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Date: 10/16/2020 7:03:32 PM

Subject: Memo - CEAP Finance - RTS 13199

Attachments: image003.png

ATT00001.htm

Memo to Mayor and Council - Climate Emergency Action Plan - Financial Summary.pdf

ATT00002.htm

Dear Mayor and Council,

Please find attached a memo from Gil Kelley as a follow up to the September 21 Council briefing on the Climate Emergency Action Plan (CEAP) – RTS 13199. This memo provides additional information on the financial implications of the CEAP report being brought for your considering on November 3.

In summary:

- The City is has historically invested approximately \$50-55M per year in climate related actions (active transportation, transit infrastructure, and neighbourhood energy, for example) and will need to increase that to approximately \$100M per year in order to meet our 2030 climate target of reducing emissions by 50% compared to 2007, a five-fold increase over our current emission reductions.
- Staff have proposed several approaches to close this funding gap over the next five years, while recognizing the financial uncertainties posed by COVID-19.
- The resident and business investment required to achieve our 2030 climate target is approximately \$1.3B over the next 9 years and will generate approximately \$2.3B in savings, for a net savings of nearly \$1B.
- This net savings for our community does not include additional benefits related to health, economic development and the avoided impacts of climate change.

Should you have any questions, please contact Gil Kelley at Gil.Kelley@vancouver.ca.

Best,
Sadhu

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Pronouns: he, him, his

The City of Vancouver acknowledges that it is situated on the unceded traditional territories of the Musqueam, Squamish, and Tsleil-Waututh peoples.

MEMORANDUM

October 16, 2020

TO: Mayor and Council

CC: Sadhu Johnston, City Manager
Paul Mochrie, Deputy City Manager
Karen Levitt, Deputy City Manager
Lynda Graves, Administration Services Manager, City Manager's Office
Rena Kendall-Craden, Civic Engagement and Communications Director
Rosemary Hagiwara, Acting City Clerk
Anita Zaenker, Chief of Staff, Mayor's Office
Neil Monckton, Chief of Staff, Mayor's Office
Alvin Singh, Communications Director, Mayor's Office
Donnie Rosa, General Manager, Parks and Recreation
Lon LaClaire, General Manager, Engineering
Patrice Impey, General Manager, Finance
Susan Haid, Deputy Director, Strategic & Long Range Planning
Doug Smith, Director, Sustainability

FROM: Gil Kelley
General Manager, Planning, Urban Design and Sustainability

SUBJECT: Climate Emergency Action Plan – Financial Summary
RTS: 13199

Introduction

On September 21, 2020 staff briefed Council on the Climate Emergency Action Plan (CEAP), Vancouver's plan to meet our 2030 climate goal of reducing carbon pollution by 50% compared to 2007. In the briefing, staff explained the recommended actions, the approach to equity, and the financial strategy to support the five-year plan. This memo contains additional information requested by Council on the financial strategy, as well as new information on modelled resident and business investments that was not available at the time of the briefing. This memo also outlines the broader economic benefits anticipated from the CEAP plan. The information contained in this memo will be included as part of the Climate Emergency Action Plan that will be brought forward to Council for approval on November 3rd.

The financial strategy for the Climate Emergency Action Plan focuses on the City's actions and investments over the next five years that will be required to meet our 2030 climate goal. (Further actions and investments will be needed beyond 2025; these will be brought forward as part of the next five-year action in 2025).

As part of the financial strategy, the Climate Emergency Action Plan will also require investment from residents and businesses through to 2030, which are expected to lead to a range of benefits and potential cost savings. These community investments, savings and benefits are described further below in this memo.

It should be noted that approval of CEAP would not immediately trigger any new regulations, policies, or resident/business costs. Approval of the plan will enable staff teams to develop and fine-tune the policies, actions, and regulations outlined in the CEAP, in consultation with the community and stakeholders. Staff will then bring back key policies, actions and regulations, with a more refined analysis of costs, outcomes, and public feedback, for Council to review and approve. This will include any internal operational impacts, including additional costs, staff required and impact to permit processing time. Staff expect to update the overall financial and implementation strategy as the Climate Emergency Action Plan is implemented and evolves over time.

City Investments

The City of Vancouver has been investing in climate change mitigation for many years and along with reduced carbon pollution, we have seen significant social benefits in the form of improved transportation infrastructure, less pollution and lower energy costs. We have also seen strong economic growth in Vancouver in part due to our green reputation.

As part of the 2020 budget Council approved new funding to accelerate action on climate change and in September 2020, Council approved the recalibrated 2019-2022 Capital Plan that allocated \$12 million of planned funding to support the City's Climate Emergency Response. This new funding was reduced to \$12 million due to COVID but will enable staff to begin moving forward with priority actions in the plan, particularly the "game changers", and to demonstrate leadership in our own operations, particularly our buildings. This initial planned funding is a critical first step to ramping up our ability to hit our 2030 climate targets.

However, to achieve our climate targets we need to increase our efforts to reduce carbon pollution in Vancouver by a factor of five in the coming years. This magnitude of change will require additional sustained investment by the City, as well as from senior government and partner organizations. An encouraging example of increased investment by senior government is the recent announcement by the Canada Infrastructure Bank of \$2.5B for building retrofits. The additional investment required from the City and others will enable new and accelerated work on pedestrian and cycling infrastructure, zero emission buildings, transit priority corridors, and electric vehicle infrastructure, amongst other climate actions. The benefits will go far beyond reductions in carbon emissions and will include improved community health, long-term financial savings, new job opportunities and a more resilient city.

As requested by Council, the cost estimates for each of the climate emergency actions are presented in Table 1 (at the end of this memo), along with the expected carbon pollution savings and a description of the co-benefits that the Big Moves will provide. Over the next five years, the total required investment by the City is estimated to be \$500M to meet the 2030 climate goal.

Of that, slightly more than half can be described as “business as usual”—this is based on the funding level in the current capital and is work that the City has historically been doing, such as improving our walking and cycling infrastructure and expanding EV charging, and which has delivered a multitude of community benefits. The remainder—roughly \$230M over five years—is referred to as the “funding gap”.

As described in the Council briefing, there are four proposed approaches to close the “gap” and achieve the required funding level over the 5-year term of the CEAP:

1. *Using more interim, cost-effective approaches* - building on the success of programs like Room to Move and Slow Streets to further expand our walking, rolling and cycling infrastructure using less costly treatments.
2. *Harnessing new revenue* – several climate emergency actions such as the citywide parking permit program will generate new revenue for the City and this revenue would be used to further advance climate action and close the funding gap.
3. *Leveraging senior government and partner organizations* – approval of the Climate Emergency Action Plan will position the City to secure external funding, particularly green stimulus funds from the provincial and federal governments.
4. *Embedding climate action as a key priority for the City* - there is an opportunity increase financial support for the CEAP by making climate action a key priority and reprioritizing support across existing programs, in particular for the next capital plan.

It is important to note that City budgets, sources of funding, and estimated costs may change significantly over the life of CEAP. The financial strategy is meant to serve as a roadmap and will need to be revised and adjusted as we move forward, particularly given the current financial uncertainties that we face.

Resident and Business Investment, Savings and Benefits

Investment by the City is critical but we can't rely on City funding alone. To achieve the City's climate objectives, residents and businesses will need to change their behaviours and increasingly invest in climate-friendly solutions such as electric vehicles and heat pumps instead of traditional purchases such as gas cars and furnaces.

To understand this better the City hired SSG and whatIf? Technologies to undertake financial modelling and an assessment of these investments and any associated savings. Both firms have extensive experience undertaking similar projects for organizations across Canada including Toronto, Edmonton, Halifax, and the provincial and federal governments.

The resident and business investments will happen for a number of reasons, including complying with regulations, being encouraged by incentives, and acting on personal values. While the modelling attempts to account for all these reasons, the carbon pollution reduction, investments, and savings included in the CEAP report focus on the changes that occur in response to the Climate Emergency Action Plan and CleanBC. So if an investment was expected to happen without these new policy initiatives, it is included in the baseline forecasts, but is not reported as an incremental carbon reduction, investment, or savings.

The resident and business investments in Vancouver that will occur between 2021 and 2030 in response to the Climate Emergency Action Plan and CleanBC are estimated at \$1.27B. Those investments in turn generate savings estimated at \$2.25B over the life of the investments, for a net resident and business savings of \$980M. Within the range of investments and behaviour changes that occur in response to the CEAP and CleanBC, some offer significant financial savings (e.g. active transportation and transit) whereas others aren't expected to have a financial payback (e.g. heat pumps). However, to achieve our climate target we need to implement the full package of actions and that package provides a significant net financial benefit for residents and businesses.

The financial results provided above do not include the costs/fees to residents and businesses associated with the Climate Emergency Action Plan (e.g. residential parking permits, transport pricing costs, and any fees associated with carbon pollution limits for buildings). The reason for not including them is that additional research, engagement and policy design is required before prices can be determined and brought back to Council for consideration. Further, the vast majority of the revenue from these policy costs is expected to be reinvested in climate mitigation work, which in turn will help to reduce the investments made by residents and businesses described in the previous paragraph.

If the CEAP is approved, the actions will be implemented between 2021 and 2025, while the resident and business investments and benefits will ramp up over time in response to those actions. More refined estimates of the investment and savings associated with specific actions will be brought forward to Council for consideration prior to implementation. The additional analysis will also look at how those investments and savings are distributed across different populations to ensure we're able to follow through on our equity commitments.

Through the design of those actions, we will also explore opportunities to reduce costs and increase savings for residents and businesses without undermining the climate emergency objectives. For example, the City's efforts to increase industry capacity for building retrofits are expected to bring down the cost of zero emissions retrofits. Another example is the development of actions to support our complete, walkable neighborhood objective (Big Move 1), which we anticipate they will help residents save more money as they are able to choose to walk and cycle to more of their daily needs. These types of opportunities are not included in the modelling work completed to date.

Community Investments/Benefits Not Included

The following benefits are not included in the above analysis, and if staff were able to properly monetize them, the financial business case for CEAP would be even stronger.

Economic and employment outcomes

Vancouver's livability and overall green brand (valued in 2016 at \$32 billion) are strong reasons why companies of all types come to do business in the city. A 2019 study by the Vancouver Economic Commission identified a \$3.3 billion Metro Vancouver market opportunity from 2019 to 2032 resulting from materials and manufacturing for newly constructed buildings to meet the energy requirements of Vancouver's building code and the BC Energy Step Code.

Likewise, many of the policies described in CEAP are expected to lead to new well-paying local green jobs and increased private sector investment in Vancouver.

Health Benefits

There are well-documented health benefits from safer streets, more active lifestyles, less extreme heat, less indoor and outdoor air pollution, and less noise. A 2017 study on the impacts of pollution estimated it costs an average Canadian family of four \$4300 per year or \$39 billion nationally¹ and a 2017 study on road safety indicated that traffic accidents costs each Canadian an average of \$1200 per year². Many of the CEAP actions will further contribute to the benefits listed above such as the improved indoor air quality from the building retrofits we'll be requiring, less air pollution associated with the shift to electric vehicles that we will be supporting, and the health benefits associated with walking, rolling and cycling that we will be promoting.

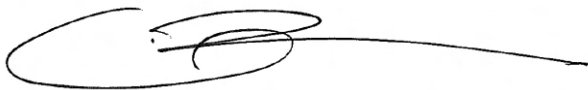
Avoided Costs due to Climate Change Mitigation

Directly related to climate change but not included in the financial analysis are the avoided costs associated with sea level rise, storm flooding, extreme heat and wildfire smoke. We're seeing these impacts today and they will continue to worsen unless we stop adding carbon pollution into the atmosphere. For example, Vancouver will need to spend approximately \$1B to manage sea level rise and the region over \$10B to manage coastal and riverine flood risk due to carbon pollution currently in the atmosphere. While mitigating some these impacts will require a global effort, it's critical that the City of Vancouver do its part and demonstrate leadership.

Summary

Staff have worked hard to design a climate emergency response plan that not only achieves the intended carbon targets but responds to the community's concerns around costs and the current economic situation. If the CEAP is approved, staff will continue to look for cost saving measures. Key regulations, actions and policies in CEAP will come back to Council over the next few years with budgets and community investment/benefits and will reflect further engagement with stakeholders and the community.

If you have any follow-up questions about this memo, please reach out to Doug Smith, Sustainability Director (doug.smith@vancouver.ca | 604.829.4308).



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¹ <https://www.iisd.org/system/files/publications/costs-of-pollution-in-canada.pdf>

² <https://www.itf-oecd.org/sites/default/files/canada-road-safety.pdf>

Appendix – City Investments for the Five-Year Action Plan

Proposed Action	Annual Carbon Pollution Savings by 2030 (CEAP + CleanBC Scenario)	Description/Outcomes	Current Capital Plan Spend in 2021 (\$M)	Required Capital Spend Over 5 Years (\$M)	Annual Operating Impacts of Capital in 2025 (\$M)	Health	Equity	Economy	Resilience
BIG MOVE 1: BY 2030, 90% OF PEOPLE LIVE WITHIN AN EASY WALK/ROLL OF THEIR DAILY NEEDS.									
	TBD		0.0	70.0	-				
1. Reduce Reliance on Motor Vehicles in the Broadway Plan and Other Planning Areas		Reconstruct ten blocks of Broadway as a Great Street, with wider sidewalks, pedestrian amenities, and support for transit; Create a network of complete streets within the Broadway Plan Area, including reconstructing and repaving numerous streets in support of walking/rolling, cycling and transit. Neighbourhood traffic calming plans in each neighbourhood area and delivery of each neighbourhood's most urgent safety and comfort walking/rolling and cycling improvements.		70.0	-	When comparing walkable neighbourhoods and car-dependent neighbourhoods, a recent study found those who live in a walkable neighbourhood are 45% more likely to walk for transportation and 17% more likely to meet the weekly-recommended level of physical activity, and 39% less likely to have diabetes.	When comparing walkable neighbourhoods and car-dependent neighbourhoods, a recent study found those who live in a walkable neighbourhood are 47% more likely to have a strong sense of community belonging. Other existing policies directly contribute to complete walkable communities (e.g., new Secured Rental Housing Policy to provide rental housing in proximity to schools, parks and shops and identify longer-term actions for expanded housing choice in neighbourhoods).	Complete walkable neighbourhoods support local businesses.	Walkable, complete neighbourhoods increase social connectedness and resilience, and improve physical and mental health.
BIG MOVE 2: BY 2030, TWO THIRDS OF ALL TRIPS IN VANCOUVER WILL BE MADE ON FOOT, BIKE OR TRANSIT.									
	82,000		33.0	288.4	6.40				
1. Implement Transport Pricing in the Metro Core ³		Develop preferred transport pricing strategy option; identify required technological resources; develop financial plan.		1.6	0.50	Walking/rolling and cycling are pollution-free and they help people maintain better health by staying active, while all ages and abilities cycling infrastructure is designed to reduce the risk of collisions and keep people safer. Similarly, transit riders typically lead more active lifestyles than people more reliant on driving. Clean air and quieter streets are important for the health of everyone, yet even more so for vulnerable residents and those who have respiratory issues.	Walking, cycling and transit can inherently be more equitable forms of transportation given that they are far cheaper than owning and operating a private vehicle. Walking infrastructure, such as new curb ramps, opens up access for people using wheelchairs and mobility aids. Other features, such as tactile warning strips and audible crossings, help people with limited vision.	Improvements to transportation and COVID-19-related updates to street use, which enable consumers to walk, cycle, shop and dine with safe physical distancing, help facilitate economic activity and decrease the carbon footprint of our local economy. Continued investment in walking will support local businesses as we shift into recovery from the COVID-19 pandemic.	Healthier residents more resilient to shocks e.g., COVID-19 pandemic and climate impacts: e.g., death rates are 12 times higher for COVID-19 patients with chronic illnesses than for others who become infected (source: US CDC). With more active and healthier residents, we can reduce future strains on our health system and frontline healthcare workers.
2. Expand and Improve Our Walking/Rolling, Biking Network		Develop 5-year Walking Plan; update 5-year Cycling Network Plan; construct more than 90km of new cycling routes and upgrades, connecting more people to destinations across the city; substantial additional new pedestrian signals, curb ramps and sidewalks to better address gaps in the pedestrian network, increasing access to bus stops and destinations.		257.0	5.50				
3. Improve Bus Speed and Reliability		Implement transit priority measures on five key corridors across the city, to provide faster and more reliable transit.		13.7	0.30				
4. Encourage More Walking, Biking and Transit Use		Promote active transportation options; develop School Active Travel initiative; local-business and tourism initiatives encouraging sustainable travel, e-bike share pilot program.		13.4	-				
5. Promote Remote and Flexible Work Options		Promote and provide tools to encourage workplaces across the City to maintain a certain portion of their workforce working remotely, to reduce vehicle commuting.		0.0	-				
6. Eliminate Minimums and Introduce Maximum Parking in New Developments		Expand transportation demand management requirements; revise parking minimums in Parking By-Law; develop parking maximums.		0.3	0.10				
7. Implement Residential Parking Permits City-Wide		Expand the current residential parking permit program to a city-wide program, with the long-term aim of a market-based system with considerations for income, disability, and other equity-focused factors.		0.0	-				
8. Demonstrating corporate leadership through sustainable commuting program		Accelerating the City's sustainable commuting program through initiatives such as improved end-of-trip facilities		2.5	-				

³ Estimated cost for implementing Transport Pricing program will require further work to refine and will be brought forward to Council in a future report. Based on costs incurred in these cities, the cost of implementing transport pricing in Vancouver could be on the order of \$250M. The capital cost incurred to launch transport pricing would be recovered through the new revenue and likely paid back within a period of 3-5 years.

BIG MOVE 3: BY 2030, 50% OF THE KILOMETRES DRIVEN ON VANCOUVER'S ROADS WILL BE BY ZERO EMISSIONS VEHICLES.		233,000	1.0	77.9	1.17			
1. Implement a Carbon Pollution Surcharge on Residential Parking Permits	Establish gas-/diesel vehicle surcharges as part of the city-wide residential permit parking system.		7.0	0.60	Electric vehicles produce no tail-pipe pollution, which benefits everyone in the region, particularly those most exposed to air pollution along arterials.	Equitable distribution of charging infrastructure will make EVs a viable option for more people. Incentives for charging infrastructure in rental buildings will add more home charging for tenants. We will work with the disabled community to improve the accessibility of our infrastructure.	The CEAP creates similar economic opportunities for electric vehicle charging. Ride-hailing companies have pointed out that including charging opportunities in rental apartment buildings will help drivers transition to electric vehicles, as many ride-hailing drivers are renters. For owners, the significant gas and maintenance savings can help offset higher initial purchase prices. For higher-mileage fleet vehicles, operators can cut fuel and maintenance costs by over 70%.	Expanded, dispersed network charging infrastructure is more resilient by reducing facility closures. Low-power and off-peak charging options will reduce utility impacts (grid peaks and upward pressure on electricity rates).
2. Increase EV Charging on Private Property	Develop construction standards/compliance mechanism; charging retrofit program in multi-unit rental buildings; develop long-term residential charging retrofit strategy		1.9	0.02				
3. Expand Public Charging Network	Pilot near-home off-street EV charging; pilot film-industry power kiosks; develop Neighbourhood Charging Strategy; continue DC fast-charging and Level 2 network deployment.		14.0	-				
4. Support Charging Infrastructure for Passenger Fleets	Develop public charging infrastructure and home-charging retrofit action plan supporting passenger fleet industry		2.5	0.05				
5. Demonstrating corporate leadership through EV fleet transition	Accelerate the transition of the City fleet to electric vehicles beyond the current rate of replacement.		52.5	0.50				
BIG MOVE 4: BY 2030, CARBON POLLUTION FROM BUILDINGS IN VANCOUVER WILL BE REDUCED BY 50% BELOW 2007 LEVEL		299,000	20.0	56.6	0.95			
1. Set Carbon Pollution Limits and Streamline Regulations	Set 2025 carbon pollution limits; streamline permitting and energy-upgrade requirements; implement energy benchmarking requirement.		5.8	0.50	Improved indoor noise levels due to improved air-tightness. Improved indoor air quality due to improved air-tightness and filtration of incoming air helps protect residents during air quality events (such as wildfire smoke). Electric heat pumps often enable air conditioning: increasingly important during summer heat waves.	Higher expectations in the carbon limit regulation for those with higher resources and opportunities, and lower expectations, along with additional support, for those lacking resources or facing exceptional barriers. We will prevent displacement and mitigate negative outcomes, and prioritize financial support and capacity-building to those who most need it.	Green buildings present a massive economic development and recovery opportunity. Low-carbon retrofits create a high number of jobs per dollar invested, the jobs created are localized and employ a wide range of skills, and renovation projects use mostly locally sourced materials and manufactured products.	A resilient-buildings approach addresses a number of City priorities, including adapting for a changing climate, climate change mitigation, fire safety, seismic risk, accessibility, residential affordability, cultural and community services and healthy buildings.
2. Build Industry Capacity	Improve industry clarity around future regulations; trades incentives/requirements for heat pump installations; launch LC3 Zero Carbon Centre; implement BC Building Electrification Roadmap		0.6	-				
3. Support Early Owner Action	Create decision-support and financing tools; equipment incentives; support demonstration projects; establish Retrofit Accelerator Centres.		16.2	0.25				
4. Facilitate Access to Renewable Energy	Working with utility partners and senior government: reduce barriers to service-connection upgrades; grow supply of renewable energy. Evaluate and set NEU renewable energy target; continue service-area expansion.		14.0	0.20				
5. Demonstrating corporate leadership through new civic facilities and retrofits achieving zero emissions	Accelerating the replacement of gas boilers with electric heat pump and making related emergency upgrades to City-owned buildings		20.0	-				
BIG MOVE 5: BY 2030, THE EMBODIED EMISSIONS FROM NEW BUILDINGS WILL BE REDUCED BY 40% COMPARED TO A 2018 BASELINE.		n/a ⁴	0.3	3.2	-			
1. Set Embodied Carbon Pollution Limits for New Buildings	Set embodied carbon limits for building materials and construction practices in new buildings.		0.0	-	Our actions should promote health in construction and the built environment by encouraging a shift to natural and safe, simple and reusable materials, assemblies, and finishes. Materials that are safe and non-toxic do not impact the health of those who handle them or live with them, and are safe to reuse at the end of their life.	Policy updates encourage best practices in equitable sourcing of building materials and products (e.g., wood products from certified sustainable forestry and Indigenous-managed territory; Just, B Corp, and other labels and certifications for equitable sourcing for organizations, sourcing from workers and owners from equity-seeking groups, including recognition of community benefit agreements).	Constructing with mass timber reduce the carbon pollution associated with construction materials, and relies on materials and expertise from B.C.'s forestry sector. There are opportunities to link the CEAP with B.C.'s resource industries in ways that can help expand economic opportunity in rural communities.	Using engineered wood columns and floor panels, known as mass timber, industry can now build high-rise buildings out of wood that are safe, strong, fire-resistant, and seismically resilient.
2. Make It Easier and Less Expensive to Use Lower-Carbon Materials in New Buildings	Remove planning and policy barriers to using low-carbon construction materials and practices in new buildings.		1.4	-				
3. Support the People Using Low-Carbon Materials in New Buildings	Develop resources, guides, training and networks; partnerships; regional and provincial advocacy		0.5	-				
4. Demonstrating corporate leadership through lower embodied carbon in new civic facilities	Coordinate with key City strategies, policies and plans		1.3	-				

⁴ Carbon pollution savings from Big Move 5 reduce Vancouver's embodied carbon (Scope 3), and are not counted against our community-wide (Scopes 1 and 2) carbon pollution.

GENERAL CEAP SUPPORT		n/a	0.2	0.35	0.20
1. Support for CEAP indicators and reporting	Develop new and improve existing data methods and sources in support of Indicators Framework, including novel equity analyses and indicator development.		0.05	0.15	0.10
2. Support for CEAP Equity and Reconciliation Actions	Develop and implement Climate Justice Charter: equity indicators; targeted economic benefits; equity lens for budget analysis. Continuation of Climate & Equity Working Group. Deeper exploration of transportation equity impacts.		0.15	0.45	0.10
TOTALS		614,000	55	496	9