

Greater Montréal: A Hotspot for Data Hosting and Processing





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Greater Montréal: a hotspot for data hosting and processing

Greater Montréal is quickly emerging as one of North America's key data centre and cloud computing hubs.

A strong competitive edge

- **Affordable, renewable, reliable energy:** abundant supply, a rock-solid power grid and electricity rates as low as **CA\$3.98/kWh**.
- **Strategic location:** cooler northern climate, low natural hazard risk, direct connection to Europe via fibre-optic cable lines.
- **A favourable legal environment,** including softer legislation for personal data transfers between Canada and the E.U.
- **A modern, highly reliable telecommunications network** and a wide range of potential partners.
- **A country that is ranked as the safest location for data centres in America and sixth safest in the world** (Cushman & Wakefield Data Center Risk Index).

A vibrant ecosystem

- **Montréal ranked 2nd in North America, behind San Francisco,** for job growth in data processing and hosting and related services (82% between 2014 and 2016).
- **High-profile investment projects** involving:
 - Industry giants like Google Cloud and Amazon Web Services.
 - Global leaders like Microsoft, Ericsson, OVH and Cologix, and local players like Bell and Cogeco, who have a strong foothold in the region.
- **A strong IT environment, a thriving big data hub and leading AI expertise:**
 - A **talent pool** of 107,500 skilled IT workers and 5,240 companies.
 - The world's largest group of elite **deep learning** researchers, and a unique data science institute—the Institute for Data Valorization (**IVADO**).
 - **Major public and private investments** enhancing the city's global reputation for excellence.

Key benefits

- **Generous, targeted government incentives** that make for a compelling business case.
- **Competitive salaries and low employer payroll taxes.**
- **An innovation hub that fosters constant interactions** between its leading universities and research centres, innovative industrial clusters, and cultural and arts organizations.
- **A skilled bilingual workforce** and a stable job market.
- **Exceptional quality of life** in a human-scale city that's a magnet for top-notch talent and a great place to live, work and create.

01

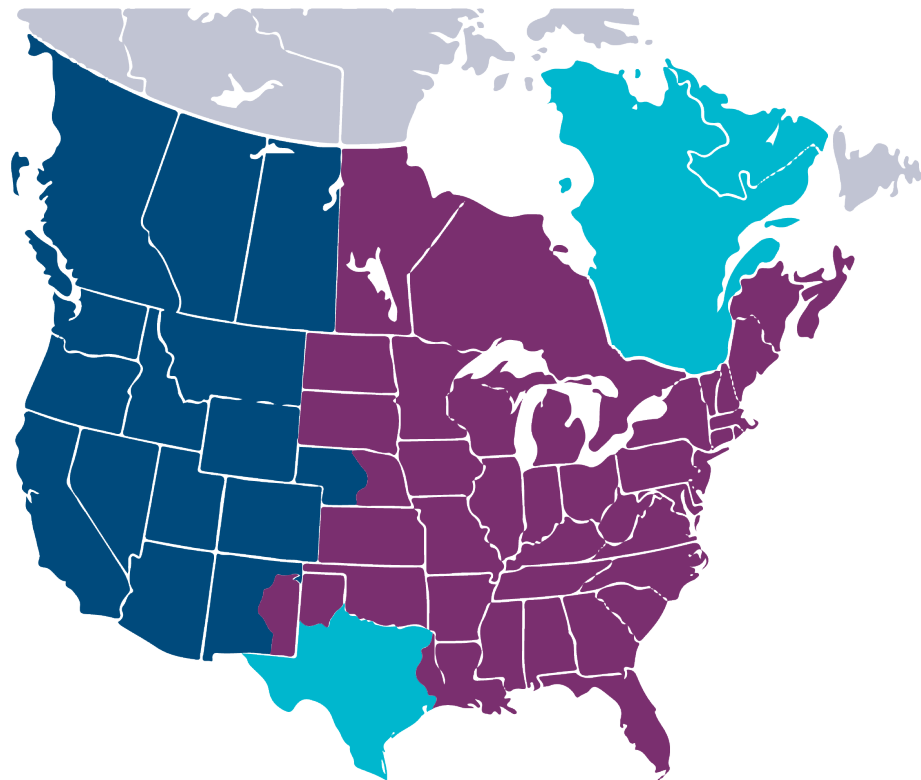
Why Montréal Fits your Data Centre needs



Renewable, reliable and affordable energy

Québec generates 99% of its electricity through hydropower. That means **stable rates**, **low carbon emissions** and **no pollution rights to trade**.

- **Independent**, reinforced system
- 13 interconnections with neighbouring systems, **securing supply** through exchanges
- Compliance with **North American Electric Reliability Council** standards
- **A loop system** for major consumption centres
- **Isolated, independent** power transmission system



- Synchronized systems – West
- Synchronized systems – Centre and East
- Other synchronized systems

One of the lowest electricity rates in North America



With its rich supply of **low-cost hydropower**, Greater Montréal boasts one of the lowest data centre electricity rates in North America:

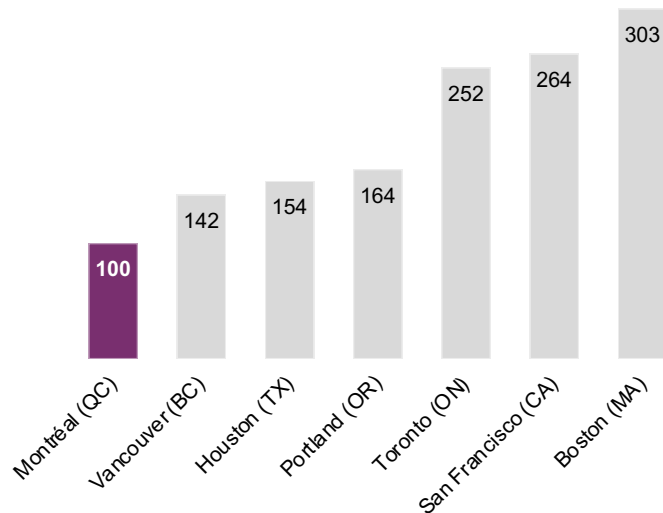
CA¢3.98/kWh*

* Rate LG: large power with minimum billing demand of 5,000 kW, transmission and distribution included, for 120-kV supply with 95% load factor, and including the Economic Development Rate reduction (if eligible).



Source : Hydro-Québec, 2019.

Comparative index of electricity rates
large-power customers



Consumption: 3,060,000 kWh/month |
Power demand: 5,000 kW |
Voltage: 25 kV
Source : Hydro-Québec, 2017.

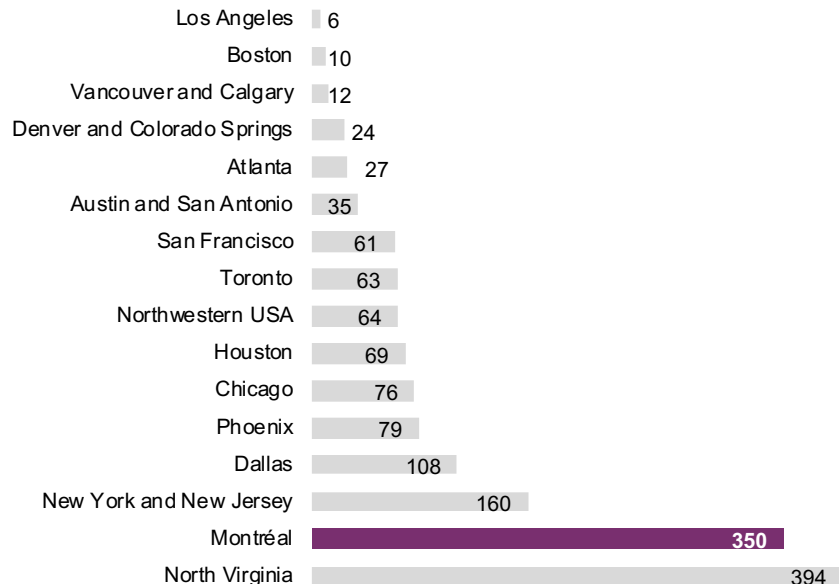
High energy potential capacity growth to meet data centre needs



Hydro Québec is rolling out a new strategy enabling it **to increase potential** capacity to support additional data centres and **provide the best services** to help projects come to life.



Potential capacity growth planned for 2020 (MW)



The perfect climate for your operations



Strategic location

In addition to being **strategically located**, Greater Montréal enjoys a cooler climate—like the rest of Canada—making it the perfect choice for innovative data centres that use ambient cooling.



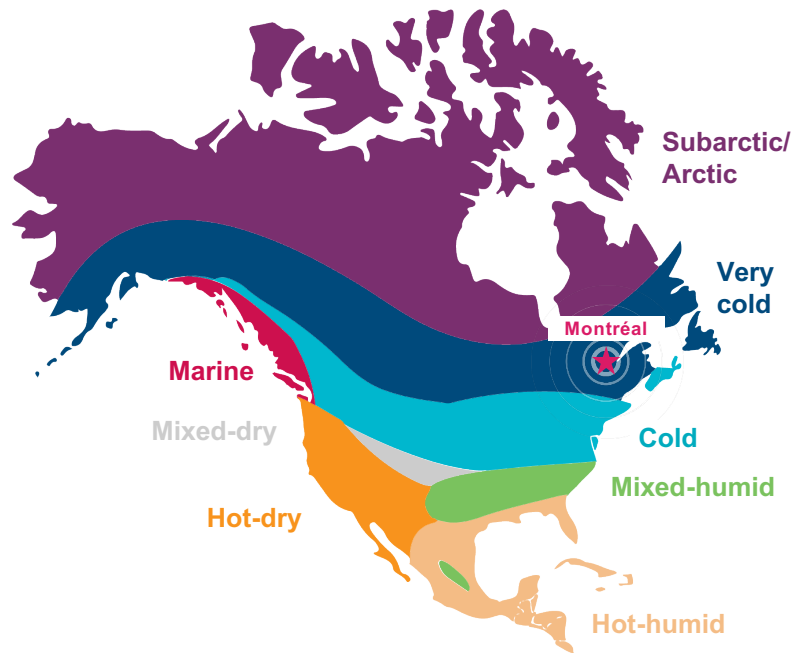
Lower temperatures = cost savings

The mean annual temperature for Montréal is 42.8°F (6.8°C), **minimizing** the need for cooling systems. With access to both ambient and water-cooled tower systems, **data centre companies can design smart, sustainable solutions enabling them to achieve significant cost savings.**



Water access

Many sites in the Greater Montréal area have **direct access to water mains** and some even have provisions for water storage that would **allow your company to innovate around rainwater and grey water recycling designs.**



A safe environment

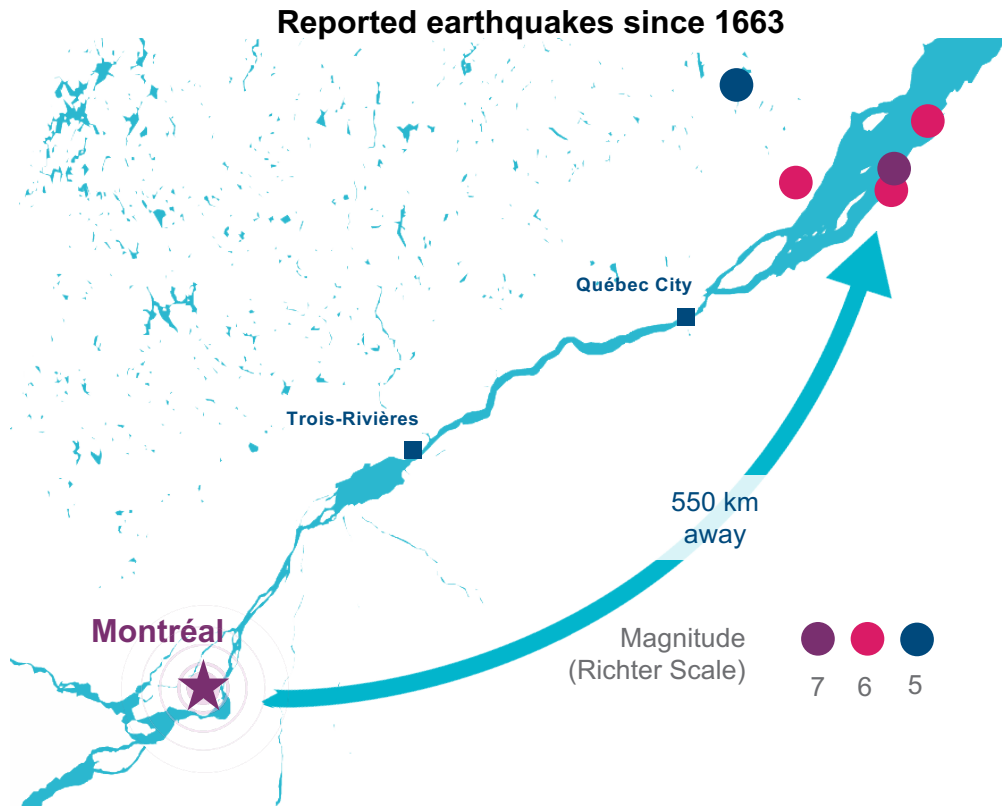
Low natural hazard risk

According to Public Safety Canada, the province of Québec has experienced about 120 hazardous events in the past 50 years, 50 of which directly affected the Greater Montréal area.

The most common disasters are floods. That said, **most Greater Montréal sites are over 100 feet above the maximum flood elevation, with stable soil and no environmental issues.**

The metropolitan area is also located far from the ocean which limits the risks of hurricanes and major floods.

Québec is part of the stable interior of the North American Plate; major earthquakes are therefore unlikely.



Privacy concerns and protection

Privacy

Canada's strict privacy laws are recognized by the E.U. as providing "adequate protection" of personal information. As a result, personal data can flow between E.U. member states and Canada without the need for a safe harbour agreement.

- Canada has two federal privacy laws: the **Personal Information Protection and Electronic Documents Act (PIPEDA)**, which applies to the private sector, and the **Privacy Act**, which applies to the public sector.
- Provincial laws that govern the use of personal information in Alberta, British Columbia and Québec are considered to be equivalent to PIPEDA by the federal government and take precedence in those provinces.
- **IP protection**
Canada's IP laws and legal landscape generate **far less litigation** than in the U.S. What's more, the 2015 federal budget includes plans to modernize the IP regime.

Dedicated partners

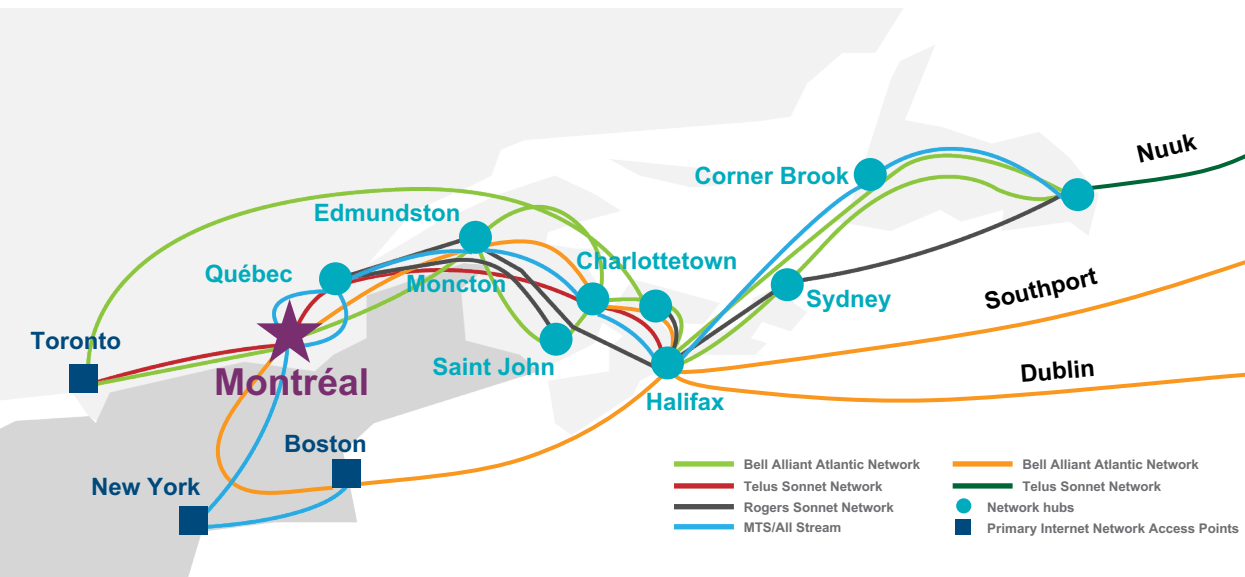
Québec's commercial and corporate laws are modern and flexible, and very similar to those of other states. The commercial law provisions of the Quebec Civil Code draw on the provisions of the Uniform Commercial Code (UCC), while provincial and federal corporate laws are derived from the general principles of U.S. corporate law.

Our team will be happy to put you in touch with the right law firm for your business.



Internet hub and gateway to Europe

Atlantic Canada fibre backbone networks



Greater Montréal: Eastern Canada's biggest internet hub and a gateway to Europe

Major telecommunications companies based in Greater Montréal, including international and North American service providers, offer IP transit and transport services in the region.

Many have a point of presence in Greater Montréal's main telecom hub located at 1250 René-Lévesque West.



A developed ecosystem of service providers

Local providers also offer modern telecommunications services, including:

- MEF Certified Ethernet Services (EPL/EVPL)
- Ethernet over MPLS
- Private Networks (IP VPN, IP MPLS)
- Wavelength Services
- Dark Fibre (lease and IRU)

Montréal is also home to **the Montréal Internet Exchange (QIX)**. Most national carriers and major content providers such as Google, Akamai and Microsoft peer at the exchange to enhance traffic flow and reduce end user costs.

Extremely easy to deploy optical fiber

Most of Montréal's fibre-optic networks are installed in a conduit system owned and regulated by a single entity CSEM (Commission des Services Électriques de Montréal), a unique municipal body that oversees all operations and builds in city conduits. Such an arrangement greatly facilitates the different steps and reduces the risk of a network outage for all providers.

Other major providers



High-profile investments

Company	Year	Country of origin
Estruxture	2017	Canada
Google Cloud	2017	USA
Colo-D	2017 2014	Canada
Amazon Web Services (AWS)	2016	USA
I.C.E. Datacenters	2016	Canada
Vidéotron (4Degrés)	2016	Canada
Urbacon/DTZ	2015	Canada/USA
Cogeco	2015 2012	Canada
Ovh.com (Data Centre)	2015 (R&D centre) 2012 (Data centre)	France
Root Data Center	2014	Canada
Cologix	2013	USA
Canadian Colo	2013	Canada
Intronis	2013	USA

If data centres
are Canada's latest
gold rush, then Montréal
is the Klondike.

Brian Jackson,
IT World Canada

We picked the area that
we did because
of the hydropower.

Teresa Carlson,
Amazon Web Services

A vibrant business ecosystem

40

Data centres throughout Québec, mostly in Greater Montréal

95

Service providers

4

Network fabric and innovative network operating system players

Google

amazon
web services

Bell

ERICSSON

SUNGARD
DATA CENTRE SERVICES

OVH.com

VERTIV

Struxture
DATA CENTERS

cologix

COLO·D

ThinkTel
A Division of Distributel

DELL EMC

I.C.E
MONTREAL

SOFTLAYER®
an IBM Company

COGECO
PEER 1

CenturyLink™

LINKBYNET

INTERNAP

Hypertec DCS

TMI
climate solutions

zayo

ROOT

ZEROFAIL

VIDÉOTRON

NoviFlow

qitx
IT SOLUTIONS

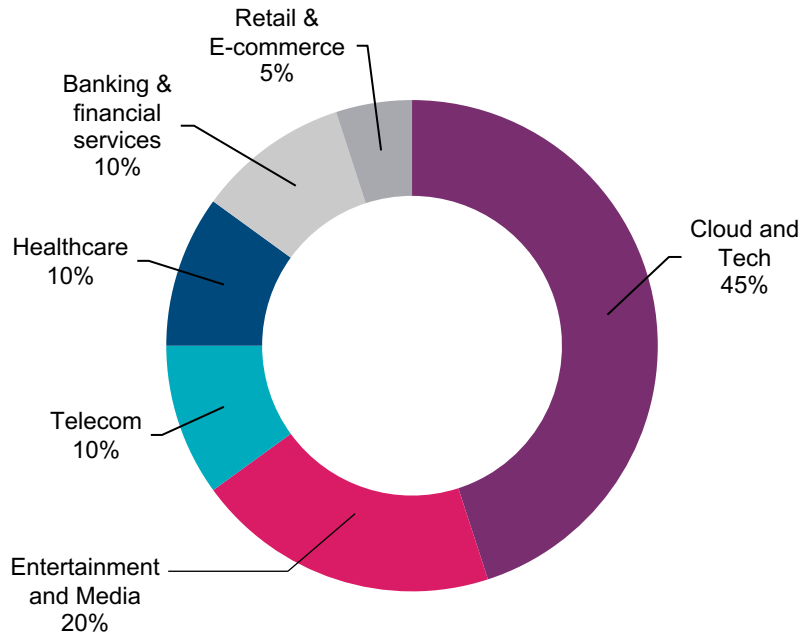
URBACON

kaloôm

A fast-growing market

Demand in Greater Montréal is mostly driven by cloud providers and technology firms along with the gaming, insurance, finance, IT, and health care sectors.

User Demand by Industry in Greater Montréal (2016)



Source: "Data Center Outlook", North America 2016, JLL.

Where leaders are already taking advantage of excess demand:

- Municipal, provincial and federal governments are pushing to outsource their IT workloads.
- Consumers and private organizations are increasingly turning to the cloud.
- Many equity research papers, like those published by JLL and Cloudscene, are forecasting high demand in Greater Montréal for the foreseeable future.

A strong IT industry

- **107,500** qualified employees in IT, and **5,240** companies
- **A GDP of \$11.6 B**
- **Lowest operating costs in Canada and the U.S.** for software development, ahead of Toronto, Boston, New York and San Francisco
- **Broadly diversified industry:**



5th
video game
development
hub in the
world



1st
in Canada and
a world leader
in VFX
& animation



5th
highest tech jobs
concentration
among the largest
metropolitan areas
in Canada & U.S.

Sample of major companies located in Greater Montréal

Google

Microsoft

IBM

accenture

FUJITSU

CGI

AUTODESK

technicolor

WB
GAMES

DASSAULT
SYSTEMES

MATHEMATIC

bE
HAVIOUR

eldos
montreal

GAMELOFT

REEL FX

SAP

SQUARE ENIX

EA

UBISOFT

ONEG

DIGITAL
DIMENSION

BUF

CINE SITE

RODEO
Visual Effects Company

FRAMESTORE

A world-class hub in Artificial Intelligence

- Nearly **\$1.1 billion in AI investments** announced in Greater Montréal since 2016.
- The Canadian government chose Montréal as Headquarters for **SCALE AI**, Canada's AI supply chain super cluster.
- All major players and a thriving community aiming for a better world.



02

Montréal's Value Proposition



The most competitive operating costs for data centres

Running a data centre costs less in Greater Montréal

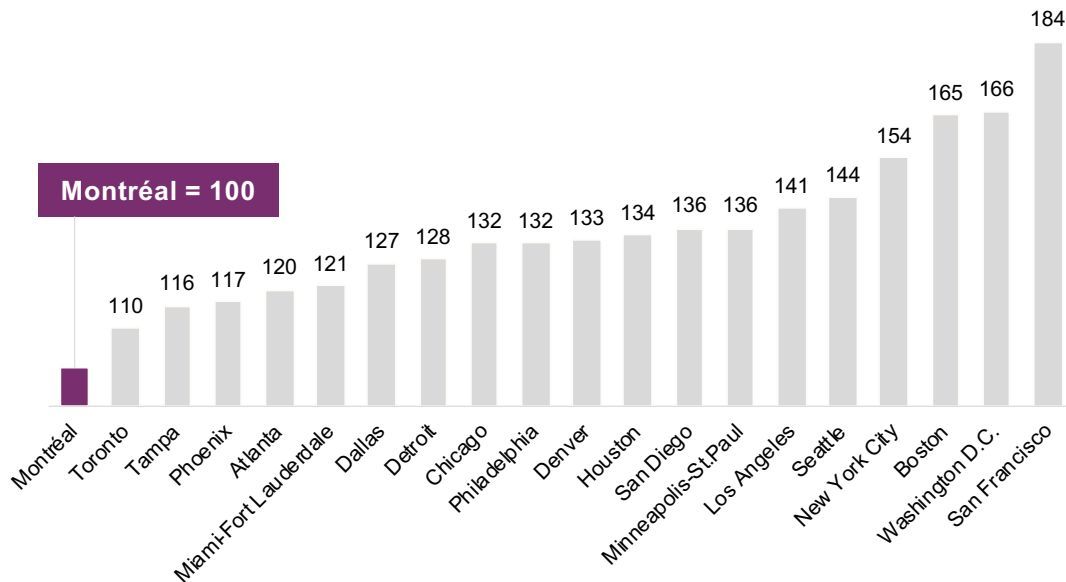
1st
rank

The most competitive operating costs of North America's 20 largest metropolitan areas

26%
cost
advantage

over the study average

Total operating costs for data centres
20 largest metropolitan areas in Canada and the U.S., 2018



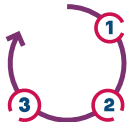
Attractive incentives: Major investment projects

The government of Québec has launched a major investment program to stimulate the economy and foster large-scale investment projects. Under the program, projects of \$100 million or more may qualify for a 15-year exemption from corporate income and employer health tax under certain conditions.



Eligibility
criteria

- Applicants must operate in one of the **following sectors** (NAICS code):
 - **Data processing and hosting**
 - **Manufacturing** (31–33)
 - **Wholesale trade** (41)
 - **Warehousing and storage**, particularly value-added distribution centres (4931)
- The **investment project must be worth at least \$100 million** and phased over 60 months or less
- **The tax exemption may not exceed 15% of the total eligible investment costs** calculated at the start of the exemption period
- The initial application must be submitted **before project kick-off**.
- The deadline for submitting applications is **December 31, 2020**



Application
procedure

To apply under the major investment program, applicants must **submit a business plan** along with **a clear description of the project, investment details** and **a project timeline**.

Attractive incentives: ESSOR Program

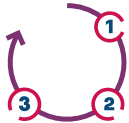
The ESSOR program provides interest-free loans and subsidies for large-scale projects.



Eligibility
criteria

Applicants must:

- Operate in one of the **following sectors**:
 - **Manufacturing**
 - **Software publishing**
 - **Private research centres**
 - **Environmental services**
 - **Tourism** (subject to certain restrictions)
- Submit a job-creating project with **capital expenditures of \$250,000 or more** or a project with a cumulative increase in payroll of **\$2 million or more** over the first three years following the project start date.



Application
procedure

ESSOR Program applicants must submit a detailed three-year project description, including project financial data and an executive summary. They can expect to receive a letter of intent from the government of Québec within **four to five weeks** of submitting their applications.

Attractive incentives: Québec tax credit for scientific research and experimental development

The R&D tax credit is designed to boost research and development in Québec. The tax credit is refundable, meaning that companies can get a refund even if they have no tax liability. What's more, it can be combined with the federal R&D tax credit.



Program
benefits for
**Large canadian —
or foreign —
controlled
corporations**

The tax credit is **14% of R&D expenditures** above the following exclusion thresholds:

- **\$50,000** for corporations **with \$50 million or less in assets**
- **\$225,000** for corporations with assets **totalling \$75 million or more**
- An amount that increases linearly from \$50,000 to \$225,000 for companies with assets between \$50 million and \$75 million

Expenditures eligible for the R&D tax credit:

- **Wages of employees** who have worked directly on the project
- **50% of payments to arm's length contractors**
- **80% of total eligible R&D expenditures** incurred under research contracts with eligible **universities or research** centres
- **Payments to research consortiums**
- Expenditures incurred for **pre-competitive private partnership** research

Advantageous salaries

Data centre salaries average annual salary* (US\$) for five typical professions

	Montréal	Vancouver	Toronto	Portland	Houston	Boston	San Francisco
Data Centre Technician	\$41,591	\$44,855	\$44,593	\$53,232	\$53,517	\$56,731	\$61,457
Data Centre Specialist	\$45,365	\$48,839	\$48,633	\$58,309	\$59,715	\$62,750	\$67,821
Data Centre Security Specialist	\$46,507	\$50,104	\$49,920	\$57,703	\$57,917	\$65,137	\$70,626
Data Centre Critical Facilities Engineer	\$57,989	\$62,110	\$62,079	\$77,807	\$79,976	\$87,183	\$94,611
Data Centre Manager	\$76,183	\$80,336	\$81,995	\$101,920	\$114,242	\$120,444	\$131,385

* Salaries based on five years of experience, Computer Processing and Data Preparation and Processing (NAICS 518210).
 Currency exchange based on the monthly average 2018-05-07 — 2018-06-04 : 1,00 \$CND = 0,7762 US\$.
 Source: Economic Research Institute Inc., June 2018.

Low mandatory employer payroll taxes

Gross annual salary	\$50,000	\$100,000	\$125,000
Québec Pension Plan (employee: 5.4%; employer: 5.4%, max. \$2,991.45)	\$2,700.00	\$2,991.45	\$2,991.45
Québec Parental Insurance Plan (employee: 0.526%, employer: 0.736%, max. sal. of \$ 76,500.00)	\$263.00	\$402.39	\$402.39
Employment Insurance (employee: 1.25%, employer: 1.75%, max. sal. of \$ 53,100.00)	\$875.00	\$929.25	\$929.25
Health Services Fund (1,25% if global salary total less than \$1M, max. 4.26%)	\$625.00	\$1,250.00	\$1,562.5
Commission des normes du travail (Labour standards board) (0.07%, max. sal. of \$ 76,500.00)	\$35.00	\$53.55	\$53.55
Commission de la santé et sécurité du travail (occupational health and safety board - 0.47% in service sector, max. sal. of \$76,500.00)*	\$235.00	\$359.55	\$359.55
Total	\$4,733.00	\$5,986.19	\$6,298.69
Total Cost	\$54,733.00	\$105,986.19	\$131,298.69

Notes: Low employer health care costs are **one of Canada's biggest cost advantages**. With a government-run health care system, employer-paid health care costs in many Canadian cities are half of what they are in the U.S.

Under the Act respecting labour standards, Notes: Vacation represent a minimum of 4% of salary pursuant to the Act respecting labour standards.

Some rates apply up to a maximum insurable revenue.

* The general rate for the service sector (65110 - Bureau de courtoisie ; bureau de services professionnels ; bureau offrant des services de soutien administratif) is 0.47% but the rate for an employer can vary depending on the sector.

Paid holidays (approx. 10 days or 4%) are included in gross salary.

Source: Revenu Québec, 2019.

A large pool of university students enrolled in IT programs

14,000

Enrolled in IT programs
at Greater Montréal
universities

IT Programs	University Students Enrolled in 2016-2017
Computer Sciences	7,100
Electrical and Electronic Engineering	3,279
Computer Engineering and Computer Science	1,866
Mathematics	1,411
Applied Mathematics	134
Probabilities and Statistics	183
Total	13,973



Montréal ranked best student city



In the Americas
according to the
**2018 QS best student
cities index**

Ranked
1st

In the Americas

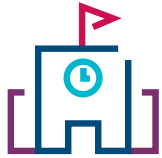
Ranked
4th

In the world



I choose
Montréal

World-class universities and talent



Home to **11 universities** and **many colleges** and **vocational training centres**, Montréal has earned a reputation as Canada's higher education hub and a breeding ground for highly skilled talent:

- **Best student city in the Americas** according to QS Best Student Cities 2018
- **201,000 university students**, the largest number in Canada
- **35,500 international students**
- Two universities—McGill University and Université de Montréal—ranked among the world's best according to the Times Higher Education World University Rankings 2018



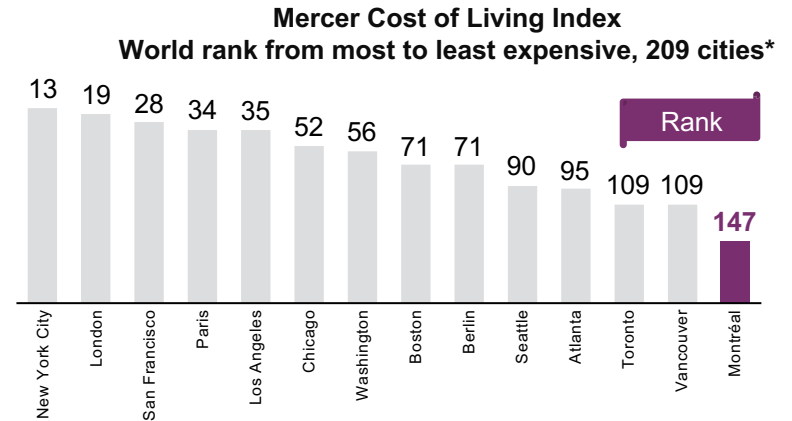
The **most bilingual and trilingual metropolitan area** in Canada:

- 2.5 million residents speak English—that's more than in Vancouver
- 55% of the population is bilingual (English and French), compared to less than 8% in Toronto and Vancouver



A low cost of living

Greater Montréal is **cheaper** than almost all other large cities in North America and Western Europe:



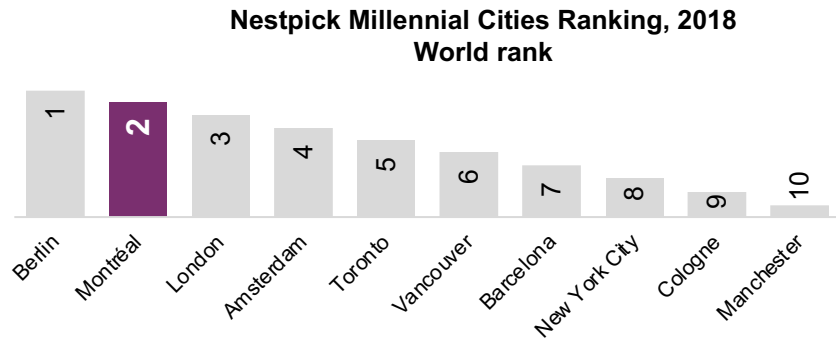
Greater Montréal offers a higher purchasing power thanks to:

- **Cheap housing**
- **Generous family allowances**
- **Low private medical insurance costs**
- **Affordable child care**

*A higher rank represents higher costs
Source: "Cost of Living Survey," Mercer, 2018.

An exceptional quality of life

Montréal is the 2nd best city in the world for millennials:



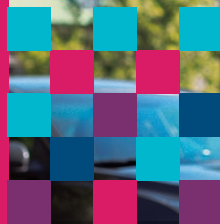
- **Lowest homicide rate** among the 20 largest metropolitan areas in Canada and the U.S.
- **Health care provided at no cost**
- **Lowest education tuition fees** in North America
- **Vibrant cultural metropolis** with +100 festivals and 70 museums

Source: "Millennial Cities Ranking", Nestpick, 2018; "Quality of Living Survey", Mercer, 2017; Federal Bureau of Investigation, 2018; Statistics Canada, 2018.



03

Montréal International's Personalized, Free and Confidential Services



Montréal International, a single point of access to a series of personalized, free and confidential services



**Long-term
strategic support**



**Economic data
and communication
services**



**Government
relations facilitation**



**Incentive programs
assistance**



**Foreign workers
immigration
assistance**



**International
recruiting missions**



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