

Metro Vancouver Climate Actions 2020

Climate Action
Public Report
June 30, 2021

General Information

Regional District:	Metro Vancouver (Metro Vancouver Regional District)
Population:	2,749,059 (2020)
Regional Growth Strategy:	“Metro Vancouver 2040 – Shaping our Future” (adopted July 2011)

Report Preparation and Contact Information

As a signatory to the BC Climate Action Charter, and in accordance with requirements of the Climate Action Revenue Incentive Program (CARIP), Metro Vancouver has completed annual climate action reports since 2011. Although a public report is not a requirement for Provincial reporting in 2020, Metro Vancouver has voluntarily published its annual corporate greenhouse gas emissions and its corporate and regional climate actions for 2020. This public report is available to stakeholders and residents to promote awareness of the range of climate actions Metro Vancouver is undertaking.

Recognizing the magnitude of the climate challenge, the urgency for action, and the evolving science and data, Metro Vancouver has developed *Climate 2050*, Metro Vancouver’s regional climate action strategy. *Climate 2050* applies a “climate lens” to Metro Vancouver’s policies and initiatives both corporately and throughout the region. The Metro Vancouver Board has adopted the *Climate 2050 Strategic Framework*, the first component of *Climate 2050*. The *Climate 2050 Strategic Framework* sets out the vision and guiding principles for the strategy, and identifies ten issue areas that will each require its own implementation approach. In 2019, the Metro Vancouver Board adopted new greenhouse gas reduction targets as part of a revised *Strategic Framework*, which committed Metro Vancouver to becoming a carbon neutral region by 2050 and an interim target of 45% reduction from 2010 levels by 2030.

Over 2019-2022, Metro Vancouver is developing a series of *Climate 2050 Roadmaps* which will describe the goals, strategies, and actions within each issue area that are necessary to transition the region to a carbon neutral, resilient future while improving the health, well-being, and prosperity of Metro Vancouver residents. Since 2019, eight discussion papers have been developed for *Climate 2050* Issue Areas (i.e., Buildings, Industry, Transportation, Nature & Ecosystems, Waste, Agriculture, Energy, and Water & Wastewater Infrastructure). To date, there are currently two draft *Climate 2050 Roadmaps* published and undergoing engagement for the key issue areas of Transportation and Buildings. The first iterations of both of these *Roadmaps* are intended to be published by the end of 2021. With progress on the *Roadmaps* underway, Metro Vancouver continues to undertake a range of climate actions. In addition, *Climate 2050* is also intended to include an annual report on progress, and will also serve as a key reporting mechanism to track progress towards the *Climate 2050* vision and goals.

In parallel to the implementation of *Climate 2050*, Metro Vancouver is developing its fourth regional air quality and greenhouse gas management plan, the *Clean Air Plan*. The Plan will set Metro Vancouver’s direction for air quality and GHG management for the next ten years, and support achieving the interim regional greenhouse gas reduction target for 2030. The draft *Clean Air Plan* was published online in April 2021 and is undergoing engagement, with the final *Clean Air Plan* to be presented to the Metro Vancouver Board for endorsement later in 2021.

This report was prepared by the staff of the Air Quality and Climate Change Division of Metro Vancouver, with input from across the organization. Questions on the report should be directed to AQInfo@metrovancover.org or the Metro Vancouver Information Centre at 604-432-6200.

Reported by:

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2020 Corporate Climate Action

The section provides an overview of Metro Vancouver's corporate climate actions, following the CARIP qualitative survey format. Actions are summarized in broad categories for each of the areas listed below. Three key actions demonstrating Metro Vancouver's corporate climate action are highlighted in more detail in this section.

In 2020, Metro Vancouver undertook actions in the following areas:

- Building and Lighting Actions
- Energy Generation Actions
- Greenspace Actions
- Planning Actions
- Solid Waste Actions
- Transportation Actions
- Water and Wastewater Actions
- Other Climate Actions: Battery operated parks equipment for operations and maintenance.

The following sections outline the actions taken by Metro Vancouver in more detail.

Building and Lighting

In 2020, Metro Vancouver undertook actions in the following categories:

- New or upgraded energy-efficient lighting systems
- New or upgraded energy-efficient heating systems
- New or upgraded building envelope initiatives
- Upgrades to amenities in recreation facilities
- Studies related to building and/or lighting energy efficiency
- Other: Net Zero Energy Study for Housing Development

Energy Generation

In 2020, Metro Vancouver undertook actions in the following categories:

- Solar power projects
- Heat recovery or heat reclamation projects
- Biomass or bio-gas projects
- Geo-exchange or geothermal projects
- Studies related to energy generation

Greenspace

In 2020, Metro Vancouver undertook actions in the following categories:

- Tree planting
- Greenspace acquisition

- New or upgraded amenities in parks
- Invasive species management
- Plans or strategies related to greenspace

Planning

In 2020, Metro Vancouver undertook actions in the following categories:

- Energy/Emissions Management Plan (New or Updated)
- Asset Management Plan (New or Updated)
- Corporate Climate Action Plan (New or Updated)
- Strategic Plan (New or Updated)
- Other: Planning underway for renewable natural gas fueling infrastructure for fleet, and procurement of EV charging stations.

Solid Waste

In 2020, Metro Vancouver undertook actions in the following categories:

- Introduction, expansion or improvement of recycling initiatives at corporate facilities
- Introduction, expansion or improvement of composting initiatives at corporate facilities
- Communication or education for staff related to corporate solid waste initiatives
- Studies or research related to corporate solid waste initiatives
- Plans or strategies related to corporate solid waste initiatives
- Other: Calculation of GHG reduction credits associated with organics diversion activities by Metro Vancouver's member municipalities.

Transportation

In 2020, Metro Vancouver undertook actions in the following categories:

- Fleet replacement or upgrades
- New or improved electric vehicle initiatives
- New or improved active transportation infrastructure for staff
- Communication or outreach for staff related to corporate transportation initiatives
- New or improved public transportation initiatives for staff

Water and Wastewater

In 2019, Metro Vancouver undertook actions in the following categories:

- New or improved water or wastewater infrastructure
- Studies or research related to water conservation
- Plans or strategies related to water or wastewater
- Water reduction initiative(s)
- Plans or strategies related to water or wastewater

Corporate Climate Action Highlights

This section highlights three of Metro Vancouver's key actions that demonstrate leadership and innovative approaches to reduce corporate greenhouse gas emissions.

Welcher Avenue Redevelopment Net Zero Study

In 2020, Metro Vancouver Housing Corporation (MVHC) submitted a development application to the City of Port Coquitlam for a Welcher Avenue redevelopment project. The proposed five-story building will include 63 homes, with a sustainable and energy-efficient design. The rental housing project has been designed to meet the BC Energy Step Code 4 ('Net Zero ready'), with the development designed to consider both affordability and climate action. To date, a net zero feasibility has been completed for the project and the building will be designed to accept an on-site renewable energy generation system (photovoltaic) that will further reduce net energy consumption.

This design standard will reduce greenhouse gas emissions and energy consumption to help meet MVHC's 10-Year Plan targets as well as Metro Vancouver's regional climate targets in Climate 2050.

Park Land Acquisitions

In 2020, Metro Vancouver completed the purchase of a parcel totaling 2.3 hectares at the Kanaka Creek Regional Park in the City of Maple Ridge. The new addition to the park is located on the north arm of Kanaka Creek and near the Bell Irving Fish Hatchery. The property includes largely treed creek ravine.

An additional land acquisition was completed in 2020 at the Crippen Regional Park in Bowen Island, which expanded the park by 1.21 hectares (3 acres), following Metro Vancouver's purchase of a prominent waterfront landmark near Snug Cove. The landmark, known as Dorman Point, consists of a rocky bluff landscape that is rare in the regional parks system. It features a small pebble beach and outcrops covered with mosses, ferns and wildflowers, interspersed with wind-shaped Douglas fir, Shore pine and Arbutus trees.

Through the conservation efforts of Park Land Acquisitions, the protected greenspaces help to store carbon and advance climate action goals at Metro Vancouver.

Carbon Neutral Protective Coating for Sewers

In collaboration with the University of British Columbia (UBC), Ocean Pipe and Metro Testing & Engineering, Metro Vancouver is field testing and validating the performance of a new protective coating material developed at UBC and referred to as Multiphase Composite Coating (MCC) for use in concrete sewer pipes. MCC is an example of circular economy and innovation, since the product is a carbon neutral coating that is formulated using industrial waste.

The MCC formula has the potential to protect both new and existing concrete sewer pipes from corrosion and in turn result in significant reductions in repair and replacement costs for Metro Vancouver sewer networks. The product is currently being piloted in a sewer chamber located in Delta, and is a great example of innovation to push forward our region's climate action goals.

2020 Community-Wide Climate Actions

This section provides an overview of Metro Vancouver’s community-wide climate actions, following the qualitative CARIP survey format. Actions are summarized in broad categories for each of the areas listed below. Three key actions demonstrating Metro Vancouver’s community climate actions are highlighted in more detail in this section.

In 2020, Metro Vancouver undertook actions in the following areas:

- Building and Lighting Actions
- Energy Generation Actions
- Greenspace Actions
- Planning Actions
- Solid Waste Actions
- Transportation Actions
- Water and Wastewater Actions
- Other Climate Actions: [Caring for the Air](#) report; Undertook modeling work for a Carbon Neutral Scenario, and development of the *Clean Air Plan* (air quality and greenhouse gas management Plan)

Building and Lighting

In 2020, Metro Vancouver undertook actions in the following categories:

- New or upgraded energy-efficient lighting systems
- New or upgraded energy-efficient heating systems
- BC Energy Step Code related projects
- Incentives/rebate programs related to energy-efficient building or lighting
- Outreach, education or communication related to energy-efficient building or lighting
- Other: Development of the draft *Climate 2050* Buildings Roadmap.

Energy Generation

In 2020, Metro Vancouver undertook actions in the following categories:

- Solar Power Projects
- Heat recovery or heat reclamation projects
- Landfill gas capture/utilization projects
- Micro-hydro projects
- Studies or research related to energy generation

Greenspace

In 2020, Metro Vancouver undertook actions in the following categories:

- Tree planting
- Greenspace restoration or maintenance
- Greenspace acquisition

- Invasive species management
- Plans or strategies related to greenspace
- Other: Research and monitoring of species and ecosystems in Metro Vancouver Parks such trials of habitat protection methods, water and soil testing, and Greenhouse gas flux measurements in peatlands undergoing restoration.

Planning

In 2020, Metro Vancouver undertook actions in the following categories:

- Official Community Plan (New or Updated)
- Climate Action Plan (New or Updated)
- Regional Growth Strategy (New or Updated)
- New or updated bylaw(s) or zoning addressing climate issues

Solid Waste

In 2020, Metro Vancouver undertook actions in the following categories:

- Introduction, expansion or improvement of recycling initiatives
- Introduction, expansion or improvement of composting initiatives
- Community clean-up initiatives
- General waste reduction initiative (including landfill diversion strategies)
- Outreach, education or communication related to solid waste
- Other: Solid Waste reports and studies such as calculation of GHG reduction credits associated with organics diversion activities by Metro Vancouver's member municipalities; and Alternative Waste Management Practices for Agricultural Vegetative Debris study.

Transportation

In 2020, Metro Vancouver undertook actions in the following categories:

- New or improved active transportation infrastructure
- New or improved public transportation initiatives (i.e. weekend shuttle bus for Park users)
- New or improved electric vehicle initiatives
- Outreach, education or communication related to transportation
- Plans or strategies related to transportation
- Other: Completion of an Access Inventory as a part of Alternative Transportation Study to identify the availability of cycling and transit infrastructure for visiting Regional Parks without a personal car.

Water and Wastewater

In 2020, Metro Vancouver undertook actions in the following categories:

- Water restrictions
- Incentives/rebate programs related to water or wastewater
- Outreach, education or communication related to water or wastewater
- Studies or research related to water or wastewater

- ☑ Plans or strategies related to water or wastewater

Community-Wide Climate Action Highlights

This section highlights three of Metro Vancouver's key actions that demonstrate leadership and innovative approaches to reduce community-wide greenhouse gas emissions.

Alternative Fuel and Recyclables Recovery Project

In 2020, Metro Vancouver initiated a feasibility study and business case for an Alternative Fuel and Recyclables Recovery Project. Metro Vancouver is looking to reduce regional greenhouse gas emissions by recovering material currently destined for disposal to create an alternative fuel product. The target material is small load waste, which is typically self-hauled by residents and primarily contains wood and other building materials. Small load waste is very similar in composition to construction and demolition waste, which is currently processed at licensed private facilities to extract recyclables and create an alternative fuel product from the remainder.

Following the opening of two new recycling and waste centres in early 2022, Metro Vancouver plans to redirect approximately 60,000 tonnes per year of this material from our facilities to existing private sector construction and demolition facilities for processing. Assuming 25,000 tonnes of alternative fuel could be recovered from the small load waste and used in place of fossil fuels such as coal and natural gas, this project could result in up to 20,000 tonnes CO₂ equivalent per year reduction in regional greenhouse gas emissions.

Regional Greenways 2050 Plan

The [Regional Greenways 2050 plan](#) describes the region's shared vision for a network of recreational multi-use paths for cycling and walking that connects residents to large parks, protected natural areas and communities to support regional livability. The plan was developed in consultation with local jurisdictions, agencies, First Nations and key stakeholders, and focuses on regional-scale recreational greenways. This network is complementary to TransLink's Major Bikeway Network. Together the two networks contribute to active transportation infrastructure in the region.

The plan identifies current challenges and benefits, provides an updated vision for a gap-free system of regional greenways and an implementation framework that focuses on actions that can be undertaken in the next five years that will enable measurable progress toward this long term vision.

Implementation of Regional Greenways 2050 supports the goals of the region's *Clean Air Plan* and *Climate 2050* strategy, by providing access to safe and comfortable routes for active transportation to promote a reduction in the number of trips taken by driving and the associated greenhouse gas emissions.

Regional Growth Strategy: Applying a Climate Lens for the Metro 2050 Policy Review

Metro Vancouver is updating Metro Vancouver 2040: Shaping our Future (*Metro 2040*), the regional growth strategy. Though many of the goals, actions, and tools that are working well in *Metro 2040* will remain unchanged, updates will extend the strategy to the year 2050 and allow the region to better respond to critical and emerging issues such as climate change, social equity, resilience, and housing affordability. Updates will also align the strategy with *Transport 2050* (TransLink's new regional

transportation strategy) and implement policy improvements in a number of areas. The updated strategy, anticipated to be completed in 2022, will be called *Metro 2050*.

Content for *Metro 2050* is informed by a series of Policy Reviews scoped to address specific policy themes, including Climate Change and Natural Hazards. Each Policy Review involved looking at the current policies in *Metro 2040* related to a policy theme, identifying gaps and opportunities, considering best practices, engaging with stakeholders and others, and developing policy recommendations to be integrated into *Metro 2050*.

The purpose of the Climate Change and Natural Hazards Policy Review was to identify ways to strengthen the regional growth strategy's climate change and natural hazard policies. The recommendations that emerged from the Policy Review focused on:

- applying a climate lens to all goal areas of *Metro 2050*, with an emphasis on integrating the content with *Climate 2050* – the regional climate action strategy;
- ensuring member jurisdictions specify how they will meet the region's GHG emissions reduction targets;
- identifying and mapping regional-scale natural hazards, risks and vulnerabilities; and
- encouraging regional growth patterns that incorporate emergency management, utility planning, and climate change adaptation considerations.

Climate Preparedness and Adaptation Action

This section describes the climate impacts Metro Vancouver is experiencing, and how they are being addressed.

Metro Vancouver has identified the following potential climate impacts:

- Increased temperatures increasing wildfire activity
- Extreme weather events contributing to urban and overland flooding
- Changes to temperature and precipitation causing seasonal drought
- Warmer winter temperatures reducing snowpack
- Sea level rise and storms causing coastal flooding and/or erosion
- Other: Invasive species

In 2020, Metro Vancouver undertook actions in the following categories in an effort to consider or address the impacts of climate change:

- Emergency response planning
- Asset management
- Infrastructure upgrades
- Public education and awareness
- Strategic and financial planning
- Risk and vulnerability assessments

- Risk reduction strategies
- Official Community Plan policy changes
- Other: Metro 2050 Regional Growth Strategy: Climate Change and Natural Hazards Review

In 2020, Metro Vancouver partnered with the following organizations to prepare for and adapt to climate change:

- Adaptation to Climate Change Team (SFU)
- Columbia Basin Trust
- Community Emergency Preparedness Fund (UBCM)
- Federation of Canadian Municipalities
- Fraser Basin Council
- Pacific Institute for Climate Solutions (UVIC)
- Other: Integrated Partnership for Regional Emergency Management, Translink, West Coast Environmental Law, BC Housing & Pembina Institute

Adaptation Action Highlights

This section highlights three of Metro Vancouver’s key actions that demonstrate leadership and innovative approaches to adapting to a changing climate.

Planning for our Future Water Supply in Metro Vancouver

The long-term water supply planning study, [Water Supply Outlook 2120](#), presents key findings and actions in the Metro Vancouver region to ensure the continued delivery of clean, safe drinking water to the region over the next 100 years. The study assesses the water system’s resiliency to various challenges, such as population growth and impacts of climate change, and confirms that the region is on the right track by planning for the Coquitlam Lake Water Supply Project to be in place by the late 2030s.

We Love Water Campaign

The We Love Water campaign continues to encourage residents to ‘use a little less, care a little more’ through a range of advertising and updated creative materials that explored connections between the regional water system and residents’ own water use. All promotions continued to lead to [welovewater.ca](#). Metro Vancouver shares all campaign materials and coordinates outreach with members. This outreach campaign is an initiative that contributes to reducing the overall demand for drinking water in the region, and is an initiative that address the climate impacts related to the region’s water supply.

Liquid Waste Services- Environmental Risk Analysis and Prioritization

In 2020 Metro Vancouver conducted an Environmental Risk Analysis and Prioritization of environmental risks associated with the operation of the liquid waste utility, including those with climate impacts. A review of the Liquid Waste Services activities identified fifty environmental risks which were evaluated systematically for environmental significance considering environmental impact, regulatory compliance, and public concern. The environmental impact was based on a calculated score of potency, time period, geographic scale, and frequency. Potential impacts from environmental risks range from contamination of water, soil and air, to far-reaching cumulative effects such as climate change, loss of biodiversity and

bio-accumulation of toxins in the environment with potential impacts to public health and terrestrial and aquatic life.

The analysis and prioritization methodology determined that rigorous management systems are in place for the majority of wastewater related risks, however a number of risk areas were identified for strengthened risk mitigation including those with climate impacts such as wastewater process GHGs, vehicle emissions, and refrigerant management. These were among the risks prioritized for ongoing consideration, setting objectives, defining strategy to inform capital planning and/or developing enhanced operational environmental programs.

2020 Carbon Neutral Reporting

2020 Carbon Emissions

Did you measure your local government's corporate GHG emissions in 2020?	Yes
Corporate GHG emissions (in tonnes of carbon dioxide equivalent) from services delivered <u>directly</u> by your local government:	5,366
Corporate GHG emissions (in tonnes of carbon dioxide equivalent) from <u>contracted</u> services:	10,071
TOTAL A: CORPORATE GHG EMISSIONS FOR 2020	15,437 tCO₂e

2020 Carbon Reductions

To be carbon neutral, a local government must balance their TOTAL corporate GHG emissions generated in 2020 by one or a combination of the following actions:

- Undertake Green Communities Committee-supported Option 1 Project(s)
- Undertake Green Communities Committee-supported Option 2 Project(s)
- Purchase carbon offsets from a credible offset provider

For more information about options to balance or offset corporate GHG emissions please refer to [Becoming Carbon Neutral: A Guidebook for Local Governments in British Columbia](#).

If applicable, please report the 2020 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from Option 1 GHG Reduction Projects:

OPTION 1 PROJECTS	REDUCTIONS
1E Avoided Forest Conversion	
Thompson Mountain	404
Minnekhada Quarry Road (Minnekhada Regional Park)	72
Grant Hill (Kanaka Creek Regional Park)	203

Lane Property (Kanaka Creek Regional Park)	64
TOTAL B: REDUCTIONS FROM OPTION 1 PROJECTS FOR 2020	743 tCO₂e

If applicable, please report the names and 2020 GHG emissions reductions (in tonnes of carbon dioxide equivalent (tCO₂e)) being claimed from Option 2 GHG Reduction Projects:

OPTION 2 PROJECT NAME	REDUCTIONS
Ecosystem Restoration of the Burns Bog Ecological Conservancy Area	27,341
TOTAL C: REDUCTIONS FROM OPTION 2 PROJECTS FOR 2020	27,341 tCO₂e

2020 Carbon Offsets

If applicable, please report the number of offsets purchased (in tonnes of carbon dioxide equivalent (tCO₂e)) from an offset provider for the 2019 reporting year:

OFFSET PROVIDER	REDUCTIONS
Not applicable	N/A
TOTAL D: OFFSETS PURCHASED FOR 2019	0 tCO₂e

TOTAL REDUCTION AND OFFSETS FOR 2019 (Total B+C+D) = 28,084 tCO₂e

Corporate GHG Emissions Balance for 2020

Your local government's Corporate GHG Emissions Balance is the difference between total corporate GHG emissions (direct + contracted emissions) and the GHG emissions reduced through GCC Option 1 and Option 2 projects and/or the purchase of offsets.

CORPORATE GHG EMISSIONS BALANCE FOR 2020 = (A – (B+C+D)) = -12,647 tCO₂e

If your local government was carbon neutral in 2020, please record any emissions reductions you will be carrying over for future years and the source of the reductions, including the year they were earned (e.g. organics diversion, 2020 100 tCO₂e):

	Source of Carryover Emission Reduction	Year Earned	GHG Emissions Reductions
1.	Ecosystem Restoration of the Burns Bog Ecological Conservancy Area	2012-2016	12,647
TOTAL E - BALANCE OF REDUCTIONS ELIGIBLE FOR CARRY OVER TO NEXT YEAR			12,647 tCO₂e

APPENDIX 1: Contracted Emissions Report for Metro Vancouver

Reporting Metro Vancouver's Contracted Emissions

Metro Vancouver's corporate GHG emissions from contracted services are primarily related to hauling of solid waste, biosolids, and residual material from corporate facilities to final disposal or use sites, such as landfills, beneficial use sites, or biofuel facilities.

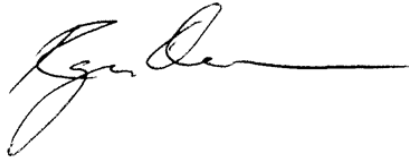
Metro Vancouver reports its contracted emissions in accordance with reporting guidance provided by the joint Provincial-UBCM Green Communities Committee's Workbooks and Guidebook. The *"Guidance on Including Contracted Emissions in Local Government Corporate Inventories"* describes what contracts should be included in corporate inventories, what emissions data needs to be collected, and the steps that a local government can undertake to achieve this. It directs local governments to report emissions from new contracts and upon renewal of existing contracts.

Metro Vancouver's waste management approach is to reduce the generation of waste, and to pursue opportunities for resource recovery and the beneficial reuse of waste. Programs supported or implemented by Metro Vancouver and its partners to reduce, reuse, and recycle waste (including organics diversion from households and businesses) marks a shift from thinking about the waste as an end product toward seeing waste as a potential resource. Metro Vancouver will continue to pursue approaches and technologies to reduce GHG emissions and promote opportunities for the replacement of fossil fuels.

Contracted Emissions Reporting Form for Metro Vancouver

Reporting Year: 2020

Local Government Information			
Name of Local Government	Metro Vancouver		
Designate Appointed to Sign Off on Estimation Template	Name: Roger Quan Title: Director, Air Quality and Climate Change Phone: 604-436-6770 Email: roger.quan@metrovancover.org		
Estimation Methodology Information			
Rationale for Applying an Estimation Methodology	For contracts in the 2020 reporting year, fuel use was reported directly from contractors ("Estimation Option 1"). Contract name = activity.		
Contracted Emissions			
Drinking, Storm and Wastewater	CONTRACT NAME	ESTIMATION OPTION USED	ESTIMATED ANNUAL GHGS (t CO2e)
	Biosolids/Residuals Hauling	1	3,386
	<i>SUBTOTAL ANNUAL CONTRACTED EMISSIONS FOR TRADITIONAL</i>		3,386
Solid Waste Collection, Transportation and Diversion	CONTRACT NAME	ESTIMATION OPTION USED	ESTIMATED ANNUAL GHGS (t CO2e)
	Solid Waste Hauling	1	4,593
	<i>SUBTOTAL ANNUAL CONTRACTED EMISSIONS FOR TRADITIONAL SERVICE</i>		4,593
Misc	CONTRACT NAME	ESTIMATION OPTION USED	ESTIMATED ANNUAL GHGS (t CO2e)
	Other Off-Road Equipment	1	1,370.5
	Other Mobile Sources	1	722
	<i>SUBTOTAL ANNUAL CONTRACTED EMISSIONS FOR TRADITIONAL</i>		2092.5
TOTAL ESTIMATED CONTRACTED EMISSIONS FOR 2020 (tonnes CO2e)			10,071

Estimated Contracted Emissions: Authorization and Sign Off
<p>The information provided in this Contracted Emissions Reporting Form for the 2020 reporting year is to the best of my knowledge correct and complete.</p> <p><i>Designate Signature:</i></p>  <p>Roger Quan, Director, Air Quality and Climate Change Date: June 30, 2021</p>

