEU service area. Opportunity areas include areas of the Central Broadway Corridor adjacent to SE False Creek, Jericho Lands and False Creek South.	To be determined, following establishment of proposed land uses and densities for these areas (needed to inform business case analysis for expansion).	Next Step	Report back to Council in 2021 (timing dependent on timing of area plan completion).	ENG
7	Active Transportation and Transit Infrastructure Accelerate the development of infrastructure to make it easier to choose walking, cycling	a. Improved Bus Service: Accelerate transit priority implementation on key routes, such as 41st Avenue, Georgia Street, Main Street and Hastings Street, as part of the ongoing bus speed and reliability program. A quick win would be further extension of bus lane hours beyond current peak hours.	Enabling improved bus service makes it a more efficient and attractive option for residents. Articulated buses generate 25% of the carbon emissions per person relative to a single occupancy vehicle, which can be improved to 5% with the use of electric buses.	Next Step	Report back to Council on engagement. Target Q2 2020.	ENG

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
and transit.	b. Active Transportation Network: Explore opportunities to accelerate the completion of accessible and equitable active transportation networks, and close key gaps, including the Granville Bridge pathway.	Providing safe, equitable active transportation infrastructure encourages walking and cycling, decreasing reliance on private vehicles and the associated carbon emissions.	Next Step	Report back to Council on opportunities. Target Q3 2020.	ENG
	c. E-Bike Share: Add 500 electric-assist bicycles (e-bikes) and 50 electrified stations to the public bike share (PBS) system. E-bikes have been shown to provide mobility to those with physical limitations that prohibit cycling, increase ridership among currently underrepresented groups and enable longer trips for a greater variety of trip purposes.	Replacing higher carbon (private motor vehicle, taxi, transit) emissions trips with lower emissions ones, like PBS with e-bikes. Currently about 47% of PBS trips replace higher carbon modes. E-bikes have at least doubled the number of rides per bike per day compared to the current system in other cities. Compared to other systems, expected usage will be at least 4.5 rides per bike per day. Average trip distance is expected to be 3.5 km, so 500 bikes are expected to replace over 1,380,000 km of polluting trips annually (conservative estimate, NYC has shown 5x more usage per bike than this estimate).	Next Step	Report back to Council on opportunities. during 2019.	ENG

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
8 Transportation Demand Management Enhanced transportation demand management to support walking, cycling and transit.	a. City-wide Transportation Demand Management Program: Encourage shifting travel behaviour from driving to sustainable modes. Coordinate, track, and monitor existing cross-branch activities (including efforts with School Active Travel, Walk + Bike + Roll promotions, and new developments) to leverage existing infrastructure investments. Complete gap analysis and develop programming to encourage mode shift and address under-targeted markets, such as major employers and institutions.	Encourage behaviour change to travel by sustainable modes. Promote efficient use of existing infrastructure.	Next Step	Report back to Council on progress. Target Q3 2020.	ENG
	b. Support for electric bikes: Explore options to encourage the safe use of electric bikes and electric cargo bikes, especially for longer commutes, steeper terrain and for those with limited physical capacity. As part of this work, staff will explore options of partnering with the provincial government to extend CleanBC incentives for electric vehicles to electric bikes.	A switch to electric bikes or cargo bikes from private vehicle trips reduces gasoline and diesel use. They also make that switch possible for longer trips, trips with kids or a heavy load, and for people who might not be able to travel by a non-electric bike.	New Action	For consideration in service planning for 2020 .	ENG
	c. Transportation Pricing: Undertake a comprehensive City-focused transportation pricing review to explore equitable and comprehensive applications for all modes (e.g., road and curb pricing) that would help curtail vehicle emissions and support zero emissions mobility. To be aligned with regional mobility pricing work.	Pricing road and curb space is a powerful tool for decreasing congestion resulting in high concentrations of emissions and discouraging vehicle travel. Revenue from mobility pricing can also be directed towards supporting sustainable travel.	New Action	Report back to Council on progress. Target Q3 2020.	ENG, PDS

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
	d. Parking Requirements: Update the Parking Bylaw to: 1) expand the transportation demand management (TDM) options available to developments outside of the downtown core and allow for elimination or reduction of parking stall requirements in those developments (except for accessible and visitor parking), and 2) explore design standards that enable parking stalls to be repurposed in the future if they aren't needed for parking (e.g., flat floor plates and over-height ceilings). This work would be in addition to the planned monitoring of the effectiveness TDM program for new developments.	How a city prioritizes parking clearly signals its priorities around livability and sustainability. Successful and livable cities support parking and driving for those who need it, and ensure other modes are readily available to the rest. With limited space and money, parking should be a low priority when designing an affordable, green city. Reduced parking also helps to reduce the embodied emissions in new construction if less concrete is needed, and it can also lead to reduced embodied emissions from vehicles as car ownership declines.	Next Step	Report back to Council on progress. Target Q3 2020.	ENG
	e. On-Street Car Share Parking: Update bylaws and create agreements to allow car share vehicles to end trips and have stopovers at on-street metered parking spaces.	It has been estimated that households participating in two-way car share programs (e.g., Modo, Zipcar) reduce their annual vehicle-related GHGs by up to 54% on average. For households participating in one-way car share programs (car2go, Evo), vehicle-related GHG emissions declined by up to 15% on average. Car sharing is also a proven way to reduce vehicle ownership, vehicle kilometres travelled and transportation costs for residents utilizing car sharing.	New Action	Report to Council Q2 2019.	ENG

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
9 <u>Goods Movement and Fleets</u> Reduce carbon emissions from freight and private fleets operating in Vancouver.	a. Urban Freight and Fleets: Develop an urban freight and fleets strategy to identify the needs for regional and longer-distance goods movement, and the opportunities for lower-impact goods movement, deliveries, and servicing in the urban environment. The strategy will also address the transition of private fleets to zero emissions vehicles (including light-, medium- and heavy-duty vehicles). Elements of the strategy could include increasing the use of cargo bikes for freight, provision of logistics hubs, time-of-day and loading zone policies, commercial vehicle licensing policies, and leveraging rail or other modes to reduce truck travel.	Reduces greenhouse gas emissions of goods movement by decreasing the distance travelled by trucks, transitioning to zero emissions vehicles, and supporting modes with lower GHG emissions, such as rail and bikes.	Next Step	Report back to Council on progress. Target Q3 2020.	ENG, PDS
	b. Curbside Zone Management: Update the management and enforcement of on-street curbside zones (e.g., commercial loading zones) so that they more effectively encourage efficient use of street space and encourage the transition to zero emissions commercial vehicles.	Effective pricing of curbside zones would encourage vehicles to load and vacate the space quickly, making it available for the next user. This would reduce greenhouse gas emissions due to circling and reduce congestion caused by double-parking. Curbside management could also be used to directly encourage the transition to zero emissions vehicles by offering preferential access to the zones.	New Action	Report back to Council in Q2 of 2020.	ENG, PDS, DBL

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
10 <u>Electric Charging Network</u> Increase the public charging network for electric vehicles and other needs, such as film and food trucks.	a. Neighbourhood Charging: Develop a neighbourhood charging strategy for vehicles and electric bikes, with a focus on providing charging in areas of the city where residents do not have access to off-street home charging. Possible locations include on-street (including light-pole charging), and lower-use parking areas, such as parks and schools, particularly where overnight access is possible. The neighbourhood charging strategy would also help provide charging options for shared mobility companies helping to accelerate their transition to zero emissions vehicles.	Access to home charging is considered a key enabler for electric vehicle uptake. It also reduces reliance on higher-powered, short-term public charging that is necessarily more expensive to use and operate. For the thousands of Vancouver residents without access to off-street parking, including many renters, this strategy will seek to enable access to convenient, more equitable near-home charging.	Next Step	Report back to Council in Q2 of 2020 with completed strategy. Early actions to also be included for consideration in service planning for 2020.	ENG, PDS
	b. Film, Food Trucks and Special Events: Develop a power supply plan for film, food trucks, and special events to help them transition off of diesel and propane generators, which are also significant contributors to noise and air pollution. Installing power drops for filming at Larwill Park will be one quick-start action. A capital project is currently underway to develop improvements to the public charging network as part of the Electric Vehicle Ecosystem Strategy. The Larwill Park initiative will be funded by the existing capital program. To help finance additional power drops at key areas, staff will implement a diesel generator permit for film and special events.	By enabling film operations, food trucks and special events to connect to the grid at key areas, such as frequent filming locations and farmers markets, they can reduce their reliance on diesel and propane use. These actions also help to reduce local air pollution and noise.	New Action	Report back to Council in Q2 of 2020 with completed plan. Early actions to also be included for consideration in service planning for 2020.	ENG, PDS
	c. Commercial Buildings: Update electric-vehicle readiness requirements for new commercial buildings to close a gap for workplace charging and other commercial uses. In recognition of the range of uses for commercial buildings and parking, the requirements will be based on a points system (similar to the City's TDM approach), where developers can choose from a menu of EV-readiness options.	For many EV drivers, the ability to charge a vehicle at work will allow them to transition to an EV, either by extending their range for long commutes or by having access to charging when not available at their home parking spot.	Next Step	Report back to Council in Q1 2020.	PDS, DBL, ENG

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
	d. Fast-Charging Network: Complete phase 1 of the City's DC fast-charging network for electric vehicles by end of 2020, instead of 2021. This will put a fast-charging hub within a 10-minute drive of anywhere in the City.	A 10-minute drive to a fast-charging hub, located at a convenient amenity, was rated by a majority of Vancouver residents as a solution that would make it more likely for them to switch to an electric vehicle.	Next Step	Selection of vendor.	ENG, PDS
	e. Home Charging in Rental Buildings: Explore options to encourage the installation of home charging in existing buildings, with a focus on rental buildings and non-market housing, which have not been as well supported as stratas by existing provincial government programs. Options to explore include providing a top-up to the Government of BC's CleanBC incentives, which were expanded in the 2019 provincial budget.	Access to home charging is a key enabler for switching to electric vehicles. Renters face a significant barrier to adding home charging if their building is not already equipped with charging infrastructure, and cost has been flagged as the greatest barrier to adding charging in multi-family buildings.	Next Step	For consideration in service planning for 2020.	PDS
	f. Electric Tour Buses: Provide charging service for electric tour buses as a pilot project at up to three locations in 2019/2020. This would build on the site identification work already completed, and provide a clear path to getting priority sites up and running to be responsive to industry leaders and help inform the freight and fleets strategy. Access to the charging locations would be determined through a market process. A capital project is currently underway to develop improvements to the public charging network as part of the Electric Vehicle Ecosystem Strategy. The Electric Tour Buses initiative will be funded by the existing capital program.	Private medium- and heavy-duty vehicles are a significant part of transportation emissions, and also significant contributors to local air pollution. Central parking and charging opportunities help reduce the barriers for tour bus operators, who may lose half their range by charging out of the city and driving in.	Next Step	Request for expressions of interest for site access.	ENG, PDS
11 Electric Vehicle Incentives Implement incentives to accelerate the	a. Parking for Zero Emissions Car-Share Vehicles: Update the Transportation Demand Management requirements in the Parking Bylaw to: 1) require all new car-share vehicles to be zero emissions with dedicated level 2 charging if electric, and 2) include points for micro-mobility charging including e-bikes.	Encourages shift to electric vehicles and other sustainable modes of transportation.	Next Step	Report back to Council by Q2 2020.	ENG, PDS

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
transition to electric vehicles.	b. Car Share Parking Rates: For zero emissions vehicles, waive the fee for permits issued to car-share organizations that allow those vehicles to park in areas restricted to residents-only parking. Waivers granted would expire in five years subject to an evaluation of the incentive.	Encourages shift to electric vehicles.	New Action	Report back to Council by Q2 2020.	ENG, PDS
12 Solid Waste Reduce solid waste and use it to reduce fossil fuel use.	a. Reducing Wasted Food: Identify and pursue opportunities to advance community actions to reduce wasted food across Vancouver, in partnership with local food businesses and food industry, with a dual focus to avoid wasted food in the supply chain and divert surplus food to people.	The production, processing and movement of food results in carbon emissions. By reducing the amount of wasted food, those food-related emissions can also be reduced.	Next Step	Identified opportunities to be considered as part of service planning for 2020.	ENG
	b. Renewable Gas Supply: Assess the business case of converting waste organic materials into renewable natural gas at the Vancouver Landfill. This would be additional to the project the City is already advancing with FortisBC to upgrade landfill gas into renewable natural gas.	Renewable natural gas can be directly substituted for fossil natural gas, which eliminates the carbon emissions associated with extracting, processing, transmitting and combusting the fossil gas.	Next Step	Complete business case analysis by 2019 year-end.	ENG
	c. Construction and Demolition Waste: Explore the business case of producing a biofuel from waste construction and demolition materials received at the Vancouver Landfill, which could potentially be used to replace coal for the local production of cement.	Construction and demolition waste can be processed into a biofuel, thereby reducing the emissions associated with mining, transporting and burning coal, for example.	Next Step	Complete business case analysis by 2019 year-end.	ENG
	d. Recycled asphalt and aggregate: Explore the business case of investing in existing infrastructure to enable an increased proportion of recycled asphalt and aggregates in City construction projects.	By increasing the proportion of recycled asphalt and aggregates in City projects, we can reduce the need for new asphalt and aggregate and the emissions associated with producing it.	Next Step	Complete business case analysis by 2019 year-end.	ENG

Category		Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
13	Food and Beverage Reduce emissions from Vancouver's food and beverage industry.	a. Restaurants and Breweries: Engage with local restaurants and breweries to help reduce emissions and transition to renewable energy. The project will work with the food and beverage industry to explore their options to reduce their emissions, as well as the possible roles that businesses and the City can play to accelerate change. Areas of interest include alternatives to standard cooking facilities and patio heaters.	Carbon emissions would be reduced by transitioning off of fossil natural gas and propane to solutions such as renewable natural gas, induction stoves, heat pump water heaters, electric patio heaters and blankets.	New Action	Report back with action plan by end of 2019.	PDS, DBL, ENG
		b. Diets that are Healthy for People and the Planet: Convene a Solutions Lab to accelerate movement toward diets that are healthy for people and the planet. The Solutions Lab will bring together City staff, partners, and community members to understand a complex challenge and rapidly prototype and test solutions. Staff will also investigate the City's potential role in supporting emissions reduction from the food system and identify best practices for ensuring that policy approaches are equity-based.	In Vancouver, 20% of consumption-based carbon emissions come from food (EcoCity Footprint Tool Pilot), therefore food can play an important role in taking climate action. Given that limited food production occurs within city limits, the City's role in supporting food system emissions reduction will likely focus on residents' eating habits and institutional food provision.	New Action	Begin convening Solutions Lab in Q2 2019. Report back with potential actions for consideration in Q1 2020.	PDS, ACCS
14	City Leadership Updating the City's Green Operations Plan to reflect the urgency of the climate emergency.	a. Facilities Capital Maintenance: The City is working towards all City buildings having 100% renewable energy and 100% reduction in carbon emissions by 2040. All new City-owned buildings are being built to zero emissions standards (since 2018). Going forward, all capital maintenance projects on energy using equipment in City buildings will transition from gas to high efficiency electric options where viable. As part of this work, several additional gas-to-electric heat pump projects will be completed in 2019/2020.	The City owns and operates more than 600 buildings and when a major upgrade is required for a boiler, furnace, or domestic hot water heaters it is proposed that zero emissions solutions are used, subject to meeting operational requirements. This action will address carbon reduction opportunities in existing buildings.	Next Step	Ongoing annual reporting.	REFM, PDS

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
	b. Embodied Carbon: Adopt a strategy that all new City facilities will explore opportunities for significant reductions in embodied emissions. To support this strategy, staff will continue to develop capacity and metrics, and create simple tools for decision-making and reporting. Staff will also work with private, public and non-profit sector partners to build awareness and encourage leadership commitments in this emerging opportunity.	By shifting materials and construction practices for new buildings to lower-carbon options, the City will be able to reduce the embodied carbon it is responsible for and help private, public and non-profit sector partners achieve similar outcomes.	New Action	Embodied carbon policy defined and included in all City-owned facilities development 2019/20.	REFM, PDS
	c. City Fleet: By 2023, transition all non-emergency City fleet sedans to zero emissions vehicles, replace an additional batch of heavy-duty trucks with electric vehicles, and support additional operational improvements using GPS and telematics.	The identified City fleet projects would reduce carbon pollution by reducing the overall volume of fossil fuels used. It is likely this would be on the order of 1,500 tonnes of CO2e.	Next Step	Detailed analysis will be considered as part of service planning for 2020.	ENG
	d. Fleet Charging: Develop a charging infrastructure strategy for the City's electric vehicles to support the accelerated sedan transition and the addition of medium- and heavy-duty electric vehicles to the fleet.	To support the planned transition to electric, a comprehensive charging strategy will allow for effective and efficient installation of the required charging infrastructure.	Next Step	For consideration as part of service planning for 2020.	ENG
	e. Manitoba Works Yard Energy Hub: As part of the planning process for the redevelopment of the Manitoba Works Yard, set an objective of establishing the yard as a renewable energy hub for the community. This could include solar PV electricity generation, generation of RNG from organic waste, and EV charging and RNG/HDRD refueling for City vehicles and private fleets and vehicles.	Establishing a renewable energy hub would support quicker transition of the City and private fleets to renewable sources, while also increasing demand, driving further maturation of the local market for these energy technologies.	New Action	Detailed plan as part of 2019–2023 Manitoba Works Yard Master Plan.	REFM, ENG

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
	f. Small Equipment: Develop a strategy to transition small mobile equipment (e.g., mowers and leaf blowers) to electric or zero emissions technologies. Use that experience to consider city-wide approaches to phase out fossil fuels in that equipment.	A transition of small mobile equipment to electric has the potential to reduce emissions by 800 tonnes of CO2e.	New Action	For consideration as part of service planning for 2020.	ENG
	g. Sustainable Commuting: Update the Sustainable Commuting Program to accelerate long-term shifts towards City staff commuting by walking, cycling, transit, or zero emissions vehicles. A secondary objective will be to provide a leading standard for City facilities as an example to other employers and commercial landlords in Vancouver. The first phase of work will focus on policies to enhance City employee electric vehicle charging and bicycle end-of-trip facilities at City buildings. A second phase will include a comprehensive review of the City's Sustainable Commuting Program and identify additional actions beyond end-of-trip facilities that will accelerate a shift to zero-carbon commuting.	As a leading employer, the City can both enable our own employees to switch to zero emissions options for commuting, as well as influence other employers in applying best practices to encourage zero emissions commuting. Active transportation, transit, electric vehicles and telecommuting all reduce commuting carbon emissions relative to a commute via an internal combustion private vehicle.	Next Step	Complete project charter in Q2 2019; develop first phase of policy by Q3 2019.	PDS, REFM, ENG, HR
	h. Online Services: Explore all available options to provide services online in order to reduce the number of trips that applicants need to make to the Development and Building Services Centre.	The City receives about 45,000 in-person visits a year to the Development and Building Services Centre at 525 W 12th Avenue. Moving more services online helps to reduce the carbon footprint of these trips. In addition, most applicants need to provide multiple printed copies of site plans and construction plans. Moving to online plan submission and review has a further benefit in reducing paper use.	Next Step	Develop detailed implementation plans for online service delivery.	DBL, IT

Category		Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
		i. Support for Cities in Developing Countries: Explore options to help cities in developing countries grow their economies without relying on fossil fuels to the extent that Canada and other developed countries have. Options could include contributing to the UNFCCC's Green Climate Fund, partnering with specific cities in developing countries to support transition to renewable energy, advocating for increased federal and/or private sector contributions, etc.	Cities in developing countries often do not have the financial resources and technical knowledge needed to rapidly transition to renewable energy and adapt to climate change, while also growing their economy. By providing support, wealthier jurisdictions that have long benefited from fossil fuels can help them achieve those objectives.		Report back to Council on options by end of 2020.	PDS, CMO, VEC
15	Intergovernmental Relations and Community Engagement	a. Intergovernmental Relations: Develop a list of policy, legislative, and regulatory changes and investment funding priorities (coordinated with other City corporate priorities) to work with other governments and related organizations in order to implement and support the City's climate emergency work. These include the federal and provincial governments; Metro Vancouver; other municipal governments across BC, Canada and internationally; FCM; UBCM; TransLink; Port of Vancouver; BC Hydro; and FortisBC. Examples of these changes and priorities include mobility pricing (as a tool to limit congestion and raise funds for transit), right-to-charge rules for electric vehicle owners in multi-unit residential buildings, ride-hailing legislation that aligns with zero emissions principles and complements sustainable travel, supporting the All On Board campaign, accelerated transit electrification, a bold vision for the Regional Transportation Strategy, energy performance benchmarking for buildings, counting district energy systems with heat from renewable energy as a contributor towards the targets in BC's new renewable gas standard, and electricity pricing that supports electrification.	As discussed in the report, the City has a number of important tools it can use to reduce carbon pollution. However, achieving the City's objectives will rely on a broader set of tools that require senior levels of government, the region, and utilities moving in similar directions.	Next Step	Report back to Council on recommended priorities by June 2019.	CMO, PDS, ENG

Category	Accelerated Action	How this Action Reduces Carbon Pollution	New Action vs. Next Step	Next Milestone	Department Lead(s)
	b. Community Engagement: Develop and implement an action-oriented community education and awareness strategy to increase residents' literacy on the urgency of climate change, local impacts, and opportunities for individual and collective action. Working with community partners, local businesses, and stakeholders, examples could include campaigns, strategic communication on City assets (fleet and buildings), presence at community events, side events during relevant local conferences—with an emphasis on those groups who are typically harder to engage, including youth and new Canadians.	Based on research conducted by Mustel Group in 2017 and 2018, the City has an opportunity, through trusted partners, to educate on the types of renewable energy, to engage on opportunities to take action, and to address specific concerns and uncertainties voiced by those who participated in the research. This will not only build continued support for climate-related policy and City action, but is foundational for resident action.	Next Step	Complete hiring of new staff and develop strategy.	PDS, CEC, VEC
	c. Partner Engagement: Develop and implement a strategy to further build relationships and expand engagement and collaboration with diverse groups involved in advancing climate action in Vancouver. Examples could include further developing the annual Renewable City stakeholder event, supporting program ambassadors, managing existing and initiating new topic-specific working groups, and coordinating collaboration between partner organizations working toward priority outcomes.	With dedicated capacity and a focused strategy, the City can better coordinate and leverage the efforts of partner organizations. This type of joint action will be essential in successfully delivering many of the actions outlined in this report.	Next Step	Complete hiring of new staff and develop strategy.	PDS, VEC

Appendix B – Adaptation Actions

The adaptation actions in the following table were identified through the process of preparing the climate emergency response.

Action	Description	How this Actions Supports Adaptation	Next Milestone
Pilot clean air shelters	In the summer of 2019, City staff will collaborate to provide "clean air rooms" in up to five (5) cooling centres. Portable HEPA filters—the VCH recommended filtration level—will be used in designated areas and rooms to provide refuge for the public during extended daytime hours during poor air quality days. Level of use, challenges and lessons will be evaluated to inform a more permanent program.	Between 2015 and 2017 there were 27 days of air quality alerts issued for the Lower Mainland due to particulate matter from wildfires burning outside the region and from ground-level ozone. The summer of 2018 also included several extended air quality alerts. Exposure to ozone and fine particulate matter is particularly a concern for infants, the elderly and those who have underlying medical conditions, such as lung disease, heart disease, diabetes or asthma. Feedback from frontline staff throughout the city suggests addressing this impact from climate change is a priority in the short term. This action targets those most vulnerable to poor air quality.	Report back to Council with pilot results and next steps.
Temporary cooling in non-market housing	Provide temporary cooling measures during summer heat to the non-market housing buildings identified as overheating during the last few summers.	As summers have been getting hotter, it is widely recognized that older buildings and certain building designs do not cool down well at night and thermal comfort during the day declines. In Vancouver, a high proportion of vulnerable people reside in areas identified as urban heat islands, and many live in older, poorly ventilated buildings. In 2018, temporary cooling was provided in four cooling rooms in City-owned non-market housing buildings that were found to be overheating. This summer, the effort will be expanded to up to six sites and to provide better cooling results.	See below

Action	Description	How this Actions Supports Adaptation	Next Milestone
Long-term cooling of non-market housing	Recognizing the limitations and costliness of continued temporary cooling in non-market housing, REFM and Non-market Housing Operations (ACCS) are collaborating to investigate options to provide long-term cooling for non-market housing buildings prone to over-heating. A consultant study of specific sites will be undertaken to recommend actions.	Investing in cooling (whether passive or active) where populations most vulnerable to heat illness are identified is a priority step in managing climate change impacts.	Report back to Council with study recommendations and related actions.
Amendment to existing street trees	Provide an amendment to existing tree pits in locations around the city to improve drought and pest tolerance.	The soil amendment will provide improved drought and pest tolerance for street trees as well as improving tree health generally. With warmer winters and summers, increasing pests are anticipated. Hotter summers are already putting stress on our trees. The GCAP goal of increasing tree canopy in the city is important for mitigating urban heat island effect, which is worsening with hotter weather, and also for stormwater benefits.	Report back to Council with results and next steps.

Appendix C – Other Climate Emergency Declarations

Examples of other cities and regions that have declared climate emergencies include:

- In BC: Richmond, New Westminster, Victoria, the Capital Regional District, the Islands Trust Area, and Powell River.
- The BC Assembly of First Nations also passed a motion recognizing the climate change emergency in March 2019.
- Across Canada, the list includes Halifax, Mahone Bay, Moncton, Sackville (NB), Edmundston, Kingston, and Hamilton, and in Québec there are over 200 communities including Québec City and Montréal.
- International cities include London, Edinburgh, Los Angeles, Berkeley, and Oakland.

Appendix D – CleanBC Commitments with Greatest Relevance for Vancouver

The policies and investments in phase one of BC's new climate plan (CleanBC) that are of greatest relevance to Vancouver include:

- A zero emissions vehicle standard that will require an increasing percentage of the light-duty vehicles sold in BC to be zero emissions. The specific targets are 10 per cent of sales by 2025, 30 per cent of sales by 2030, and 100 per cent of sales by 2040. The policy will ensure that there are more electric vehicles available when residents and businesses are ready to purchase a new vehicle.
- A strengthened Low-Carbon Fuel Standard, which will require the carbon intensity of transportation fuels of 20 per cent below 2010 levels by 2030. The current requirement is 10 per cent below 2010 levels by 2020. This policy will support the transition to electric vehicles and increase the supply of renewable diesel and gasoline.
- A renewable gas standard that will require 15 per cent of FortisBC's gas supply to come from renewable sources by 2030 (there is currently less than one per cent renewable content in the gas grid). This policy will help reduce carbon pollution from buildings and some transportation in the city, and will help advance renewable natural gas supply projects.
- The 2019 provincial budget included $902 million to support the implementation of CleanBC from 2019 through 2021. This includes new funding for electric vehicles and charging infrastructure, heat pumps, and building energy efficiency upgrades.

In addition to these provincial actions, the federal government has been in the process of implementing several important climate policies of its own through the Pan-Canadian Framework on Clean Growth and Climate Change. These include the Carbon Pollution Pricing Benchmark, the Clean Fuel Standard and the Coal-Fired Power Phase-Out. All of these policies will help Canada reduce emissions, but in a BC context, they are largely overlapping with provincial climate policies.

Appendix E – Multiple Benefits of Reducing Carbon Pollution

Health and air quality benefits

The vast majority of solutions the City is pursuing to reduce carbon pollution also lead to better health outcomes. Zero emissions buildings have better indoor air quality. Electric vehicles produce less air pollution than their gasoline and diesel counterparts. Walking and cycling are pollution-free and they help people stay active.

Improved resilience

Many of the solutions that help to reduce carbon pollution also help residents and businesses become more resilient. A zero emissions building provides a good example: in addition to emitting no carbon pollution, the improved ventilation helps limit air quality impacts from forest fire smoke, and high levels of insulation mean that it can stay comfortable in hot or cold weather in the event of a power outage and more extreme weather events. A second example is a resilient transportation network, which provides a range of mobility options that can meet diverse daily needs and respond to and recover from changing circumstances.

Reduced costs

The costs of reducing emissions fast enough to limit warming to 1.5°C are much less than the costs that will be incurred if more warming is allowed to happen. That said, it is understandable that many residents and businesses are focused on more immediate cost implications to them as individuals. In some cases, those solutions already represent a net savings for Vancouver residents and businesses (e.g., improved energy efficiency requirements in new buildings, and safer and more convenient active transportation and transit choices).

In other cases, there are currently cost premiums that most residents will not recover through energy savings (e.g., electric vehicles and heat pumps). In these cases, the City (and governments more generally) can play an important role of helping to make those solutions more affordable in the near term and building demand for them so that costs come down.

Based on economic modelling the City commissioned with BC Hydro in 2017, the transition to 100 per cent renewable energy can help achieve modest cost savings for residents and businesses. For example, average per capita expenditures on energy and the associated capital equipment decline by nine per cent between 2015 and 2050.

Economic development

Going “green” is good for business and great for the local economy. This can be measured in a variety of ways, including job creation, job transition, innovation, process efficiencies, increased sales/revenues, etc. In Vancouver, the green economy employs 1 in 15 workers, well above any other North American city and this is growing at 7.8% per year on average for the past three years. The carbon intensity of Vancouver’s economy (tonnes of carbon pollution per dollar of GDP) has fallen by 29 per cent since 2007.

Establishing effective policies that address climate change can accelerate innovation in cleantech, green building technologies, advanced materials, local food, solid waste and transportation options. When Vancouver City Council passed the Zero Emissions Building Plan and the Government of BC established the BC Energy Step Code for new construction, the Vancouver Economic Commission (VEC) identified a $3.3 billion market opportunity for the local green building and construction sector over the next decade.

The environmental ethos and world-renowned recognition of Vancouver as a “green” city has also translated into a US$31.7 billion brand. In a global economy where cities are competing for talent, this is an important quality and advantage that Vancouver possesses to help it attract the best and brightest to Vancouver’s thriving economy in all sectors.

Appendix F – Regulatory, Investment and Advocacy Tools to Reduce Carbon Pollution

The following table lists the primary regulatory and investment tools (with examples) that Vancouver can use to reduce carbon pollution. Advocacy tools are discussed below the table.

Tool	Examples
Land-use planning	• Designing complete and compact communities that allow people to live close to transit and other services and amenities
Allocating public space	• Widening sidewalks • Creating parks and plazas • Dedicating road space for transit • Reserving parking for electric vehicles • Creating protected bike lanes
Regulating buildings and equipment	• Limiting carbon emissions in new construction • Adding electric-vehicle readiness requirements in new construction • Supporting transportation demand management requirements in new construction
Investing in infrastructure	• Improving walking and cycling networks • Increasing public electric vehicle chargers
Supplying renewable energy	• Developing and expanding the Neighbourhood Energy Utility • Providing landfill gas for heat and power generation
Providing financial and land-use incentives	• Topping up Government of BC incentives for heat pumps • Incentivizing carbon reductions in heritage homes • Allowing buildings that are taller or have bigger footprints in exchange for higher environmental performance • Pricing curb space to manage parking demand and reduce congestion
Capacity building	• Partnering with institutional and professional organizations to provide skills training • Establishing the Zero Emissions Buildings Centre of Excellence
Demonstrating corporate leadership	• Transitioning the City's fleet to electric vehicles and renewable fuels • Heating the City's buildings with heat pumps and renewable energy sources

Advocacy Tools
In addition to the regulatory and investment tools that the City directly controls, we can also work with other governments and utilities to use their tools to pursue shared climate objectives. Climate change is too big of a problem to be tackled without close collaboration and learning from other jurisdictions. Examples include:

- The Government of BC's jurisdiction includes critical policies, such as requirements for the percentage of renewable energy in the gas and electric grids. The City continues to actively work with the Government of BC on the development and implementation of its climate plan (CleanBC).
- The amount of renewable energy supplied by BC Hydro and FortisBC, and the rate structures they set to connect to and use their energy influences the business cases for switching to renewable energy, such as electric vehicles, heat pumps and renewable natural gas.
- Metro Vancouver, TransLink and neighbouring local governments have similar tools to Vancouver that can help transform regional markets that make it easier for Vancouver to achieve its targets (e.g., the broader adoption of EV-readiness requirements in new construction will help accelerate EV adoption across the region). Updating transit fare policy and providing additional transit service region-wide can support Vancouver's sustainable transportation goals.
- Vancouver is also an active member in a number of regional, national and international networks of cities working collaboratively to reduce carbon emissions. Examples include the Union of BC Municipalities (UBCM) and Federation of Canadian Municipalities (FCM), the EV Peer Network, the BC Energy Step Code Peer Network, Carbon Neutral Cities Alliance, C40 Cities, and 100 Resilient Cities.

Appendix G – Carbon Budgeting Objectives

Improved Transparency

A carbon budget should be accessible to the public. It should show:

- The components ("sub-budgets") that add up to the overall budget (e.g., energy use reductions in buildings, transportation; waste management).
- The links to anticipated carbon reductions.
- The links to financial budgets to show that they are funded.
- The City departments responsible for development and implementation.
- Any remaining carbon reductions necessary to achieve targets, but not currently attributable.

How targets for the "sub-budgets" are equitably set, and mechanisms for rebalancing between them if necessary, remains a question. Cost-effective, impactful technologies and reduction pathways may be available to different sectors and departments at different times. There is also the issue of evaluating program efficacy. Initiatives with manifold or indirect effects may be especially complicated, and the ability to measure, estimate, or forecast carbon impacts varies greatly.

Other considerations include delayed carbon reduction impacts and the permanence of those impacts. In these instances where the carbon impact may not be clear, secondary metrics within a forthcoming indicators framework for the Renewable City Action Plan can help track progress. Finally, any gaps between indicated components and reduction targets will inform additional carbon reduction or removal programs as required to meet the budget targets. Underpinning all of these is the need to improve data quality.

Better Data

The carbon budget should track our emissions with enough accuracy and precision to properly assess our progress.

Better data helps us better determine whether we have the right current and planned measures to achieve our targets. Calculating Vancouver's community emissions to date has relied on estimates, which has been enough to show overall trends in total emissions. A carbon budget requires more detailed, "policy-sensitive" data to show clear links between program impacts and measured emissions.

As an example, reported transportation emissions have relied partially on fuel-sales data. This can show an overall trend in vehicle activity, but it is influenced by too many external factors to directly show the impact of Vancouver's progress of mode split, resident vehicle-distances driven, and active transportation initiatives. Another example is methane emissions from the natural gas distribution system and the Vancouver Landfill. A number of studies have pointed to scientific uncertainty regarding the amount of methane released from these sources, and efforts to reduce that uncertainty help the City make better decisions about programs and policies.

Better Forecasting
The carbon budget should allow us to forecast emissions with reasonable confidence, and course-correct as necessary.

Better data also allows improved forecasting for future budgets. Budget levels should be adjusted as progress is made (or not), as costs and availability of carbon-reduction and removal technologies change, and as global climate projections are updated. Regular budget-adjustment milestones should be set: four-year periods would align with Council terms and fulfil Council's directive to "create interim four-year targets and goals".

CleanBC Alignment
The carbon budget should align with the Government of BC's CleanBC plan where appropriate.

A new CleanBC accountability framework is currently in development. The CleanBC report mentions carbon budgets with respect to maintaining a "commitment to transparency on use of carbon tax revenue", undertaking an "independent review of proposed climate action against climate budgets", and tabling "an annual report of GHG spending, program results and anticipated reductions in GHG emissions". These all point to similar objectives around transparency already discussed above. Vancouver's data analysis and forecasting approaches can align where possible with provincial approaches, to ensure similar measures are accounted for, as long as carbon measurements continue to be policy-sensitive at the city level.

Improved Accountability
The carbon budget should enable some mechanism for addressing exceedances.

Targets may be missed. Carbon budgeting approaches can help drive analysis into the causes of exceedance, which drives the development of ways to address them. Tracking carbon expenditures within a budget also allows accounting processes to be applied, such as the ability to carry forward budget surpluses to future years, to borrow surplus "room" if overspent, or to accrue carbon-removal impacts to the years they actually come into effect. Frequent budget reporting (Council direction is for annual reporting) decreases the risk of complacency and delayed action.

Likewise, accountability can lead to the notion of carbon "debt": if a carbon budget is missed in one year, does that incur a deficit that should be addressed in the following year? Meanwhile, at this time, no common approach exists for consequences. For example, New Zealand's Emissions Trading Scheme allows exceedances to be offset with carbon removals. The District of Saanich's Carbon Fund makes departments accountable by requiring them to pay into a fund for corporate-emissions reduction projects, based on their emissions levels. Staff will continue to research and develop an approach in consultation with City departments.

Appendix H – Carbon and Equity Working Group

Objectives and Process

The objectives of Vancouver's Climate and Equity Work Group will be to:

1. Help City staff to better centre the voices of Vancouver black, Indigenous, and people of colour in climate and sustainability work, and to understand systemic discrimination and climate-related risks faced by low-income residents.
2. Review proposed Greenest City 2050 actions over a number of goal areas, including this Climate Emergency Response, to identify potential impacts (positive and negative) and opportunities where implementation could benefit systemically excluded populations.
3. Propose new relevant actions to be considered for inclusion in climate plans, including the City's Climate Change Adaptation Strategy.

An ancillary objective of the Climate and Equity Working Group will be to serve as a potential model for meaningfully engaging with black, Indigenous, and people of colour, as well as low-income communities, using the tools and guidance provided by the City's Equity Framework. The Climate and Equity Working Group will be a learning experience and one that could build trust and capacity for other City-led initiatives. It will also be an important opportunity to incorporate a gendered intersectional lens into the City's climate actions and the Climate Adaptation Strategy.

In terms of process, it is anticipated that the Climate and Equity Working Group participants will attend a series of 2–3 hour workshops over the course of 12–18 months, starting in the fall of 2019. To avoid power imbalance, the workshops will be facilitated by a non-City staff person with a depth of experience in equity. The workshops will be organized and attended by staff from Sustainability working in collaboration with Social Policy. Other City staff will attend based on the topic area of discussion at each meeting. The working structure of the group will be co-created with working group participants, to ensure that it delivers meaningful outcomes while building trust amongst participants and City staff.

Participants

The group will consist of 10–15 representatives from local community-based organizations (or their citizen designates). An intersectional approach will be used. The working group will include Indigenous representation and the City will strive to include a diversity of racial and ethnic backgrounds, ages, gender identities, and sexual orientations. The City will strive to ensure the group has a majority of black, Indigenous, and people of colour among participants. Applicants who identify as black, Indigenous, people of colour, and LGBTQ2S+ who may also identify as gender non-binary will be strongly encouraged to apply. A public call for applications for organizations that are willing to participate will be made.

Budget

The proposed budget to create the Climate and Equity Working Group is $50,000, which will cover up to eight workshops with an external facilitator and includes compensation for working group participants at Vancouver's living wage, provision of childcare during meetings, and transportation costs. The proposed budget would also enable the facilitator to do a high-level scan of the City's climate and sustainability plans (e.g., GCAP 2020) to identify equity gaps and opportunities. Staff have identified funding for the creation of this group from within existing budgets and may bring back a budget proposal for an ongoing working group for Council's consideration.