



Climate 2050 PROGRESS REPORT

2023/2024

Indigenous Territorial Acknowledgement

Metro Vancouver acknowledges that the region's residents live, work, and learn on the shared territories of many Indigenous peoples, including 10 local First Nations: q̓íç̓ə́y̓ (Katzie), q̓ʷɑ:ń̓ł̓əń̓ (Kwantlen), kʷikʷə́ł̓əm (Kwikwetlem), máthxwi (Matsqui), xʷməθkʷə́y̓əm (Musqueam), q̓íq̓éy̓t (Qayqayt), Semiahmoo, Sk̓wx̓wú7mesh Úxwumixw (Squamish), scə́wəθən məsteyəxʷ (Tsawwassen) and sə́lilwə́təł̓ (Tseil-Waututh).

Metro Vancouver respects the diverse and distinct histories, languages, and cultures of First Nations, Métis, and Inuit, which collectively enrich our lives and the region.

About Metro Vancouver

Metro Vancouver is a diverse organization that plans for and delivers regional utility services, including drinking water, sewers and wastewater treatment, and solid waste management. It also regulates air quality, plans for urban growth, manages a regional parks system, provides affordable housing, and serves as a regional federation. The organization is a federation of 21 municipalities, one electoral area, and one treaty First Nation located in the region of the same name. The organization is governed by a Board of Directors of elected officials from each member jurisdiction.

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metrovancover.org

October 2024

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Message from the Chair

Advancing Climate Action Together



Taking action to reduce GHG emissions and prepare for climate change is a collaborative task. In our role as a regional convener, Metro Vancouver is able to support climate initiatives led by municipalities, First Nations, businesses, and residents. In doing so, we get to see the great work happening to take on this challenge across the region, while being thoughtful of other compounding challenges.

Notably, even as our region faces challenges related to housing and affordability, many are finding ways to prioritize climate actions in a cost-effective way. This is made possible because so many climate actions can support cost-savings and long-term benefits for residents. Many climate policies are able to leverage public and private investments. They're also able to create economic opportunities in clean transportation, zero emissions buildings, clean energy, and other sectors.

Throughout this report you'll find examples of regional progress toward reducing emissions. This includes work by municipalities who have adopted the BC Zero Carbon Step Code, ensuring new buildings are zero emissions and will use clean energy. Residents are also taking advantage of rebates and incentives to install heat pumps, reducing household emissions and adding cooling. In 2023, electric vehicle sales exceeded 27% across the region, and now EVs make up 6% of all passenger vehicles on the roads in our region.

You'll also see highlights of Metro Vancouver's corporate progress. We're expanding our fleet with new electric vehicles and EV chargers and piloting zero emissions waste hauling trucks. Throughout the region, we're upgrading Metro Vancouver Housing sites for heat resilience and energy savings. Importantly, we're building climate resilience into major infrastructure plans, and actively capturing heat and energy from our waste and wastewater systems to generate low carbon energy.

I am encouraged by the leadership I see every day across this region to reduce emissions and ensure we're resilient to climate change. Metro Vancouver remains committed to doing its part to advance its climate goals and achieve innovative solutions with partners. Through collective effort, we can build a resilient and sustainable future in Metro Vancouver for generations to come.

Sincerely yours,

A handwritten signature in black ink that reads "M Hurley". The signature is written in a cursive, flowing style.

Mike Hurley, Chair, Metro Vancouver Board of Directors

About *Climate 2050*

Climate change is driven by excess greenhouse gases (GHGs) from human activities and is affecting residents in our region today. Warming of the atmosphere, oceans, and land is leading to more frequent and severe weather events, and widespread disturbances and damage to natural and human systems. In the future, our region can expect even hotter, drier summers, warmer, wetter winters, and more extreme weather (see Metro Vancouver’s [Climate Projections Report](#)). Scientists emphasize we can still stop the worst effects of climate change if we work together to dramatically reduce our emissions over the next few years and coming decades.

Climate 2050 is the strategy adopted by Metro Vancouver in 2018 that commits to:

- Achieve a carbon-neutral region by 2050
- Ensure the region’s infrastructure, ecosystems, and communities are resilient to the impacts of climate change
- Reduce greenhouse gas (GHG) emissions by 45% from 2010 levels by 2030

Carbon Neutral Region

A carbon neutral region is achieved when the annual GHG emissions are equal to the amount of carbon removed from the atmosphere and stored annually by the natural ecosystems (e.g. forests and wetlands).

In our region, these ecosystems remove about 1 million tonnes of carbon from the atmosphere every year. Currently, regional GHG emissions are around 17 million tonnes per year. This means that we must reduce these emissions as much as possible, while ecosystems can help to offset a very small amount of remaining emissions to get to net zero.

In this context “Net Zero” can be used interchangeably with carbon neutral.

According to the International Panel on Climate Change (IPCC) the world must achieve “net zero” emissions by 2050 to avoid catastrophic climate change.



Progress Toward Climate Goals and Targets

We are beginning to see emissions decrease in key sectors in our region, but total emissions are still rising. Increased and more coordinated efforts will be needed at all levels of government, in collaboration with partner organizations including public sector organizations, businesses, non-profits, and residents in our region.

Positive Trends on Reducing Emissions

- Clean energy technologies are becoming more available and affordable, such as heat pumps, solar panels, electric vehicles, and batteries.
- In 2023, electric vehicles made up 27% of new vehicle sales in the region.
- In 2022 and 2023, more residential heat pumps than natural gas furnaces were imported into BC.
- Governments are investing in connected walking and active transportation networks, and use of micro-mobility (including e-bikes and e-scooters) is growing in popularity.

Regional Emissions are Rising

In 2022, the Metro Vancouver region's total annual regional GHG emissions were 17.2 million tonnes CO₂e (carbon dioxide equivalent), up 9% from 2010 (15.8 million tonnes CO₂e). These increases were driven by growth in emissions from industrial facilities,

non-road engines (including construction and other equipment), and buildings. GHG emissions from on-road transportation and solid waste decreased during this period.

Per Capita Emissions are Decreasing

Metro Vancouver's population grew by 22% during this period, with GHG emissions per person decreasing from 6.7 tonnes to 6 tonnes.

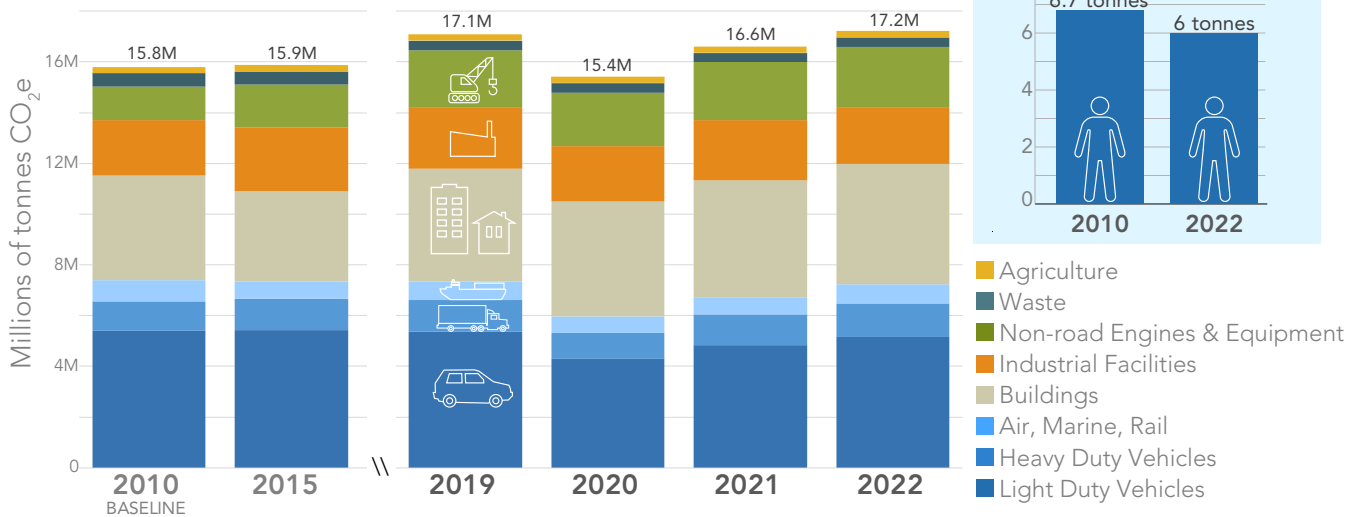
Total regional emissions are expected to decrease in future years, as actions in the Climate 2050 roadmaps, and policies from other orders of government are implemented and as technology and market shifts continue to take effect.

Challenges to Climate Action

Conversely, challenges to climate action include:

- Compounding societal crises and challenges
- The challenge of scaling up the infrastructure needed to supply clean energy
- Continued growth and lock-in of fossil fuel technology
- Securing sustainable funding for transit
- Maintaining public support for climate action with spread of misinformation

METRO VANCOUVER REGION-WIDE GREENHOUSE GAS EMISSIONS BY SECTOR 2010 – 2022



Implementing Climate 2050

This *Climate 2050* Progress Report includes updates on work in 2023 and 2024 (to the end of June) to implement the actions in each *Climate 2050 roadmap*. For *Climate 2050* roadmaps that are still under development, this report includes updates about relevant actions and projects that are underway or completed.

This report provides an update on which actions are complete, in-progress, not started, planned for future years, or not proceeding.

See Appendix 1 (page 28) for a list of Climate 2050 actions that were complete or in-progress as of June 2024, and see the Climate 2050 roadmaps for a full list of actions in board-endorsed roadmaps.

Climate 2050 Action Implementation (from Board-endorsed roadmaps, as of June 2024)

	BIG MOVES	TOTAL ACTIONS
Complete	7	10
In Progress	31	124
Not Started	3	16
Planned for Future Years	14	102
Not Proceeding ¹	1	1

The icons below indicate the types of actions you will find throughout this report:



Actions that have the most potential to significantly reduce emissions or enhance resilience and adaptation to climate impacts



Actions that reduce greenhouse gas (GHG) emissions



Actions that support adaptation and resilience to climate impacts



Actions by Metro Vancouver in its corporate operations that demonstrate leadership and support regional action



Buildings

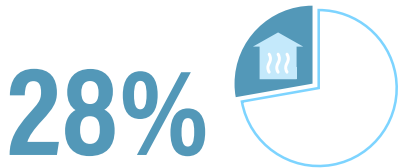
Creating climate-ready buildings that protect human health, save lives, and stand strong against extreme weather.

GHG emissions from buildings in Metro Vancouver have increased by 15% since 2010. Energy-efficient and zero-emissions buildings have lower annual energy costs, better resilience to extreme heat events, and healthier air quality. Without strong policies, emissions from buildings will continue to rise and building owners will miss opportunities to reduce energy costs and improve resilience.

THE CHALLENGE



4.7 million tonnes CO₂e
from burning natural gas for heating and hot water in buildings



28%
of regional GHG emissions are from burning natural gas for heating and hot water in buildings

PERFORMANCE

↑15% increase in buildings emissions in the region since 2010 (2022)

2,885
new residential heat pumps installed in region through the CleanBC Better Homes Program (2023) replacing natural gas systems, compared to **1,957 in 2022**

10 Metro Vancouver municipalities and local First Nations adopting the **Zero Carbon Step Code**

↓17% decrease in **GHG emissions** from Metro Vancouver Housing buildings since 2010

Accelerating Zero Emissions New Construction

New homes with all-electric heating can be just as affordable to build, and cheaper to operate, compared to gas-heated buildings². As of the time of this report's publication, ten municipalities and First Nations in the Metro Vancouver region have adopted the BC Zero Carbon Step Code for new construction³, ensuring that new homes and buildings have lower emissions, ahead of BC-wide requirements that will come into effect in 2030.

Reducing Emissions from Existing Buildings

The Government of BC's CleanBC Better Homes and Better Buildings programs provide rebates and incentives for building owners to implement zero-emissions retrofits. In 2024, the Government of BC and BC Hydro announced the [Multi-Unit Residential Building Retrofit Program](#), which extends substantial rebates for equipment upgrades in these buildings, providing rebates for building owners to implement advanced technologies that significantly reduce energy consumption. Member jurisdictions are also working to ensure building owners have the resources and supports to incorporate emissions reduction and cooling into the renovations plans for their buildings:

- The City of Vancouver has launched Energize Vancouver to support owners and managers of commercial buildings to meet new requirements for emissions reporting and future emissions limits. In 2023, the Rental Apartment Retrofit Accelerator (RARA) was launched, which provides grant funding to owners of market rental buildings to undertake critical energy retrofit upgrades, reducing emissions and improving climate resilience of these buildings.
- The City of Richmond is exploring its own reporting and benchmarking policies for large buildings.



Metro Vancouver Project Highlights



BC Retrofit Accelerator

The [Zero Emissions Innovation Centre \(ZEIC\)](#) used seed funding from Metro Vancouver’s Sustainability Innovation Fund to raise more than \$14 million to establish a buildings “Retrofit Accelerator”.

This is a “one-stop” resource hub for building owners in the region to help plan and carry out building upgrades that reduce emissions. The accelerator will offer coaching and advisory services including technical expertise, access to financing and grants, and other services.

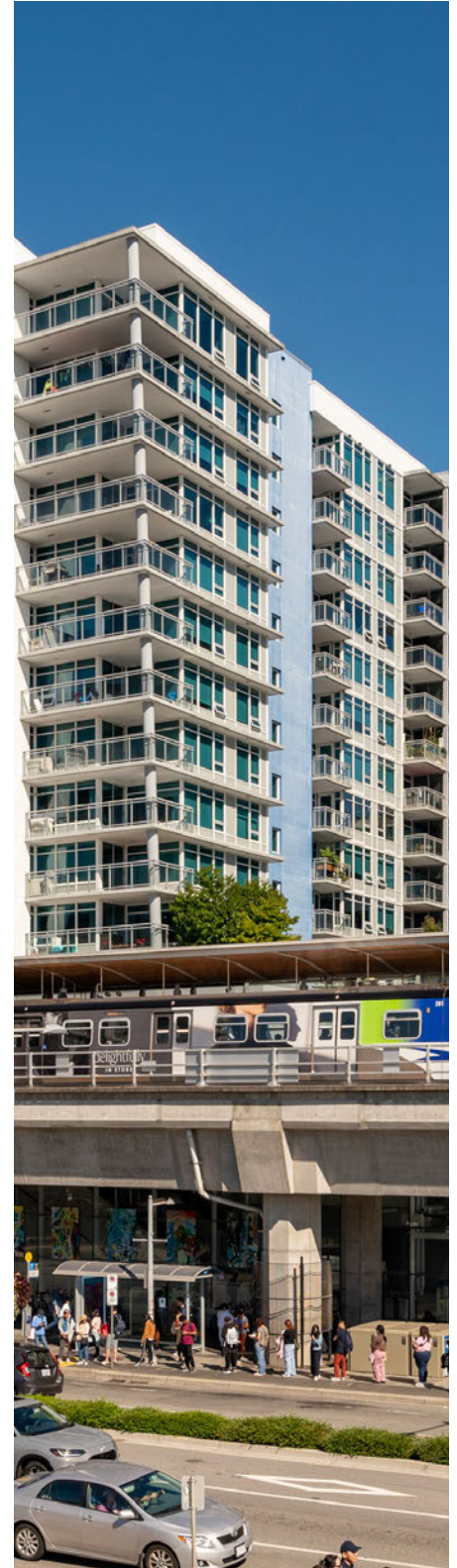


Green Upgrades: Transforming Metro Vancouver Housing



Metro Vancouver Housing Corporation is upgrading buildings across the region to significantly reduce their emissions and energy costs, including at Somerset Gardens and Minato West, where retrofits were initiated in 2023. These projects include major improvements to insulation and windows, replacing inefficient heating systems and switching them from gas to electric alternatives, and providing efficient cooling with heat pumps that protect residents from extreme heat events.

This work is supported by the Reframed Initiative, a collaboration between Metro Vancouver Housing, the Pembina Institute, the BC Non-Profit Housing Association, BC Housing, and the City of Vancouver.





Transportation

Cutting emissions while improving how we move people and goods across the region.

Transportation is the largest source of GHG emissions in the region. Emissions from cars, light trucks, and SUVs have decreased by 4% since 2010, while emissions from heavy-duty vehicles such as freight trucks have increased by 13%. However, zero-emissions vehicles are becoming more affordable and available, opening up greater opportunity to reduce these emissions.

THE CHALLENGE



6.5 million tonnes CO₂e
total annual regional GHG emissions from on-road vehicles (2022), making up 38% of regional GHG emissions



23 billion km
annual total vehicle distance traveled in region (up 25% from 2010)

PERFORMANCE

↓ 4% decrease in light duty vehicle emissions from 2010-2022

↑ 13% increase in heavy-duty vehicle emissions from 2010-2022

27% of new passenger vehicles sold in region were electric (2023)³
6% of passenger vehicles in region are EVs (2023)⁴

↓ 28% decrease in GHG emissions from MV Fleet vehicles from 2016 baseline year

Accelerating the Shift to Electric Vehicles

In 2023, EVs comprised over 27% of new vehicles sold in the region. This rising demand is driven in part by effective policies such as provincial and federal zero-emissions vehicle sales mandates⁴.

The BC government has revised the Strata Property Act to make it easier for apartment owners to install EV charging stations. At the same time, additional efforts are needed to ensure the EV charger network is rapidly expanded.

Investing in Public and Active Transportation

While the rise in EVs is promising, we must also prioritize walking, cycling, and transit. These modes cut GHG emissions, improve health, ease traffic, and create more livable neighbourhoods. TransLink, with funding from the federal and BC governments, is building two major SkyTrain expansion projects; the Broadway Subway Line and the Surrey-Langley SkyTrain extension.

Member jurisdictions are also building infrastructure to make walking and cycling safer, and piloting or expanding programs for bike-share, e-bikes, and e-scooters. Together, these investments can reduce vehicle trips and associated congestion and improve health. In addition to investments in infrastructure such as protected bike lanes and sidewalks, programs like the City of Coquitlam's Shared Micromobility Pilot, and the North Shore E-bike share program, are providing residents with low-carbon, affordable, and convenient travel options. Upon launching in June 2023, the BC E-Bike Rebate Program was fully subscribed within a few hours, demonstrating the demand for e-bikes and other forms of electric micro-mobility.



Metro Vancouver Project Highlights



Electric Vehicle Charging Analysis and Guidance

In partnership with BC Hydro and TransLink, in 2023 Metro Vancouver completed [Keeping it Current: Guidance for Collaborative Deployment of EV Charging in Metro Vancouver](#), a resource to guide and align deployment of public and multifamily residential building EV charging in the region. The analysis found a need for:

- Rapid and widespread expansion of the EV charging network
- 2,200 to 2,900 public direct current fast charging (DCFC) ports and 32,000 to 47,000 public Level 2 ports needed by 2035 to keep pace with the expected rapid uptake of EVs

The report also provides recommendations for local governments and others to accelerate deployment of these chargers.



Zero Emission Hauling: Leading the Way to Clean Heavy-Duty Transportation

In 2023, Metro Vancouver worked with member jurisdictions and hauling companies to assess the business case for using zero-emission vehicles (ZEVs) for transporting solid waste, drinking water treatment residuals, biosolids, and curbside waste collection. Metro Vancouver uses hauling contractors to transport waste within the region, as well as over long-distances (for example, biosolids are recovered from advanced wastewater treatment and used for soil remediation at agricultural and industrial sites in the interior of BC). Metro Vancouver also engaged with hauling contractors as part of a ZEV pilot project to use battery electric and hydrogen fuel cell trucks to reduce emissions from hauling services.

Charging Ahead: Transitioning to a Zero-Emission Fleet



Metro Vancouver's Green Fleet Plan will support a goal of transitioning Metro Vancouver's corporate on-road vehicle fleet to zero-emissions vehicles by 2050. As part of the strategy, Metro Vancouver will transition over 300 fleet vehicles to EVs over the next six years. In 2023, Metro Vancouver added 25 new EVs to its light-duty fleet and added over 20 new EV chargers for corporate, staff, and public use.





Energy

Powering our region sustainably with clean, renewable energy.


THE CHALLENGE

75% 

of energy used in the region comes from burning fossil fuels (including fossil natural gas, gasoline, diesel, and coal), accounting for 90% of all regional GHG emissions

PERFORMANCE

384,930 GJ

of electricity generated at Waste-to-Energy Facility in 2023, enough to power **more than 14,000 homes** for a year 

403,673 GJ

of biogas produced by Metro Vancouver for use in its operations in 2023 

\$ 900,000

revenue from Renewable Natural Gas sold to FortisBC, **reducing** emissions in the region **by over 2,100 tonnes**

Increasing Clean Energy Supply

The Metro Vancouver region is in the midst of transitioning to clean, renewable energy sources. Electricity use in Metro Vancouver and BC is expected to grow by 15% by 2030. In 2024, BC Hydro issued a call for power to acquire 3,000 gigawatt hours per year of new electricity throughout the province, enough to power 270,000 homes. The call for power received strong response with proposals received for over three times more energy than was targeted, with 90% of proposals being wind or solar projects.

Supporting the Region's Energy Transition

Metro Vancouver is harnessing wasted energy from our region's sewage and solid waste systems to power communities, and creating renewable fuels for use in industry and transportation.

Influencing Energy Planning

Local governments are working together to advocate to the Province of BC and the BC Utilities Commission for fair and affordable energy rates and strategic long-term energy planning aligned with provincial and regional climate goals. Communities in the region are increasingly requiring new buildings to be energy-efficient and low-emissions, through setting requirements such as those in the Zero Carbon Step Code.



Metro Vancouver Project Highlights



Advocating for Fair Energy Rates and Accelerating Climate Action

In 2023, Metro Vancouver collaborated with other local governments as an intervener in three British Columbia Utilities Commission (BCUC) proceedings. The focus was on advocating for fair energy rates and strategic long-term planning, and ensuring alignment with regional priorities.

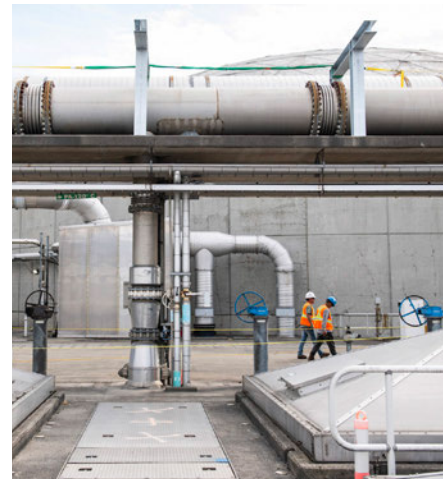
The interveners aimed to ensure that rigorous standards be met for renewable gases in BC's energy plan:

- They must be verifiably zero-emission
- They must be safely deployed affordable, consistently available
- They must be utilized in the most efficient and effective ways possible

Metro Vancouver as a Clean, Renewable Energy Provider



Metro Vancouver's Waste-to-Energy Facility already provides renewable electricity to the region, but also generates steam through its regular operations that is not currently being put to use. Metro Vancouver is developing a district energy system which will use this excess heat to supply space and hot water heating for to up to 50,000 homes in Vancouver, Burnaby, and potentially New Westminster, and has the potential to reduce emissions by up to 70,000 tonnes. Construction of Phase 1 is expected to take place from 2025 to 2027.



Turning Wastewater into Renewable Natural Gas



Metro Vancouver is turning wastewater into renewable natural gas at its wastewater treatment plants, helping to displace fossil fuels and reducing greenhouse gas emissions in the region.

At facilities like Annacis Island and Iona Wastewater Treatment Plants, biogas is used to generate heat and electricity. At Lulu Island Wastewater Treatment Plant, biogas fulfills all the plant's heating needs while excess gas is sold to FortisBC. Metro Vancouver is also exploring using biogas at other facilities like Northwest Langley and Iona Island. An additional pilot project aims to enhance biogas production by optimizing bacteria in treatment plant digesters.



Industry & Business

Driving economic growth and prosperity through a thriving local clean energy economy.

The majority of industrial sector emissions in the region come from just 23 large industrial facilities such as cement and petroleum manufacturing facilities, and have remained stable since 2010. Emissions from gas and diesel-powered equipment, such as construction and manufacturing, have nearly doubled since 2010, corresponding to rapid urban development in the region, and now make up 14% of total regional emissions⁵.

THE CHALLENGE



2.2 million tonnes CO₂e

total regional emissions from **large industrial facilities** in 2022⁶, making up 13% of regional GHG emissions



2.4 million tonnes CO₂e

total regional emissions from **non-road equipment** in 2022, making up 14% of regional GHG emissions



PERFORMANCE

↑ **1%**

increase in GHG emissions from **large industrial facilities** from 2010-2022

↑ **84%**

increase in GHG emissions from **non-road equipment** from 2010-2022

Clean Industry Policy

The Province of BC has introduced new emissions requirements for large GHG emitters through the Output-Based Pricing System (OBPS), which prices industrial emissions using a performance-based approach and ensures industry competitiveness.

The CleanBC Clean Industry Fund is supporting industrial emissions reduction projects in the region, including supporting a project in 2023 at Richmond's Lafarge Cement Plant to upgrade the facility to use alternative fuels in order to reduce the need for fossil fuels.

The BC Low Carbon Fuel Standard continues to require fuel producers to reduce their emissions and innovate to produce renewable fuels.

Clean Technology Leadership

British Columbia is home to 492 companies focused on products and services that reduce environmental impacts such as GHG emissions—more than 70% of these companies are headquartered in Metro Vancouver⁶. Investments, programs, and policies at all levels of government are supporting industry and business in the region to develop and commercialize these innovative solutions.



Metro Vancouver Project Highlights



Assessment of Carbon Capture Technology in the Metro Vancouver Region

Carbon capture, utilization, and storage (CCUS) systems remove CO₂ industrial process emissions and either use or store the CO₂, preventing its release into the atmosphere. With support from the Government of BC and the UBC Clean Energy Research Center, Metro Vancouver launched a project in 2021 to evaluate carbon capture technology for stacks or chimneys at large industrial facilities, such as those from:

- Cement manufacturing
- Petroleum refining and chemical production
- Food and wood products manufacturing
- Metro Vancouver's Waste-to-Energy Facility

The initial assessment concluded that deploying carbon capture, CO₂ transportation, and local CO₂ storage in an integrated network is technically feasible for the major

industrial facilities, but will require significant investment, long-term planning, and extensive engagement with industry and the community.



Reducing Emissions from Small Gas-Powered Equipment

Small gas-powered landscaping equipment in the region, like leaf blowers and lawn mowers produce the same amount of health-harming emissions as 750,000 light-duty vehicles, (half of all cars, trucks and SUVs in the region).

Discussions with industry associations, equipment manufacturers, member jurisdictions, and the provincial government indicate there is growing interest in transitioning to zero-emissions equipment. Metro Vancouver is engaging on developing a strategy to accelerate the transition to zero emissions equipment.



Lights, Camera, Climate Action! Supporting Clean Energy Use in Film Production

Portable diesel generators are used extensively in BC's film industry and as a result of this reliance on fossil fuels, film production in Metro Vancouver has higher emissions from fuel consumption compared to other regions. In 2023, Metro Vancouver completed [Lights, Camera, Climate Action](#), a report on clean power alternatives for the film industry, which identified a number of solutions to reduce emissions from film production, including programs to support use of mobile battery power or electrical tie-ins at filming locations.

Since 2022, Metro Vancouver has offered a discount on clean energy-powered portable generators used by film crews. Metro Vancouver is now pursuing a pilot to install upgraded electrical connections at a regional park location to enable zero emissions film production.



Nature & Ecosystems

Protecting and leveraging green spaces to enhance climate resilience and biodiversity.

Metro Vancouver member jurisdictions and local First Nations are leaders in protecting, restoring, and enhancing ecosystems, which help to sequester and store carbon, and bolster the region’s resilience to climate change impacts such as extreme heat and flooding.

THE CHALLENGE

31% proportion of Urban Containment Boundary with **tree canopy cover** (2020)

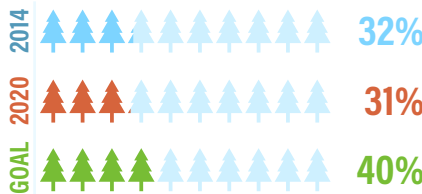


54% proportion of the Urban Containment Boundary covered by **impervious surface** (2020)

Restoring Ecosystems

- In 2023, Tsleil-Waututh Nation completed a project to restore coastal eelgrass ecosystems in Burrard Inlet.
- The Living Dyke project is being implemented through a partnership between the City of Surrey, City of Delta, and Semiahmoo First Nation.
- Member jurisdictions such as Vancouver and New Westminster are using nature-based solutions such as rain gardens and bio-retention ponds to soak up increased rainfall and filter out pollutants before they enter natural waterways.

PERFORMANCE



1% loss of tree canopy cover in Urban Containment Boundary between 2014-2020 (down from 32%).
Metro Vancouver target = 40%

↑ 4% increase in proportion of the Urban Containment Boundary covered by impervious surface between 2014-2020 (up from 50%)

Expanding Connectivity of Ecosystems

Metro Vancouver is also working with partners to implement region-wide initiatives to support nature and ecosystems. These include the Regional Green Infrastructure Network and the Regional Greenway Network (RGN), a network of connected recreational paths for cycling and walking. Between 2020 and 2023, the total Regional Greenway Network length grew by 13 km, and approximately 39 km of its segments were completed and are now operational.

32 restoration projects
across 17 regional parks
completed in 2023



Metro Vancouver Project Highlights



Develop a Regional Green Infrastructure Network

To support the implementation of *Metro 2050*, Metro Vancouver is collaborating with member jurisdictions, local First Nations, and other agencies to plan a regional green infrastructure network. This project seeks to protect, enhance, restore, and connect a network of habitat patches and corridors that support the movement of wildlife across the landscape, while maximizing resilience, biodiversity, and human health benefits. Key work streams for this project include First Nations engagement, collaborative network mapping, research and design, and the development of *Metro 2050* guidelines to support network implementation.



Restoring Regional Parks for Future Generations



In 2023, Metro Vancouver completed 32 restoration projects across 17 regional parks, significantly enhancing natural habitats and promoting biodiversity. These projects included:

- Tree planting at Pacific Spirit and Lynn Headwaters regional parks
- Riparian area enhancement at Derby Reach Regional Park
- Seedling removal from a wildfire site at Burns Bog Ecological Conservancy Area to maintain bog ecosystem properties

In total, 10,734 native trees and plants were planted, revitalizing green spaces and supporting local ecosystems. These restoration efforts beautify parks and prevent soil erosion and soak up rainfall, which makes the parks and the areas around them more climate-resilient. Investing in nature and ecosystems ensures that these natural habitats and our communities thrive for generations to come.

Restoring Burns Bog: Conservation of a Carbon Sink



Over the past 20 years, Metro Vancouver, in partnership with the City of Delta, has been restoring the Burns Bog, which is a significant carbon “sink” for the region, meaning that the carbon it removes from the atmosphere accumulates over time. To promote carbon sequestration and support healthy bog function, Metro Vancouver and Delta are working to raise the water table by blocking drainage ditches, constructing peat berms, removing trees and seedlings, and monitoring water levels and quality. Since 2008, these restoration efforts have prevented over 120,000 tonnes of GHG emissions, mostly methane, a highly potent GHG.

As of 2024, Metro Vancouver and the UBC Micrometeorology group are working together to analyze potential climate change impacts, such as warmer, drier summers and wetter winters, on Burns Bog, and to develop new ecological restoration strategies to maintain the health of the bog.





Agriculture

Protecting farmland to ensure a local, resilient food supply.

Metro Vancouver's agricultural sector plays a crucial role in reducing greenhouse gas emissions and providing ecosystem services that make the region more resilient to climate change⁷. Because agriculture is highly sensitive to weather and climate, it is particularly impacted by climate change. To achieve our target of a net-zero and resilient agricultural sector, farmers in the region are using regenerative agricultural practices to help rebuild healthy soil, reduce emissions, and make farmland more resilient to climate change.

Planning for Climate-Resilient Agriculture

Metro Vancouver and member jurisdictions are collaborating with the agricultural sector to identify opportunities to shift away from fossil fuels, build up soil health, promote local food, and embrace new technologies and nature-based solutions. These include:

- Delta recently completed an [Agricultural Plan](#)
- Pitt Meadows has begun implementing its newly adopted [Agricultural Viability Strategy](#) by initiating an agricultural irrigation and drainage water assessment and feasibility study
- Richmond continues to support the transition toward a circular food system through implementation of its [Circular City Strategy](#).

THE CHALLENGE



0.2 million tonnes CO₂e

total regional emissions from the **agricultural sector** in 2022⁷

PERFORMANCE

↑ 11% increase total **agricultural** emissions from 2010-2022



Metro Vancouver Project Highlights



Regional Food System Strategy Update Project

Metro Vancouver plays a key role in protecting agricultural lands and supporting a sustainable, resilient food system. The Regional Food System Strategy (RFSS), completed in 2011, aims to transition the region’s food system into a fully resilient, circular model. While many actions remain relevant, the 2011 RFSS is in the process of being updated to address climate change, food security, Indigenous food sovereignty, and a circular food system.



Payment for Ecosystem Services Program on Agricultural Land

Ecosystem services are benefits humans derive from natural ecosystems, including providing materials like food and water, regulating process such as climate and air quality, supporting processes

like nutrient cycling, and cultural benefits such as recreation and spiritual values.

Metro Vancouver is researching existing ecosystem payment and funding programs in BC, and is now exploring a potential payment program for ecosystem services on the region’s agricultural lands.

Preliminary research reviewed existing ecosystem payment and funding programs in the province. Metro Vancouver is now engaged in a multi-year work plan to explore the parameters of a potential payment for an ecosystem services program.



Agricultural Industry Efforts Showcase

Many stakeholders and participants in the agriculture sector are engaged in direct action that helps to reduce GHG emissions from agriculture, increase resilience, and ensure new and future generations of farmers incorporate sustainable practices.



Agricultural Climate Solutions – BC Living Lab

This research project focuses on climate change mitigation practices that benefit the environment and meet farmers' needs. Priorities include increasing soil carbon, reducing GHG emissions, understanding social and economic implications, and sharing research findings. BC’s Living Lab supports perennial row crops, dairy, field vegetables, and forage and cattle.



Greenhouse Growers

A joint project by the BC Greenhouse Growers’ Association, United Flower Growers, and the BC Landscape Nursery Association explored technological options for reducing GHG emissions in the BC greenhouse industry.



Water & Wastewater Infrastructure

Building climate resilience in our water systems to ensure high quality drinking water and low-carbon, resilient wastewater services for all residents.

THE CHALLENGE

8,594 tonnes CO₂e

total **corporate energy-related** GHG emissions from **Liquid Waste Services** in 2023

1,946 tonnes CO₂e

Total **corporate energy-related** GHG emissions from **Water Services** in 2023

PERFORMANCE

↑13%

increase in total **corporate energy-related** GHG emissions from **Liquid Waste Services** from 2014 corporate baseline (up from 7,591 tonnes CO₂e)

↓28%

decrease in total **corporate energy-related** GHG emissions from **Water Services** from 2014 corporate baseline (down from 2,698 tonnes CO₂e)

403,673 GJ

of **biogas produced** by **Metro Vancouver** for use in its operations in 2023



\$ 900,000

revenue from Renewable Natural Gas sold to FortisBC, **reducing** emissions in the region **by over 2,100 tonnes**

Metro Vancouver provides high quality drinking water and manages wastewater for the region's 2.8 million residents. These systems also help to protect watershed health, conserve water resources, generate low-carbon energy at wastewater facilities, and are designed and upgraded to improve resilience to climate change.

Protecting the Region's Drinking Water

Using the region's drinking water efficiently will become increasingly important as climate change makes our summers hotter and drier. Several member jurisdictions are pursuing residential water metering as a step towards conserving drinking water for when it is needed most.

Creating Climate-Ready Stormwater Systems

Increased rainfall and sea level rise is putting more pressure on stormwater systems. To adapt, Metro Vancouver's member jurisdictions are upgrading these systems.

Member jurisdictions are using nature-based solutions such as raingardens that retain runoff and allow it to drain into the ground while removing contaminants, protecting the health of fish-bearing streams.

For example, raingardens are part of New Westminister's West End Combined Sewer Separation Program, and Vancouver's Hastings-Sunrise Sewer Renewal Project.

Burnaby, New Westminister, and Vancouver are diverting rainfall runoff from sanitary sewers in separate pipe networks to reduce the burden on Metro Vancouver's wastewater treatment facilities and prevent sewage from being released into marine areas.



Metro Vancouver Project Highlights



Wastewater Heat Recovery Powers Sustainable Communities



There is enough excess heat in Metro Vancouver’s wastewater systems to heat about 700 high-rise buildings. Metro Vancouver is partnering with member jurisdictions, First Nations, and utilities to extract this heat from warm wastewater in sewers to provide renewable, low-carbon heat to residents and businesses. Using energy centres next to large sewers with special heat exchangers, heated hot water is then distributed in a pipe network to nearby buildings for space heating and hot water. Progress over the past year includes:

- Construction is underway to recover waste heat from Metro Vancouver’s Jervis Forcemain sewer to heat the Señákw development in Vancouver
- In Richmond, Metro Vancouver is collaborating with Lulu Island Energy Company on a project to recover heat for use by residents and businesses in the Richmond City Centre area
- Metro Vancouver is funding a project with the City of New Westminster to recover heat for the Royal Columbian Hospital and the Sapperton District

- The new North Shore Wastewater Treatment Plant, currently under construction, will recover 5 megawatts (MWs) of heat and sell it to Lonsdale Energy Corporation, owned by the City of North Vancouver
- In Surrey, a sewer heat recovery system will provide heat for residents and businesses in the Surrey City Centre area



Turning Wastewater into Renewable Natural Gas



Metro Vancouver’s wastewater treatment plants produce biogas as part of their treatment processes. Biogas is a valuable resource that can be used instead of conventional natural gas, reducing greenhouse gas emissions. Biogas is currently used at our wastewater treatment plants in a range of ways:

- At the Lulu Island Wastewater Treatment plant, the biogas is used to generate all plant heating needs. An RNG facility was installed at the Lulu Island Wastewater Treatment Plant in 2021 to clean up excess biogas and sell the resulting renewable natural gas (RNG) to FortisBC. In 2023, the facility produced nearly

43,000 GJ of RNG, reducing GHG emissions in the region by over 2,100 tonnes, and generating nearly \$900,000 in revenue for Metro Vancouver. Plans are underway to expand the facility to make additional gas available.

- At the Annacis Island and Iona Island Wastewater Treatment Plants, the biogas is used to produce both heat and electricity (“co-generation”) that is used at the plants. The new North Shore Wastewater Treatment Plant will do this as well.
- Metro Vancouver is assessing how best to use the biogas at its other facilities, including the upgraded Northwest Langley and Iona Island Wastewater Treatment Plants.



Providing High Quality Drinking Water in a Changing Climate



In 2023, Metro Vancouver evaluated ways to save water for both residential and industrial users, such as plumbing fixture replacements, water audits, and using non-drinkable water where possible. Further research is being conducted to estimate how changes in agricultural water demand will impact the region’s water supply.



Waste

Shaping a low-carbon future through waste prevention and the promotion of a circular economy.

Approximately 3 million tonnes of solid waste is generated in the Metro Vancouver region each year, contributing to 2% of the region’s greenhouse gas emissions. Regional solid waste emissions have been reduced by almost half since 2010, largely as a result of provincial requirements for landfills to capture and manage 75% of landfill gases.

Reducing Waste to Reduce Emissions

To further reduce GHG emissions, Metro Vancouver and its members are focused on eliminating waste, and recycling as much remaining waste as possible⁸. Metro Vancouver is supporting member jurisdictions to expand organics diversion programs to include multi-unit residential buildings and commercial/institutional sectors. Each year, municipal programs collect approximately 400,000 of the 600,000 tonnes of organic material, reducing waste, cutting about 160,000 tonnes of GHG emissions, and creating valuable products such as compost and biogas. Local governments and other partners are also implementing construction and demolition waste reduction requirements.

THE CHALLENGE



0.4 million tonnes CO₂e

total regional emissions from solid waste (2022)



11,788 tonnes CO₂e

total corporate energy-related GHG emissions from Solid Waste Services in 2023

PERFORMANCE

65% Recycling rate for regional solid waste (2022)

2.4 million tonnes of material recycled in the region (2022)

↓ 29% decrease in total regional emissions from solid waste from 2010 -2022

↑ 8% increase regional solid waste recycled since 2011⁸

384,930 GJ of electricity generated at Waste-to-Energy Facility in 2023, enough to power **more than 14,000 homes** for a year

↑ 56% increase in total corporate energy-related GHG emissions from Solid Waste Services from 2014 baseline⁹ (up from 7,570 tonnes CO₂e)



Metro Vancouver Project Highlights



Regional Initiatives to Support Waste Reduction and a Circular Economy

Metro Vancouver is leading a number of initiatives to reduce waste from food, construction, and single-use items, by finding ways to reduce, reuse and recycle these materials.

- Metro Vancouver and member jurisdictions advocated for provincial-level regulations to reduce confusion for residents and to increase efficiency for business in reducing single use items. In June 2023, the Government of BC announced the new [Single Use and Plastic Waste Prevention Regulation](#). As a result of collaboration across all levels of government, Metro Vancouver is seeing a downward trend of plastic single-use items such as shopping bags, which are banned under the regulation.

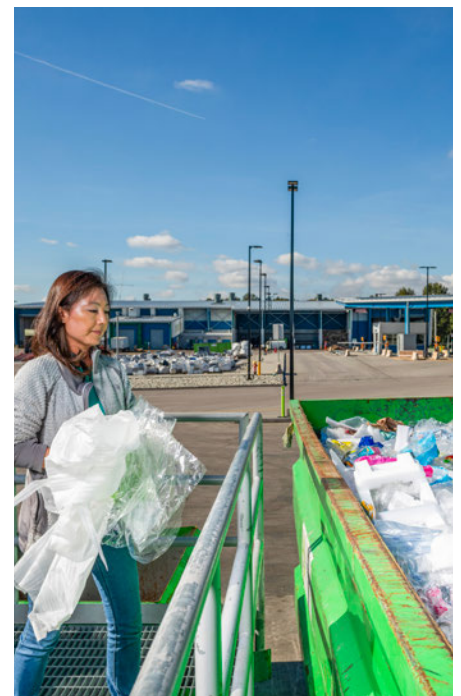
- Metro Vancouver hired FoodMesh to develop a regional food recovery network. In the first two years of the contract—September 2021 to August 2023—the program diverted 7,200 tonnes of food that would otherwise have been wasted, providing the equivalent of over 13 million meals for people, 600 tonnes of food to animals, and avoiding about 20,000 tonnes of GHG emissions.
- Metro Vancouver is hosting Reuse Days at its recycling and waste centres, and supporting member jurisdictions to host repair café events, which offer residents a way to play an active part in a circular economy. In 2023, seven co-funded repair cafés were held in the region serving 442 residents and successfully repairing 301 items.

Waste-to-Energy District Energy System

Metro Vancouver’s Waste-to-Energy Facility manages approximately a quarter of the region’s solid waste, turning waste into energy to create electricity for communities in the region, and recovering around 5,000 tonnes of metals annually to keep materials in use. Metro Vancouver is also developing a district energy system that will use excess heat from the Waste-to-Energy Facility to supply heat and hot water for up to 50,000 homes in Vancouver, Burnaby, and

potentially New Westminister. This project has the potential to reduce GHG emissions by up to 70,000 tonnes.

As of 2024, Metro Vancouver has initiated procurement on the construction of the first phase of this project, which is expected to take place from 2025 to 2027. Phase 1 includes construction of an energy centre adjacent to the Waste-to-Energy Facility and installing an approximately 6-kilometre-long hot water piping system to the River District community in Vancouver. The second phase of this project will extend the pipe network to the Metrotown and Edmonds areas where the City of Burnaby is developing a district energy utility.





Human Health & Well-Being

Safeguarding health and well-being as we adapt to the changing climate.

Metro Vancouver is collaborating with governments, First Nations, health authorities, and other partners to identify and respond to climate risks and vulnerabilities and support communities to maintain and protect human health in the face of climate change.

Protecting Quality of Life

Local governments in the region are supporting the shift to public and active transportation, improving air quality and providing human health benefits. TransLink, with funding from the federal and BC governments, is investing in major public transportation projects to better connect our region. Investments from member jurisdictions in active transportation infrastructure and programs such as the BC E-Bike Rebate are supporting residents to shift to using active transportation.

Recognizing the importance of natural ecosystems to human health and well-being, Metro Vancouver and our partners are working to expand natural areas, improve access to them, and plant more trees, which provide wildlife habitat, cooling, and reduce urban flood impacts.

Protecting People in Extreme Heat Events

Metro Vancouver's partners are responding to near-term climate risks by supporting the addition of equipment to provide cooling and safe air quality in buildings. In 2024, the BC Government expanded the Free Portable Air Conditioner program, which is expected to provide more than 28,000 free air conditioners to low-income and vulnerable residents across the province.

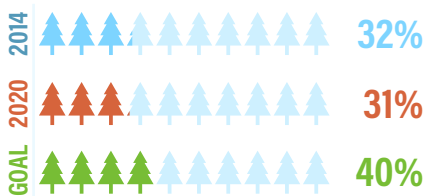
THE CHALLENGE

3 AIR QUALITY ADVISORY DAYS in the Metro Vancouver and Fraser Valley Airshed from sources within the airshed (2023)

PERFORMANCE



3 Air Quality Advisory Days in the Metro Vancouver and Fraser Valley Airshed in 2023 from sources located within the airshed, compared to 5-year average of 4 days (2018-2022)



1% loss of tree canopy cover in Urban Containment Boundary between 2014-2020 (down from 32%).
Metro Vancouver target = 40%



Metro Vancouver Project Highlights



Protecting Human Health by Enhancing Tree Canopy Cover

Tree canopy cover plays a vital role in reducing outdoor and indoor temperatures during extreme heat events. It also provides further benefits including improving air quality and reducing flood risks.

Tree canopy cover declined between 2014–2020 from 32% to 31% within the Urban Containment Boundary (UCB), largely as a result of new urban development. Metro Vancouver has a goal to achieve a regional target of 40% tree canopy cover within the UCB.

Our efforts to enhance urban greenery focus on equitable distribution across communities. Actions include:

- Expanding tree canopy on Metro Vancouver-owned lands
- Measuring and reporting on regional canopy cover trends
- Advocating to the federal and BC governments to provide funding for tree planting in urban areas



Neighborhood Level Air Quality Monitoring

The Hyperlocal Air Quality Monitoring Project uses many small sensors to improve air quality data collected by Metro Vancouver. By placing many sensors in a single neighbourhood, we can see how air quality changes over short distances. This helps us identify neighbourhood-level air quality impacts from emissions sources such as road and rail traffic, industrial facilities, and wildfire smoke.

In 2023, Metro Vancouver identified a pilot site for the project. This project will help Metro Vancouver to better understand how air quality affects local health, and assess the effectiveness of our emissions reduction programs to ensure communities in Metro Vancouver have access to clean air.





Land Use & Urban Form

Planning healthy and complete communities resilient to climate impacts.

Supported by *Metro 2050*, Metro Vancouver’s Regional Growth Strategy, member jurisdictions are including climate change goals in official community plans, and implementing policies to reduce emissions. Examples include zoning changes to improve densification in rapid transit corridors, removal of minimum parking requirements in new developments, and policies and programs to increase resiliency of the urban environment.

Complete, Compact Communities are a Climate Solution

Focusing density in transit-oriented areas can accelerate the development of complete communities that encourage low-carbon mobility options like walking, rolling, and transit. In 2023, the Province of BC introduced new legislation designed to increase housing supply with increased density in transit-oriented areas and by allowing multi-plex housing in neighborhoods previously restricted to single-detached homes. Metro Vancouver and its member jurisdictions are analyzing the impact of provincial legislation on municipal and regional housing, and climate goals and targets.

THE CHALLENGE

31% proportion of Urban Containment Boundary with **tree canopy cover** (2020)



54% proportion of the Urban Containment Boundary covered by **impervious surface** (2020)

PERFORMANCE

99%

of the region’s dwelling unit growth within the **Urban Containment Boundary** (2016 to 2021)

41%

of the region’s dwelling unit growth in **Urban Centres** (2016-2021)



Metro Vancouver Project Highlights



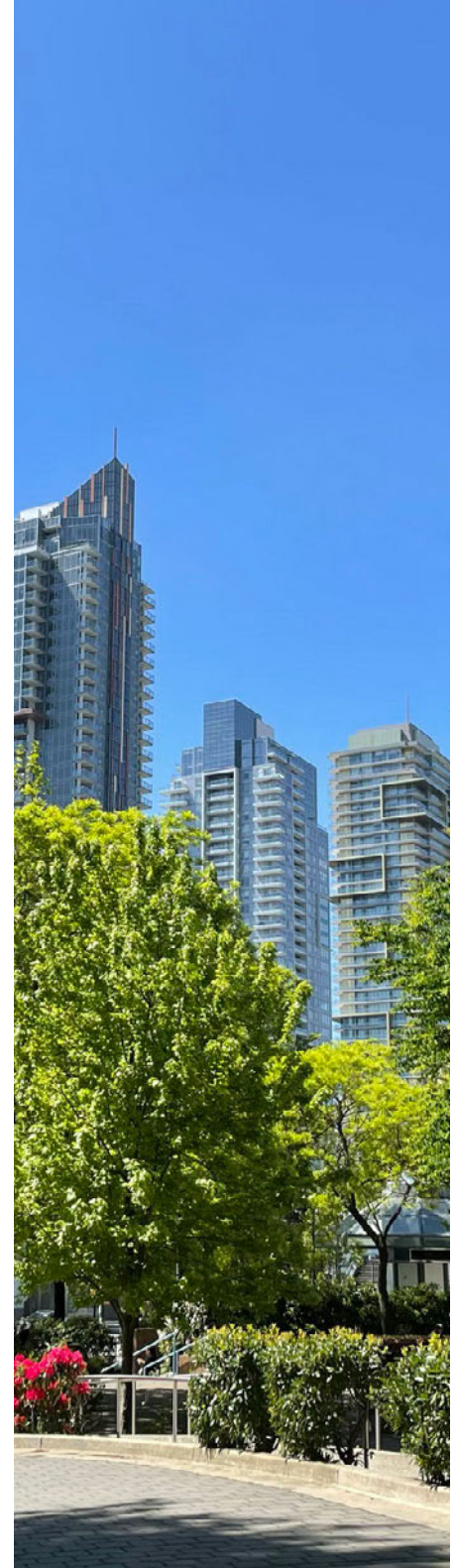
Regional Multi-Hazard Mapping Project

In 2023, Metro Vancouver completed the Regional Multi-Hazard Mapping Project, which includes regional-scale single-hazard maps, data quality rating maps, and multi-hazard maps for four hazard types: coastal flooding, riverine flooding, earthquake, and wildfire. Understanding the region's hazardous areas is critical to making informed land use decisions. The results will allow Metro Vancouver and member jurisdictions to consider and integrate regional-scale hazard information for several hazard types into planning analysis, projects, and models.



Regional Parking Strategy – Update

Metro Vancouver is collaborating with TransLink and member jurisdictions to jointly develop a regional parking strategy to right-size the supply of parking and improve efficiency in land use. All of these objectives have greenhouse gas benefits, from the construction stage (using less concrete for underground parking) through to enabling residents to use active transportation, transit, and other alternative modes instead of personal vehicles. The strategy will provide guidance to inform municipal parking bylaws and on-street parking management. The Regional Parking Strategy is identified as an action in the Transportation Roadmap.


















APPENDIX 1 — Climate 2050 Action Implementation 2023/2024

Buildings

























IMPLEMENTATION (AS OF JUNE 2024): 4 COMPLETE, 27 IN PROGRESS, 2 NOT STARTED, 4 PLANNED FOR FUTURE YEARS, 1 NOT PROCEEDING

IN-PROGRESS & COMPLETE ACTIONS		STATUS
 	New Buildings are Highly Efficient and Electric	Complete
 	Building Electrification Mandate for BC Hydro	Complete
	Building Decarbonization Coalition	Complete
	Regional Working Group to Reduce Embodied Emissions in Buildings	Complete
 	GHG Requirements for Existing Large Buildings	Not proceeding
	High Performance Heating and Cooling Equipment Import and Sale Standards	In progress
 	GHG Performance Requirements for Existing Houses and Townhomes	In progress
 	Require Greenhouse Gas Reductions During Renovations	In progress
	Energy Labels for Homes and Buildings	In progress
	Manage Indoor Air Quality in Building Codes	In progress
	Significantly Reduce Refrigerant Leaks in Building Equipment	In progress
	Expand Low Carbon Upgrade Incentives	In progress
	Online Decision Support Tools for Low Carbon Upgrades in Buildings	In progress
	New Financing Tools for Low Carbon Upgrades	In progress
	Energy Advisor Services for Homes and Large Buildings	In progress
	Make Electricity Upgrades Faster and Cheaper	In progress
 	Increase Public Awareness of the Benefits of Zero Emissions and Resilient Buildings	In progress
	Training and Education in Zero Emissions and Resilient Buildings	In progress
	Share Lessons from Transitioning Metro Vancouver Corporate Buildings to Zero Emissions	In progress

Corporate LEADERSHIP		Test New Zero Emission Building Technologies	In progress
Corporate LEADERSHIP		Low Carbon District Energy Policies	In progress
		Use Building Materials with Low Embodied Emissions	In progress
Corporate LEADERSHIP		Strengthen Metro Vancouver's Corporate Sustainable Design Requirements	In progress
		Broaden Applications of Non-Potable Water Use in Buildings	In progress
		Support Capacity Building of Non-Potable Water Use Applications on Building Sites	In progress
		Incorporate Embodied Emissions into the BC Building Code	In progress
		Require Cooling Measures in New Buildings and Major Retrofits	In progress
		Expand the Network of Public Buildings that can serve as Cool, Clean Air Centres	In progress
		Understand Climate Risk and Resilience for Public Buildings Across the Region	In progress
		Integrate Resiliency into Low Carbon Upgrade Solutions	In progress
		Provide Education on Retrofit Options that can Increase Resilience to Heatwaves and Wildfires	In progress
		Update Climate Projections to Future-Proof Buildings	In progress
		Provide Education on Retrofit Options that can Increase Resilience to Severe Storms and Flooding	Not started
		Accurately Value Zero Emission and Resilient Buildings	Not started
		Emissions Requirements for District Energy Systems	Planned for future
BIG Move		Apply Leading Water Efficiency Standards to Buildings	Planned for future
		New Public Buildings Set Embodied Emission Reduction Targets	Planned for future
BIG Move		Apply Leading Standards for Ventilation and Filtration in New Buildings	Planned for future

Transportation

IMPLEMENTATION (AS OF JUNE 2024): 2 COMPLETE, 24 IN PROGRESS, 11 NOT STARTED, 15 PLANNED FOR FUTURE YEARS


















IN-PROGRESS & COMPLETE ACTIONS		STATUS
	Accelerate Sales Targets for New Electric Passenger Vehicles	Complete
	Regional Electric Vehicle Charging Strategy	Complete
	Electric Vehicle Outreach Programs	In progress
	Enhance and Improve Regional Transit	In progress
	Support Low Emissions Commuting by Staff	In progress
	Use Pricing to Reduce Driving and Emissions	In progress
	Expand Active Transportation Networks	In progress
	More Stable Infrastructure Funding for Regional Active Transportation Networks	In progress
	More Stable Funding for Regional Transit	In progress
	Regional Parking Strategy to Reduce Driving	In progress
	Support Residents and Businesses in Active Transportation	In progress
	Communicate the Benefits of Walking, Cycling and Public Transit	In progress
	Develop Regional Emission Requirements for Passenger Vehicles	In progress
	Make Electric Vehicles More Affordable	In progress
	Make New Passenger Vehicles Cleaner	In progress
	Expand Electric Vehicle Charging in Buildings	In progress
	Transition the Corporate Fleet to Zero Emissions	In progress
	Regulate Existing Medium and Heavy Trucks	In progress
	Reduce Refuse Trucks Emissions	In progress
	Support Innovation in Zero Emission Technology for Medium and Heavy Trucks	In progress
	Require Zero Emission Sales Targets for New Medium and Heavy Trucks	In progress
	Long-term Emissions Strategy for Medium and Heavy Trucks	In progress
	Regulate Fuel Economy and Emissions for Medium and Heavy Trucks	In progress
	Support Emission Reduction Actions at Vancouver Fraser Port Authority	In progress

	Support Innovation in Low and Zero Emission Marine and Rail Technologies	In progress
	Identify Regional Climate Hazards, Risks, and Vulnerabilities Impacting Transportation Networks	In progress
	Support Low Carbon Corporate Business Travel	Not started
 BIG Move	Support Regional Emergency Management Planning	Not started
	Protect Road Networks	Not started
	Protect Key Transportation Hubs	Not started
	Adapt Active Transportation and Transit Networks	Not started
 BIG Move	Minimize Risk Exposure for New Transportation Infrastructure	Not started
 BIG Move	Create Flexible Transportation Networks	Not started
	Reduce Reliance on Transportation Networks	Not started
	Build Climate Resilient Transportation Infrastructure	Not started
	Integrate Resilient Infrastructure in to Transportation Networks	Not started
	Implement Trip Reduction Programs	Planned for future
	Regional Bike- and Car-Sharing Strategy	Planned for future
	Electrification Targets for Ride-Hailing Services	Planned for future
	Make Low and Zero Emission Medium and Heavy Trucks More Affordable	Planned for future
	Zero Carbon Refueling Strategy for Medium and Heavy Trucks	Planned for future
	Funding for Zero Carbon Refueling Infrastructure for Medium and Heavy Trucks	Planned for future
	Large Fleets to Adopt “ZEV-First” Procurement	Planned for future
	Reduce Delivery Emissions	Planned for future
	Use Business Licences to Support Emission Reductions	Planned for future
 BIG Move	Accelerate Emission Reductions from Marine Vessels	Planned for future
	Accelerate Emission Reductions from Rail Locomotives	Planned for future
	Carbon Neutral Aviation Sector	Planned for future
	Develop Local Sources of Sustainable Aviation Fuel	Planned for future
	Technologies for Zero Emission Aircraft	Planned for future
	Prepare for Regional Disruption	Planned for future

Energy

IMPLEMENTATION (AS OF JUNE 2024): 0 COMPLETE, 23 IN PROGRESS, 0 NOT STARTED, 13 PLANNED FOR FUTURE YEARS













	IN-PROGRESS & COMPLETE ACTIONS	STATUS
	Align British Columbia's Energy Objectives with Strong Climate Action	In progress
	Strong Climate Mandate for Energy Utilities	In progress
	Revise Utility Regulation to Align with Strong Climate Action	In progress
	Long-term Planning Scenarios for the Transition to 100% Clean, Renewable Energy	In progress
	Regional Climate Action in Energy Utility Regulatory Processes	In progress
	Implement Tracking, Verification, and Reporting Requirements for Renewable Natural Gas Supply	In progress
	Transition Corporate Energy Use to 100% Clean, Renewable Energy	In progress
	Electrification Rates	In progress
	Time-of-Use Rates, Demand Response Programs, & EV Peak Reduction Programs	In progress
	Modernizing the Electrical Grid	In progress
	Regional Grid Constraints	In progress
	High Performance Heating and Cooling Equipment Import and Sale Standards	In progress
	More Stringent Low Carbon Fuel Standards	In progress
	Implement Renewable Gas Content Requirements	In progress
	Regional Hydrogen Hub	In progress
	Regional Sources of Liquid Biofuels	In progress
	Metro Vancouver as a Regional Clean, Renewable Energy Provider	In progress
	Innovative Research on Optimizing Energy Recovery from Waste Streams	In progress
	Account for the Full Climate Impact of Fossil Fuel Production and Export Projects	In progress
	Eliminate Subsidies and Public Financing for Fossil Fuels	In progress
	Just Transition Plan for Workers and Communities Engaged in the Fossil Fuel Industry	In progress
	Comprehensive Climate Risk and Vulnerability Assessment	In progress
	Pilot Innovative Renewable Energy + Storage Systems to Improve Resiliency	In progress

  	Vehicle-to-Grid Technologies	Planned for future
	Reduce Energy Poverty	Planned for future
	Minimize Air, Land, and Water Impacts	Planned for future
  	Prioritize Sustainability in Biofuel Feedstock	Planned for future
 	Develop Local Sources of Sustainable Aviation Fuel	Planned for future
	Streamline Emission Requirements for Anaerobic Digestion Facilities	Planned for future
	Expand Anaerobic Digestion of Agricultural Waste	Planned for future
	Phase Down Use of Thermal Coal and Petroleum Coke	Planned for future
	Prepare for Regional Disruption due to Extreme Weather Events	Planned for future
	Protect and Increase Resilience of Existing Regional Energy Generation	Planned for future
	Protect and Increase Resilience of Existing Energy Distribution Infrastructure	Planned for future
	Ensure Critical Regional Infrastructure has Backup Power	Planned for future
	Design for Climate Resilient Energy Infrastructure	Planned for future

Industry & Business



IMPLEMENTATION (AS OF JUNE 2024): 2 COMPLETE, 14 IN PROGRESS, 2 NOT STARTED, 9 PLANNED FOR FUTURE YEARS

IN-PROGRESS & COMPLETE ACTIONS		STATUS
 	More Stringent Greenhouse Gas Requirements for Large Industrial Emitters	Complete
 	Tighten Emissions Regulation for Non-Road Diesel Engines	Complete
 	Integrate Greenhouse Gases into Emission Regulations and Permits	In progress
	Industrial Emission Reduction Incentives	In progress
	Develop Sector-Specific Regulations	In progress
	Carbon Tariffs	In progress
	Phase out High Global Warming Refrigerants	In progress
	Emission Standards for New Non-Road Equipment	In progress
	Funding for Cleaner Non-Road Equipment	In progress

		Identify Infrastructure Needs for Zero Emission Non-Road Equipment	In progress
		Encourage Cleaner Non-Road Equipment through Municipal Approvals	In progress
		Awareness Program on Zero Emission Non-Road Equipment	In progress
Corporate LEADERSHIP		Transition Metro Vancouver's Corporate Non-Road Fleet to Zero Emissions	In progress
		Carbon Capture in Metro Vancouver Region	In progress
Corporate LEADERSHIP		Low Carbon Metro Vancouver Corporate Procurement	In progress
		Assess Regional Climate Risks and Vulnerability to Support Business Decision-making	In progress
		Identify Climate Vulnerability by Clusters with Industry and Business Sectors	Not started
		Regional Industrial Facilities Emissions Working Group	Not started
		Develop Carbon Capture Standards	Planned for future
BIG Move		Regional Low Carbon Procurement	Planned for future
		Integrate Climate Considerations into Standard Business Practices	Planned for future
		Support Knowledge-Sharing to Increase Resilience to Severe Storms and Flooding	Planned for future
		Coordinate Flood Protection and Flood Risk Management for Industrial Lands	Planned for future
		Support Employers in Developing Response Plans for Extreme Heat and Air Quality Events	Planned for future
		Apply Leading Water Efficiency Standards to Industry	Planned for future
		Promote Water Efficiency Retrofit Incentives and Rebates for Industries and Businesses	Planned for future

Nature & Ecosystems

IMPLEMENTATION (AS OF JUNE 2024): 0 COMPLETE, 27 IN PROGRESS, 0 NOT STARTED, 4 PLANNED FOR FUTURE YEARS
















IN-PROGRESS & COMPLETE ACTIONS		STATUS
BIG Move	Protect an Additional 10% of the Region for Nature	In progress
Corporate LEADERSHIP	Protect, Restore, and Enhance Natural Areas at the Regional Scale	In progress
	Protect, Restore, and Enhance Nature at the Local Scale	In progress
	Prioritize the Conservation of Ecosystem Health and Biodiversity in BC Forest Management	In progress

		Support Ecosystem Protection, Enhancement, and Restoration	In progress
		Reverse the Loss of the Region's Ecosystems	In progress
		Manage invasive species	In progress
		Develop a Regional Green Infrastructure Network	In progress
		Green Urban Areas	In progress
		Green the Regional Greenways Network	In progress
		Minimize Ecosystem Fragmentation	In progress
		Develop Data and Resources to Support Ecosystem Connectivity	In progress
		Incorporate Natural Assets into Asset Management and Financial Planning	In progress
		Integrate Ecosystems and their Services into the Design of Major Infrastructure	In progress
		Consider Ecosystems and their Services in Major Development Decisions	In progress
		Support Natural Asset Management at the Local Level	In progress
		Achieve 40% Tree Canopy Cover Within the Region's Urban Areas	In progress
		Provide Data and Resources to Support Urban Forest Management	In progress
		Improve Local Regulations and Management Practices	In progress
		Convene Partners on Urban Forestry Issues	In progress
		Consider Equity and Human Health in Urban Forestry Planning	In progress
		Explore Innovative Funding and Incentive Programs	In progress
		Include Nature-Based Solutions in Climate Action Plans	In progress
		Support the Implementation of Nature-based Solutions	In progress
		Manage Forests in the Context of a Changing Climate	In progress
		Advance Nature-Based Solutions to Address Flood Hazards	In progress
		Partner with Others to Address Climate Change Issues in Coastal and Marine Ecosystems	In progress
		Incorporate Climate Change Planning into Protected Area Management	Planned for future
		Explore Opportunities to Overcome Barriers to natural asset management	Planned for future
		Plan for Climate Change Impacts on Ecosystems	Planned for future
		Develop our Understanding of Coastal Ecosystems and Blue Carbon Potential	Planned for future

Agriculture

IMPLEMENTATION (AS OF JUNE 2024): 2 COMPLETE, 8 IN PROGRESS, 0 NOT STARTED, 58 PLANNED FOR FUTURE YEARS

	IN-PROGRESS & COMPLETE ACTIONS	STATUS
	Reduce Emissions from Greenhouses	Complete
	Increase Capacity to integrate climate change into business operations	Complete
	Determine appropriate agricultural-focused uses on land with limited potential for soil-based agriculture	In progress
	Review how regional policy can recognize and support Indigenous Food Sovereignty	In progress
	Encourage and Prioritize Local Agriculture	In progress
	Determine how Agriculture can Benefit from Restoration and Protection of Ecosystems	In progress
	Estimate financial value of ecosystem service on agricultural lands	In progress
	Explore and build a long-term funding mechanism to support payment for ecosystem services	In progress
	Align with the Regional Green Infrastructure Project	In progress
	Undertake a review of the Regional Food System Strategy	In progress
	Prepare an Agricultural Land Protection and Viability Strategy	Planned for future
	Implement soil movement tracking within agricultural areas	Planned for future
	Incentivize, increase viability of, and prioritize soil-based agriculture	Planned for future
	Review how regional policy can be strengthened to reduce encroachment of urban uses	Planned for future
	Review how regional policy can be strengthened to reduce negative impacts of urban development on adjacent agricultural uses	Planned for future
	Update Section 2.2 of Metro 2050 to be consistent with November 2019 MVRD Board decision	Planned for future
	Expand our collective knowledge and understanding of the role of soil health in supporting long-term agricultural viability and resilience and as a local source that can be used to help reduce carbon emissions within the Lower Mainland	Planned for future
	Increase awareness and accessibility to the Environmental Farm Plan	Planned for future
	Prepare a regional vulnerability assessment of agricultural lands specific to climate change impacts	Planned for future
	Support pilot projects to illustrate regenerative agriculture	Planned for future
	Monitor outcomes of the BC Living Lab projects to determine alignment with regional policies	Planned for future
	Develop a comprehensive analysis of the sub-regional sources of water used by agricultural sector	Planned for future

	Provide viable and tangible solutions to ensuring water resources need by agriculture are sustainable	Planned for future
	Support financial investment in the agricultural sector through incentive programs and funding sources	Planned for future
	Determine how the agricultural community can address issues raised in the Provincial Stewarding Watercourse study	Planned for future
	Develop engaging and approachable educational campaigns aimed at consumers and the realities of food production	Planned for future
	Advocate to Limit Utility Services Extension	Planned for future
	Change tax structure to reduce incentives for non-farm use development in ALR	Planned for future
	Better define agricultural uses, agricultural-supporting uses and clarify role of rural lands	Planned for future
	Develop a comprehensive strategy to manage small lot agricultural lands potentially exempt from the ALCA	Planned for future
	Prepare passive design standards specific to greenhouse operations	Planned for future
	Provide on-line decision support tools to help greenhouse operators manage upgrades	Planned for future
	Update regional emissions inventory with greenhouse-specific data	Planned for future
	Work with the greenhouse industry to collect data on greenhouse carbon dioxide requirements	Planned for future
	Work with the BC Government, member jurisdictions, the agricultural industry and other regional partners to support the long-term collection and open source provision of soil carbon data	Planned for future
	 Work with the BC Government and other key stakeholders to develop actionable programs specific to soil carbon storage and wood perennial sequestration on agricultural lands, including providing benchmarking data	Planned for future
	Strengthen Outreach Program on Reducing Agricultural Emissions	Planned for future
	Enhance funding to develop and implement Environmental Farm Plans	Planned for future
	Enhance funding and develop and promote BMPs to support using Environmental Farm Plans	Planned for future
	Provide reliable incentives and technical guidance to support low emission practices	Planned for future
	Funding for programs that accelerate the use of cleaner agricultural equipment	Planned for future
	Incentives or programs that help to decommission old equipment in place of zero emission equipment	Planned for future
	Develop pilot study to test wide-spread use of zero emission agriculture equipment	Planned for future
	Expand development of anaerobic digestion facilities	Planned for future
	Help establish new anaerobic digestion facilities	Planned for future
	Support successful operation of existing anaerobic digestion facilities	Planned for future
	Develop simple anaerobic digestion emission regulation	Planned for future

	Develop multi-stakeholder centralized agricultural waste collection facility in the region to support anaerobic digestion	Planned for future
	Create comprehensive information package for the agricultural sector to support anaerobic digestion facilities	Planned for future
	Create comprehensive information package for member jurisdictions on how to support anaerobic digestion facilities	Planned for future
	Prepare a comprehensive, regional high resolution map of ecosystem services locations on agricultural land	Planned for future
	Introduce and support biovigilance programs to local farmers	Planned for future
	Develop guidance materials to support natural asset management	Planned for future
	Address knowledge gap between agricultural sector and the benefits and applications of regenerative agriculture	Planned for future
	Pilot program to expand local pollinator populations	Planned for future
	Explore innovative sources and new technology for water re-use	Planned for future
	Explore ways to take advantage of rainfall collection opportunities	Planned for future
	Update water demand model	Planned for future
	Develop a toolkit about a circular water economy	Planned for future
	Examine feasibility and benefits of committing to programs that address the effects of climate change on agricultural operations	Planned for future
	Develop an agricultural information network focusing on cost benefit analysis needed for farmers	Planned for future
	Prepare an interactive information resource kit	Planned for future
	Support pilot projects that focus on diversifying local food production	Planned for future
	Develop regional signage to showcase local food production	Planned for future
	Advocate for changes to the tax structure for agricultural properties	Planned for future
	Establish pilot projects that carry the financial and operational burden of testing new technological and agri-tech systems	Planned for future
	Establish a cost-sharing or group purchase program to share new agri-tech innovations across the agricultural sector	Planned for future
	Collaborate with agricultural-focused research and innovation entities	Planned for future

Endnotes

- 1 In January 2024, the Metro Vancouver Board directed staff to not proceed with engagement on a potential regulatory approach that proposed to establish GHG emission limits and GHG reporting requirements for existing large buildings. The board expressed concerns about whether Metro Vancouver was the appropriate jurisdiction to effectively implement regulations for large buildings and about affordability as it related to potential program fees.
- 2 [BC Housing Case Study: Does High Performance Construction Cost More?](#); Metro Vancouver Analysis
- 3 As of time of publishing. Total includes Burnaby, City of North Vancouver, District of North Vancouver, District of West Vancouver, New Westminster, Port Moody, Richmond, Township of Langley, Vancouver, Tsleil-Waututh Nation.
- 4 S&P Global Mobility Canadian Automotive Insights. Figure uses average of quarterly EV sales data for 2023 for Metro Vancouver CMA.
- 5 Includes industrial emissions from facilities in Metro Vancouver region of more than 10,000 tonnes CO₂e.
- 6 Cleantech Sector in British Columbia- December 2023 ([britishcolumbia.ca](https://www.britishcolumbia.ca))
- 7 Total for agriculture does not include GHG emissions from greenhouses, which are included in Buildings sector emissions.
- 8 Metro Vancouver ISWRMP 2022 Biennial Report (metrovancover.org)
- 9 Total energy-related GHG emissions for Solid Waste Services in 2023 was 11,788 tonnes CO₂e, up 56% from 2014. These increases in energy use and GHG emissions are driven by increased fossil natural gas use at the Waste-to-Energy Facility starting in 2018, which are the result of regulatory changes requiring larger natural gas burners. Other factors contributing to the increase include higher contracted fuel use for road and rail hauling of solid waste to remote landfills.

