



CLIMATE 2050

Solid Waste Primer

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: qíçəy̓ (Katzie), q̓ʷɑ:ńłəń (Kwantlen), k̓ʷíkʷəłəm (Kwikwetlem), máthxwi (Matsqui), x̓ʷməθkʷəy̓əm (Musqueam), qiqéyt (Qayqayt), Semiahmoo, Sk̓wxwú7mesh Úxwumixw (Squamish), scəwəθən məsteyəx̓ (Tsawwassen), and səlilwətał (Tsleil-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.

4515 Central Boulevard,
Burnaby, BC, V5H 0C6

metrovancover.org

August 2025

Cover photo: United Boulevard Recycling and Waste Centre

Metro Vancouver

Metro Vancouver is a diverse organization that plans for and delivers regional utility services, including 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.

In collaboration with our members, Metro Vancouver has three broad roles.

1. Deliver core services

Metro Vancouver provides regional utility services related to drinking water, liquid waste, and solid waste to members. Provide regional services, including parks and affordable housing, directly to residents and act as the local government for Electoral Area A.

2. Plan for the future

Carry out planning and regulatory responsibilities related to the three utilities as well as air quality, regional growth, and regional parks. At the board level, develop and implement strategies related to issues of regional interest.

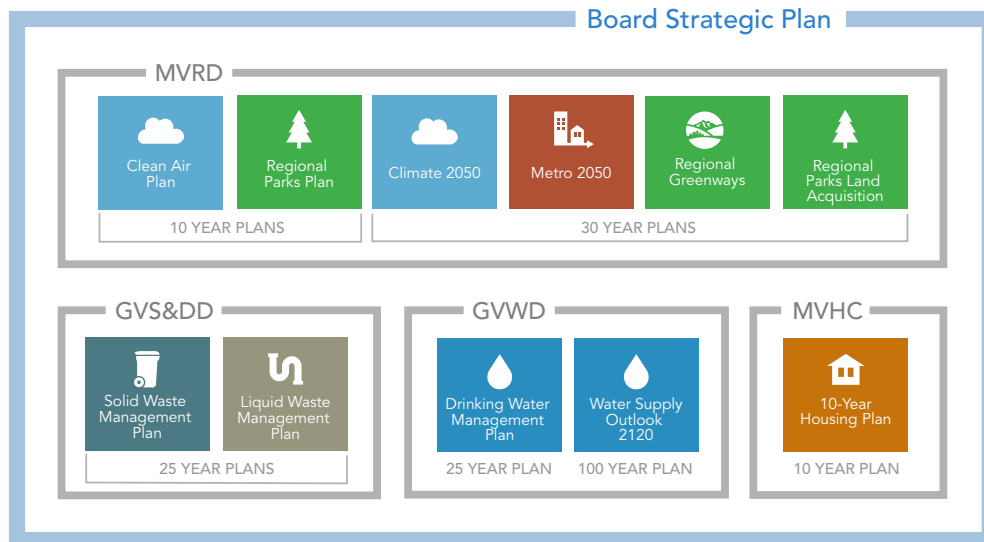
3. Municipal forum

Serve as the main political forum for discussion of significant community issues at the regional level.



Building A Resilient Region

Building the resilience of the region is at the heart of Metro Vancouver's work. Each of Metro Vancouver's regional plans and strategies adopts a vision, guiding principles, goals, strategies, actions and key performance measures that will support a more resilient, low-carbon and equitable future. Metro Vancouver's interconnected plans and strategies are guided by the Board Strategic Plan, which provides strategic direction for each of Metro Vancouver's legislated areas of responsibility and the Long-Term Financial Plan which projects total expenditures for capital projects and operations that sustain important regional services and infrastructure. Together these documents outline Metro Vancouver's policy commitments and specific contributions to achieving a resilient region.



Metro Vancouver's Roles and Responsibilities for Climate Action

The actions to achieve carbon neutrality and building a more resilient region will depend on the collaborative efforts of many players in the region as well as the federal and provincial government. However, Metro Vancouver has some unique and important roles and responsibilities for advancing climate action.

- Under the *Environmental Management Act*, Metro Vancouver has the delegated authority to provide the service of air pollution control and air quality management and may, by bylaw, prohibit, regulate and otherwise control and prevent the discharge of air contaminants, including greenhouse gases.
- Metro Vancouver is responsible for waste reduction and recycling planning, and operating a series of solid waste facilities in the region. Planning for less waste, improving reuse and recycling systems and managing the remaining waste reflects the public's expectations of high environmental stewardship, as well as the desire to keep waste management affordable.
- As part of delivering its core services, Metro Vancouver also generates and uses clean, renewable energy from its facilities and is working to ensure core regional services and infrastructure are prepared for and resilient to climate change.
- In its role as a regional forum, Metro Vancouver builds and facilitates collaborative processes which engage the public and build partnerships to address significant regional issues like climate change. As part of this role, Metro Vancouver coordinates with and advocates on behalf of its member jurisdictions to other governments and partners on greenhouse gas management and climate change adaptation initiatives.

These roles are necessary but not sufficient to achieve our goals of a climate-neutral, resilient region. Metro Vancouver will be looking to other orders of government, First Nations and other regional partners to lead and collaborate in the implementation of a number of key actions under *Climate 2050*.

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Waste-to-Energy Facility

The Primer at a Glance

Climate 2050 is organized around 10 key climate issue areas, including solid waste, that reflect the functions and responsibilities under Metro Vancouver's mandate and the range of climate-related challenges and initiatives affecting the region. Roadmaps to a resilient, low-carbon region have been developed for six issue areas. *Climate 2050 Roadmaps* outline regional and corporate goals, strategies, actions, and performance metrics. For the Solid Waste issue area, these goals, strategies, and actions are found in Metro Vancouver's solid waste management plan. This *Climate 2050 Solid Waste Primer* provides context on opportunities for adapting to climate impacts and reducing regional emissions related to solid waste management, to ensure climate actions are aligned with the future management plan.

The *Climate 2050 Solid Waste Primer* provides an overview of the sources and quantities of greenhouse gas emissions from disposal of solid waste generated in the Metro Vancouver region since 2010. Disposal of solid waste in Metro Vancouver contributes less than two per cent of the total regional greenhouse gas emissions. Ongoing efforts of Metro Vancouver and

member jurisdictions along with active participation of residents and businesses have significantly reduced these emissions over the past decade. It is projected that these emissions will decrease by 45 per cent from 2010 levels by 2030 as a result of continuous improvements to the Vancouver Landfill gas management system. Overall, this primer offers a summary of actions taken to date to reduce over 40 per cent of annual emissions related to solid waste disposal by 2050. Additional actions to reduce emissions from solid waste disposal are identified in the updated Metro Vancouver solid waste management plan.

Metro Vancouver, together with its member jurisdictions, has been taking action on climate change for decades. But we need to do more to achieve the deep reductions in greenhouse gas emissions required to meet our goals and to mitigate the impacts of climate change. Coordination and collaboration with other orders of government, First Nations, and other regional partners will be essential to transition to a carbon-neutral and resilient region.

The Challenge

Solid waste is the term used to describe unwanted and left-over materials, such as garbage, food scraps, yard trimmings, and recycling, from homes, businesses, institutions, and construction, renovation and demolition activities. Solid waste disposed (garbage) to landfill or waste-to-energy (waste combustion) results in the generation of two per cent of region's greenhouse gases, as buried organic materials degrade and when inorganic waste is combusted. Actions currently taken by Metro Vancouver to reduce greenhouse gas emissions from disposal are described in this *Climate 2050 Solid Waste Primer*. While there are other sources of emissions involved in the management of solid waste, activities associated with those sources of emissions are included in *Climate 2050 Transportation, Industry and Business Roadmaps*. For example, process emissions from anaerobic digesters, composters and recycling facilities are included in actions to manage emissions from industrial facilities in the *Climate 2050 Industry and Business Roadmap*. Actions to reduce emissions from trucks that collect and transport waste to recycling, compost and other disposal facilities are included in the *Climate 2050 Transportation Roadmap*.

To reach the goal of carbon neutrality for emissions from solid waste disposal, diverting organic waste from landfill disposal, and collection and utilization of landfill gas are top priorities, as landfills are the largest source of these emissions. Transitioning to clean renewable energy for equipment involved in managing solid waste at facilities are also key activities.

Metro Vancouver is currently in the process of updating its solid waste management plan. The updated plan will identify future actions to reduce emissions from waste disposal, and indirectly assist with reducing regional emissions in other sectors, by prioritizing waste prevention, reuse, and recycling over disposal. Preventing waste in the first place and keeping goods in use for as long as possible are key to reducing emissions associated with waste disposal, and provides co-benefits of reducing emissions related to the reduction of material and energy required to make new products.

As many products and packaging are currently not designed to be reused and recycled, there continues to be a need for responsible waste management, while actively working to design waste out of supply chains.

Actions to achieve a carbon-neutral region are designed to ensure that Metro Vancouver remains sustainable, prosperous, and livable for today's residents and future generations.

Goals

Metro Vancouver has set the following emissions goal and targets for solid waste disposal in the region, out to 2030 and 2050. The *Climate 2050 Solid Waste Primer* outlines the expected contributions of existing solid waste actions towards achieving the set goal and targets while leaving the development of further strategies and actions that address any remaining disposal emissions to the updated solid waste management plan. Refer to *Climate 2050 Transportation, Industry and Business Roadmaps* for more information on goals and targets for the reduction of emissions from commercial collection, transportation, and recycling of waste and processing of organics.



Goal

Carbon-neutral solid waste system



Targets

By 2030:

- 45 per cent reduction in greenhouse gas emissions from solid waste disposal, relative to 2010.

By 2050:

- Disposal of solid waste results in no net greenhouse gas emissions.

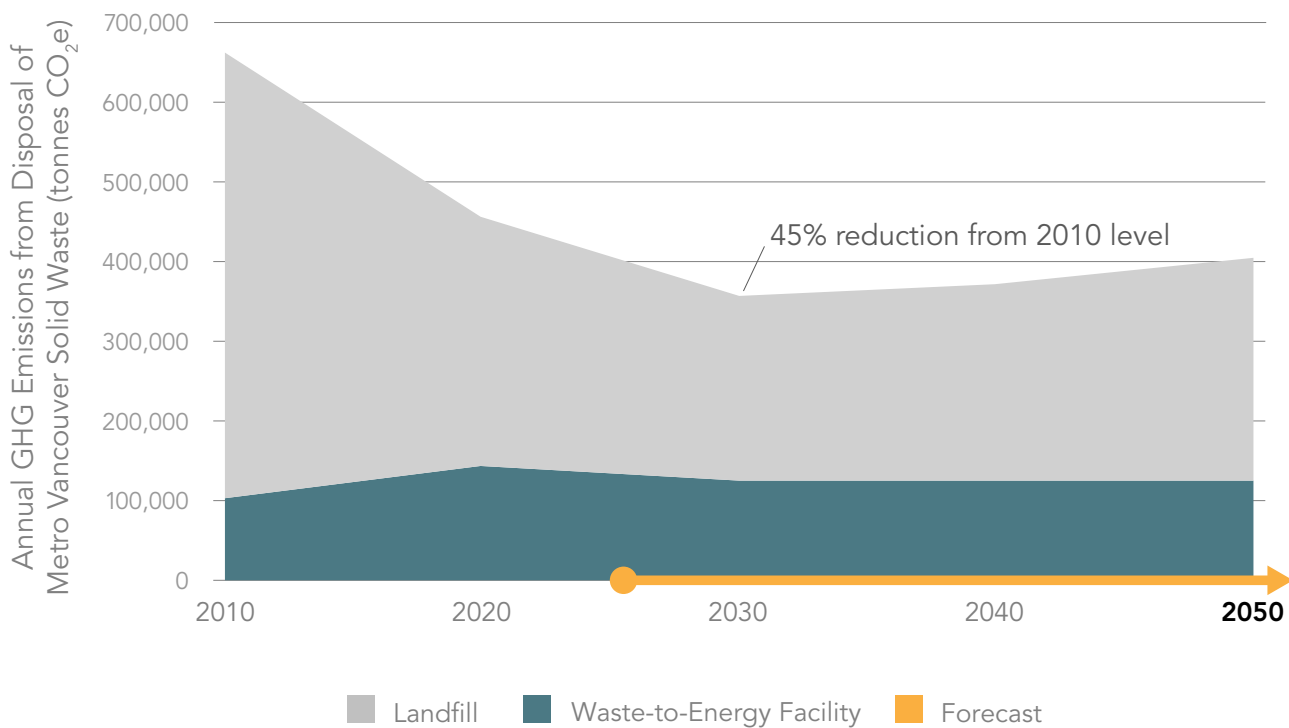


Emissions from Disposal of Metro Vancouver Solid Waste

According to Metro Vancouver’s 2023 emissions inventory, managing the region’s 1.27 million tonnes of garbage contributed less than two per cent of total regional greenhouse gas emissions. Almost all regional garbage is disposed at the Vancouver Landfill and the Metro Vancouver Waste-to-Energy Facility. When local garbage disposal capacity is exceeded, additional volume is managed at other engineered landfills. This *Climate 2050 Solid Waste Primer* specifically covers greenhouse gas emissions resulting from landfill and waste-to-energy disposal. Emissions from recycling and composting facilities are within the scope of the *Climate 2050 Industry and Business Roadmap*. Emissions from the collection and transport of garbage, recycling and organics are accounted for under the *Climate 2050 Transportation Roadmap*.

Figure 1 shows emissions from the disposal of regional garbage from 2010 to present. It also shows that without additional interventions, emissions are projected to drop by about 45 per cent by 2030 relative to 2010 levels, and then increase from 2030 to 2050 as population continues to grow. The reduction between 2010 and 2030 can be attributed to improved landfill gas collection efficiency and recycling of organics. The projected increase in emissions could be avoided if the amount of waste disposed per capita declines faster than population increases. This would require increased participation by residents and businesses in reduce, reuse, repair, and recycling activities.

Figure 1. Projected emissions from Metro Vancouver solid waste disposal through 2050



Sources of Emissions from Solid Waste Disposal

Methane emitted from landfills makes up the majority of emissions from disposal of regional solid waste. This powerful greenhouse gas is produced when organic materials – such as food scraps, yard trimmings, wood and paper are not recycled by residents and businesses and are instead disposed as garbage. When these materials end up in landfills, they decompose over time and produce gas referred to as landfill gas. Methane makes up about one half of landfill gas by volume, and the global warming potential of methane is 28 times higher than that of carbon dioxide according to the Intergovernmental Panel on Climate Change (IPCC)¹. To reduce this impact, gas management systems are used to capture the landfill gas, and convert methane into carbon dioxide by flaring or beneficially using the collected methane.

The Vancouver Landfill receives more than half of the garbage generated by Metro Vancouver residents and businesses every year, and an extensive landfill gas collection system is in place at the Vancouver Landfill that captures most of the methane produced by decomposing organics. In 2024, Vancouver Landfill emissions were estimated at 108,000 tonnes of CO₂e which is 75 per cent less than 2010 and 84 per cent less than 2000 levels. These reductions were made possible by continuous improvements to the Vancouver Landfill gas management system, as well as a ban on the disposal of organics introduced by Metro Vancouver in 2015. As a result of investments made in expanded landfill gas management at the Vancouver Landfill, as much as 85 per cent of the generated methane was collected and flared in 2024. To further reduce climate impacts from Vancouver Landfill gas, the collected gas is beneficially used as renewable energy where possible. In 2024, close to 30 per cent of the collected gas was used to generate renewable natural gas.

Approximately one quarter of the region's garbage is processed by Metro Vancouver's Waste-to-Energy Facility. It is a mass-burn facility that turns waste into electricity – enough to power 16,000 homes each year. The Waste-to-Energy Facility reduces the volume of garbage by over 90 per cent (80 per cent by mass). Disposing of garbage through waste-to-energy results in greenhouse gas emissions. Extracting energy and metals from waste as part of the waste-to-energy process reduces emissions that would otherwise occur in producing these resources.

1 IPCC, 2013: Climate Change 2013: **The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change** [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.



The Journey to Carbon-Neutral, Climate-Resilient Solid Waste Management

Metro Vancouver continues to be a North American leader in waste reduction and recycling, with a recycling rate of 65 per cent. Recycling can reduce the need for disposal and associated disposal emissions. In addition, transforming recycled materials into new products prevents excessive extraction of finite resources and helps reduce emissions from extraction and processing of raw materials.

In Metro Vancouver, each year more than two thirds of the 600,000 tonnes of organic waste generated in the region are recycled. This alone prevents methane emissions of about 160,000 tonnes CO₂e annually. Reducing and recycling food scraps, yard trimmings and other organic materials can bring about further

environmental benefits. For example, the production and use of compost reduces the use of synthetic fertilizers, and biogas generated from anaerobic digestion is used in place of fossil fuels. Over 80 per cent of organic waste from single family homes in the region is captured in green bin programs and recycled, however, this share is lower for multi-family residential and business sectors (35 and 40 per cent, respectively). Additional strategies and actions to increase recycling of organic waste from these sectors will be included in the updated solid waste management plan.



Fresh produce hampers prepared by FoodMesh for a charity

Food Waste and Global Warming

When food is wasted, natural and financial resources are lost, and food security is compromised. Preventing avoidable food waste in the first place is key to preserving finite resources, combating food insecurity, and mitigating the effects of climate change. According to a US Environmental Protection Agency study², avoiding food waste can avoid tens of times more greenhouse gas emissions than composting or anaerobic digestion. The US Environmental Protection Agency also found that donating surplus food to food banks or upcycling it into new human food products are the next best environmentally-preferred pathways to lower food waste.

Metro Vancouver has taken an important step to reduce wasted food by contracting FoodMesh, a Vancouver-based company, to increase food recovery in the region. Through its extended network of over 900 organizations in the region, from all stages of the food supply chain, FoodMesh connects organizations with surplus food to entities that can put that otherwise-wasted food to its highest end use. Between 2021 and 2024, about 11,800 tonnes of edible food destined for the green bin or disposal was diverted to hunger-relief organizations to feed people and to farmers to feed animals, avoiding over 30,000 tonnes of CO₂e emissions from entering the atmosphere, and creating around 70 jobs and 951 volunteer positions.

² [From Field to Bin: The Environmental Impacts of U.S. Food Waste Management Pathways \(Part 2\)](#), United States Environmental Protection Agency, October 2023

More work is needed to further increase recycling rates, and an updated solid waste management plan will include new actions to address this. However, recycling is not the highest priority for achieving a regional carbon neutrality goal. Preventing waste from occurring in the first place, and then reducing and reusing materials that would otherwise become waste are the most effective ways of reducing greenhouse gas emissions from products and packaging. While recycling is better than disposal, opportunities for waste prevention, reduction, and reuse within a circular economy framework are a higher priority and will be a key area of focus in the updated solid waste management plan. A circular economy aims to design waste out of supply chains, extend product life, and ensure easy reparability and recyclability through improved design. Such a transition requires a shift in consumer behaviors, and industrial and commercial systems. To achieve these systemic shifts, actions are required not only in the solid waste sector, but within all sectors covered by *Climate 2050*.





While the *Climate 2050 Solid Waste Primer* focuses on reducing disposal emissions, the reduction of emissions from other stages of the solid waste system including collection, hauling, recycling, and composting, are supported by actions and strategies in the *Climate 2050 Transportation, Industry and Business Roadmaps*. As described below, these roadmaps are interconnected and support each other in implementing the strategies set out to transition Metro Vancouver to a carbon-neutral region with a circular economy.



Role of Solid Waste in Advancing a Circular Economy

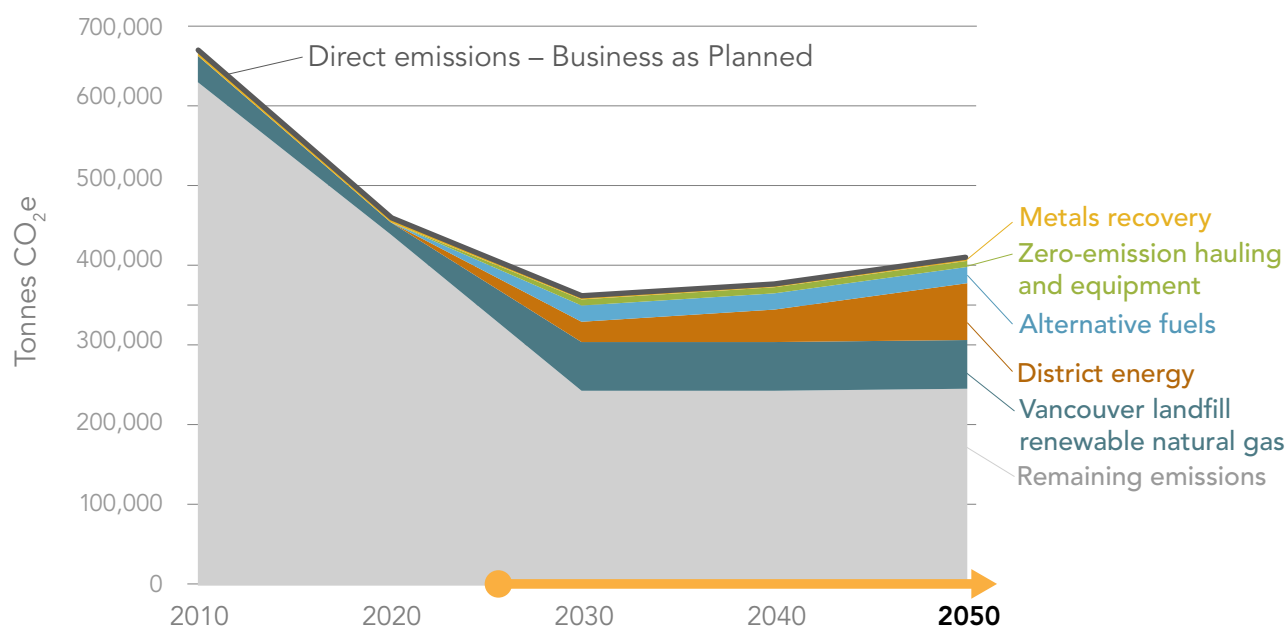
Actions currently taken by Metro Vancouver to keep materials and products in use at their highest potential value, include hosting Reuse Days at Metro Vancouver recycling and waste centres, and supporting member jurisdictions to host repair cafe events, allowing residents to play an active part in a circular economy. In 2024, 34 reuse events were held during which 27,000 kg of material was collected for reuse. Also, 26 co-funded repair cafes were held in the region serving 1,600 residents and successfully repairing over 1,100 items. Metro Vancouver continues to work with member jurisdictions and repair service providers to scale up the number of repair events in the region.

Linkage to *Climate 2050 Roadmaps*

	<h3>Transportation Roadmap</h3> <p>Strategy 3: Reduce Heavy Truck Emissions and Support Early Adoption of Zero-Emission Heavy Trucks</p> <ul style="list-style-type: none">• Reduce emissions from collecting and hauling solid waste by transitioning to low-carbon-emitting, on-road vehicles.
	<h3>Energy Roadmap</h3> <p>Strategy 3: Increase Sustainable Production of Low-Carbon Biofuels</p> <ul style="list-style-type: none">• Treat unavoidable waste as a resource to maximize energy recovery. Anaerobic digestion of organics, landfill gas capture systems, and waste derived fuels programs can generate low-carbon and renewable energy in different forms from renewable natural gas to electricity.
	<h3>Buildings Roadmap</h3> <p>Strategy 3: Shift to Zero-Carbon District Energy</p> <ul style="list-style-type: none">• District energy systems connected to waste-to-energy or fueled by alternative fuels made from unavoidable waste can support the transition to clean and renewable sources of energy such as electricity and waste heat. <p>Strategy 4: Accelerate the Transition to Lower Embodied Emissions in Buildings</p> <ul style="list-style-type: none">• Designing excess concrete or steel out from buildings, using the previous structure's foundation and other waste reduction approaches, such as treating buildings as "material banks," could help reduce the need for new concrete and steel in buildings.
	<h3>Industry and Business Roadmap</h3> <p>Strategy 2: Reduce Non-Road Emissions and Support Early Adoption of Zero-Emission Non-Road Equipment</p> <ul style="list-style-type: none">• Transition to low-carbon fuels to reduce direct emissions from handling and recycling of waste as well as organics processing (transition to low-carbon-emitting, non-road engines and equipment). <p>Strategy 4: Reduce Greenhouse Gas Emissions Through Procurement and Other Business Practices</p> <ul style="list-style-type: none">• Transition to a circular economy to mitigate natural resource depletion and minimize waste. Supporting the transition to circular business models that keep materials in circulation for longer can reduce emissions associated with creating new materials and products. Maximizing material recovery, recycling – through Extended Producer Responsibility programs – and recyclability avoids emissions from material extraction and manufacture of new goods.

Metro Vancouver is currently putting into action projects that reduce solid waste disposal emissions as outlined in the *Climate 2050 Buildings, Energy, Transportation, Industry and Business Roadmaps*. Several projects shown in Figure 2 and described below are being driven by Metro Vancouver and the solid waste industry to reduce regional emissions:

Figure 2. Solid waste emission reduction projects



Vancouver Landfill Renewable Natural Gas

Several measures are in place to decrease emissions and harness renewable energy from landfill gas at the Vancouver Landfill. The City of Vancouver is expanding the current landfill gas collection capacity at the Vancouver Landfill and will develop an upgrading plant to convert collected gas to renewable natural gas for the FortisBC pipeline. The development of a renewable natural gas system is an opportunity to replace fossil fuels with a renewable and low-carbon alternative derived from waste. This development has the potential to reduce annual regional emissions by about 60,000 tonnes CO₂e and supports the *Climate 2050 Energy Roadmap*, which strives for a region that uses energy only derived from clean, renewable sources.

District Energy System at Waste-to-Energy Facility

Metro Vancouver's Waste-to-Energy Facility generates enough electricity for approximately 16,000 homes. To reduce emissions even further, Metro Vancouver is developing a district energy system that will triple the energy efficiency of the Waste-to-Energy Facility by supplying heat and hot water to up to 50,000 homes in Vancouver, Burnaby, and potentially New Westminster. 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. By reducing the need to heat homes with fossil natural gas, the project is anticipated to bring about 9,000 tonnes CO₂e emission savings in the first year, with up to 70,000 tonnes avoided CO₂e emissions by 2050.

Waste-to-Energy Metals Recovery and Bottom Ash Beneficial Use

Bottom ash is produced when garbage is processed at the Waste-to-Energy Facility, and each year more than 5,000 tonnes of metal are recovered from the bottom ash. In 2022, more than 3,000 tonnes of CO₂e emissions were avoided by recovering and keeping these metals in use. To further reduce emissions related to waste-to-energy, Metro Vancouver is advancing pilot tests to beneficially use bottom ash, as an alternate material in the production of cement. In 2023, a 1,000-tonne pilot test was completed at Heidelberg Cement in support of a full scale beneficial use of bottom ash program, and a second similar processing trial is underway with Lafarge-Holcim. At full scale, beneficial use of bottom ash could reduce regional solid waste disposal by approximately five per cent, and would reduce the need for raw materials in the cement production process and the associated greenhouse gas emissions from mining and transporting these materials. The procurement of low-carbon material, such as recovered metals and bottom ash, is identified as a strategic move towards achieving the *Climate 2050 Industry and Business Roadmap* goal of making all industrial facilities carbon-neutral by 2050.

Zero-Emission Hauling and Equipment

Currently, moving and handling waste and recyclable materials at Metro Vancouver solid waste facilities requires the use of fossil fuel-powered trucks and other mobile equipment. As set out in the *Climate 2050 Transportation and Industry and Business Roadmaps*, by 2050, all medium and heavy-duty trucks as well as non-road equipment operating within the region will use zero-emission technologies powered by clean, renewable energy. The goal is to achieve 100 per cent reduction in greenhouse gas emissions from these sectors in Metro Vancouver region by 2050. At Metro Vancouver solid waste facilities, there is an opportunity to decrease hauling and mobile equipment emissions by over 7,000 tonnes of CO₂e per year, when switching from fossil fuels to zero-emission fuels and electricity. To realize this opportunity, starting in 2026, contractors that operate Metro Vancouver's recycling and waste centres will be required to use renewable diesel for all non-road heavy mobile equipment (such as loaders and excavators), and trucks that are used to haul garbage from the recycling and waste centers to the Waste-to-Energy Facility and Vancouver Landfill. The contracts will also include incentivized rates to encourage contractors to transition to zero-emission heavy mobile equipment and trucks.

Alternative Fuels

The Metro Vancouver Alternative Fuels Project will involve processing up to 60,000 tonnes per year (more than five per cent of all regional garbage) of small-load waste received at Metro Vancouver recycling and waste centres to recover recyclables and alternative fuel. This project will reduce overall waste disposal and up to 20,000 tonnes per year of regional greenhouse gas emissions by beneficially using small loads mostly consisting of non-reusable, waste wood in place of fossil fuels. The separated wood waste can be combusted for process heating and decarbonization of industrial operations. While the combustion of wood biomass releases CO₂, this project will decrease the absolute amount of greenhouse gas emissions entering the atmosphere. Using wood displaces burning of fossil fuels, which release carbon that has been trapped underground for millions of years. The goal of *Climate 2050 Energy Roadmap* is to transition from a region that relies on fossil energy to one that uses clean, renewable energy. The Alternative Fuels Project contributes to reduced greenhouse gas emissions in the energy sector, helping Metro Vancouver progress towards its *Climate 2050* goal of carbon neutrality.

Future Actions to Address Remaining Emissions

Strategies and actions within the current solid waste management plan have been effective in reducing per capita waste disposal and associated greenhouse gas emissions below 2010 levels (see Figure 1). Without any new actions, the current waste management system is well-positioned to meet the *Climate 2050* interim target of 45 per cent reduction in solid waste emissions by 2030, relative to 2010 levels. This progress doesn't include the fossil fuel emission reductions that the Metro Vancouver solid waste system brings about in other issue areas – such as industry and business, energy, and transportation.

In addition to existing actions, there is a need for new actions to further reduce waste and reach our *Climate 2050* goal for a carbon-neutral region, and these actions will be identified in an updated solid waste management plan.

Glossary

Air contaminants are any substances emitted into the air that do or could a) harm public health (including material physical discomfort) and property, b) damage the environment, including the climate, c) impede normal business operations, or d) impair visual air quality.

Carbon-neutral region is a region that has achieved the deepest greenhouse gas emissions reductions possible across all economic sectors and removes or captures sufficient carbon dioxide to balance any remaining regional greenhouse gas emissions.

Circular economy is an economy where the value of products is retained after their initial use through reuse, repair and remanufacturing. Keeping products functioning at their highest potential reduces emissions associated with end-of-life management and production of goods and products, including the raw materials and the transport of the goods or products to where they are sold. Transitioning to a circular economy will gradually decouple economic activity from the consumption of finite resources by designing waste out of the system and helping to regenerate natural systems.

Climate change adaptation means anticipating, planning for and responding to the adverse effects of climate change and taking appropriate action to prevent or minimize the damage it can cause, or taking advantage of opportunities that may arise. It has been shown that well-planned, early adaptation action saves money and lives later.

Climate change mitigation is limiting or preventing greenhouse gas emissions and removing these gases from the atmosphere to avoid catastrophic climate change.

Greenhouse gases are air contaminants that trap heat and are the cause of climate change. Greenhouse gases include carbon dioxide and nitrous oxide as well as short-lived climate forcers such as methane, halocarbons, black carbon and ozone. Limiting or preventing greenhouse gas emissions and removing these gases from the atmosphere is critical to avoiding catastrophic climate change (sometimes referred to as climate change mitigation).

Waste-to-energy is the process of converting waste into usable energy such as heat, steam, and electricity. Metro Vancouver's Waste-to-Energy Facility turns municipal waste into electricity through combustion of waste.

