NATIONAL CLIMATE LEAGUE STANDINGS

2022

The Climate Reality Project
CANADA

2022

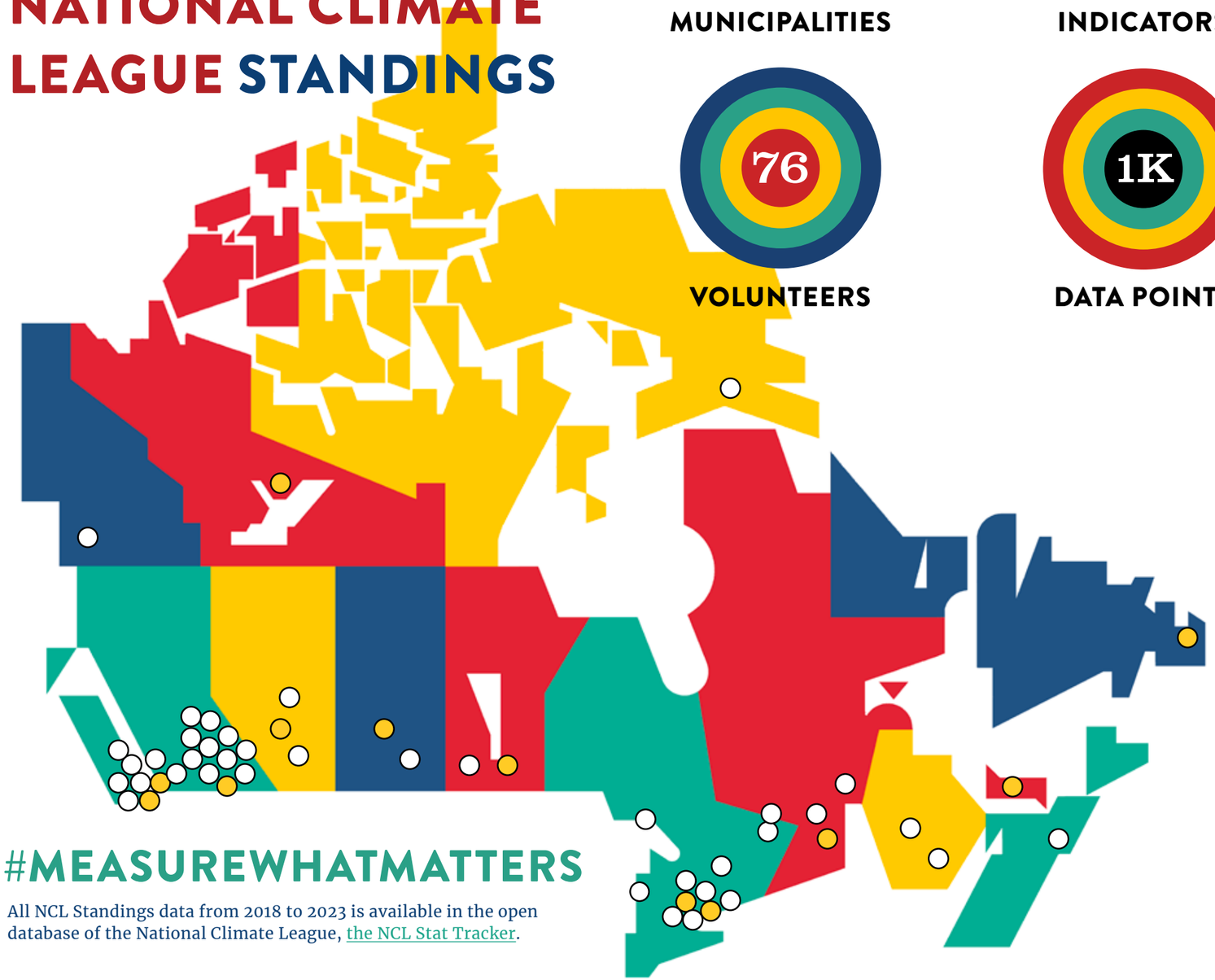
NATIONAL CLIMATE LEAGUE STANDINGS

57 MUNICIPALITIES

26 INDICATORS

76 VOLUNTEERS

1K DATA POINTS



#MEASUREWHATMATTERS

All NCL Standings data from 2018 to 2023 is available in the open database of the National Climate League, the NCL Stat Tracker.

PRIMARY INDICATOR	WINNER
AFFORDABLE HOUSING	SHERBROOKE
SUSTAINABLE BUILDINGS	VICTORIA
AIR QUALITY	YELLOWKNIFE, ST. JOHN'S & CHARLOTTETOWN
URBAN GREEN SPACE	FREDERICTON
ENERGY MIX	WINNIPEG
URBAN AGRICULTURE	CHARLOTTETOWN
LANDFILL WASTE	GUELPH CALGARY
WATER CONSUMPTION	SASKATOON
WALKABILITY	VANCOUVER
BIKEABILITY	VICTORIA
PUBLIC TRANSIT	VANCOUVER
EV CHARGING STATIONS	OSOYOOS
SHARED VEHICLES	VANCOUVER
TRANSITION EMPLOYEES	CHARLOTTETOWN
DEMOCRATIC REPRESENTATION	VANCOUVER
EMISSIONS TARGETS	TORONTO
CLIMATE MITIGATION	MILESTONE 5 CITIES

CONTENTS

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Compiling and publishing the National Climate League Standings is a huge endeavour that could not be accomplished if it weren't for the collaboration of people in communities all across the country.

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A SPECIAL THANK YOU TO OUR VOLUNTEERS!

Your engagement and contributions are a testament to how citizen participation can be met with municipal collaboration to decarbonize our cities and improve data transparency!

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As well as a special thank you to:
EY Connect Day volunteers from EY Canada
Volunteers from UniC - International
Student Network on Climate

THE NCL IS PILOTED BY

The Climate Reality Project CANADA

INDIGENOUS TERRITORIES

As a non-Indigenous organization working on climate education in what is now known as Canada, we honour and recognize the diverse Indigenous peoples who are the first guardians of the air, land, water and spirit. We acknowledge their unique sense of place since they have been guardians since time immemorial and carry this knowledge to inform the next seven generations.
We respect and value their ways of being, knowing and relating. We recognize our collective responsibility to dismantle the systems of oppression that created the climate crisis and start by listening to the wisdom of the First Nations, Métis and Inuit.
We are committed to amplifying Indigenous voices, and supporting Indigenous-led solutions for climate justice.

NCL municipalities are located on the unceded and traditional territories of the

WEST COAST

Cayuse, Umatilla, and Walla Walla
S'ólh Téméxw (Stó:lō)
Hul'qumi'num Treaty Group
səl̓ilwətaʔɬ təməxʷ (Tsleil-Waututh)
šxʷməθkʷəy̓əmaʔɬ təməxʷ (Musqueam)
Skwxwú7mesh-ulh Temíx̱w (Squamish)
Stz'uminus
Á,LEṈENEȻ ŁTE (W̱SÁNEĆ)
Lekwungen/Songhees
Te'mexw Treaty Association
Sc'ianew
MÁLEXEŁ (Malahat)
Semiahmoo
Kwantlen
sc̓əwaθenaʔɬ təməxʷ (Tsawwassen)
sq̓əc̓iy̓aʔɬ təməxʷ (Katzie)
Nłeʔkepmx Tmíxʷ (Nlaka'pamux)
Syilx (Okanagan)
Confederated Tribes of the Colville Reservation
Secwepemcúl'ecw (Secwépemc)
Nłeʔkepmx Tmíxʷ (Nlaka'pamux)
Dakeł Keyoh (ᑕᗸᒡ ᗸᘏᕁ)
Yekooche
Takla
Dënéndeh
snʕickstx tmxʷúlaʔxʷ (Sinixt)
Îyãħé Nakón mąkóce (Stoney)
sx̌ʷyʔiɬp (Colville)
Ktunaxa ʔamakʔis

PRAIRIES

ᓀᐦᐃᔭᐤ ᐊᐢᑭᕀ Nêhiyaw-Askiy (Plains Cree)
Îyãħé Nakón mąkóce (Stoney)
Niitsítpiis-stahkoii ᖹᐟᒧᐧᒣᑯ ᓴᐦᖾᐟ
(Blackfoot / Niitsítapi ᖹᐟᒧᐧᖿᑯ)
Tsuut'ina
Michif Piyii (Métis)
Cree
Ktunaxa ʔamakʔis
Niitsítpiis-stahkoii ᖹᐟᒧᐧᒣᑯ ᓴᐦᖾᐟ
(Blackfoot / Niitsítapi ᖹᐟᒧᐧᖿᑯ)
Îyãħé Nakón mąkóce (Stoney)
Očhéthi Šakówiŋ
Anishinabewaki ᐊᓂᔑᓈᐯᐧᐊᑭ
Anishininiimowin (Oji-Cree)

CENTRAL

Anishinabewaki ᐊᓂᔑᓈᐯᐧᐊᑭ
Attiwonderonk (Neutral)
Mississauga
Ho-de-no-sau-nee-ga (Haudenosaunee)
Mississaugas of the Credit First Nation
Wendake-Nionwentsïo
Kanien'kehá ka (Mohawk)
Omàmìwininìwag (Algonquin)
Wabanaki (Dawnland Confederacy)
N'dakina (Abenaki / Abénaquis)
Nitassinan (Innu)

EAST COAST

Beothuk
Mi'kma'ki
Wabanaki (Dawnland Confederacy)
Wəlastəkwiyik (Maliseet)

NORTH

Inuit Nunangat ᐃᓄᐃᑦ ᓄᓇᖓᑦ
Kwanlin Dün
Dënéndeh
Tłı̨chǫ Ndè
Ta'an Kwäch'än
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Source: https://native-land.ca

FOREWORD

The Climate Reality Project Canada is proud to present the 2022 Standings of the National Climate League (NCL), our fifth edition! Developed by community members, for community members, the Standings presents a snapshot of where municipalities across Canada are at when it comes to climate and sustainability, as well as offering some stories of what works.

2022 marked eighteen consecutive years of warmer than normal temperatures, with the first ten months of 2022 averaging almost a degree warmer than usual. Regions across the country also experienced more severe and unprecedented weather events—from spring flooding in Manitoba that left farmers' fields underwater, to a "derecho" wind storm that hit southern Ontario and Quebec in May damaging thousands of trees, not to mention the devastation visited on the East Coast by Hurricane Fiona in the fall.[1] The cost of these events is multi-faceted: lives, financial and economic loss, and the social and emotional impacts of disrupted homes, livelihoods, and communities.

Canadians also continue to struggle under the rising cost of living, which is connected to our continued reliance on fossil fuels. This year the cost of oil and natural gas skyrocketed, in part due to the crisis in Ukraine and its impact on global markets. Besides causing pain at the pumps and on our monthly heating bills, this also drove up the prices of other essentials like food, leading to widespread inflation that is still not under control. Given the power these global influences have over our lives, it can sometimes seem like local communities are too small to make a difference. And yet it is also at the municipal level that many of the most tangible decisions are made. This year, for example, Vancouver and Victoria issued natural gas bans for new buildings, a move which will protect the health of future residents; the city of Winnipeg moved forward on its transit master plan including securing funding for 100 new electric buses; and cities like Charlottetown continued their financing programs for home retrofits and renewable energy, with cities like Calgary and Canmore soon to have similar programs. The expansion of charging infrastructure across the country has made a difference, with electric vehicle sales growing by a third in the first half of the year, and more Canadians than ever before saying they are interested in going electric.

At the national level, the federal government released its 2030 Emissions Reduction Plan in the spring, and the first National Adaptation Strategy in the fall. These will result in municipalities having more funding and support as they translate these high-level plans into meaningful changes on the ground.

This kind of progress is always thanks to the efforts of activists and organizers across the country working together to show governments what is possible and what we want from them. This year, we kept organizing: making climate a priority at municipal elections, scrutinizing budgets for meaningful climate investments, and fighting for better transit, better bike infrastructure, for affordable housing, to protect green spaces, and everything else we need to make our communities resilient, healthy, and prosperous.

Of course, we also know these changes are uneven—not every community is moving forward at the same pace. We need to understand who is pulling ahead and who is falling behind, and how different policy decisions might contribute to those differences.

That is what the National Climate League Standings is for. We hope you find the 2022 Standings informative and inspiring, as you celebrate what your community is doing well and identify where it could do better. And we hope you can use it to advocate for policies that are informed by facts, based on justice and equity, and help make your community better for all!

WHAT IS THE NATIONAL CLIMATE LEAGUE?

The National Climate League (NCL) is a yearly project developed by The Climate Reality Project Canada, launched in 2018. It is a volunteer-driven data collection initiative, where people across the country collect data tracking how municipalities are doing on a range of climate and sustainability indicators.

Volunteers collect data through municipal websites and documents, talking to city staff, and from national open data sets like Statistics Canada and the Canadian Mortgage and Housing Corporation. Our findings are then published as the NCL Standings, which you are now reading, which shows how Canadian municipalities stack up! Last year's 2021 Standings have been downloaded over 1,000 times since their launch, and the project was amongst the 2022 Clean50 Top Projects honourees, recognized at the Clean50 Summit 11.0 in Toronto.

The NCL was developed with the twin purposes of increasing transparency and accountability when it comes to municipal-level climate action, as well as increasing climate data and policy literacy. These Standings show what municipalities are responsible for, what tools they have available, how progress is measured, and how your particular municipality is doing in comparison to others when it comes to implementing local climate action.

Since we deeply believe in the power of grassroots advocacy and organizing, the Standings are also meant as a tool for all activists (or potential activists!) out there. See page 19 for ideas on how you can use the Standings as a resource when advocating to your city council or other municipal leaders on the climate and sustainability issues you care about. The ranking format of the standings introduces a sense of friendly competition, and should motivate elected leaders to improve their communities' standing (or defend their position!) come next year!

The 2022 NCL Standings include seventeen primary indicators and nine complementary indicators. Indicators were selected based on meeting all or most of the following criteria:

- **JURISDICTION**: the municipality has the ability to influence this area.
- **ACCESSIBILITY**: there is data available at the municipal level and across a wide range of municipalities.
- **COMPARABILITY**: applies to all or most municipalities and can be used to compare them.
- **GREENHOUSE GAS (GHG) EMISSIONS IMPACT**: improving in this area will reduce emissions or strengthen climate resiliency.
- **POPULARITY**: meaningfulness and relevancy to the general public.

Our primary indicators are quantitative, and are presented in the first half of this report. Our complementary indicators, which follow, present a more qualitative comparison of different policies from select municipalities.

This year's Standings includes data from 57 municipalities overall. The municipalities represented here are a result of where NCL volunteers were based, CRPC's Community Climate Hubs program, as well as striving to ensure major cities from all provinces and territories were included.

Submitted data is always accessible in our open database Stat Tracker, which you can check out by heading to http://ncl.climatehub.ca/!

HOW TO READ THE NCL STANDINGS

Data availability and accessibility

This section describes the data sources we rely on for each indicator, how reliable and consistent they are between municipalities, as well as how easily accessible. Each indicator's data availability and ease of accessibility is also calculated based on a three-point scale illustrated by magnifying glasses.

3 POINTS

- Data is available for a large number of municipalities of different sizes
- Most municipalities make the information directly available to the public OR a reputable third-party has collected the data directly from municipalities and made it available to the public
- The data is generally consistent across municipalities, allowing for easy comparison

2 POINTS

- data is only available for a limited number of municipalities (generally larger urban centres), either from municipalities themselves or a third-party

1 POINT

- The data is generally either not tracked or not made public
- There are significant inconsistencies in how municipalities track the data, making it hard to draw comparisons

Cohorts

For some indicators, we have divided municipalities into cohorts based on population size. We apply the cohorts for indicators where population size and density plays an influential role.

VERY LARGE: >600,000
LARGE: 300,000–600,000
MEDIUM: 50,000–300,000
SMALL: <50,000

New Feature: Small & Rural Highlight

One of the challenges of the NCL has been ensuring small and rural communities are being fairly represented. We have tried to select indicators that apply across many different contexts, but this is not always possible (public transit, for example, is an important urban climate solution that does not work as well in a rural community). There is also generally less data available for small communities.

To address this issue, we have collected five case studies from small communities (<30,000) that demonstrate their unique approach to certain indicators. Look for these case studies to learn about the innovative climate and sustainability solutions being developed for a small and rural context!

METHODOLOGY PROCESS

The NCL is a yearly cycle, with volunteer recruitments and data collection kicking off in the late summer, and wrapping up in the spring with the launch of the Standings. Volunteers participate in the data collection and writing process, with Climate Reality Canada staff providing coordination, data analysis and organization and writing support. Once the report is released, we shift to training volunteers on how to use the results in their advocacy.

1 DATA COLLECTION

Volunteers are recruited from the CRPC network and beyond from across the country, and collect data independently or by participating in a data collection workshop.

2 DATA ANALYSIS

Data is organized, analyzed, and verified by the NCL project lead and volunteers.

3 WRITING & VISUALIZATION

Data visualizations are created for each indicator. Volunteers research and write up the results of each indicator.

4 CIRCULATE & AMPLIFY

The launch of the National Climate League Standings includes a national event and a series of regional advocacy workshops, organized in coordination with partners and our advocacy community.

5 REFINEMENT

Evaluate last year's Standings: what can be improved upon for next year? Indicator refinement: which indicators can we improve upon or add to the upcoming Standings?

METHODOLOGY
PRIMARY INDICATORS

SUSTAINABLE BUILDING
The number of certified LEED Platinum and certified Passive buildings (2022).

AFFORDABLE HOUSING
The hourly wage needed to afford to rent an average 2-bedroom unit (2021).

AIR QUALITY
The number of days during 2021 measuring 3 (of 10) or below on the Air Quality Health Index scale (2021).

URBAN GREEN SPACE
The total area of park managed by the municipality (2022).

ENERGY MIX
Percentage of renewables in the energy mix (2021).

URBAN AGRICULTURE
The number of publicly accessible, food-growing spaces such as community gardens, urban farms and orchards (2022).

LANDFILL WASTE
Residential solid waste disposed of per household per year (2021).

WATER CONSUMPTION
The average amount of water consumed in litres per capita per day (2021).

BIKEABILITY
The municipality's bike score as calculated by WalkScore.com (2022).

WALKABILITY
The municipality's Walk Score as calculated by WalkScore.com (2022).

SHARED VEHICLES
The number of shared vehicles available within municipal boundaries. ie. Zipcar, Communauto, etc... (2022).

EV CHARGING STATIONS
The number of Level 2 and Level 3 EV charging stations (2022).

PUBLIC TRANSIT
Total annual trips based on the ridership statistics reported by transit authorities (2021).

MUNICIPAL EMPLOYEES
The number of full-time employees that work in the city's climate or environment department (2022).

DEMOCRATIC REPRESENTATION
The proportion of women and non-binary people sitting on city council (2022).

EMISSIONS TARGETS
The municipality's community-wide GHG emission reduction target for 2030 and 2050.

CLIMATE MITIGATION
The municipality's membership status and progress in the "Partners for Climate Protection" network.

METHODOLOGY
COMPLEMENTARY INDICATORS

CLIMATE PLAN
The municipality has a current, fully funded climate plan to reduce GHG emissions.

ADAPTATION PLAN
The municipality has a current, fully funded adaptation plan to prepare for impacts of extreme weather.

GHG INVENTORY FREQUENCY
The municipality conducts an annual emissions inventory.

GHG INVENTORY METHODOLOGY
Emissions inventories are conducted according to the international standard: the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC).

CLIMATE TEST/LENS
The municipality systematically applies a climate test (full life cycle GHG impact) to major projects and expenditures.

CARBON BUDGET
The municipality has adopted and applied a carbon budget.

BUILDING CODE
The municipality requires new and renovated buildings to meet higher efficiency standards than the provincial building code.

DIVESTMENT
The municipality has put forward a plan to divest its pension and other funds from fossil fuels.

FOOD COUNCIL
The municipality has a food council (a citizen advisory committee that works with the municipality on food sustainability, affordability, and nutrition).

SUSTAINABLE DEVELOPMENT GOALS

At the beginning of each primary indicator section, we show how our indicators align with the United Nation's Sustainable Development Goals (SDGs). Learn more about the SDGs here.

METHODOLOGY
WHAT'S NEW WITH THE INDICATORS?

While we strive to maintain consistency of our indicators from year to year to allow for comparability, we also want to ensure they are well-designed, which requires continual refinement. In some cases, we also think it is interesting to look at slightly different measures from year to year.

This year, we added two new primary indicators

WATER CONSUMPTION: water management is an important area of municipal responsibility, which relates to environmental conservation as well as climate mitigation and resilience.

EMISSIONS REDUCTIONS TARGETS: emissions targets are one of the foundations of climate action, and it is useful to assess which cities have set ambitious targets in line with climate science, and which have not.

We also changed our methodology for some indicators

DEMOCRATIC REPRESENTATION (primary): this replaces last year's "Gender Equity" indicator. While last year we looked at the gender pay gap, this year we chose to look at a different aspect of gender equity which relates to municipal politics more directly, examining the representation of women and non-binary people on city council.

BIKEABILITY (primary): we changed from measuring the total kilometres of bike lanes to tracking the "Bike Score" of the municipality, which incorporates total kilometres as well as connectivity, types of infrastructure, and other factors.

AFFORDABLE HOUSING (primary): rather than looking at the percent change in rental prices, we experimented with a new measure for capturing the relationship between income and housing prices: the rental wage.

URBAN AGRICULTURE (primary): while last year we looked at farmers markets, this year our urban agriculture indicators track the number of community gardens, urban farms, and urban orchards.

FOOD COUNCILS (complementary): last year, we looked at whether a municipality offers sustainable (local, organic, vegetarian, vegan) menu options in their facilities. This proved a complicated indicator to evaluate, with many nuances that were hard to capture. food councils are easier to track, and are an important structure for increasing citizen engagement and promoting sustainable food policy, two important values of the NCL.

And finally, we chose not to include these two indicators

SUSTAINABLE JOBS (primary): while green and low-carbon jobs are incredibly important, we questioned the best methodology for calculating this indicator, especially given the somewhat limited role the municipality plays in job creation. In the meantime, we continue to track municipal employees dedicated to the transition.

PUBLIC CONSULTATION (complementary): this indicator looked at whether public participation is required before approving any project whose budget amounts to more than 0.1% of the municipality's total budget. We found this indicator didn't always capture how well municipalities actually consult the public, since this is a multi-faceted and subjective area. We would like to develop another way to measure public engagement, but this year, we left this indicator off the roster.

WHAT CAN YOU DO WITH THE NCL?

This document was designed to be an advocacy and engagement tool.

- **Send your councillor a copy of the NCL and/or request to meet with them to discuss how your community did and how it could improve. Present some examples of key policies or practices being done elsewhere that could be implemented in your community.**
- **Cite the NCL when participating in public consultations or presenting to city council on related topics.**
- **Cite the NCL on social media, opinion pieces, media interviews or other communications you engage in.**
- **Connect with other motivated citizens in your community and communities around the country by joining our Community Climate Hub network, and start collecting data yourself.**
- **Host a discussion session on the Standings with your local Community Climate Hub, or other like-minded individuals from your community (you might also do this before approaching your councillor, and then reach out to them together).**
- **Get inspired by doing more research on the data sources displayed in the report. Or, if data from your community is missing for certain indicators, perhaps you want to look into it! You can always add data to the NCL Stat Tracker at any point.**

ABOUT US

We are the Canadian branch of The Climate Reality Project, a global network founded by Nobel Laureate and former US Vice President Al Gore. We are mobilizing to decarbonize the Canadian economy while building a more just and equitable society through grassroots peer-to-peer education, and public policy and climate solutions literacy.

We firmly believe that by advocating and engaging in our communities, we can bring about the change needed to protect the climate and build a bright future for all. Canadians have expressed growing concerns with climate change and injustice – we offer the tools, training and networks to empower people to advocate for a healthy planet and just communities. Tools like this one!

To put it simply, think of us as the DIY supercentre for climate advocacy. Find out more at **climatereality.ca** or on our social media platforms.

The Climate Reality Project
CANADA

Pictured right, members of the Oakville Climate Hub rallying amongst others, October 2022.

THE STANDINGS

2022

NATIONAL CLIMATE LEAGUE

BUILDINGS

Buildings are one of the most impactful areas where a municipality can reduce its emissions. Increasing energy efficiency can also make housing costs more affordable. Housing prices have been increasing, and ensuring people can afford housing is important for tackling poverty. How affordable is housing in a community? How many of its buildings are sustainable?

INDICATORS IN THIS SECTION

RELATED UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

AFFORDABLE HOUSING

Why this indicator is important

Climate change and housing access are parallel crises that need to be tackled together. When all people in Canada have their basic housing needs met, they're more able to think about and exert their personal political power and demand emissions reductions. Strong protections for tenants also mean they can better advocate for their own health and safety in the face of climate change - for example, for adequate air conditioning.[2] Conversely, extreme weather events have a greater impact on unhoused people and increase housing insecurity overall, particularly for low-income people who are less able to replace or repair damaged homes.[3]

In Canada, affordable housing is defined as costing less than 30% of a household's before-tax income.[4] "Rent geared to income" housing programs ensure this threshold is not being exceeded. While strategies like increasing the minimum wage fall within provincial jurisdiction, municipalities can support housing affordability by working with provincial and federal governments, as well as private and non-profit housing providers, to ensure there are enough units of affordable housing being built in the community. They should also exercise oversight to ensure these homes are being properly maintained.

Data availability and accessibility

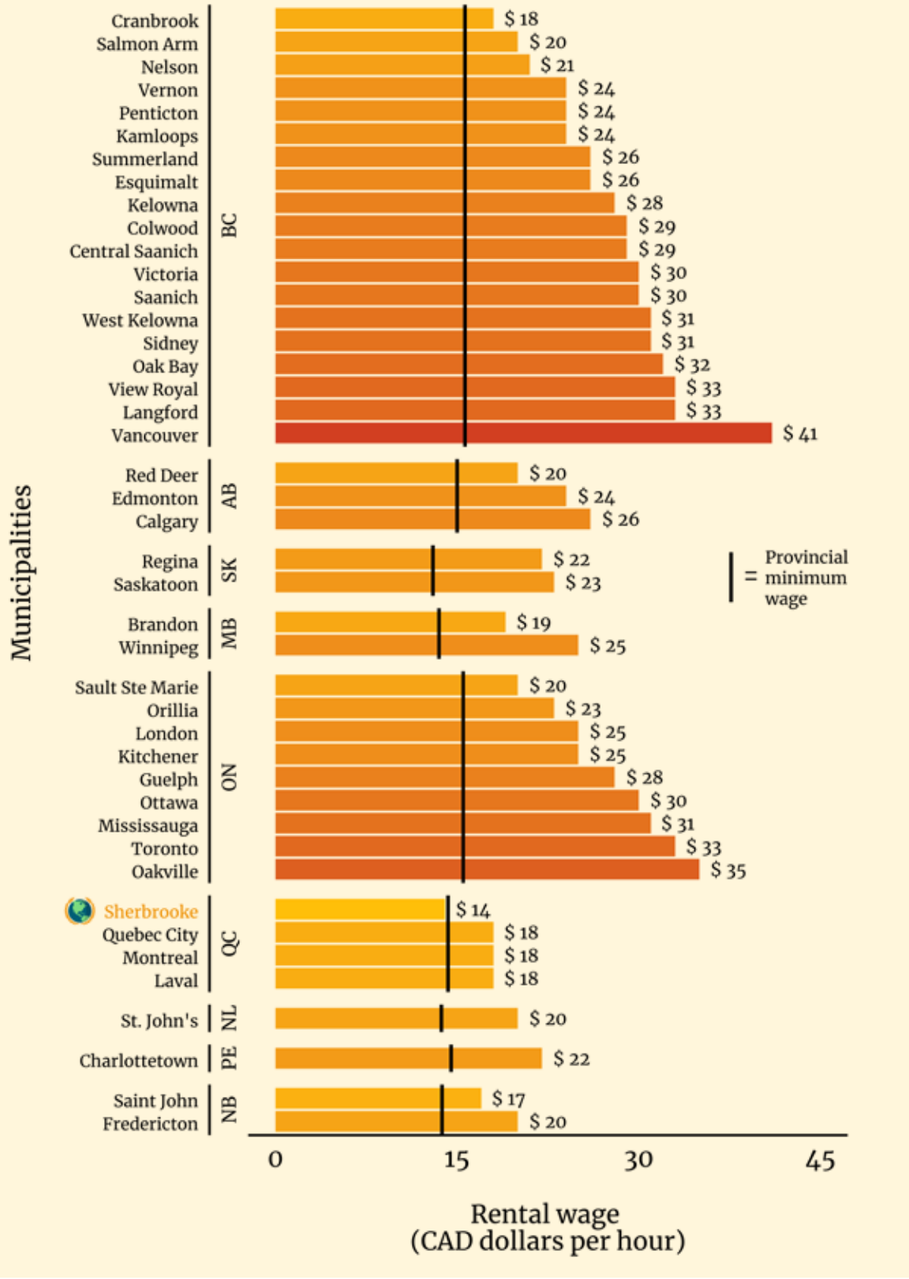
We used rental price data to calculate the "rental wage," which is the hourly wage needed to afford an average apartment without spending more than 30% of total income.

The rental wage calculation follows the Canadian Centre for Policy Alternatives Report (CCPA), "Unaccommodating: Rental Housing Wage in Canada."[5] We follow the CCPA's method of looking at the price of a two-bedroom unit as a "proxy," since it "offers a modest amount of room for multiple living arrangements."

Rental price data was collected from the Canada Mortgage and Housing Corporation, a national agency which collects housing data, including average rent prices, from across the country. Rental market data only includes townhouses and apartments, however—houses are not tracked.

AFFORDABLE HOUSING AVAILABILITY

The average hourly range needed to afford rent, CAD dollars.



Note(s): Methodology for calculating rental wage is based on work from the Canadian Centre for Policy Alternatives (2019). Data are from the Canadian Mortgage and Housing Corporation (2021). Solid lines represent provincial minimum wages.

Winning Municipality

SHERBROOKE

In Sherbrooke, Quebec, the rental wage required to rent a two-bedroom apartment is $14 - less than Quebec's $14.25 minimum wage and significantly lower than the next most affordable Canadian cities. The impetus to build affordable housing often comes from multiple levels of government - for example, a federal-provincial partnership was announced in 2022 that will put $6 million dollars into new affordable units in Sherbrooke.[6] The city itself also has an important role to play, deciding how much affordable housing to build and where it should go.

Additionally, Quebec's stronger rent control rules help keep market rent in check.[7] Tenants are able to refuse rent increases requested by their landlords, and landlords are required to disclose to new tenants what the lowest rent paid in the previous twelve months was. If the amount being requested in the new lease is higher, the tenant can apply to the housing tribunal to set the rent using the previous price as the starting point.

International Highlight

VIENNA, AUSTRIA

In Vienna, Austria, approximately 23% of housing is social housing.[8] The city has policies that set a fixed proportion of housing to students, low-income residents and refugees. The wait list for this social housing is relatively short since around 5000 units are built annually. Nordbahnhof, a development project set to be completed in 2030 is a perfect example of Vienna's effort to promote affordable housing. The development will create around 20,00 homes. These residential homes will be built in diverse blocks that will include commercial spaces along with green spaces. To promote affordable housing, buildings are mostly reserved for social housing.

SUSTAINABLE BUILDINGS

Why this indicator is important

Buildings account for Canada's third largest source of GHG emissions at 18%.[9] As climate impacts increase, increasing the climate resilience of buildings is also important. To be more sustainable, we need to switch the kind of energy buildings are using—many buildings in Canada currently rely on natural gas, oil, or electricity generated from fossil fuels, and need to switch to clean electricity generated from renewables like wind, solar, or geothermal. Improving the energy efficiency of buildings is also an important complementary strategy.

While building standards are largely a provincial jurisdiction, most municipalities also have the ability to develop their own standards that fit within provincial building codes. While there are many ways to measure sustainable buildings, our indicator looks at two examples of "high performance building standards" —Leading in Energy and Environmental Design (LEED)[10] and Passive House[11]— which municipalities might use or adopt in their own bylaws and policies.

The federal government is also developing a Green Building Strategy[12] which aims to achieve a net-zero emissions and climate resilient building sector by 2050. It will include building new "zero-carbon" and climate resilient buildings as well as retrofitting existing buildings. While it remains to be seen exactly what this will look like, the strategy will have to involve municipal cooperation in order to ensure consistent implementation.[13]

Data availability and accessibility

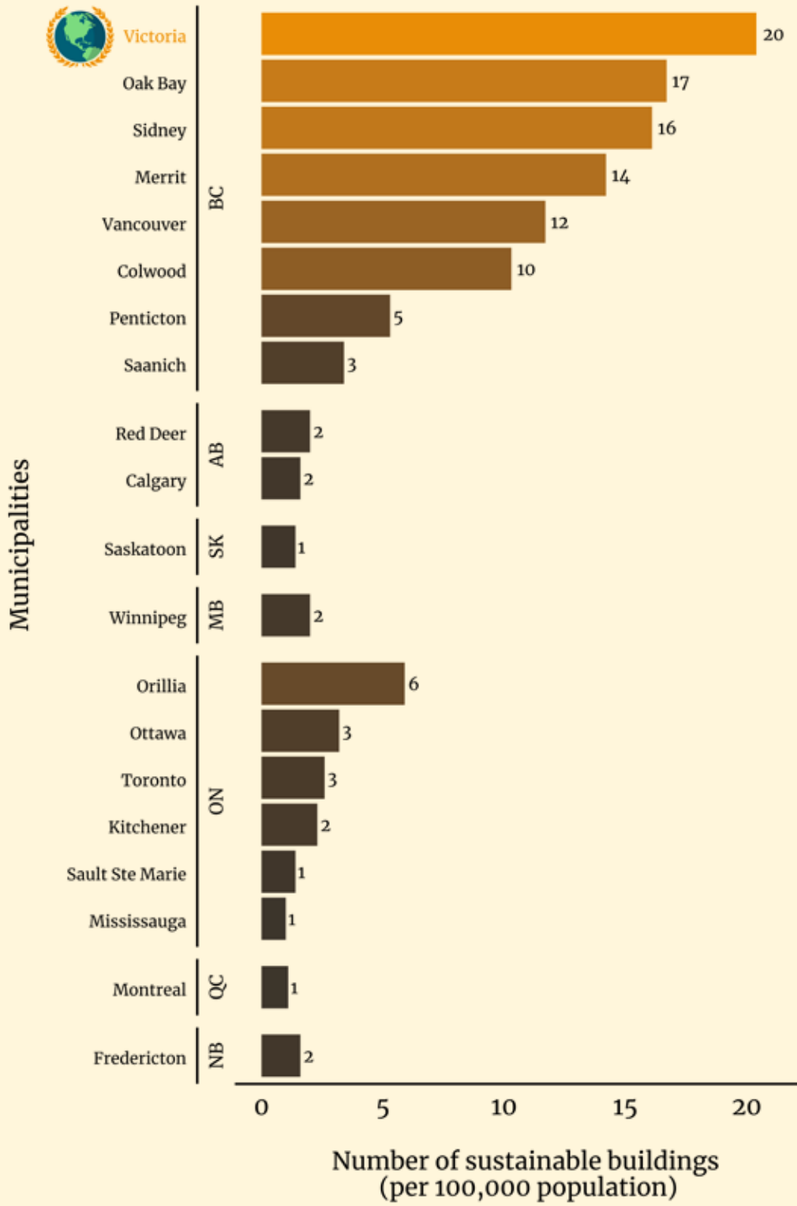
Our data comes from the Canada Green Building Council database of LEED and other ratings,[14] and the Passive House Database from Passivhaus Institut.[15]

LEED comes with four levels of certification.[16] However only Platinum, the top level certification, is used for the indicator. LEED is a rating system that indicates how efficiently a building is designed and operated. Each site is given points based on its environmental impact in various categories. Credits are awarded and must meet a minimum of 80 points on a 100 point scale to be rated Platinum.

A Passive House offers high levels of comfort with very low energy consumption. The construction of such a house includes specialized windows and building envelope — insulated roof, floor slab and exterior walls — that regulate indoor temperature. Passive Houses have up to 90% energy savings for space heating and cooling compared to typical buildings. The Passive House standard is not easily achieved for the refurbishment of existing buildings due to thermal bridges, basements and walls.[17]

SUSTAINABLE BUILDINGS PER CAPITA

The number of sustainable buildings (buildings certified LEED Platinum or Passive) per 100,000 population



Note(s): Data are from 2022. Multiple sources are consulted including the Canada Green Building Council database and the Passive House Database.

Winning Municipality

VICTORIA

A medium city, Victoria, British Columbia, is the winner, with nineteen LEED and Passive House buildings combined, giving it the highest per capita standing among NCL municipalities. Our data shows a strong provincial trend, with BC municipalities as a whole performing the best in this category. This could be linked to the province's Energy Step Code, which allows municipalities to implement higher tiers of energy efficiency requirements above the BC Building Code, and draws on Passive House certification.[18]

Under the city's current Step Code tier, all new residential and commercial buildings in Victoria must be built with 20% high energy efficiency compared to the baseline BC Building Code.[19] Moving forward, the city will gradually be moving up the tiers and implementing higher requirements. Provincially, BC is also implementing carbon pollution standards for new buildings, which will come into effect gradually across the next couple years. Victoria is working with the building industry to ensure it is equipped to meet these higher requirements.[20]

NATURE & HEALTH

These indicators track the state of the natural urban environment, which is also linked to human health. How much green space is there in a community? Do its residents enjoy clean air?

INDICATORS IN THIS SECTION

RELATED UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

AIR QUALITY

Why this indicator is important

Air pollution includes fine particulate matter, ground-level ozone, and nitrogen dioxide. It comes from human-driven sources like fossil fuel burning vehicles, burning natural gas, certain industries, or natural events like wildfires.[21] Poor air quality increases the risk of allergies, respiratory disease, and cardiovascular disease.[22]

According to researchers at the Canadian Urban Environmental Health Research Consortium, about 86% of Canadians live in areas where fine airborne particulate matter exceeds recommended levels, and 56% of Canadians live in areas where nitrogen dioxide exceeds recommended levels.[23] Polluting industries may be more likely to be located in or near low income, Indigenous, and racialized communities, meaning those communities are more likely to be exposed to negative health impacts from air pollution.

Air quality also tends to be worse in urban areas.[24] While municipal governments may not be able to control all sources of air pollution, there are nonetheless strategies they can take to ensure cleaner air for their communities–and many of them overlap with the other indicators, particularly walkability, bikeability, public transit, and green space. One of the main sources of air pollution in urban areas comes from vehicles.[25] Policies that encourage active transportation over driving, switching to electric vehicles, and reducing vehicle speeds can all result in improved air quality, as well as protecting natural vegetation in green spaces which can clean the air.

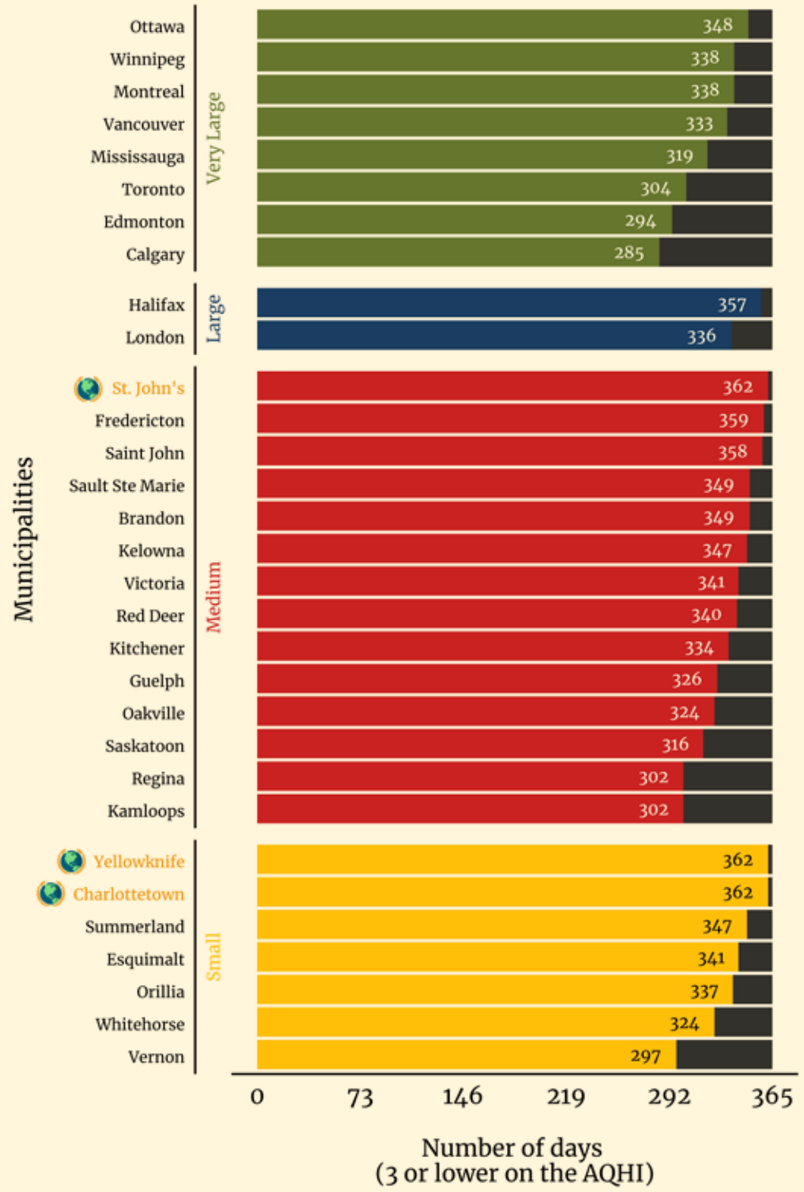
Data availability and accessibility

Air quality is measured on the Air Quality Health Index Scale, which measures on a scale of 1 to 10 the level of health risk associated with the current air quality, with 10 being the highest risk. Air quality readings are taken from monitoring stations situated all across the country—the availability of data depends on having a station nearby.

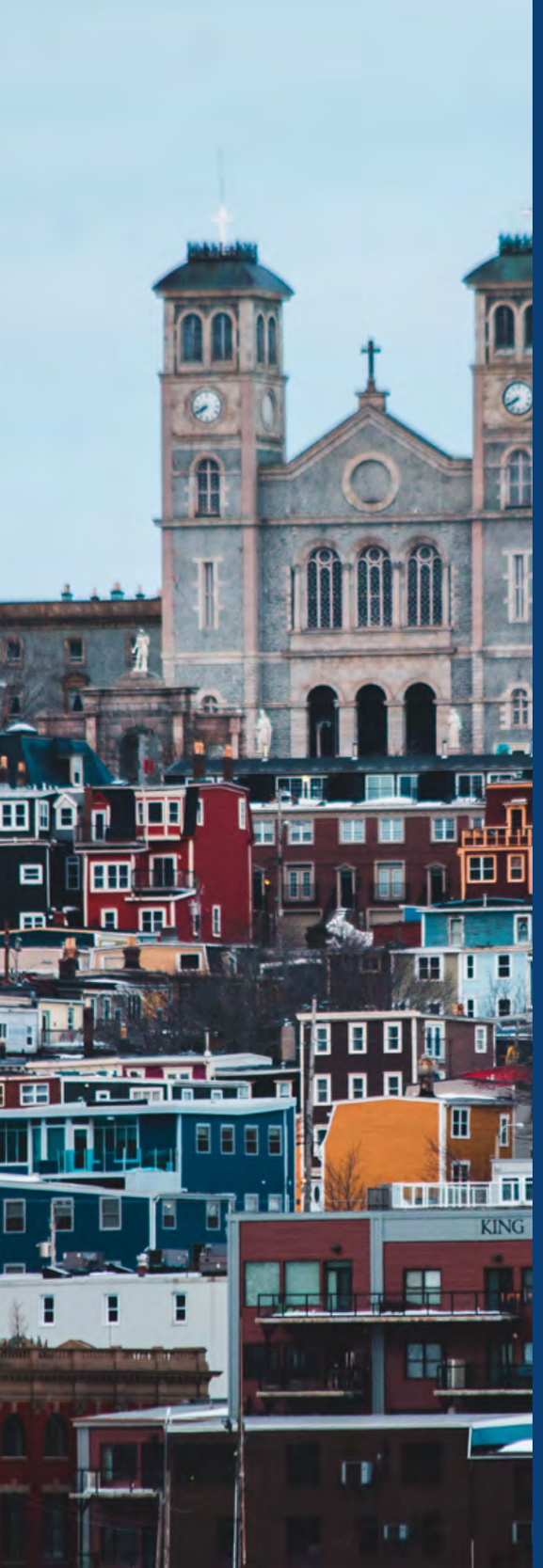
Our main source of air quality data is the WeatherStats website, which draws on data from Environment and Climate Change Canada and provides a number of different summaries, including air quality data over the past year.[26] Some provinces, such as Quebec[27] and Ontario,[28] also offer aggregated data results.

DAYS WITH CLEAN AIR

The number of days with clean air in 2021: days with a daily score of 3 or below on the Air Quality Health Index (AQHI).



Note(s): Data are from 2021. Data is from Environment and Climate Change Canada via weatherstats.ca



Winning Municipalities

YELLOWKNIFE, ST. JOHN'S & CHARLOTTETOWN

Three Canadian cities tied for best air quality in this year's Standings: Yellowknife, Northwest Territories, St. John's, Newfoundland and Labrador, and Charlottetown, Prince Edward Island. In 2021, each municipality registered a mere three days of daily readings below 3 (out of 10) on the Air Quality Health Index. The lower the index reading, the cleaner the air.

While smaller, remote communities such as Yellowknife are less likely to suffer from vehicle-based pollution, the greatest air quality risk comes from wildfires, which will only increase with climate change.[29]

The city of Yellowknife offers the community's fieldhouse (which is equipped with a high quality HVAC system) as a place to shelter and exercise when it is unsafe to do so outside. The city may turn this into a "clean air shelter policy," where that process would be automatically triggered when the AQHI goes above a certain level.[30] This past year, residents in Yellowknife and other NWT communities also received free air quality sensors from the territorial government's Community Based Air Monitoring Project, which will help provide more expansive real-time air quality data via a virtual map.[31]

International Highlight

DURBAN, SOUTH AFRICA

Households that use open fires or simple stoves fueled by kerosene, biomass and coal see their air quality drastically fall. To address this environmental and public health issue, the city of Durban, South Africa, has created a new subsidy program to help with poor air quality in households. The program offers free eco-friendly cooking bags which allow households to slow cook food for hours after taking pots off the heat. This seemingly simple bag offers a cheap and quick way to reduce fossil fuel use, harmful emissions in households and water use.[32]

URBAN GREEN SPACE

Why this indicator is important

Urban green space includes parks (which may have playgrounds or other infrastructure), as well as less managed natural spaces such as riverbanks and urban forests. Urban greenspace has a variety of climate, environmental, and social benefits. It can help provide cleaner air (reducing air pollution caused by fossil fuels), habitat for wildlife, and recreational opportunities that increase mental and physical health.[33] Green space provides shade and cooling, which can help reduce the urban heat island effect (the tendency for larger cities to generate a warmer microclimate, leading to negative health effects as well as higher emissions from air conditioning use).[34] Green space can also increase climate resiliency by protecting against heat waves and absorbing water runoff during flooding.[35]

Cities across Canada have become less and less green since 2001.[36] Green space is threatened by urban expansion and infill development—but municipalities can prioritize brownfield development (on previously developed, unused land) as a way to promote urban density while still protecting green space.[37] In addition, due to decades of exclusionary zoning, and unequal investment and development, communities of colour and of lower socioeconomic status disproportionately lack accessible green spaces.[38]

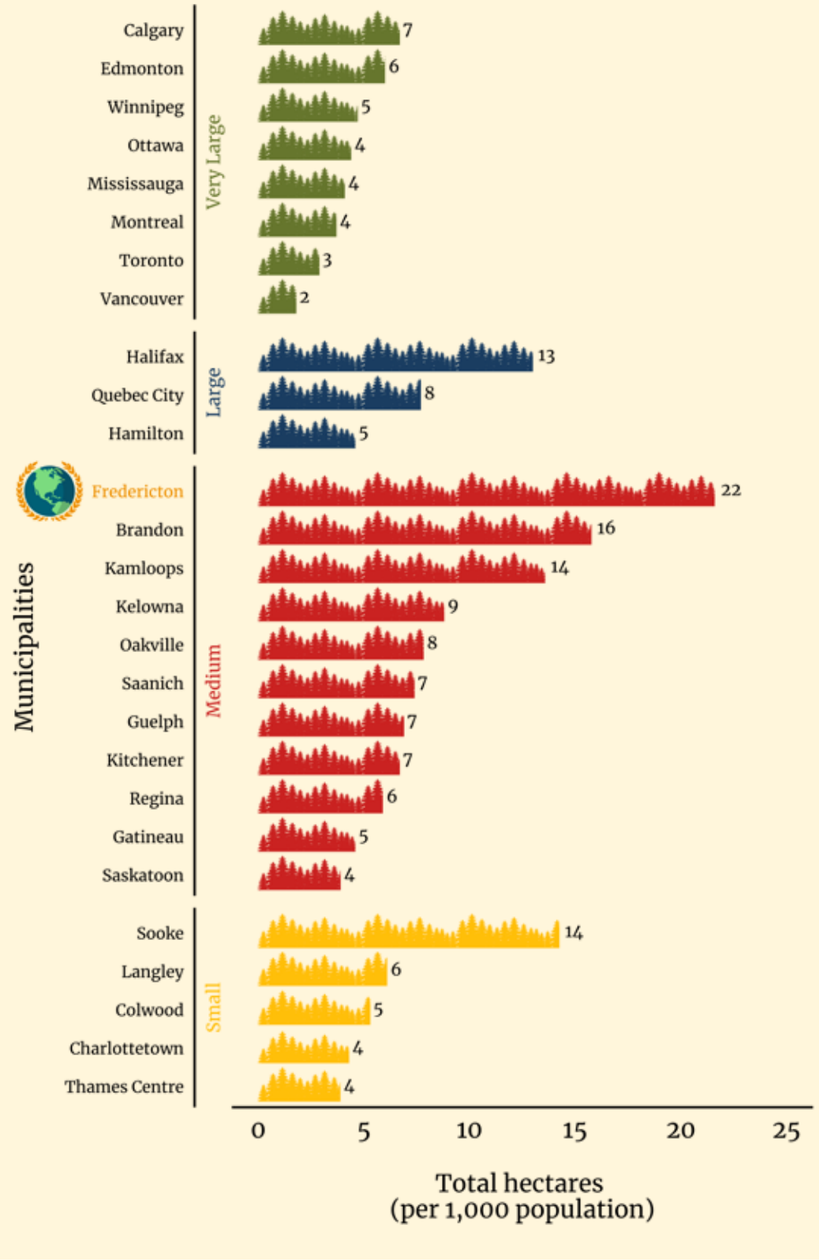
Data availability and accessibility

NCL data on the urban green space (and urban agriculture in the Food chapter), is drawn from the 2022 Canadian City Parks Report, by Park People (a Canadian charitable organization).[39] The 2022 report includes a variety of data from 30 diverse Canadian cities. Park People gather data through questionnaires to park staff, as well as expert interviews and a public survey.

We follow Park People's definition of parks and green space, which is all actively managed and natural parkland, as well as other public green spaces that are owned, leased, or under a management agreement by the municipality. Check out the 2022 report to see further policy recommendations for how municipalities can improve green space management!

URBAN GREEN SPACE

Total hectares of green space per 1,000 people



Note(s): Data are from 2022. The source of data is the Canadian City Parks Report, by Park People.

Winning Municipalitiy

FREDERICTON

With 9.7 hectares of natural area per thousand people and 21.6 hectares of parkland per thousand people, the winner is Fredericton, New Brunswick. It is unsurprising that a medium sized city leads in green space—medium and small cities tend to have more green space compared to larger cities.[40] Enhancing green space, ecosystem corridors and tree canopy on public and private properties is an action item in the city's Climate Adaptation Plan.[41] In addition, Fredericton is collaborating with a University of New Brunswick professor to measure the age of hemlock trees, estimated to be 500 years old, in Odell Park.[42] The research will also investigate the effects of climate change on the trees to allow the city to better protect them moving forward. Also, for the first time, this year Fredericton took part in No Mow May, suspending mowing on over 60 municipal properties, or roughly 25% of the land normally mowed, to provide pollinator-friendly habitats.[43]

International Highlight

SEOUL, SOUTH KOREA

Cheonggye Freeway, in Seoul, Korea, is a reminder that past harmful practices are reversible and redeemable. In 1968, the Cheonggye elevated freeway was built during Korea's rapid urbanization. Three decades later, the government realized that the freeway was contributing to worsened congestion and record-breaking noise levels. To solve these issues, the freeway was demolished and replaced by a green corridor and rediscovered water way. The removal of the freeway did not only create ecological benefits, such as an average temperature drop of 3.3 degrees Celsius, but it also had positive impacts on Seoul's economic and social sectors. Indeed, the project boosted Seoul's tourism and it created a safe space for citizens to enjoy the outdoors.[44]

ENERGY

Switching to renewable energy from fossil fuels is the foundation of climate action. Many kinds of renewable energy (such as solar) can be locally generated within municipality boundaries. How much of a community's energy mix is renewable?

INDICATORS IN THIS SECTION

RELATED UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

ENERGY MIX

Why this indicator is important

This indicator looks at the portion of a city's electricity generated from renewable sources. Electricity can be generated from non-renewable sources (such as coal), or renewable (such as solar). In provinces where electricity is generated from fossil fuels (such as Alberta, Saskatchewan, Nova Scotia, and Nunavut),[45] renewable sources of electricity need to be expanded before electrification (of vehicles, for example), will make a difference to emissions. Even if a city has 100% renewable electricity, residents might still rely on fossil fuels directly for heating their homes (with natural gas) or fueling their vehicles (with gasoline). Therefore, this indicator only captures a portion of total energy use.

Since electricity generation often takes place on a regional level, it largely falls under provincial jurisdiction. However, there are still strategies municipalities can use for increasing local renewable generation of electricity. The Federation of Canadian Municipalities (FCM) has developed a factsheet titled "Municipal Energy Roadmap",[46] which outlines tools for the development of wind and solar energy generation in a municipality, among other approaches.[47] Municipalities can build publicly-owned solar or wind infrastructure, or they can also enable other actors through financial, administrative, or educational support. This infrastructure can be small-scale, (such as a small rooftop solar system, perhaps installed by a homeowner), to community-level (such as a larger ground-mounted solar installation).

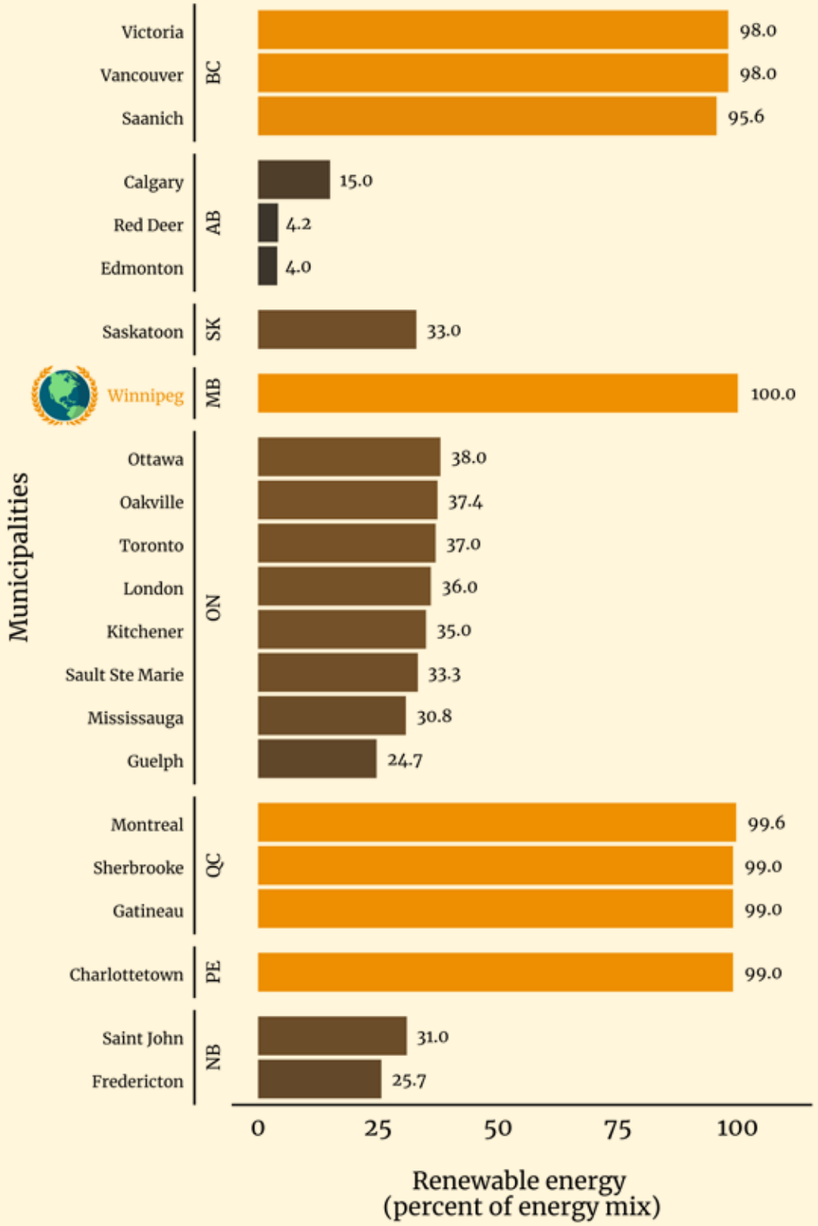
Increasing local renewable electricity generation can keep money in the community, help reduce residents' energy costs, and reduce GHG emissions.

Data availability and accessibility

For this indicator, we draw on "City-wide Electricity Mix" data from the Carbon Disclosure Project (CDP).[48] The CDP is a non-profit global charity that collects benchmarking data on a wide variety of climate and environmental indicators from companies, cities, states, and regions. This particular dataset was compiled from answers to their 2015, 2016, and 2017 annual questionnaires to cities. Staff were asked to "indicate the energy mix of your electricity consumed at the city-wide scale." Since energy mix data is more readily available at the provincial level, the CDP's dataset is a valuable tool for tracking energy mix more locally.

RENEWABLE ENERGY

Renewable sources in municipal energy mix, %



Note(s): Data are from 2019 to 2022. The source of data is the CDP 2021 Cities Energy Mix. Renewable energy sources include wind, solar, hydro, geothermal, and biomass.

Winning Municipalitiy

WINNIPEG

This year, Winnipeg, Manitoba, with its score of 100% renewable electricity, bumps Montreal to second place. Both Manitoba and Quebec are hydropower provinces, and Manitoba generates 100% of its own electricity through hydropower. However, this hydroelectricity is generated in northern Manitoba, where hydro dams have flooded Indigenous traditional territories, dislocating communities and disrupting traditional livelihoods and ecosystems.

As discussed above, despite its 100% renewable electricity grid, Winnipeg still uses fossil fuels. Buildings and transportation represent its largest sources of GHG emissions. To address this, Winnipeg has committed to the Community Energy Investment Roadmap (CEIR), for the city to achieve net zero emissions by 2050.[49] Consistent with some of the recommendations from the FCM above, the roadmap calls for investment in improved thermal retention in its buildings and for conversion to renewable heat sources like use of heat pumps and solar arrays.

Small and Rural Highlight

VUNTUT GWITCHIN FIRST NATION, YUKON

POPULATION 250

Sree Vyah, or "Sun Snare," is a 2160-panel solar installation in the community of Vuntut Gwitchin First Nation.[50] It has been producing clean, renewable electricity since the spring of 2021. Like many other remote northern communities, Vuntut Gwitchin's main source of power has been diesel fuel, which is flown into the community at great expense. For diesel-reliant communities especially, switching to renewables means increasing energy sovereignty and reducing energy costs as well as emissions. Sree Vyah has helped the community cut diesel use by 189,000 litres per year, and reduce greenhouse gas emissions by 680 tonnes CO_2e per year. The First Nation was the first community to take advantage of Yukon's Independent Power Production policy, a new territorial policy which allows communities wanting to generate their own renewable energy to negotiate power purchase agreements with ATCO Electric Yukon. ATCO's technical knowledge as well as openness to collaboration was key to the project's success. The community itself also played an important role. All along the way, decision-making was informed by community members. For example, during a community forum, some members raised concerns that the solar array was planned for an important berry

picking area. As a result, it was decided not to erect a fence (as is usual practice), so that people can continue to harvest berries among the solar panels. Capacity is also a challenge. That's why the First Nation has developed a community energy and implementation plan to identify and focus efforts on the renewable projects that will have the greatest impact. One possible next step is wind power, which could fill the gaps left in solar generation during the long northern winter.

International Highlight

TURKEY

A rapid growth in Turkey's economy and population size has led the country to rethink their energy production and consumption. To address this issue, Turkey has decided to increase the production of renewable energy. Over the last five years, the country's production of renewable energy, including hydropower, solar, and wind, has increased by 50%. Although Turkey had the fifth highest level of new renewable capacity additions in Europe in 2019, the International Energy Agency has stated that the country still has great potential for renewable energy growth.[51]

FOOD

While much of our food comes from outside our communities, municipalities can also support more local food production, which is also more sustainable and lower carbon. How many sites of urban food production does a community have?

INDICATORS IN THIS SECTION

RELATED UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

URBAN AGRICULTURE

Why this indicator is important

Our urban agriculture indicator captures the number of community gardens, urban farms, and orchards within the city. These are sites of communal food production, usually managed by the city or a nonprofit, sometimes collectively or with individual plots. Urban agriculture provides a clean and local source of food while also building community. While small-scale, urban agriculture tends to use more sustainable methods, producing less emissions than conventional farming, as well as reducing the emissions from food transport.[52]

Amid the Covid-19 pandemic, many individuals turned to community gardens as a sense of escape from social quarantine. Food shortages and price hikes during this time (an average of 13.2% year over year in fruit prices alone)[53] also made growing your own food more attractive. Provincial and municipal governments subsequently created programs to support local gardening initiatives with grants, or are offering more land owned by cities to establish new community gardens (in addition to private land bought by community organizers).[54] These programs all have common goals to promote mental health, education programs and/or protect food security for underprivileged areas.

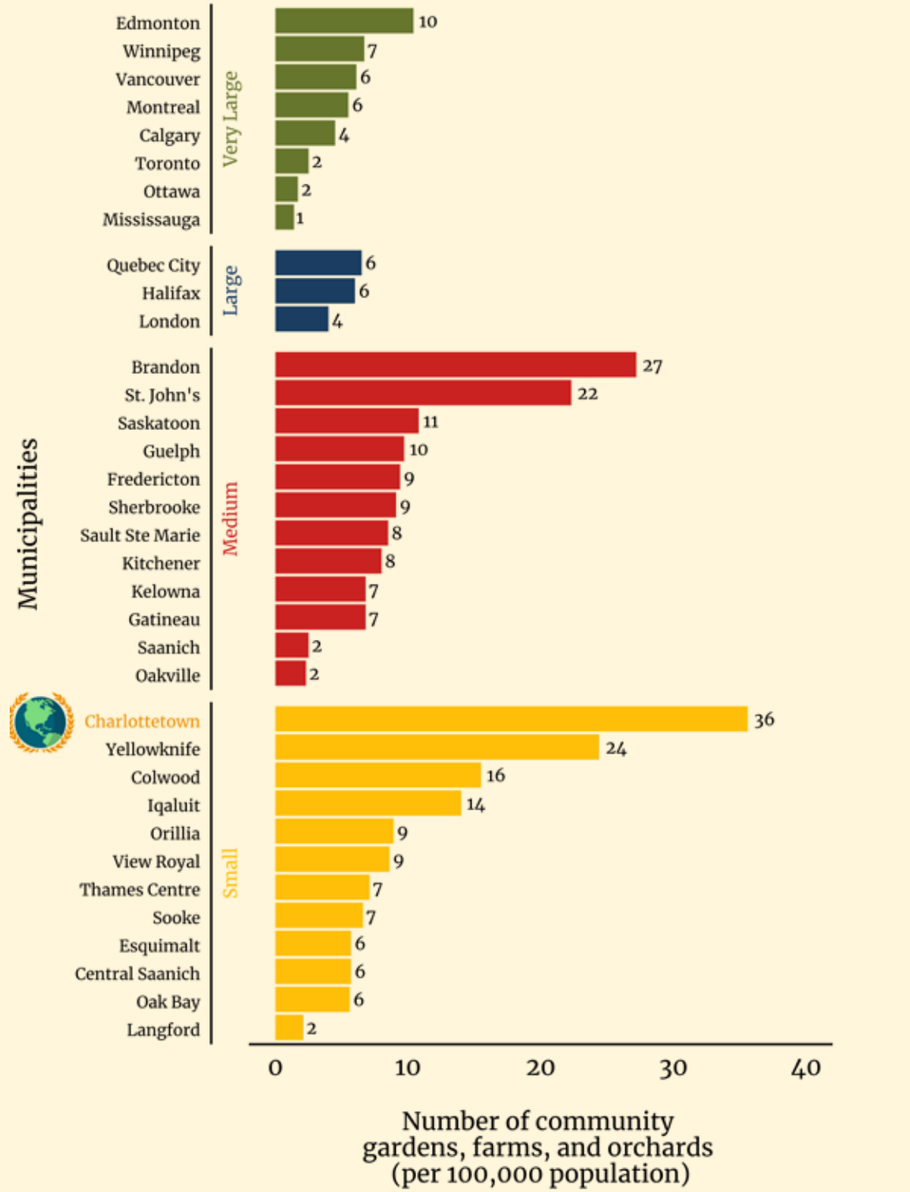
Data availability and accessibility

NCL data on the urban agriculture (and urban green space in the Nature & Health chapter), is drawn from the 2022 Canadian City Parks Report, by Park People (a Canadian charitable organization).[55] Our definition of community gardens, urban farms, and community orchards is based on theirs, as food-growing sites that "are available for the public to use that may require membership."

The 2022 report includes a variety of data from 30 diverse Canadian cities. Park People gather data through questionnaires to park staff, as well as expert interviews and a public survey. Check out the 2022 report to see further policy recommendations for how municipalities can improve their urban food production policies! For cities not included in the Parks People report, volunteers consulted city representatives, city websites, and Google Maps.

URBAN AGRICULTURE

The number of community gardens, urban farms, and urban orchards per 100,000 population



Note(s): Data are from 2022. Multiple sources are consulted, including the Canadian City Parks Report, by Park People. These figures include community gardens, urban farms, and community orchards that are food-growing and open to the public but that may require membership fees to use.

Winning Municipalitiy

CHARLOTTETOWN

The winning city, with thirty-six sites of urban food production per 100,000 people, is Charlottetown, Prince Edward Island (PEI). In May 2022, PEI announced the "Island Community Food Security Initiative" that allows local organizations to apply for a grant up to $10,000 to fund community projects, such as community gardens, that help insure accessible food sources for all. Between 2021 and 2022, there has been an 11.5% increase in food costs in PEI, leaving a significant number of households facing food insecurity.[56] Community garden organizers have since seen a rapid increase of demand for gardening plots with individuals seeking alternative ways to access fruits and vegetables supply, while others simply looking for new forms of mental and physical activities. Some community PEI gardens, including one of Eastern Canada's largest urban farms, have almost tripled in number of plots over the last few years here, with more to come.[57]

International Highlight

SINGAPORE

Food security is becoming an increasingly important topic in cities' policies. Singapore has addressed this issue by developing the "30 by 30" goal. This goal states that Singapore will produce 30% of its own food by 2030. To achieve their goal, the city is focusing on developing new innovative urban agriculture projects. Initiatives include using hydroponic systems on rooftops, installing urban farms in existing buildings and increasing green-house infrastructures. The city also encourages citizen action by promoting home gardens.[58]

WATER & WASTE

Cutting down on the waste we produce and conserving the water we use means our communities are producing less emissions, as well as being easier on our natural resources. Municipalities can support households in doing both these things with good programs and education. How much waste do households in a community produce? How much water do people use every day?

INDICATORS IN THIS SECTION

RELATED UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

LANDFILL WASTE

Why this indicator is important

This indicator looks at how much solid waste residents send to the landfill, broken down by household. In Canada, approximately 97% of waste is sent to landfills, accounting for 23% of Canada's total methane emissions.[59] Methane is a greenhouse gas that is released from decomposing organic material. It is one of the most potent GHGs, with twenty-five times the heat-trapping potential of carbon dioxide.[60]

Municipal governments are responsible for the collection, recycling, composting, and disposal of household waste. One strategy municipalities can use to reduce household waste is to implement composting pick-up. Canadians create over 50 million tonnes of food waste every year, almost half of which comes from households.[61] Many households have a backyard compost, but municipal composting pick-up programs can help fill in the gaps.

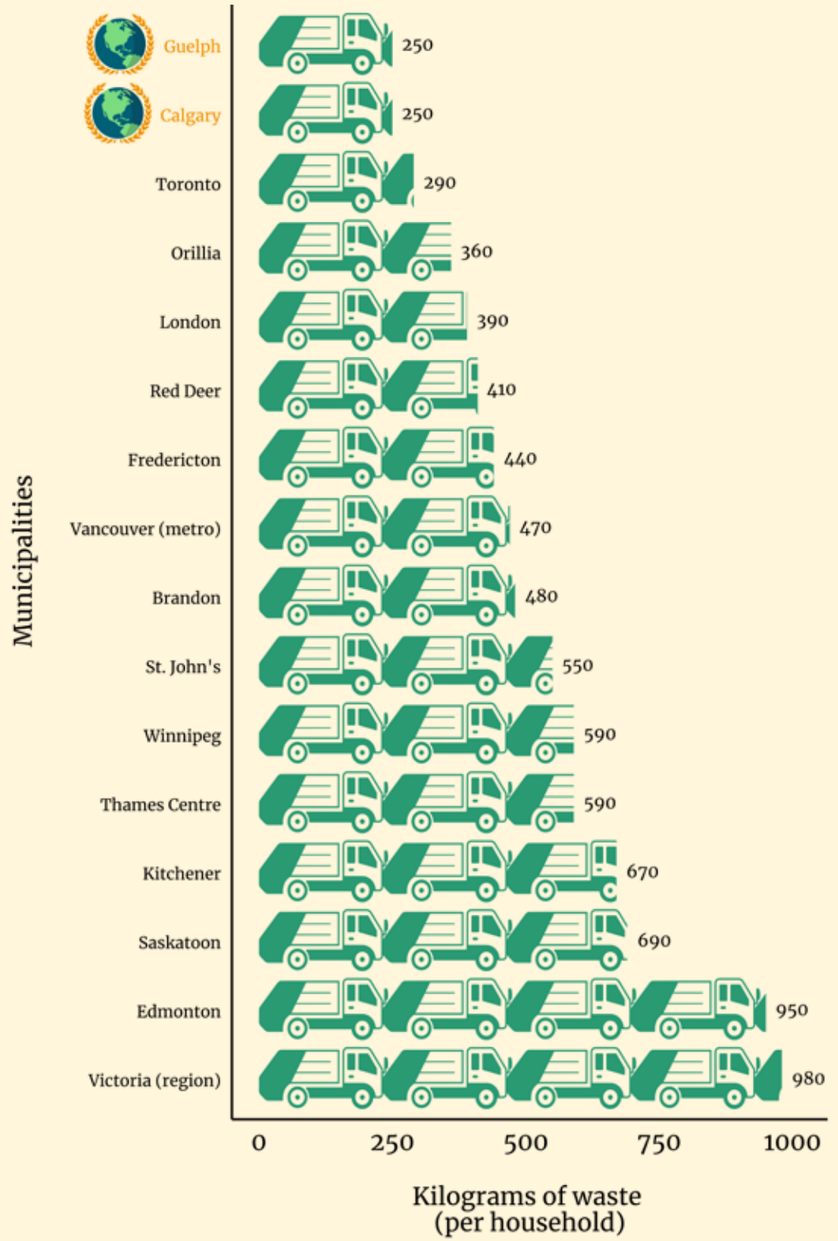
On a larger scale, the Canadian Circular Cities and Regions Initiative (CCRI) is a network of municipalities that promotes local involvement in a circular economy. The circular economy is a framework encouraging governments to reduce all kinds of waste at all stages, from reducing consumption all the way through to encouraging recycling and composting and other methods of repurposing waste into fertilizers, soil supplements, or renewable energy.[62]

Data availability and accessibility

Similar to measuring water consumption, this indicator was more complicated than others to calculate. We focus on household waste sent to landfills, which means looking at curbside pick-up data, along with data measuring waste dropped off directly to the dump by residents (when that information was available). Most of this data comes from cities' 2021 waste reports. Some cities only report total residential waste, in which case we calculated the household breakdown ourselves using census data.

HOUSEHOLD WASTE

Waste per household, kilograms



Note(s): Data are from 2020 to 2022. Sources include the Municipal Benchmarking Network 2021 Performance Measure report, city waste reports, and city staff.

Winning Municipalities

GUELPH & CALGARY

Guelph, Ontario and Calgary, Alberta are tied for the 2022 winner, producing the least amount of household waste at 250 kilograms each in 2021.

In January 2022, the City of Guelph launched the Zero Waste Economic Transformation Lab in collaboration with the private sector and Wellington County. The lab will develop and test opportunities to incorporate a circular economy by reducing and/or redirecting waste.[63] Supported by Canada's Smart City Challenge, the city also has the Our Food Future initiative led by the city's Smart Cities office. This aims to reimagine waste as a resource, using waste products as a new form of energy. This has prevented 1,769 tonnes of greenhouse gas emissions by diverting 6,479 tonnes of food waste from landfill since their start in 2020.[64]

International Highlight

SWEDEN

In 1975, Sweden had a recycling rate of 38%. Today, this figure has jumped to 99%! Sweden is a global leader in waste management and is now on track to reach its zero-waste goal. Sweden is achieving this goal through different policies and projects. One of which is making citizens responsible for handling costs associated with the management of their waste. This monetary incentive encourages producers to properly sort waste and bring it to waste collection stations, which can be found within 300 metres of all residential areas. Remaining waste, that cannot be recycled or composted, is sent to Sweden's 34 waste-to-energy plants. These energy plants eliminate waste by combustion, which consequently generates energy for heating or electricity. WTE plants are good alternatives to deal with waste that cannot be reused, but we must stay aware that these energy plants emit their share of harmful toxins and GHG emissions.[65]

Small and Rural Highlight

CANMORE, AB

POP. 14,370

Implementing composting programs can meet with challenges such as resident participation rates, designing efficient pick-up routes, purchasing the right technology, and more. But rural and small communities face an additional challenge in the form of wild animals. This was the case for the town of Canmore, Alberta, where backyard composting is illegal due to the risks of attracting bears and other unwanted scavengers. Residents, however, recognized the importance of cutting down on food waste if the town is to reach its climate goals, and called on the municipality to implement a composting program. The town responded by launching a pilot project in 2019, with five neighbourhood animal-proof bins (decorated by a local artist), where residents can bring their compost. The municipality faced an initial barrier in the need to upgrade their transfer station. However, they received help from the nearby town of Banff, which offered to transport Canmore's food waste to a processing facility until Canmore's transfer station was ready. The program has met with extreme enthusiasm from residents. Food and food-soiled paper represent about a third of Canmore's

residential waste, and the town was able to divert about a third of that in its first year alone. After starting with residential pick-up, the town started offering commercial composting pick-up. The program is funded by a $28 additional cost per year in recycling fees.[66]

WATER CONSUMPTION

Why this indicator is important

We measure water consumption as the amount of residential water consumption in litres per capita per day. Water conservation is important from both an environmental and climate standpoint. Canada is one of the largest users of freshwater in the world.[67] Treating wastewater produces methane, a greenhouse gas, which water conversation can help cut down on.[68] The more extreme and frequent weather events caused by climate change can also pollute our surface and groundwater systems.[69] This can disproportionately affect communities that already struggle with water access, such as Indigenous communities that face drinking water advisories.[70]

Water use in a city is broken down into three main categories: residential, commercial, and industrial. On average, residential use accounts for about half or more of total water consumption in a municipality.[71] Research has shown that "volume-based pricing" is a good strategy for encouraging residential water conservation. While some municipalities apply flat-rate pricing (where all households are charged the same amount regardless of variations in consumption levels), volume-based pricing means that households are charged based on the actual amount of water used.[72] Volume-based pricing encourages households to reduce their water use by as much as 73% compared to flat-rate pricing. However, volume-based pricing requires the city to install water metres on every home.[73]

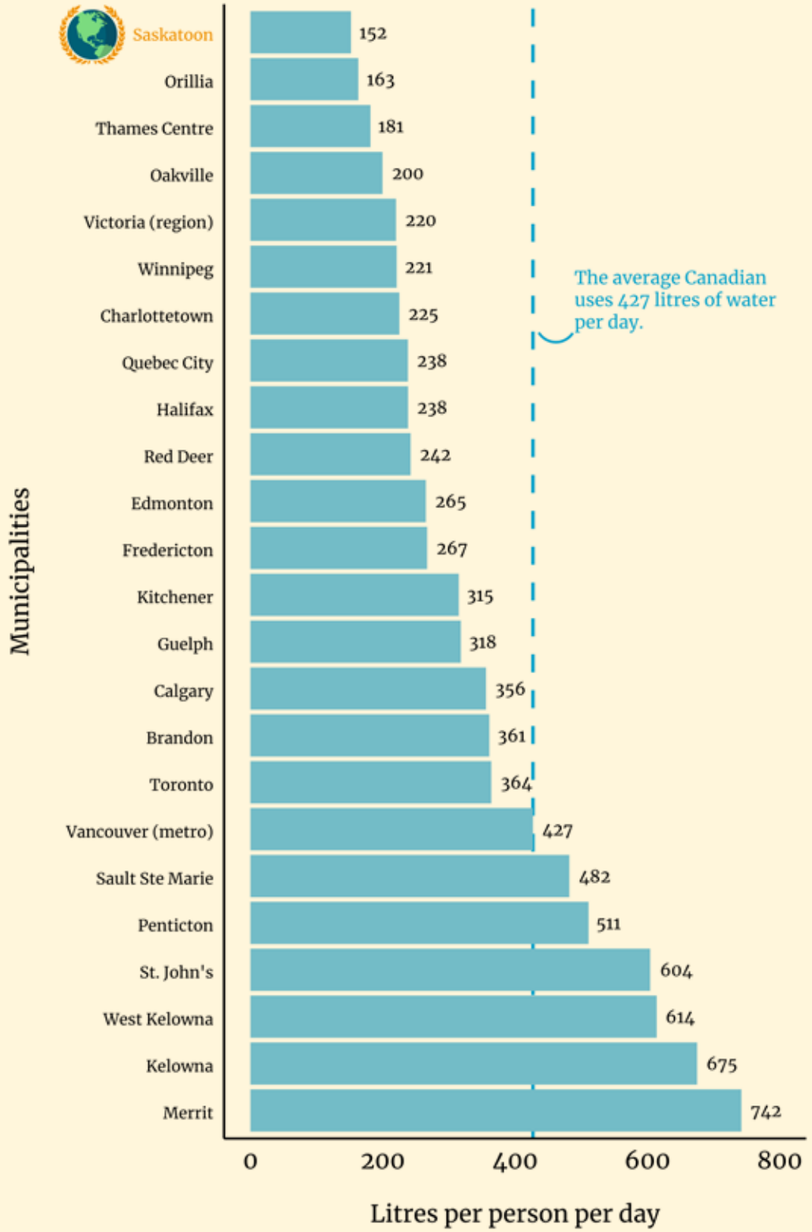
Other strategies cities may use include educational programming and water efficiency incentives, as well reducing water consumption from city-owned facilities.

Data availability and accessibility

Water consumption is a new indicator for the NCL this year. We chose to add it because it is a significant part of city services as well as environmental sustainability. This data involved contacting city water facilities and city staff, as well as consulting water consumption reports. Cities that have water meters installed in homes are able to obtain this data more easily, although some cities provided a total residential water consumption, which meant that we had to calculate per capita use using census data.

RESIDENTIAL WATER USAGE

Average water usage, litres per person per day



Note(s): Data are from 2020 to 2021. Sources include city water reports and city staff. The dotted line represents the Canadian average.

Winning Municipality

SASKATOON

The winning city is Saskatoon, Saskatchewan with a water consumption of 152 L/capita/day.

One of the key actions in the city's Strategic Plan for 2022-2025 is to "implement innovative and efficient water conservation practices and programs..."[74] Saskatoon has used an advanced metering infrastructure system since around 2016, in which installed water metres automatically report customer usage to the utility for billing.[75] The city provides educational information on how residents can reduce water use through its "Be Water Wise" program, and also offers a $20 rebate on rain barrel purchases. It also partnered with SaskPower, the local utility, on the Energy Assistance Program, which offers lower-income residents free retrofits such as water-efficient showerheads.[76] As with energy efficiency measures, these kind of retrofits are not only climate-friendly and sustainable, they also help residents save money on their utility bills.

International Highlight

CAPE TOWN, SOUTH AFRICA

Cape Town's strong water conservation program has resulted in a 30% reduction in water use by the city, despite a population increase of 30% over the same period. The programme focuses on water conservation education as well as implementing water-saving technology. In the first category, the city trained school caretakers in 60 schools about water conservation. In the second, the city improved leak detection, adjusted water pressure to reduce wastage, and carried out a massive overhaul of old infrastructure, including replacing 20,574 water meters. The city also worked with parks and golf courses to get them to irrigate with treated effluent rather than potable water, saving millions of gallons a year.[77]

TRANSPORTATION

These indicators track how well municipalities are providing options and infrastructure that makes sustainable transportation possible. How easy is it to travel by public transit, walking, biking, and electric or shared vehicles?

INDICATORS IN THIS SECTION

RELATED UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

WALKABILITY

Why this indicator is important

Walkability measures how easy it is for residents to travel around the city by foot, including being able to access workplaces, schools, grocery stores, and other essential services and amenities. By decreasing emissions from transportation, high walkability is a key factor in reducing GHG emissions. It also promotes equity by ensuring those who cannot afford a car or are unable to drive can travel around the city as easily as anyone else.

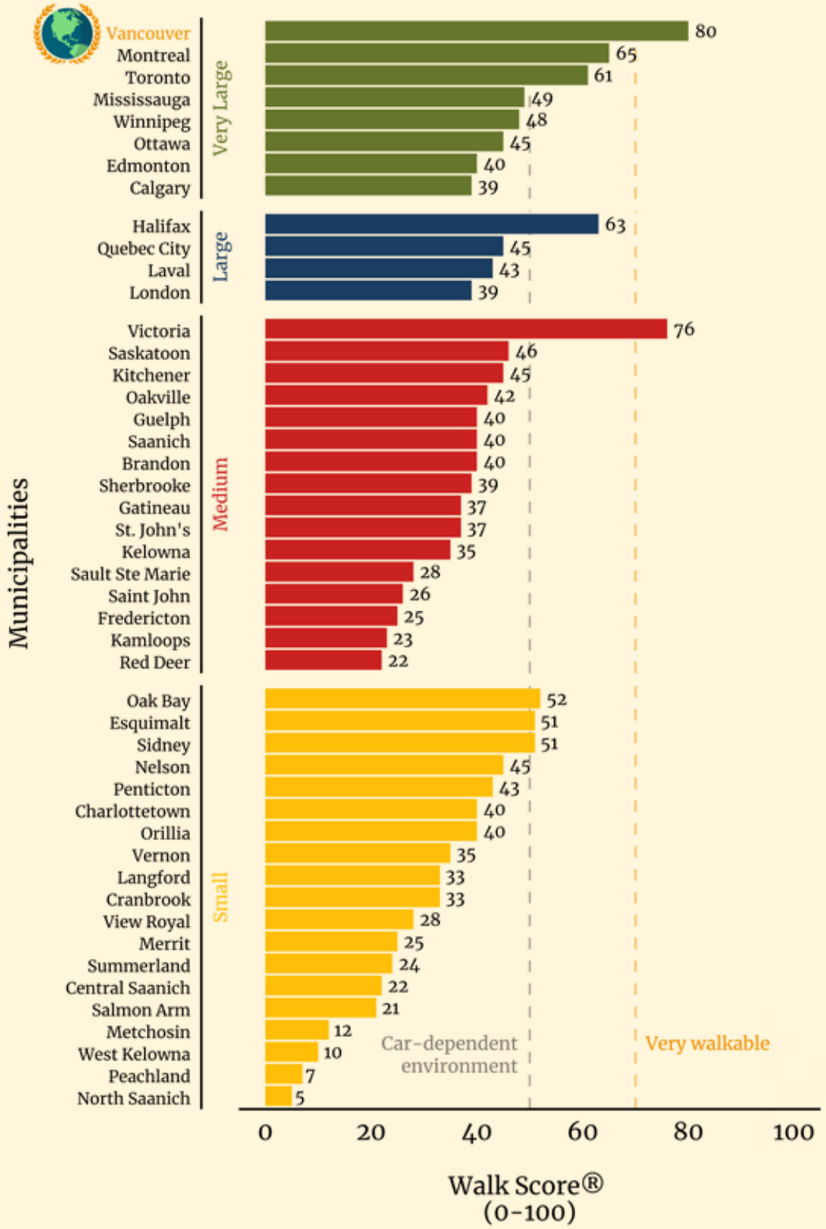
While many factors influence walkability (including seasonal weather), a community's walkability is largely a result of municipal governments' deliberate and researched action to provide active transportation infrastructure that favours pedestrians and discourages reliance on automobiles. Urban density, ensuring roads are designed with sidewalks, curb-cuts, and pedestrian crossing lights, good street lighting, and regulating lower vehicle speeds on residential roads are just a few ways that cities can increase pedestrian-friendliness. They can also ensure city design connects pedestrians to other modes of green transportation—for example, ensuring everyone lives within a certain distance of a public transit stop.

Data availability and accessibility

To measure walkability, we rely on cities' walkability scores, designed by Walk Score.[78] Walk Score evaluates cities around the world and is used reliably by realty, city planners, healthcare planners and many other businesses. Scores range from 0 to 100 points. A score of 90 to 100 means that all errands can be done without reliance on vehicles. A score between 70 and 89 means that most needs can be met without use of a vehicle. Scores descending from 49 define a city as increasingly car dependent. For further in-depth understanding of the relationship of walkability, bike lane development, transit development and the use of green space and housing densification, the website of the Institute for Transportation and Development Policy, www.itdp.org is very helpful.

WALKABILILTY

Walk Score® assigns a value between 0 to 100, where 100 is the most walkable



Note(s): Data are from Walk Score®. (2022). This score considers a number of variables such as distance to amenities and pedestrian friendliness.

Winning Municipality

VANCOUVER

The winning city, Vancouver, British Columbia, is a model walkable city with a Walk Score of 80. In 2019, Vancouver initiated a four-phase plan development that heavily relied on citizen input. The result, "Climate 2050",[79] adopted as policy in July 2022, promotes three main themes within the goal of establishing a sustainable city by 2050: create more housing, support the local economy, and address climate change. The plan proposes increasing the density of the urban space by developing neighbourhoods around the 15-minute city concept. Neighbourhoods would be culturally vibrant and support local businesses, arts, culture, valued amenities and public spaces, and they would be linked by an expanded transit system that centres on Vancouver's recently developed monorail. The third prong of the plan addresses carbon emissions by continuously improving transport, so it is more sustainable, by creating denser housing across neighbourhoods, by restoring and expanding green spaces, by protecting water courses and shores and by growing the forest canopy. These initiatives all nicely dovetail with the creation of a walkable city and with making the 15-minute city a reality.

International Highlight

BARCELONA, SPAIN

Barcelona, Spain, is promoting walkability in its city by implementing the "superblock" project. With its unique urban design, Barcelona had the ability to merge multiple blocks together to create a superblock. As of now, five superblocks have been created. These super-blocks are designed to give back roads to pedestrians and cyclists, as well as promoting green spaces. The removal of many roads and over 3500 parking spaces were required. These changes in urban planning have led to reduced GHG emissions, increased walkability and cycling, and a reduced urban heat island effect. The new parks and plazas created from the removal of roads and parkings lots have allowed residents to enjoy a safer and healthier lifestyle. The cleaner air and reduced noise levels have made spending time outside much more pleasant for citizens.[80]

Small and Rural Highlights

CLEARWATER, BC

POP. 2324

Some rural communities may lack active transportation infrastructure like sidewalks, making walking and cycling around the community more challenging. This was the case for the town of Clearwater, BC, which is bifurcated by a main highway, and split into three distinct regions separated from each other by 1-2 kilometres. To address this challenge, the town adopted a Complete Streets policy through a new road cross-section bylaw in 2013. Originating in the US, but now being adopted by communities across Canada, a Complete Streets approach ensures that streets are designed with all types of users in mind, including pedestrians, cyclists, and people of all ages and mobilities.[81] Complete Streets policies can be included in transportation plans or bylaws and bylaw amendments. Since the adoption this policy in Clearwater, one roadway, Murtle Crescent, has been updated with a paved sidewalk and multi-use path, crosswalk, street lighting and trees. Residents are now able to access shopping and services in different districts of the community by walking or biking. The policy also requires developers to share in the cost of implementation, which meant that these improvements cost the municipality only $58,000. While Complete Streets have been adopted by urban and rural, larger and small communities alike, they may be especially useful for small and rural municipalities.[82]

BIKEABILITY

Why this indicator is important

Cycling is a low-emissions form of transportation, along with walking and public transit. Research shows that increasing the length of the cycling network by 7% in Montreal resulted in a 2% reduction in GHG emissions.[83] Cycling is also more affordable when compared to the cost of owning a vehicle—replacing a car trip with a bike trip is estimated to save a traveller $2.73 per mile.[84] Cycling also provides health benefits through physical activity, and prevents wear on roads which saves municipalities money.

However, cycling is only safe and appealing when there is adequate infrastructure, such as biking paths and protected bike lanes. "All Ages and Abilities" (AAA) is an international approach to bike infrastructure that seeks to make biking comfortable and appealing for all who may wish to cycle.[85] Municipalities can start by developing an active transportation plan that maps out goals and timeframes for the installation of bike infrastructure.[86] That can be complemented by municipal-led programming promoting cycling, and traffic calming policies in key cycling areas.[87] While snow and bad weather poses a barrier for cycling for a portion of the year, cities can also help by ensuring snow removal of bike lanes.

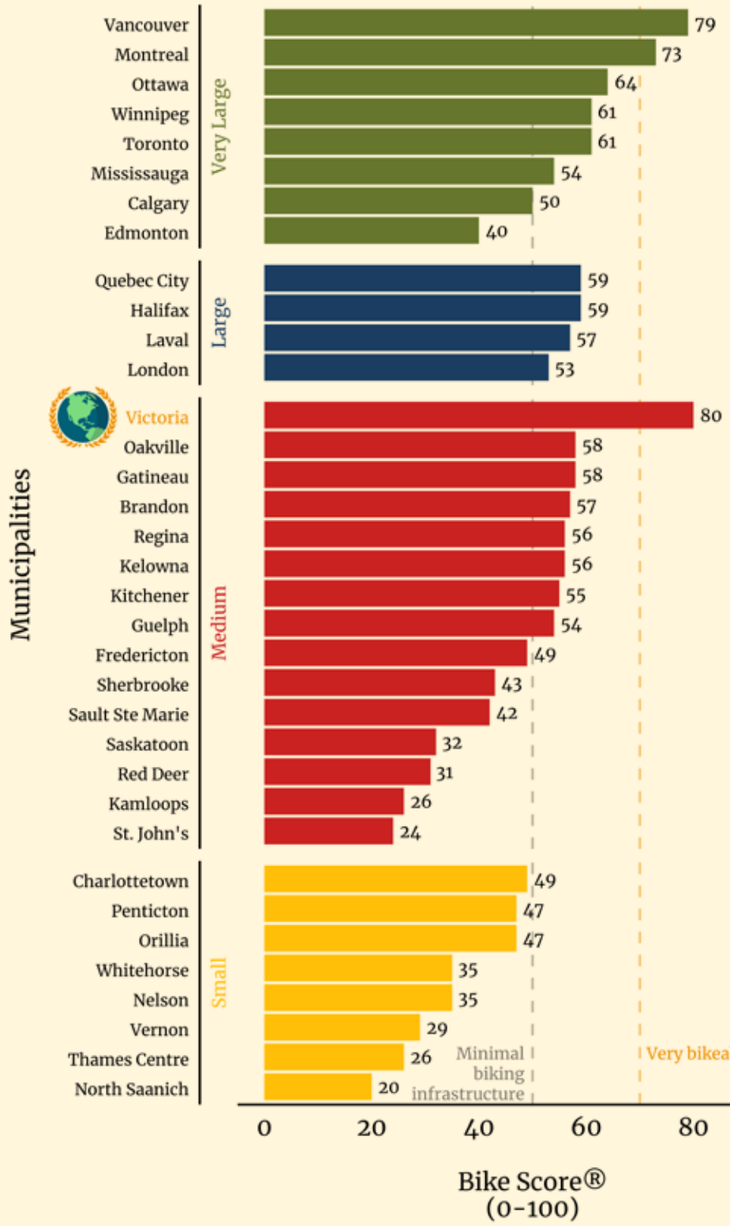
Data availability and accessibility

Data was obtained by looking up the municipality's Bike Score, from Walk Score.[88] The bike score is calculated through four equally weighted components: bike lanes, hilliness, destinations and road connectivity, and bike commuting mode share. Within the bike lane rating, bike paths are weighted 2x more than bike lanes and 3x more than shared infrastructure. Walk Score obtains bike lane data from Open Street Map,[89] while the hill data is from the National Elevation Data set from the US Geological Survey. As for destinations/road connectivity, it is based on their Walk Score; it is modified to include metrics such as intersection density and average block length, etc.

Though we have scored this indicator a "3", this is a result of using Bike Score—if we were looking at municipalities' data directly, it would probably be a "1," due to a lack of standardization and availability.

BIKEABILITY

Bike Score® assigns municipalities a value between 0 to 100, where 100 is the most bikeable



Note(s): Data are from Bike Score®. (2022). This score considers multiple variables such as bike infrastructure and road connectivity.

Winning Municipality

VICTORIA

The winning city is Victoria, British Columbia with its 32 km AAA Cycling Network. Victoria adopted the AAA approach in 2016 and the aim is to complete their network in 2023. Their bike infrastructure will allow for 95% of the city to be within 500m of the bike network. One of the goals of their AAA Cycling Network is to encourage cycling among those who do not feel as comfortable by installing more safe infrastructure. The city has a combination of different infrastructure, such as one-way and two-way protected bike lanes, shared-use neighbourhood bikeways, multi-use pathways and advisory bike lanes. Overall, this allows for access to parks, schools, recreation centres and village centres.[90]

International Highlight

JAKARTA, INDONESIA

Jakarta, Indonesia, has planned a 500 kilometre cycling network throughout the city. After the COVID-19 outbreaks, the city decided to significantly increase its cycling path network in hopes of reducing transmission. Once social restrictions were eased, a major public consultation was conducted and it showed that cycling had gone up 500-1000% from the past year. The new initiative also includes integrating more cycling infrastructure, such as bicycle parking, all in hopes of making cycling more accessible and enjoyable for users.[91]

PUBLIC TRANSIT

Why this indicator is important

Efficient, effective, affordable public transit cuts pollution, automobile congestion, commuter times, and greenhouse gas emissions.[92] Approximately 20% to 40% of people do not drive due to income, ability, age, or choice.[93] Providing safe, frequent, and accessible public transportation improves opportunities for all income levels. According to the Federation of Canadian Municipalities, Canadian households can save annually $10,000 by taking public transportation.[94]

Municipal public transit is funded by all levels of government, as well as through fares. It is owned and operated by municipalities, and is one of the important public services cities provide. Larger cities tend to have more extensive public transit systems due to their size and density, as evidenced in the data visualization—but there are other models available to smaller communities (see our small and rural case highlight).

While even diesel buses already produce fewer emissions compared to using individual vehicles, to further reduce the emissions from transportation, many cities are transitioning their bus fleets to hybrid or electric.[95] Another innovative policy to support transit ridership is free-fare transit, which cities like Victoria have introduced for children 12 and under.[96]

Data availability and accessibility

Transit ridership data is typically easy to find in annual municipal transportation reports or city data portals, or directly from city staff. Cities may track different transit metrics (boardings versus trips, for example), so we ensure to focus on transit trips specifically. Another challenge is that while the NCL is intended to focus on municipalities, most larger cities' transit systems (including this year's winner, TransLink) cover the entire metropolitan region rather than the municipality alone. When we divide the total number of yearly trips by population, we therefore ensure to use the metro population rather than any individual municipality's population.

TRANSIT TRIPS

Transit trips per capita, 2021

Note(s): Data are from 2021. Sources include city data portals, transit reports, and city staff.

Winning Municipality

VANCOUVER

While always a strong contender, Vancouver, British Columbia has emerged for the first time in the NCL as the leader in this indicator. TransLink (the public transit authority) provides transportation coverage for the entire Greater Vancouver Metropolitan area. High ridership rates can partially be attributed to its Frequent Transportation Network (FTN), a network corridor of transit service which runs buses no less than 15 minutes apart seven days a week. TransLink is governed by the South Coast British Columbia Transportation Act. The governance structure includes a board of directors and the Mayors' Council on Transportation, which oversee Vancouver's public transit system.[97] TransLink has its own Climate Action Plan, as well as a Zero-Emissions Fleet Transition Plan, which has the goal of adding over 460 battery-electric buses to the fleet by 2030.[98]

TransLink was also recently ranked the fourth best public transit system in North America in the Urban Mobility Readiness Index, led by the consulting firm Oliver Wyman Forum in partnership with the University of California, Berkeley.[99]

Small and Rural Highlight

NICOLET, QC (POP. 8,620)
PLESSISVILLE, QC (POP. 6,414)
PRÉVOST, QC (POP. 13,692)
VAL-DES-MONTS, QC (POP. 13,328)
CARLETON-SUR-MER, QC (POP. 4,081)
ÎLES-DE-LA-MADELEINE, QC (POP. 13,000)
MANIWAKI, QC (POP. 3,757)
MRC DE PONTIAC, QC (POP. 14,764)
SAINT-CHARLES-SUR-RICHELIEU, QC (POP. 1735)
SAINT-CONSTANT, QC (POP. 30,547)
SAINT-FULGENCE, QC (POP. 2061)
MERCIER, QC (POP. 14, 626)
SAINT-SIMÉON, QC (POP. 1117)
VARENNES, QC (POP. 21,198)
DIEPPE, NB (POP. 28 114)
BERESFORD, NB (POP. 4,294)
SAINT-QUENTIN, NB (POP. 2,141)
SHIPPAGAN, NB (POP. 2,672)
TRACADIE, NB (POP 16, 048)

Public transportation is a key climate solution, but low population density makes public transit within and between rural and small communities challenging to operate. One innovative approach is the SAUVéR project (Système d'autopartage de véhicules électriques en région).[101] SAUVéR is a tool created by the Société d'innovation en environnement and YHC Environnement in 2016, with funding from the Federation of Canadian Municipalities. They then partnered with six municipalities in Quebec, who were given funding to purchase one or two electric vehicles each for their municipal fleet. On evenings, weekends, and holidays, the vehicles are made available for community use. The SAUVéR software supplies the car-sharing system that tracks who is using the car and how far it has been driven, among other data.[102] The municipalities also used the funding to install charging stations to facilitate inter-community travel. The program has been so successful, many more Quebec municipalities and five New Brunswick municipalities have since joined. This decreases both corporate and community carbon emissions, generates revenue for the municipality, optimizes the use of the municipal fleet, and provides an affordable method of public transportation for people living in these communities. Find a map of all the municipalities offering the SAUVeR system at: https://sauver.yhcenvironnement.com/en/.

International Highlight

STOCKHOLM, SWEDEN

Introducing road pricing may seem out of the question for many individuals, but it has been shown that this policy idea works wonders for reducing GHG emissions and traffic, while increasing public transit use. Stockholm, Sweden, has introduced a congestion charge during peak hours and has seen its traffic decline by 20%. This reduction in traffic has led to vehicle emissions in the inner city to decrease by 10-15%. Although the policy is now supported by 70% of residents, it was not always the case. When the policy was first proposed it was only supported by 33% of residents. Throughout the years, popularity for the policy grew as residents got used to being charged and saw the benefits appear. To encourage more support for the policy, it was agreed that the revenue from the congestion charge would be redirected to national investment planning processes.[100]

ELECTRIC VEHICLE (EV) CHARGING STATIONS

Why this indicator is important

The transportation sector accounts for 27% of GHG emissions in Canada.[103] Half of this is attributed to cars, vans, and light-duty trucks. Switching to electric vehicles (EVs) or hybrids can reduce these emissions.

Sales of EVs in Canada have increased by 35% in 2022 compared to the previous year due to improvements in battery range and cost.[104] Canada has set a goal for 100% of new vehicle sales to be electric by 2035. The expansion of charging infrastructure (both public and at private residences) must go hand in hand with increased EV ownership—sales of EVs will increase if more public ports are added and more ports will be installed if EVs sales increase. NRCAN estimates we will need an EV to charger port ratio of 36 to 1 by 2035.[105]

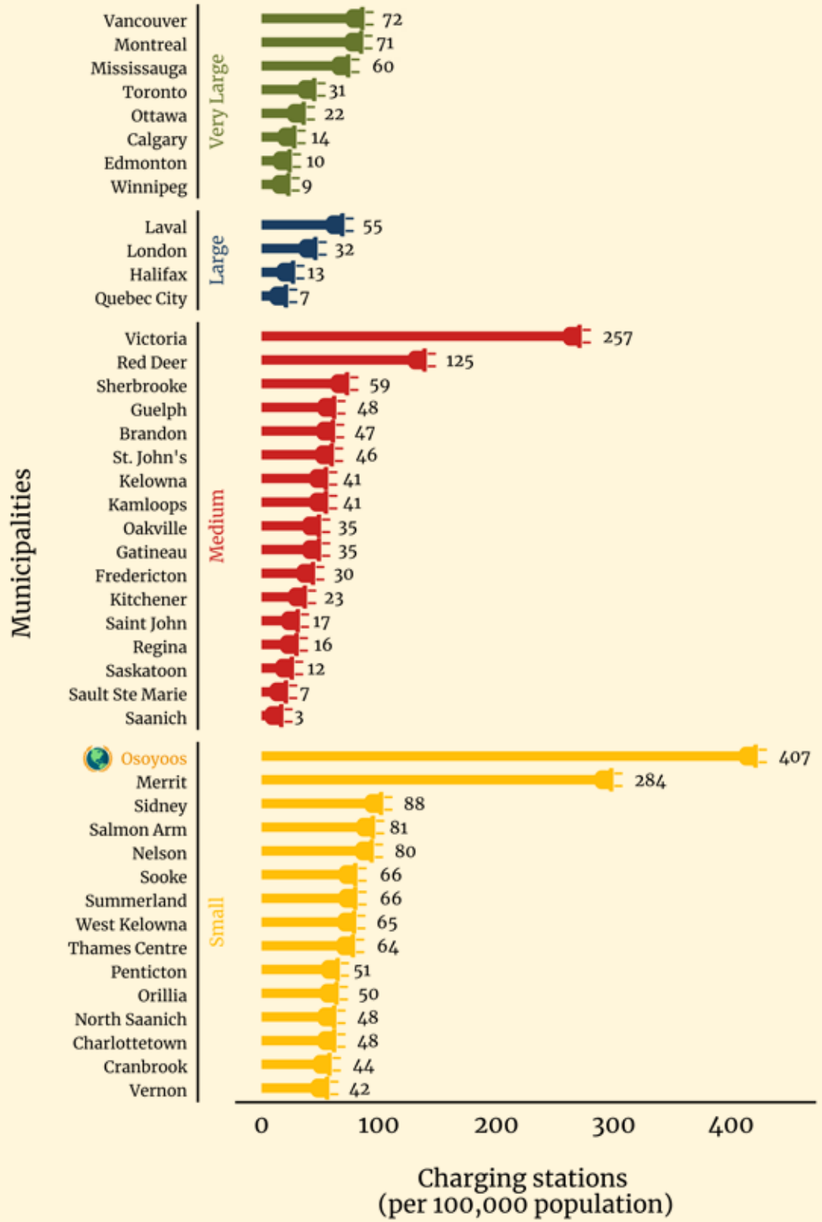
Currently, multiple public charging networks exist and are run by various different entities, including municipalities. There are two main types of chargers Level 2 and Level 3. Fast chargers (Level 3), positioned along highway corridors and urban retail centres close to multi-user residential buildings, are one solution to improve the public network of chargers.[106]

Data availability and accessibility

Data on public charging stations is available from ChargeHub.com[107] and PlugShare.com.[108] Each site has a map which shows the location and level of charger available. These maps can be used by EV owners to locate chargers and plan their travel accordingly. A Level 2 charger takes 4 to 10 hours for a standard battery, while Level 3 chargers can reach an 80% charge in 30 to 45 minutes.[109]

EV CHARGING STATIONS

The number of level 2 and level 3 EV charging stations per 100,000 population



Note(s): Data are from 2021 and 2022. Multiple sources are consulted including ChargeHub and PlugShare.

Winning Municipality

OSOYOOS

Osoyoos, a small town in British Columbia is the winner this year. BC also has the most charging stations for medium cities (Victoria) and for very large cities (Vancouver). In late 2021, Osoyoos added 11 new Level 3 chargers in association with Natural Resources Canada and Tesla Motors Canada.[110] There are eight Tesla superchargers and three FLO (a Quebec-based company) direct current fast chargers in the community, with Tesla also supplying funding for the maintenance of its stations.

Provincially, British Columbia has created the CleanBC Go Electric Public Charger Program to fill in geographic gaps in charging infrastructure, and prioritize locations in rural, northern, or Indigenous communities.[111]

International Highlight

ENGLAND

As of 2022, England is the first country making it obligatory for new homes and buildings to have electric vehicle charging points. Starting next year, the law will also include new supermarkets, workplaces and major building renovations. This policy was created due to the lack of EV charging stations in the country. The global demand for electric vehicles has increased 140% in the first quarter of 2021. Unfortunately, the number of EV charging stations has not increased enough to respond to the growing demand for electric vehicles, especially in Europe. England's new law intends to increase EV charging stations and consequently, continue encouraging the shift away from fossil fuels.[112]

Small and Rural Highlights

TRURO, NS

POP. 12,700

COLCHESTER COUNTRY, NS

(POP. 51,476)

Communities with small populations may find that it is not hard to achieve a reasonable number of charging stations per capita—as evidenced by small communities' performance in the charging indicator. However, analysis shows that urban centres can get away with a lower number of charging stations per capita compared to rural communities, because the chargers are used more efficiently.[113] Since small and rural communities tend to be less densely populated, the main challenge may be more about ensuring there are enough stations per square kilometre, rather than per capita. For EVs to be viable in rural areas, people need to be able to make long daily commutes without worrying about getting stranded without a charger nearby. Private businesses, like gas stations, may not see the point in installing charging infrastructure until there is a higher rate of EV ownership—which creates a chicken and egg situation. There is therefore an important role for local governments to play.

Nova Scotia, a more rural province, is working on catching up to provinces like Quebec, Ontario, and BC when it comes to charging infrastructure. The Nova Scotian municipality of Colchester and Town of Truro installed six and one (respectively) Level 2 chargers at the end of October 2022.[114] They received partial funding from the federal government's Zero-Emission Vehicle Infrastructure Program through the Nova Scotia Clean Foundation. The chargers (each one costing around $17,000-$20,000) are spread throughout Truro as well as key tourist points and smaller communities within Colchester County. The municipalities recognized that the chargers could help boost the local economy, since EV users might grab a bite at a local restaurant, or check out nearby businesses while waiting for their vehicle to charge. The charger installation follows climate policies and commitments from each government—Colchester has a plan for all vehicles to be zero-emission by 2040, while Truro became a member of the Partners for Climate Protection program in October 2021 and is undertaking an emissions inventory.

SHARED VEHICLES

Why this indicator is important

Reducing individuals' reliance on personal cars brings a wide range of social, economic, and environmental benefits, thereby contributing to the general well-being of citizens and to fostering a more just society. Reducing reliance on personal cars is, therefore, key to the health of citizens and cities alike. One way to do this (besides increasing active transportation infrastructure and public transit), is supporting car-sharing. Car-sharing is usually run by a private company, but can sometimes be run by the municipality. A car-share is a car rental service that allows people to use vehicles for short periods of time, often by the hour. It can be an economical and eco-friendly option for those who only need occasional access to a vehicle, and for those for whom public or active transit is not a feasible or convenient method of transport. Adding car sharing options to the mix fosters social justice by making sure that there are commuting options adapted to all sorts of needs and situations.

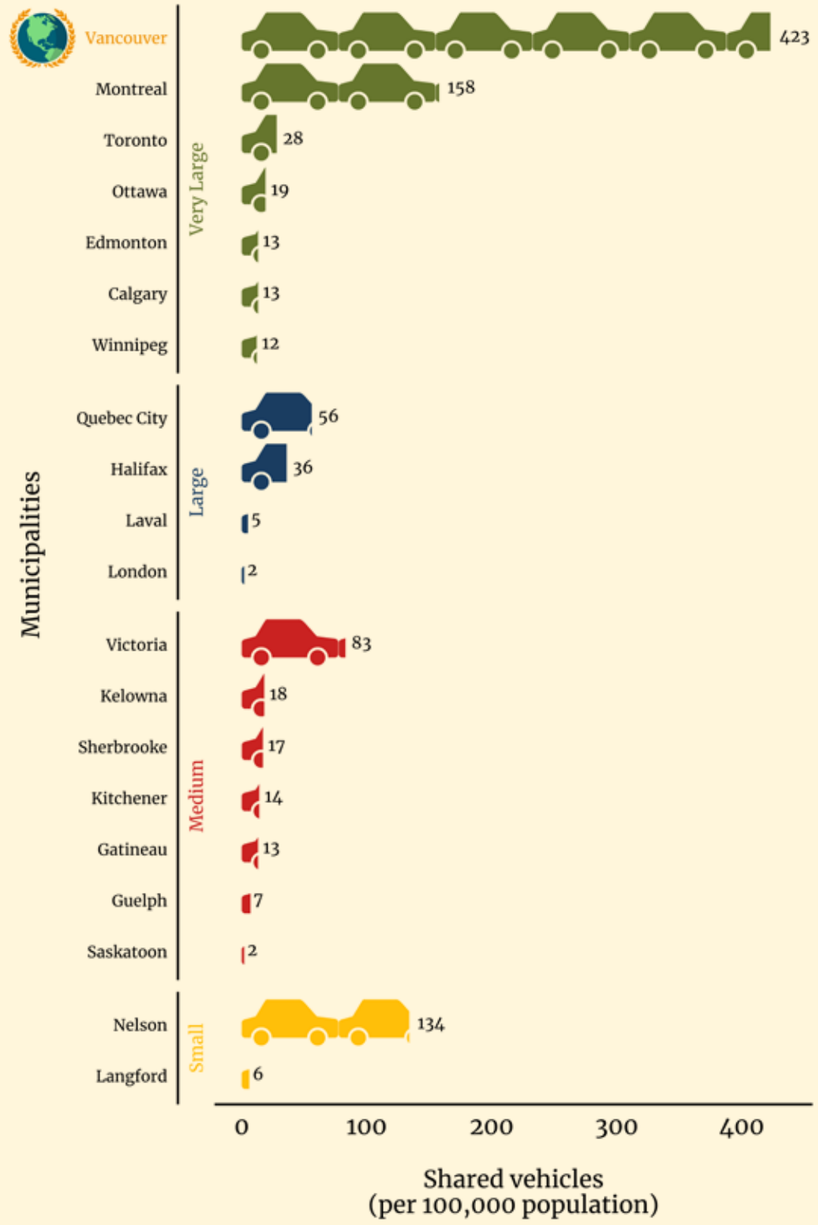
To foster more car sharing, cities can adopt bylaws to allow car-sharing vehicles to be parked for extended periods of time, particularly in strategic locations. Montreal, for example, allows all car-sharing vehicles access to parking in residential areas in participating boroughs.[115]

Data availability and accessibility

Data for this indicator is compiled from car-sharing companies' websites and direct contact. Most companies offer a publicly available map of charging stations, though not necessarily the number. While municipalities generally have data on the number of registered shared vehicles licenses, this data is not made publicly available.

SHARED VEHICLES

Number of shared vehicles per 100,000 population

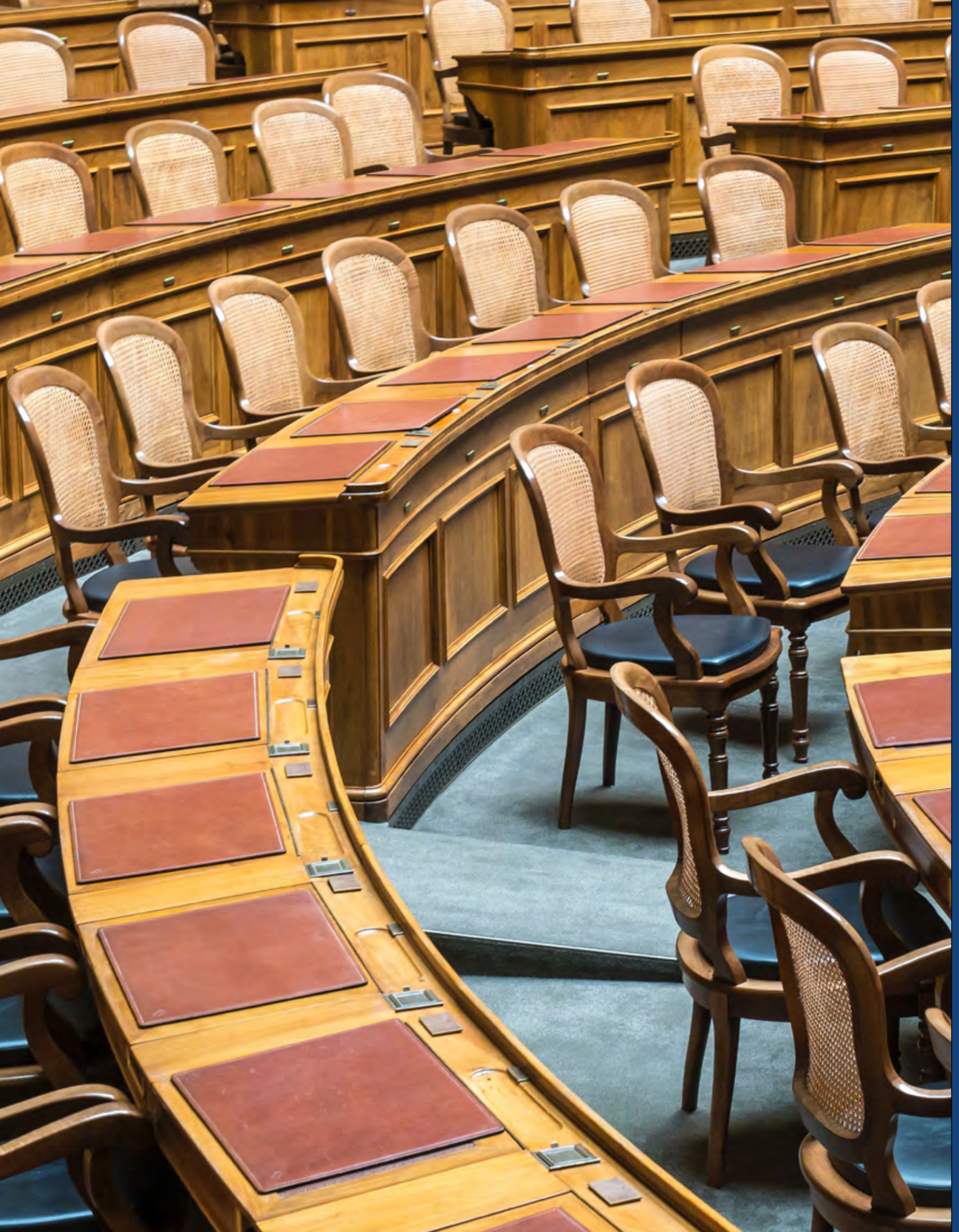


Note(s): Data are from 2022. Sources are shared vehicle companies (websites and direct contact).

Winning Municipality

VANCOUVER

Again this year, Vancouver's performance on this indicator considerably surpasses that of any other Canadian city. Part of this success can be attributed to the fact that Vancouver's city bylaws allow for car-sharing vehicles to be parked in spaces that are otherwise reserved for residents or parking permit holders. Users can also park an actively-rented car-sharing vehicle at a parking metre for up to two hours, free of charge. By having adopted such bylaws, Vancouver has succeeded in making it easy and hassle-free to access car-share vehicles, and to park them as well. Creating this kind of positive user experience can effectively create a strong disincentive to owning a personal vehicle. Another factor that helps foster this successful and efficient car-sharing network is that Vancouver is Canada's most densely populated city centre, meaning that the large fleet of car-sharing vehicles found in the city is concentrated in a relatively small surface area, thereby enhancing the accessibility of the vehicles.[116]



GOVERNANCE

These indicators track municipal governance and management on climate and sustainability. Who is making decisions and are they representative of the community? What commitments has the municipality made? Are they backing up those commitments with adequate resources?

INDICATORS IN THIS SECTION

RELATED UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

MUNICIPAL EMPLOYEES

Why this indicator is important

Cities can set targets and create plans to achieve climate and sustainability targets—however, these will only be achieved if the city has dedicated a sufficient number of staff with clear roles, training, and adequate resources. Across the municipalities represented in this year's NCL, we found varying structures when it came to climate, with some cities having a dedicated climate change unit or staff person, while most have a combined climate and sustainability department.

In municipal decision-making, climate change is a complex, relatively new, and ever-evolving area. While not captured in this indicator, municipal staff also need access to the latest training and education on municipal climate strategies, as not all may be well-versed on the subject (especially when first hired). Climate change cuts across all municipal departments. More public employees with expertise, knowledge and training in climate change can not only contribute to environmental management programs. They can also support motivation and maturation of climate change perspectives in other city work teams.

Cities of course also rely on collaborative initiatives involving private, non-profit, and voluntary actors in achieving climate and sustainability targets. These groups can play an important role, especially when a city has limited resources. However, municipal leadership is still crucial.

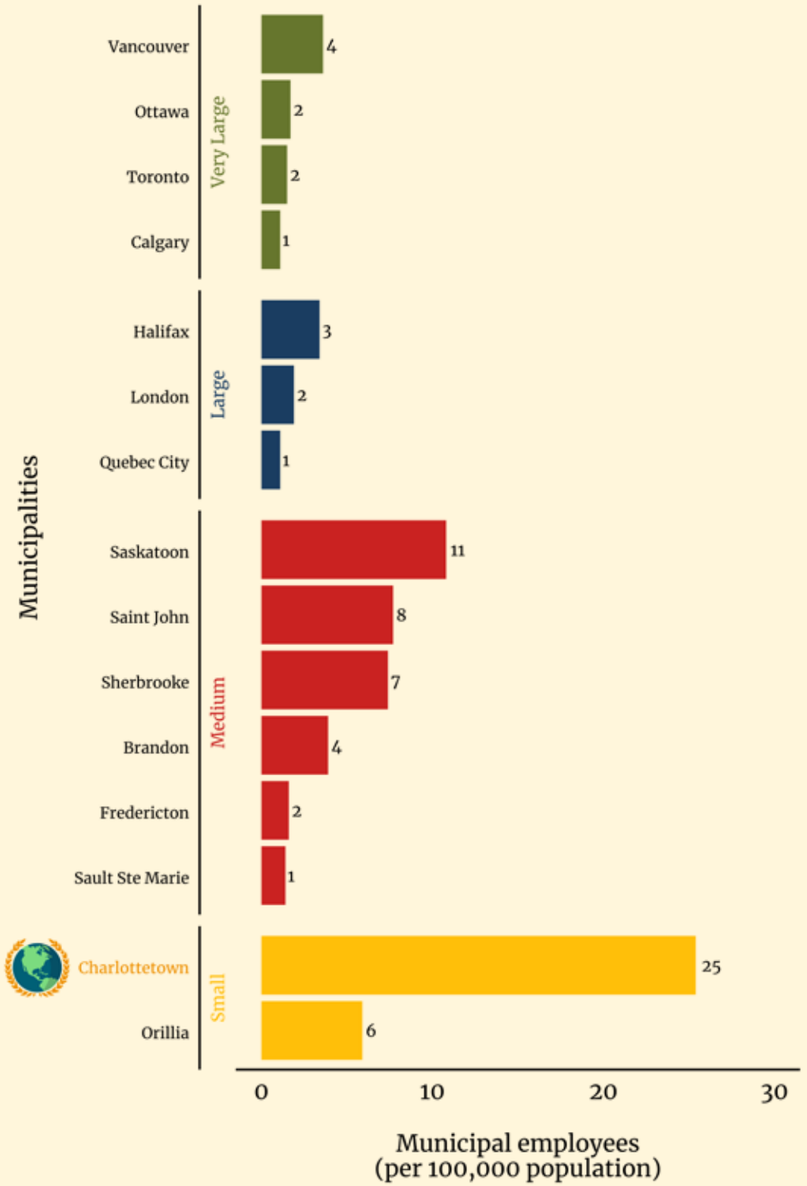
Data availability and accessibility

We used two strategies to collect this data. First, we consulted city websites and identified the professional roles and responsibilities of the municipality employees–however, this information is generally not available online. To confirm our findings, we also contacted city staff directly.

One challenge with this indicator is how to distinguish climate and energy transition work from other environmental and sustainability areas. Where possible, we tried to capture the number of staff specifically dedicated to climate and energy transition specifically, since we were interested in how intensely cities are dedicating staffing hours and resources to that relatively new and urgent area. However, since this work is often housed within a broader sustainability department, with staff having multiple responsibilities, it was sometimes challenging to draw that distinction.

DEDICATED TO THE TRANSITION

The number of municipal employees dedicated to climate and sustainability per 100,000 population



Note(s): Data are from 2022. Multiple sources are consulted including city websites and city staff.

Winning Municipality

CHARLOTTETOWN

The winning city is Charlottetown, Prince Edward Island, with ten employees for its approximately 39,000 residents. The number of employees dedicated to studying and analyzing the city's climate change adaptation and mitigation strategies is likely supported by the city declaring a climate emergency municipality in 2019.

The Charlottetown Sustainability Department leads the implementation of the city's Community Energy Plan as well as the Integrated Community Sustainability Plan, which will soon be combined into a new Climate Action Plan. As well as energy conservation and transition, their focuses include active transportation, public transit, and food security. Staff positions focus on energy, urban forest, and general sustainability management.

The department also engages with the community through events such as Bike Week, a Fix It Fair, and a waste-reduction initiative called the Bring It Campaign.[117]

DEMOGRAPHIC REPRESENTATION

Why this indicator is important

This indicator, which is new this year, looks at the proportion of women and non-binary representation on city councils across Canada. While not explicitly linked to lowering GHG emissions, diverse councils mean more voices at the decision-making table and better representation for constituents. International research has also found connections between female political representation and an increased focus on issues like health, childcare and gender-based violence.[118]

Statistics on female council members around the world show Canada lagging behind other countries.[119] In an effort to improve that, the Federation of Canadian Municipalities (FCM) has launched an effort to reach 30% female council members by 2026. To get there, the FCM is calling on existing municipal councils to take steps to make it easier for women to run, including by making council operations more compatible with family responsibilities and by considering providing financial support to candidates.[120]

Meanwhile, data on non-binary council members remains scarce, as are campaigns to increase their presence in local government. So far, there are just a handful of politicians across different levels of government in Canada who publicly identify themselves as non-binary.

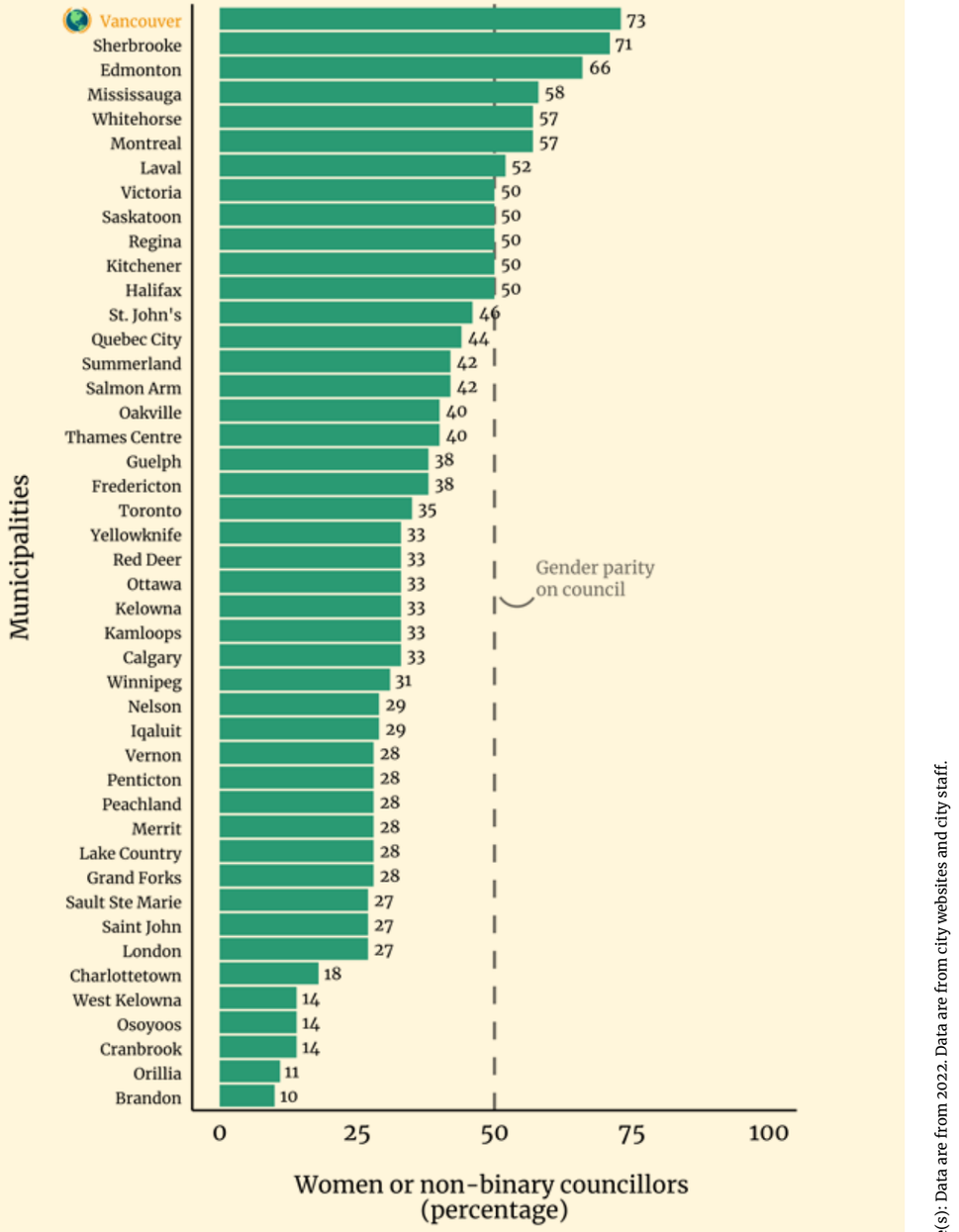
Data availability and accessibility

This indicator was calculated using information drawn from municipal websites. It's important to note that in some cases, assumptions were made based on the pronouns used in council member's biographies to determine how they identify. We also drew our data prior to any late fall municipal elections. In Vancouver's case, the most recent municipal election led to the proportion of female and non-binary council members dropping from 73% to 46%.[121]

When identifying a "winner" in this category, we debated whether it should be the city with the highest female and non-binary representation, or the city whose council demographics most closely matches its population (closer to gender parity). We decided to go with the former, with the justification that since women and non-binary people tend to be under-represented on councils, a representation superior to 50% would be more likely to be connected to intentional policies or circumstances for supporting female and non-binary candidates.

GENDER REPRESENTATION

Women and non-binary representation on city council, %.



Note(s): Data are from 2022. Data are from city websites and city staff.

Winning Municipality

VANCOUVER

Vancouver, British Columbia, is the winner of this category, with a 2018-2022 municipal council that was composed of 73% female and non-binary members. One possible factor contributing to this is Vancouver's municipal political party system. The municipal parties select and put forward slates of candidates every election, who are then able to benefit from the name recognition and fundraising power of the party as they run their campaigns. In 2018, at least two of Vancouver's major municipal parties —the Non-Partisan Association and Coalition of Progressive Electors— put forward more female candidates than male.[122] In fact, none of the ten winning council members in 2018 were independent, indicating it may be difficult to make an impression on Vancouver voters without a party behind you, especially for female and non-binary candidates. While 2018 brought in an unprecedented number of female council members, it's also important to note that they were overwhelmingly white, with just one person of colour elected in a city where more than 50% of people identify as racialized.[123]

EMISSIONS REDUCTION TARGETS

Why this indicator is important

According to the Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment report, if we are to limit global warming to 1.5°C, we need to, globally, reduce greenhouse gas emissions by 50% by 2030, and reach net-zero by 2050.[124] Net-zero does not necessarily mean zero-emissions—just that all remaining emissions are offset.[125] However, globally, we should strive to reduce actual emissions to zero as much as possible. These science-based targets are fundamental to efficiently tackling climate change. Setting emissions reduction targets is the starting point to allow countries, provinces and cities to develop climate plans with a clear understanding of where they are, where they need to be and by when as well as whether they are on the right track. Targets can also provide a greater sense of urgency and be used for accountability.

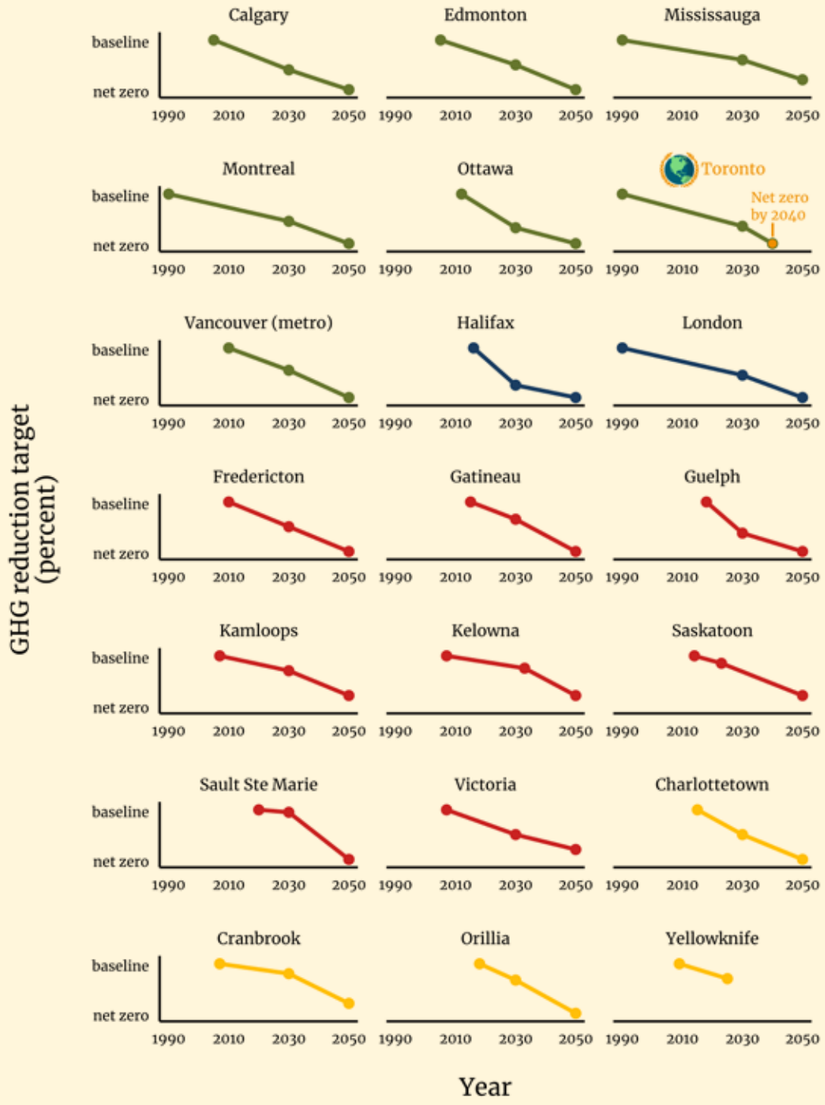
The Government of Canada is aligned with the IPCC's targets and has committed to achieving 40-45% emissions reductions by 2030, and net-zero emissions by 2050.[126] Municipalities will play a key role in bringing Canada closer to its GHGs emissions reduction targets.

Data availability and accessibility

Data on emissions reduction targets were relatively easy to find on cities' official websites and in their climate plans. One challenge is that in some places, municipalities will state their targets without providing the baseline year, which is an important context. Where cities had separate targets for corporate and community emissions, we looked at the community target.

GHG REDUCTION TARGETS

Targeted reductions in greenhouse gas (GHG) emissions, % reduction from baseline year.



Note(s): Targets are based on current commitments. Data are from city websites and climate plans.

Winning Municipality

TORONTO

Unlike our other indicators, emissions targets do not lend themselves to a quantitative ranking. Therefore, our data merely presents the different targets for comparison. However, we would like to highlight the city of Toronto, Ontario for its ambitious goal of reaching net-zero by 2040, ten years ahead of the IPCC recommendation.

Analysis has shown that not all "net-zero by 2050" scenarios are equal.[127] High emissions up until 2040 or 2045 followed by a sharp decline to net-zero still results in higher total GHG emissions in the atmosphere, with greater consequences for global temperatures, compared to reducing emissions as quickly as possible. Therefore, Toronto's commitment to "bending the curve" more sharply and aiming to reach net-zero by 2040 is a commendable commitment.

Adopted in 2021, Toronto's 2040 target is one of the most ambitious in North America. The target is supported by a Net-Zero Strategy which focuses on five key areas, including establishing a carbon budget (see complementary indicators), reducing natural gas use in buildings, increasing low-carbon transportation options, and increasing local renewable energy.[128] One challenge for any city is that the city government does not have direct jurisdiction over a large percentage of the city's emissions. Therefore, meeting the 2040 target will require the cooperation of federal and provincial governments, businesses, and residents.

CLIMATE MITIGATION

Why this indicator is important

Partners for Climate Protection (PCP) is a program of the Federation for Canadian Municipalities (FCM)[129] and ICLEI–Local Governments for Sustainability Canada,[130] open to any Canadian municipality. Under our "municipal employees" indicator, we discussed how cities must go beyond the issue of adequate staffing: they must ensure that staff are provided training and resources. This is what the PCP program provides. The program is designed to provide structural support and resources for municipalities to act on climate change. A municipality starts by passing a resolution through council committing to moving through the Milestone Framework within ten years, and committing to reporting on progress at least once every two years and to participating in program activities with other network partners. Participating in the PCP connects municipalities to a network of other participating communities. It offers tools, networking venues, events, case studies, and other resources, as well as coaching and technical assistance support.

We track PCP membership as a key indicator of a municipality's commitment to act on climate change. In addition, this year our data visualization shows not just membership, but how many of the 5 key PCP milestones each municipality has achieved.

These milestones are:
1. Create a baseline emissions inventory and forecast;
2. Set emissions reductions targets;
3. Develop a local action plan;
4. Implement the local action plan;
5. Monitor progress and report results.

Data availability and accessibility

Data was collected directly from the PCP website, where the FCM keeps an updated list of members and milestones. To double check accuracy, information was also requested from FCM but not received.

PROGRESS ON CLIMATE MITIGATION

Municipal commitments and milestones through the Partners for Climate Protection Program.

Mileston 5 - **Monitoring Impact**

Brandon, Calgary, Fredericton, Guelph, Halifax, Kitchener, London, Mississauga, Ottawa, Regina, Saanich, Toronto, Vancouver

Milestone 4 - **Implemented Plan**

Nelson, Orillia, Victoria, Winnipeg

Milestone 3 - **Developed a Plan**

Charlotte-town, Cranbrook, Laval, Montreal, Quebec City, Saint John, Saskatoon, St. John's

Milestone 2 - **Set a Target**

Sherbrooke

Milestone 1 - **Create an Inventory**

Kamloops, Kelowna, Peachland, Penticton, Salmon Arm, Summer-land, Vernon

Member but has not acheived any milestone

Edmonton, Grand Forks, Lake Country, Merrit, Osoyoos, Sault Ste Marie, West Kelowna

Not a member

Central Saanich, Esquimalt, Highlands

Note(s): Data is from the Partners for Climate Protection (PCP) program (2022).

Winning Municipalities

MILESTONE FIVE MUNICIPALITIES

As of 2023, Partners for Climate Protection (PCP) has over 500 members in total, with municipalities from all thirteen provinces and territories.[131] Of the municipalities tracked in this report, thirteen have reached the fifth milestone (see page 101): monitoring and reporting results. Among them, Toronto and Halifax have some of the most ambitious climate commitments. A municipality is required to submit certain information to FCM to prove it has reached each milestone. Reaching milestone five means the municipality has submitted an updated corporate or community inventory for the current year; a quantification of the GHG reduction impact of each measure outlined in its local action plan; and a report on how stakeholders and decision makers have been included in the milestone process.

Even after reaching milestone five, municipalities are not done—they must keep implementing their climate plans and tracking progress to ensure they stay on track to reach their targets.

COMPLEMENTARY INDICATORS

Our complementary indicators examine which municipalities have key foundational policies in place for strong climate and sustainability action. These policies are likely to positively influence a municipality's performance across almost all of the primary indicators.

COMPLEMENTARY INDICATORS

	KEWOLNA	EDMONTON	WINNIPEG	OTTAWA	ORILLIA	FREDERICTON	HALIFAX
CLIMATE PLAN	✓	✓	✓	✓	✓	✓	✓
ADAPTATION PLAN	→	✓	✗	→	→	✓	✗
GHG INVENTORY FREQUENCY	→	✓	✗	✓	✓	✓	✓
GHG INVENTORY METHODOLOGY	→	✓	✗	✓	✓	✓	✓
CLIMATE TEST/LENS	✗	✗	→	→	→	✓	✗
CARBON BUDGET	✗	✓	→	→	→	→	✓
BUILDING CODE	✓	✓*	✗	✓	→	→	✓
DIVESTMENT	✗	✗	✗	✗	✗	✗	✗
FOOD COUNCIL	✗**	✓	✓	✗**	✗**	✗	✗**

* Corporate-only buildings
** NGO food council, but no municipal food council

See page 17 for full definitions of each indicator

INDICATORS IN THIS SECTION

TABLE OF RESULTS, OPPOSITE PAGE

We collected complementary indicator data for a smaller sub-section of municipalities, aiming for representation from east to west.

✗ No, the municipality has not adopted this policy.

✓ Yes, the municipality has adopted and is implementing this policy

→ In progress: the municipality is considering adopting this policy, or has adopted but not yet implemented it.

CLIMATE PLAN

No city can systematically and drastically reduce its GHG emissions without a climate plan, which takes a city's emissions targets and identifies specific pathways for how those targets will be achieved.

Developing a climate plan can take up to a year or more. For example, Orillia's council approved funding for the creation of a climate plan in the 2021 budget. City staff worked with an external consulting team and a committee of community stakeholders. They collected baseline emissions data and conducted scenario modelling to identify the best evidence-based approaches to meet Orillia's emissions targets. Residents were invited to give feedback on the plan through an open house and a community survey. The final plan, approved in April of 2022, includes sections on local renewable energy, buildings, and transportation.[132]

While most large and medium-sized municipalities across Canada now have a climate plan, not all climate plans are created equal. A strong plan should present detailed policies, with timelines attached, and identify which departments are responsible for which pieces.[133] It also needs to receive adequate funding and staffing. To ensure accountability to the plan, the city should produce regular public progress reports (as Halifax, Ottawa, and Edmonton do) that identify what progress has been made, and where more resources might be needed.

ADAPTATION PLAN

While climate plans focus on reducing emissions, a city's adaptation plan guides how it will respond to climate impacts. Adaptation plans are usually based on climate science projections and a vulnerability and risk assessment.

"Climate Resilient Edmonton: Adaptation Strategy and Action Plan" is a good example of a municipal adaptation plan.[134] It includes measures to protect residents from extreme temperatures, prepare for droughts, flooding and severe weather events, and ensure the food system and local infrastructure are resilient.

Orillia, Edmonton, and Fredericton all indicated that they benefited from the Building Adaptive and Resilient Communities program offered by ICLEI–Local Governments for Sustainability Canada, which offers best practices in adaptation planning. The federal government is also taking leadership through the new National Adaptation Strategy unveiled at the end of 2022, which will provide additional funding for municipalities to implement adaptation projects.[135]

Besides Edmonton, relatively few cities in Canada have developed an adaptation plan thus far. Some might include adaptation measures within the climate plan (like Halifax), while others may have various measures related to adaptation in place, but not organized under an overarching strategy. Municipalities should be focusing on this as the effects of climate change will only become more serious.

GHG INVENTORY FREQUENCY AND METHODOLOGY

A greenhouse gas (GHG) inventory tracks how many tonnes of GHG emissions a city produces in a year, breaking them down both by sector and by kind (carbon dioxide, methane, etc.).

Cities might conduct "corporate" GHG inventories that only measure emissions produced by city-owned assets (municipal buildings, fleet vehicles, and more), or a community emissions inventory, which measures all emissions produced within the municipality.[136] A baseline GHG inventory is a necessary starting point for developing a climate action plan, and is one of the steps of the Partners for Climate Protection program (included in our primary indicators). Cities should also conduct regular (ideally annual) inventories to measure whether they are on track to meeting their reduction targets. Of the cities we have data for, Halifax and Edmonton indicated they conduct annual inventories, while Winnipeg's last inventory was in 2011.

We also track whether municipalities use the Global Protocol for Community-Scale Greenhouse Gas Inventories (GPC), which follows IPCC guidelines and is the internationally recognized standard. Protocols like the GPC provide a standard methodology for how emissions should be counted that allows for accurate comparison between cities.

CARBON BUDGET

Carbon budgeting is another policy tool that can help a city meet its climate commitments. A carbon budget can complement a net-zero target, by quantifying how many tonnes of emissions a city has left to "spend" before 2050.

For example, Halifax calculated its carbon budget between now and 2050 is 37 megatonnes of CO2eq. Compared to a percentage-based target, a carbon budget approach encourages municipalities to pay attention to their cumulative emissions and reduce at a faster pace, which is crucial for keeping global warming below 1.5 degrees.[137]

Of all Canadian municipalities, Edmonton is the furthest along in developing and applying a carbon budget. In order to operationalize its carbon budget, the city is weaving it into its financial budget, by tracking the carbon "costs" of each budget item. For example, the budget quantifies the emissions associated with its investments in roads, as well as the emissions reductions associated with its investments in transit.[138] When tied to the financial budget, carbon budgets can bring a "whole of government" approach to reducing emissions. Ottawa and Winnipeg include piloting carbon budgets in their climate plans but have not yet developed them.

BUILDING CODES

Energy efficiency standards for new buildings are defined by building codes.

The federal government sets the National Building Code, which is then adopted by the provinces. Municipalities must follow federal and provincial building codes, but in some provinces, municipalities have the option to develop or adopt even higher efficiency standards, which is what this indicator measures. The province of Manitoba, however, prohibits municipalities from doing so, which is why the city of Winnipeg scores a "no" on this indicator.[139] Other municipalities we looked at do have a higher efficiency building standard, but only for municipal-owned buildings (Edmonton and Halifax).

The province of BC's Energy Step Code, on the other hand, provides a tiered set of optional higher efficiency standards for municipalities, starting with the provincial building code as a baseline and increasing to "net zero ready." Developed in partnership between industry, the provincial government, and municipalities, the BC Energy Step Code provides a simple and consistent approach for municipalities looking to reduce emissions by setting high efficiency standards for buildings, while also allowing local governments flexibility and autonomy.

The City of Ottawa recently passed its own High Performance Development Standard. Ottawa also worked with Clean Air Partnership and other municipalities to develop the Green Standards toolkit, which can be used by other municipalities.[140]

CLIMATE TEST

A climate test is a method of creating climate accountability and interweaving climate into all decisions and investments.

A climate test means calculating the GHG impact of a proposed project or expenditure, while a climate lens refers to taking climate impacts into account in decision-making.

Edmonton, Ottawa, and Winnipeg all discuss implementing climate tests, but it is unclear whether this has been done yet in any of these cities. Ottawa's climate plan includes recommendations to apply a "climate lens" to the Official Plan and to asset management and capital projects.[141]

A "climate lens" is also required by several Infrastructure Canada funding programs.[142] This includes a GHG mitigation assessment (a climate test) and a resilience assessment (assessing the vulnerability of the project to climate impacts). In order to receive funding for projects, proponents may have to complete one or both. Halifax indicated that while they do not apply a climate test systematically, they have conducted these assessments as part of applying for Infrastructure Canada funding.

DIVESTMENT

Divestment means removing investments (often pension funds) in the fossil fuel industry and directing them elsewhere.

Divesting is not only an ethical choice, but also financially savvy—as the world transitions to renewable and clean energy, investments in fossil fuels could become stranded assets, or in other words, worthless.[143]

Institutions of all kinds can divest—for example, twelve Canadian universities have divested so far. But Canadian municipalities are lagging behind, with none of the cities we surveyed this year having divestment commitments. Of all Canadian cities, only Vancouver has passed a motion to develop a plan for divestment (in 2019).[144] It has also signed on to a C40 declaration on divestment along with eleven other major international cities including Berlin, London, and New York City.[145] To support municipal divestment, C40 offers a toolkit that offers a step-by-step guide, starting with a mayoral commitment, to engaging with pension fund managers, to developing responsible investment policy.[146] By removing any financial stake in the continued extraction and burning of fossil fuels, divestment is an important step for cities to show they are truly committed to climate action.

FOOD COUNCIL

Though most issues relating to the food system fall within provincial or federal jurisdiction, city councils nonetheless have tools to encourage the sustainable production and consumption of food in their municipality. One of them is creating a food council.

A municipal food council is a citizen committee that is responsible for advising on matters relating to food systems policy, which includes not just sustainable food, but also food security and nutrition, which all intersect. A food council provides a structure for ensuring municipal food issues are being discussed and policy solutions developed, as well as an opportunity for leadership from citizen stakeholders.

Some cities or regions may have food councils that are structured as independent non-profits instead of citizen committees. This is the case for Kelowna,[147] Orillia,[148] Ottawa,[149] and Halifax.[150] In these cases, the food council may still work closely with the municipality, as the Halifax Food Policy Alliance did with the Halifax Regional Municipality to produce a food action plan for the Halifax Region.

MOVING FORWARD

On behalf of the entire team, we would like to thank everyone who has contributed to the National Climate League's progress this year, and we look forward to the 2023 edition! Now more than ever, it is important to #MeasureWhatMatters. We'd like to share some tools you can use to spread awareness and advance solutions to the climate crisis.

NCL STAT TRACKER: OVER 4,000 DATA POINTS

The NCL Stat Tracker, which currently hosts over 4,000 data points covering over 30 indicators from 2018 to 2022, will continue to grow to include a broader range of data at the intersection of living a better and more sustainable life, fostering social justice, and driving down greenhouse gas emissions. This open data source will continue to provide Community Climate Hubs, Climate Reality Leaders, Campus Corps Chapters, and other local groups with the empirical foundation required to conduct effective local campaigns.

CAMPAIGN GUIDEBOOK

Last year, we launched a new guidebook titled, "Campaigning 101: A Step-by-Step Guide for Meaningful Action". This resource is designed to help anyone lead, plan and execute a campaign, regardless of their level of expertise or the scale at which they are seeking to enact change.

COMMUNITY CLIMATE HUBS HANDBOOK

Recently updated, this handbook was developped by our Community Climate Hubs network to provide information about the Hub model, guiding principles, organizing tips and tricks, potential barriers you may face, and a list of resources relating to different areas of municipal policy and activities. Its purpose is to help equip local residents with the tools to advocate and even implement change needed to make their municipalities decarbonized, equitable and resilient for the future.

TO PUT IT SIMPLY, THINK OF US AS THE D.I.Y. SUPERCENTRE FOR CLIMATE ADVOCACY.

Find out more at climatereality.ca
or on our social media platforms.

The Climate Reality Project
CANADA

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P.53 Riva, Coleen. Unsplash.
P.54 Zibik. Unsplash.
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2022

MUNICIPALITIES

Brandon, MB
Calgary, AB
Edmonton, AB
Red Deer, AB
Central Saanich, BC
Charlottetown, PEI
Colwood, BC
Cranbrook, BC
Esquimalt, BC
Fredericton, NB
Gatineau, QC
Grand Forks, BC
Guelph, ON
Halifax, NS
Hamilton, ON
Highlands, BC
Iqaluit, NU
Kamloops, BC
Kelowna, BC
Kitchener, ON
Lake Country, BC
Langford, BC
Langley, BC
Laval, QC
London, ON
Merrit, BC
Metchosin, BC
Mississauga, ON
Montreal, QC
Nelson, BC
North Saanich, BC
Oak Bay, BC
Oakville, ON
Orillia, ON
Ottawa, ON
Osoyoos, BC
Peachland, BC
Penticton, BC
Quebec City, QC
Regina, SK
Saanich, BC
Saint John, NB
St. John's, NL
Salmon Arm, BC
Saskatoon, SK
Sault Ste Marie, ON
Sherbrooke, QC
Sidney, BC
Sooke, BC
Summerland, BC
Thames Centre, ON
Toronto, ON
Vancouver, BC
Vernon, BC
Victoria, BC
View Royal, BC
Waterloo, ON
West Kelowna, BC
Whitehorse, YU
Winnipeg, MB
Yellowknife, NWT

NATIONAL CLIMATE LEAGUE STANDINGS