



Climate Change
Adaptation Strategy
ANNUAL REPORT

2024 Dashboard

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The City of Vancouver acknowledges that it is situated on the unceded traditional territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səliwətał (Tsleil-Waututh) Peoples.

Abbreviations

ACCS	Arts, Culture and Community Services
BM	Big Move
BPPS	Business Planning and Project Support
CCAS	Climate Change Adaptation Strategy
CEAP	Climate Emergency Action Plan
DBL	Development, Buildings and Licensing
ENG	Engineering Services
FH	Fraser Health Authority
FRS	Finance, Risk and Supply Chain Management
PB	Vancouver Board of Parks and Recreation
PDS	Planning, Urban Design and Sustainability
REFM	Real Estate and Facilities Management
VCH	Vancouver Coastal Health Authority
VEMA	Vancouver Emergency Management Agency

INTRODUCTION

In 2024, the City of Vancouver adopted the refreshed Climate Change Adaptation Strategy (CCAS), addressing five climate change-related hazards faced by Vancouver now and in the future. Included in that was a commitment to report annually on progress made.

The Outlook section lists upcoming decisions for Council related to CCAS. The Annual Report also includes the current-year Climate Budget for CCAS actions, and the latest available indicators and progress updates towards CCAS objectives.

Go to vancouver.ca/climateadaptation for the full Climate Change Adaptation Strategy report to City Council (including the full list of CCAS actions and indicators, and the Financial Framework), and other documents.

Climate Hazards

Climate adaptation requires a complex, risk-based approach to planning.

CCAS is built around the **five main climate-related hazards** facing Vancouver, plus enabling actions.

- As year-round temperatures increase, warmer summers will see **more extreme heat days and heatwaves**.
- **Poor air quality** from wildfire smoke and ground-level ozone (primarily from human sources) is harmful to human health.
- **Drought** can be caused by combinations of insufficient snow accumulation, chronic hot and dry weather, and low or delayed rainfall.
- More **extreme rainfall** events can overwhelm the capacity of drainage systems, resulting in major disruptions, damage to property and infrastructure, and risk to people.
- **Sea level rise** will exacerbate coastal flooding of low-lying areas. With 1 meter of sea level rise projected by 2100, almost 13km² of City lands will be in the floodplain, meaning new risks and impacts to parklands, infrastructure, buildings, and residences.

Extreme Heat



Poor Air Quality



Drought



Extreme Rainfall



Sea Level Rise



Enabling Actions

OUTLOOK

UPCOMING COUNCIL DECISIONS

Council will consider a number of staff recommendations in late 2024 and early 2025 that will enable the actions set out in the Adaptation Strategy refresh approved by Council in February 2024.

Dates subject to change

2024 Q3	Q4	2025 Q1	Q2
Vancouver Building By-law Multifamily Mandatory Cooling Extreme Heat	Protection of Trees By-law Extreme Heat Extreme Rainfall Urban Forest Strategy Extreme Heat Extreme Rainfall Healthy Waters Plan Phase 2 Extreme Rainfall	Coastal Flood Risk Policy Sea Level Rise Alberta-Columbia Park Green Rainwater Infrastructure Project Extreme Rainfall	Vancouver Building By-law Rainwater Management Amendments Extreme Rainfall 2026-30 Climate Change Adaptation Strategy All Hazards

2024 CLIMATE BUDGET

In December 2023, the City published the [2024 Climate Budget](#), defining which investments in the overall City budget are deemed Climate Priority items, and consolidating information on these investments and outcomes into one annual report.

The City's 2024 Capital and Operating Budgets include **\$13.6M** in Climate Priority (CCAS-related) capital investments to advance implementation across climate hazards as shown below. A portion of this (\$1.9M) also furthers Climate Emergency Action Plan (CEAP) actions at the same time. **\$24.8M** in operating expenses in 2024 comprise predominantly staffing costs across departments working on climate initiatives related to CCAS, CEAP, or both.

The CCAS Refresh in early 2024 identifies an estimated **\$74M** capital investment need over 2024-26 to implement CCAS actions to improve adaptive capacity and resilience in Vancouver. As of 2024, these are 97% funded through investment allocations identified in the 2023-26 Capital Plan.

An additional **\$20M** was approved in the four-year 2023-26 Capital Plan for Emerging Climate Adaptation Priority projects, to support new projects that significantly reduce risk and enhance resilience. Examples in 2023/24 include flood protection planning in False Creek; street-tree planting; nature-based flood mitigation in Still Creek, and a tidal terrace pilot at Cooper's Park.

Outside of defined Climate Priority work, climate change considerations are gradually being mainstreamed into many of the City's infrastructure decisions.

Opportunities to reduce the funding gap include prioritizing regulatory/advocacy tools, optimizing project delivery at a lower cost, advocating for funding from senior government and partners, and continuing to include CCAS investment needs in upcoming financial planning processes. Staff will prepare a 2026-30 investment needs estimate for CCAS to coincide with a strategy refresh in mid-2025. This information can then be used to inform 2027-30 Capital Plan development.

The Mid-Term Capital Plan Update includes proposed adjustments to enable several priority CCAS-related projects, centred on extreme and air-quality resiliency upgrades in civic and social infrastructure facilities. These will be brought to Council for decision in late July 2024.

External Funding

City staff actively look for opportunities to advocate for and leverage funding from senior government and partners to enable CCAS projects. External funding programs are often cost-shared, so staff submit high-priority projects that best meet funding program requirements. Applications allow the City to either accelerate work underway, or undertake projects only made possible by significant available external funding. The following funding program applications were successful in 2023:

- Cooling in Non-Market Housing, Extreme Heat/Air Quality Upgrades at Kensington and Carnegie Community Centres \$5.1M
- Oak St and Fraser St Outfall/Tide Gate upgrades \$1.8M
- Fraser River Flood Mitigation Options Study \$0.2M
- Musqueam Creek West Southlands Flood Preparedness \$0.1

CLIMATE CHANGE ADAPTATION STRATEGY 2024 CAPITAL INVESTMENTS

2024 Multi-Year Capital Budget (Annual Budget): "Climate Priority" Initiatives

Goal Area	Service Areas	Capital Plan Program/Project	2024 Budget Allocation, \$M	
			CCAS	CCAS / CEAP
Extreme Heat	• Urban Forest*	2023-2026 Park Trees - New		\$0.7
		2023-2026 Street Trees - Replacement		\$1.2
Extreme Rainfall	• Core Network	2023-2026 Green Infrastructure renewal/upgrades	\$3.6	
		2023-2026 Green Infrastructure planning/design	\$2.8	
		2023-2026 Flood & Watershed Planning	\$1.6	
		2023-2026 Green Infrastructure Asset renewal	\$0.3	
		2023-26 Drainage Studies, Shoreline Protection	\$2.0	
Sea Level Rise	• Seawall & Shoreline	Seawall/shoreline planning - Coastal Flood Protection	\$0.9	
		Seawall/shoreline planning - Coastal Resiliency	\$0.5	
TOTAL, \$M			\$11.7	\$1.9

* also addresses identified Big Move 6 actions in CEAP

CLIMATE HAZARD INDICATORS

CCAS hazard indicators summarize the increase in local climate impacts on Vancouver over time.

Hazard	Indicator	2023	Notes	Historical Trend
Extreme Heat	Heat Warnings ¹ days	4	One heat warning was issued in 2023, lasting four days. Globally and in BC, 2023 had the warmest summer since records began. Temperatures in May to September were an average of 2.1°C above seasonal averages. Also, the warmest ocean temperatures on record were observed.	Climate Hazard Indicators Heat
	Temperature ² > 25°C days	19		
	Temperature ² > 30°C days	0		
Air Quality	Air Quality Advisories ³ days	10	Air quality advisories in Vancouver largely correlate to wildfire events. In BC, four of the most severe wildfire seasons of the last century (2018, 2019, 2021, 2023) occurred in the past seven years. While 2023 was the most destructive (24,900 sq km of land) BC wildfire season on record, favourable weather patterns in Vancouver meant fewer advisory days here than in 2022 (when Vancouver experienced some of the worst air quality in the world).	Climate Hazard Indicators Air Quality
Drought	Staged watering restrictions in place ⁴ weeks	23	In 2023, watering restrictions were in place from May 1 to Oct 15.	Climate Hazard Indicators Drought
	Allowable watering ⁴ hours per week	3	Allowable watering hours per week has decreased from 20 in the 2000s, to 3 in 2023.	
	Lawn watering banned ⁴ weeks	10	10 weeks without watering in 2023 was the longest since 2000.	
Extreme Rainfall	Rainfall Warnings ⁵ days	4	Despite experiencing fewer extreme rainfall warning days than in several previous years, 2023 saw record rainfall amounts in December 2023 caused by an atmospheric river. Almost 50mm fell in a single day—far exceeding the previous record of 35.4mm—and causing localized flooding and traffic disruption across Vancouver.	Climate Hazard Indicators Rainfall
Sea Level Rise	Coastal water level triggered preparedness protocols ⁶ days	17 (2022)	On the morning of December 27, 2022, a significant storm surge event during seasonal high tides resulted in the highest water level (~2.7m above mean) since measurements began. Part of the South Vancouver Industrial Area was temporarily flooded. City crews were active in floodplain and shoreline areas. Fortunately, there was relatively little concurrent wind and wave activity, which limited the potential for coastal damage.	Climate Hazard Indicators Sea Level Rise
All Hazards	Climate-related costs to the City (estimated)	\$	tbd	City staff are working to characterize and track costs related specifically to damage and recovery from climate-related events

PROGRESS INDICATORS

These indicators summarize City progress on CCAS actions, which contribute to adapting and improving the city's resilience to climate hazards. **Note: as of July 2024, implementation has been underway for only 4 months. Indicators have been provided for 2023 or the most recent available data.**

Indicator		2023	Target		Notes
Extreme Heat					
Cool Kits distributed (cumulative)	#	3,500	6,500	2025	
Households retrofitted in multi-family residential buildings (cumulative)	#	0	<i>tbd</i>	2025	Project development underway and on track
Households retrofitted in rental/non-profit residential buildings (cumulative)	#	0	40	2025	Project development underway and on track
Tree canopy cover (vs. total Vancouver land area)	%	25% ^{2022⁷}	30%	2050	~2,900 hectares of tree cover across the city's total area of 11,500 hectares
Tree pits installed, trees planted (cumulative)	#	31	40-80	2025	Interim (2024) target of 34 tree pits and trees. Planting in progress.
Air Quality					
DIY Air Cleaner units distributed (cumulative)	#	230	800	2025	
Drought					
Single-family residences with water meters installed (cumulative)	%	14.4%	20.5%	2026	11,772 properties metered as of 2023
Residential water meters (Advanced Metering Infrastructure conversions, cumulative)	#	0	22,000	2026	Project testing phase underway and on track
Extreme Rainfall					
City right-of-way area managed by new green rainwater infrastructure (cumulative)	hectares	1	23	2026	Upcoming work includes Tatlow Creek, St. George Rainway, and large Still Creek Watershed improvement projects
Enabling Actions					
External funding secured	\$	\$7.1M	<i>tbd</i>	<i>tbd</i>	See <i>Climate Budget</i> section for breakdown

MILESTONES

These milestones summarize our progress on prioritized City implementation of CCAS actions.

Note: as of July 2024, implementation has been underway for only 4 months.

Milestone	Due Date	Responsible	Progress
Extreme Heat			
Improving Access to Cooling in Public Spaces			
Launch extreme heat transportation pilot for seniors and people with disabilities in 2024.	2025	VEMA, ACCS	Not Started
Pursue upgrades in two community-use facilities and one civic-operations facility with mechanical cooling by 2025, and continue to develop design plans for future cooling upgrade projects while seeking external funding to accelerate cooling retrofits for additional sites.	2025	PB, REFEM	Underway
Supporting Indoor Cooling and Thermal Safety at Home			
Expand on 2022 and 2023 Cool Kit project in partnership with community-based organizations and Vancouver Coastal Health, delivering 3,000 kits.	2025	VEMA	Underway
Initiate work to scope, resource, and determine legal, technical, and economic feasibility for reducing indoor temperatures in existing multi-family residential buildings.	2025	PDS	Underway
Develop and launch a multi-family heat pump incentive and owner support program with BC Hydro, Province of BC and Zero Emission Innovation Centre in 2024.	2025	PDS	Underway
Complete two existing building retrofit programs: the Rental Apartment Retrofit Accelerator (RARA) and Non-Profit Resilient Retrofit Grant (NRRG). These programs will seek participating buildings from the rental and non-profit sector to complete retrofits that reduce emissions and improve resilience	2025	PDS	Underway
Complete a study on cooling measures in existing multi-family buildings, in partnership with Metro Vancouver and the City of North Vancouver. The findings will inform direction on short, medium and long-term strategies to reduce heat-related morbidity in existing multi-family buildings.	2025	PDS	Underway
Implement requirements for mandatory cooling in new multi-family residential buildings in Vancouver Building By-law effective 2025, and explore for 1-3 story residential buildings.	2024	PDS	Underway
Advocate to Province to reduce barriers to installing cooling measures outlined in the Strata Property Act and Residential Tenancy Act.	tbd	PDS, VCH, FH	Not Started
Complete analyses and report out on findings from multi-year Measuring Indoor Temperature Initiative in partnership with Vancouver Coastal Health and BC Centre for Disease Control.	2025	PDS	Underway
Stewarding the Urban Forest and Green Space to Support Outdoor Cooling			
Continue to advance tree planting on public land to support efforts to increase the urban forest canopy to 30% by 2050, with a focus on below average canopy neighbourhoods.	2050	PB	Underway
Install 20-40 new tree pits (and planted trees) in low canopy areas per year, including appropriate soil volume improvements.	2025	ENG, PB	Underway
Assess the resilience of specific climate-adapted tree species to extreme heat and drought by implementing and monitoring three pilot tree-planting projects, and use the outcomes of these pilots to inform the use of climate-adapted species in future tree-planting projects.	2026	PB	Underway
Explore priority areas for tree planting and retention on private land.	2025	PDS	Underway
Following update to the Tree Bylaw, develop a monitoring approach to track changes to tree coverage on private land as a result of permitted tree removal.	2025	BPPS	Underway

MILESTONES

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Milestone	Due Date	Responsible	Progress
<i>Air Quality</i>			
<i>Cross-cutting: Extreme Heat and Air Quality</i>			
Continue working with health, housing, and community-based partners to increase supports for seniors and people with disabilities as part of the Resilient Neighbourhoods Program during extreme heat and poor air quality events.	2025	VEMA, ACCS	Underway
Explore expanding social capital grants program to support resilient retrofits for social infrastructure to address near-term needs related to extreme heat and air quality events.	2025	ACCS	Not Started
Explore requirements for installing cooling and air quality infrastructure (such as air conditioning and air filters) as part of tenant improvements or renovations in city-partnered emergency homeless shelters.	2025	ACCS	Not Started
Utilize the updated REF M Facilities Standard Manual to ensure climate resiliency considerations are implemented in the construction of new City-owned buildings and to support upgrades for existing buildings. All new public-facing facilities will have mechanical cooling and improved air filtration systems, and designated clean air spaces will have additional filtration requirements to address wildfire smoke events.	2025	REFM	Underway
<i>Poor Air Quality</i>			
Expand on 2023 DIY Air Cleaner pilot in partnership with the Pacific Institute for Pathogens, Pandemics, and Society to enable community members to build their own air cleaners.	2025	VEMA	Underway
Work with Metro Vancouver and Vancouver Coastal Health on a Hyperlocal Air Quality Monitoring Initiative to build a dense air quality monitoring network using lower cost sensors to better understand neighbourhood level variations in air quality.	2024	PDS, ENG, REF M	Underway
Explore and implement building code requirements for filtered outdoor air in new part 9 residential buildings.	2024	PDS	Underway
<i>Drought</i>			
Accelerate residential metering and transition to Advanced Metering Infrastructure (AMI) meter reading systems as outlined by the Water Demand Management Strategy and supported by regional direction from Metro Vancouver.	2026	ENG	Underway
Explore policy updates for increased non-potable water use in future developments under suitable densification scenarios.	2025	ENG	Underway
Explore policy that prohibits the installation of in-ground lawn irrigation systems that use potable water for new build permits applied for 2025 onwards.	2025	ENG	Underway

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Milestone	Due Date	Responsible	Progress
Extreme Rainfall			
Improving Our Understanding of Extreme Rainfall			
Complete an Extreme Rainfall Risk Assessment and Strategy - Phases 1 and 2 (hazard assessment and risk/vulnerability assessment) and scope Phase 3 (strategy)	2025	ENG	Underway
Initiate scoping of a study to assess steep slopes City-wide to identify areas at risk for instability (i.e. slope instability from extreme rainfall, or from slope or bluff toe erosion from sea level rise).	2025	ENG	Underway
Supporting Community Stewardship of Rainwater Infrastructure			
Pilot coordination of Adopt a Catch Basin program with Resilient Neighbourhoods Program to expand community participation and public awareness.	2025	ENG, VEMA	Not Started
Managing Rainwater Through Green Rainwater Infrastructure and the Built Environment			
Explore a dedicated funding stream for GRI maintenance tasks and renewal projects in underserved areas to accelerate project implementation.	2025	ENG	Not Started
Explore/work towards early implementation opportunities for Still Creek nature-based flood mitigation through a pilot project from the Still Creek Watershed Enhancement Opportunities Study and the forthcoming Rupert and Renfrew Station Area Plan.	2025	ENG	Not Started
Incorporate green rainwater infrastructure (GRI) into City right-of-way reconstruction projects.	2026	ENG	Underway
Develop methods to quantify and communicate the service provision value of GRI for benefits such as drainage, livability, urban heat island mitigation.	2025	ENG	Underway
Implement rainwater management requirements in the Vancouver Building By-law for LL Part 3 and for all Part 9 buildings.	2024	DBL, ENG	Underway
Explore a policy or bylaw for the Rupert Renfrew area that prohibits underground parking in and around Still Creek.	2025	PDS, REFM, ENG	Underway
Sea Level Rise			
Planning for Sea Level Rise and Coastal Hazards			
Complete a vulnerability assessment and study of waterfront parks and beaches.	2025	PB	Underway
Develop a coastal adaptation policy that outlines a city-wide approach to coastal adaptation planning, including governance, policy tools, and funding mechanisms.	2025	PDS	Underway
Initiate technical work and engagement towards the development of a Fraser River Flood Mitigation Plan.	2025	PDS, ENG	Underway
Perform a cost benefit analysis to determine best value in terms of delivering safe and resilient housing and coastal and extreme rain infrastructure at South East False Creek 1A.	2024	REFM	Underway
Complete an environmental assessment of the shoreline areas of the City's flood hazard areas (i.e., False Creek, Kits Beach, Locarno to Spanish Banks, the Fraser River shoreline and areas of Burrard Inlet) where coastal adaptation will take place.	2025	REFM, ENG, PDS, PB	Not Started
Explore the development of vulnerability assessments for the severe weather and coastal flooding initial response guidelines.	2025	VEMA	Underway
Begin development of a coastal asset inventory and resilience guidelines.	2025	ENG, PB	Not Started
Collaborate with neighbouring local governments and First Nations on refined sea level rise projection criteria for short -and medium- term infrastructure planning.	2025	PDS, ENG	Complete
Piloting Creative Solutions for Coastal Resilience			
Design & construct a Sea2City coastal adaptation pilot project on the Cooper's Park shoreline, and continue to seek funding for additional Sea2City pilots.	2025	REFM, ENG, PB	Underway
Explore a pilot for nature-based solutions to flooding along the Fraser River.	2025	ENG	Not Started
Begin design of naturalized shoreline adaptation approaches (e.g. for West End Waterfront Plan implementation) and continue project-specific engagement with Host Nations.	2025	PB	Underway

MILESTONES

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Milestone	Due Date	Responsible	Progress
All Hazards			
Explore opportunities with partners to address the unique needs of people experiencing homelessness and housing precarity in climate-related events.	2025	VEMA, ACCS	Not Started
Formalize the Resilient Neighbourhoods Program and officially expand mandate beyond Extreme Heat planning.	2025	VEMA	Not Started
Update Resilient Neighbourhoods Toolkit with community-led climate resilience actions to adapt to climate change and align with Neighbourhood and Community Placemaking Grants for 2024.	2025	VEMA	Not Started
Continue to advance risk management initiatives for park trees, street trees, and forested areas to address risks associated climate-related events such as wildfire and pest and pathogen outbreaks.	ongoing	PB	Underway
Enabling			
Mainstreaming Climate Adaptation in City Practices			
Generate localized cost-implication estimates from inaction on climate adaptation, using ICLEI's 'The cost of doing nothing' toolbox for municipal governments.	2025	PDS	Underway
Pilot the use of a climate equity evaluation framework through which CCAS actions will be evaluated to ensure equitable development and implementation.	2025	PDS	Underway
Integrate updated climate projections into City processes to inform relevant planning, policies, and infrastructure projects.	2025	PDS	Not Started
Continue to integrate climate adaptation into the climate budget and use to guide future planning and investment decisions.	2025	PDS, FRS	Underway
Establish a Climate Friendly Buildings Advisory Committee to seek input from diverse residents living in multi-family buildings to understand benefits and challenges of future regulations and programs aimed at reducing carbon pollution generated in existing multifamily buildings while adapting these buildings to be more resilient to the impacts of climate change.	2024	PDS	Underway
Collaborating With Key Partners and Senior Levels of Government			
Continue to participate in regional, national, and international collaborations to advance best practice on municipal climate adaptation planning (e.g. C40 Cool Cities Network, Fraser Basin Council)	2025	PDS	Underway
Leverage funding opportunities and maximize intergovernmental collaboration through alignment with National Adaptation Strategy and British Columbia Climate Preparedness and Adaptation Strategy.	2025	PDS	Underway
Building Community Awareness of Climate Change Hazards and Responses			
Improve public access to information and awareness by completing a public-facing multi-hazard and risk story map (identified in Resilient Vancouver) by 2025	2025	VEMA	Underway
Enhance public communications around each of the climate-related hazards to improve the reach and relevance of City messaging by leveraging community partners and translating materials.	2025	PDS, VEMA	Underway
Setting Intentions and Commitments for the 2026-30 Strategy			
Build on existing relationships and partnerships to ensure that communities that are most impacted by climate change (including Host Nations, urban Indigenous, and equity-denied communities) are aware of and engaged in the 2025 CCAS update process.	2025	PDS	Underway
Ensure priority actions for the 2025 CCAS align with the UNDRIP Action Plan (once finalized and approved), acknowledging the importance of building resilience to climate hazards while addressing past harms.	2025	PDS	Not Started
Seek meaningful collaboration with Musqueam, Squamish and Tsleil-Waututh Nations to support Host Nation priorities for the 2025 CCAS refresh (UNDRIP Action 3.10).	2025	PDS	Underway

FUTURE REPORTING IMPROVEMENTS

FUTURE CHANGES TO INDICATORS

The intention of CCAS indicators is to provide a summarized overview of complex climate solutions. Their accuracy and relevance depend on which programs and approaches get approved and underway, as well as evolving methods of data gathering and analysis from multiple sources inside and outside of City jurisdiction.

Setting indicators and targets for climate adaptation actions is challenging due to several factors. Unlike carbon reductions (where measurement is relatively more straightforward), effectiveness of adaptation actions on outcomes involves a range of complex variables influenced by geography, socio-economic factors, and ecological systems. Adaptation hazards and impacts like the ones identified in CCAS depend on location and context, even within a small geography like Vancouver. Adaptation requires long-term planning and investment in infrastructure, technology, and institutional capacity, further complicating target setting. Setting adaptation targets requires an understanding of vulnerabilities and resilience across various sectors and communities, making them inherently more intricate to define and measure.

Preparing to set targets requires thoroughly assessing the risk and vulnerabilities faced by communities, infrastructure and ecosystems over the coming decades. Once risks are understood, clear and measurable targets may be established to enhance urban resilience and adaptation capacities, tailored to the unique needs and circumstances of Vancouver by considering factors like infrastructure, demographics, and land use patterns. Indicators can include metrics such as the implementation of green infrastructure projects, improvements in emergency response capabilities, or increases in public awareness and education initiatives.

This means that the list of CCAS indicators and data sources will continue to improve over the course of CCAS. The next changes will occur when CCAS undergoes a scheduled refresh in 2025, coinciding with a refresh of the Climate Emergency Action Plan as well.

Possible future changes:

- Additional Progress Indicators may be introduced at the CCAS 2026-30 Refresh, as new actions are determined in collaboration with partners such as the Vancouver Emergency Management Agency, and more implementation projects get underway.
- City staff are currently determining additional targets that better reflect impacts the City can directly influence (e.g., building cooling retrofit deployment, green rainwater infrastructure, etc.). As mentioned, measuring effectiveness in adaptation is difficult. These *City-controlled* targets recognize the City does not have control over *all* the factors influencing adaptation outcomes.
- City staff will work to generate localized cost-implication estimates from inaction on climate adaptation, using ICLÉI's "The cost of doing nothing" toolbox for municipal governments. This tool can also help us understand the distribution of those costs across different sectors and society, which will help with making more equity-centred decisions on climate adaptation in the future.

Endnotes

- ¹ Heat warnings are issued for Vancouver when 2 or more consecutive days of daytime maximum temperatures are expected to reach 29°C or warmer and nighttime minimum temperatures are expected to fall to 16°C or warmer.
- ² Temperature data is recorded at Vancouver International Airport. Due to wind, proximity to the ocean, and lack of urban heat island effect, recorded temperatures are often cooler than those experienced inland.
- ³ Air quality advisories are issued when degraded regional air quality exceeds or is expected to exceed Metro Vancouver's air quality objectives. (<https://metrovancover.org/services/air-quality-climate-action/Documents/ambient-air-quality-objectives.pdf>)
- ⁴ Our region experiences a number of factors that affect reservoir levels and available drinking water. This is partially managed through annual summer water restrictions, which can be used as an indicator of the changing severity of drought conditions in Vancouver. In future, additional indicators may be needed to capture our evolving response to drought.
- ⁵ Rainfall warnings are issued based on several different parameters, depending on season and anticipated duration of rainfall event.
- ⁶ >5m chart datum (CD) represents the limit of pure astronomical tides (i.e., without sea level rise and storm surge events), and the bottom threshold of the City's moderate risk monitoring protocol
- ⁷ Measurement will be conducted every 5 years using LiDAR and i-Tree methods, per Urban Forest Strategy.

For more information, go to vancouver.ca/climateadaptation

