

Vancouver Economy Report

Now Boarding
**E-mobility &
Zero Emissions
Transportation**

Plus
**What's really happening
with local logistics and
warehousing?**

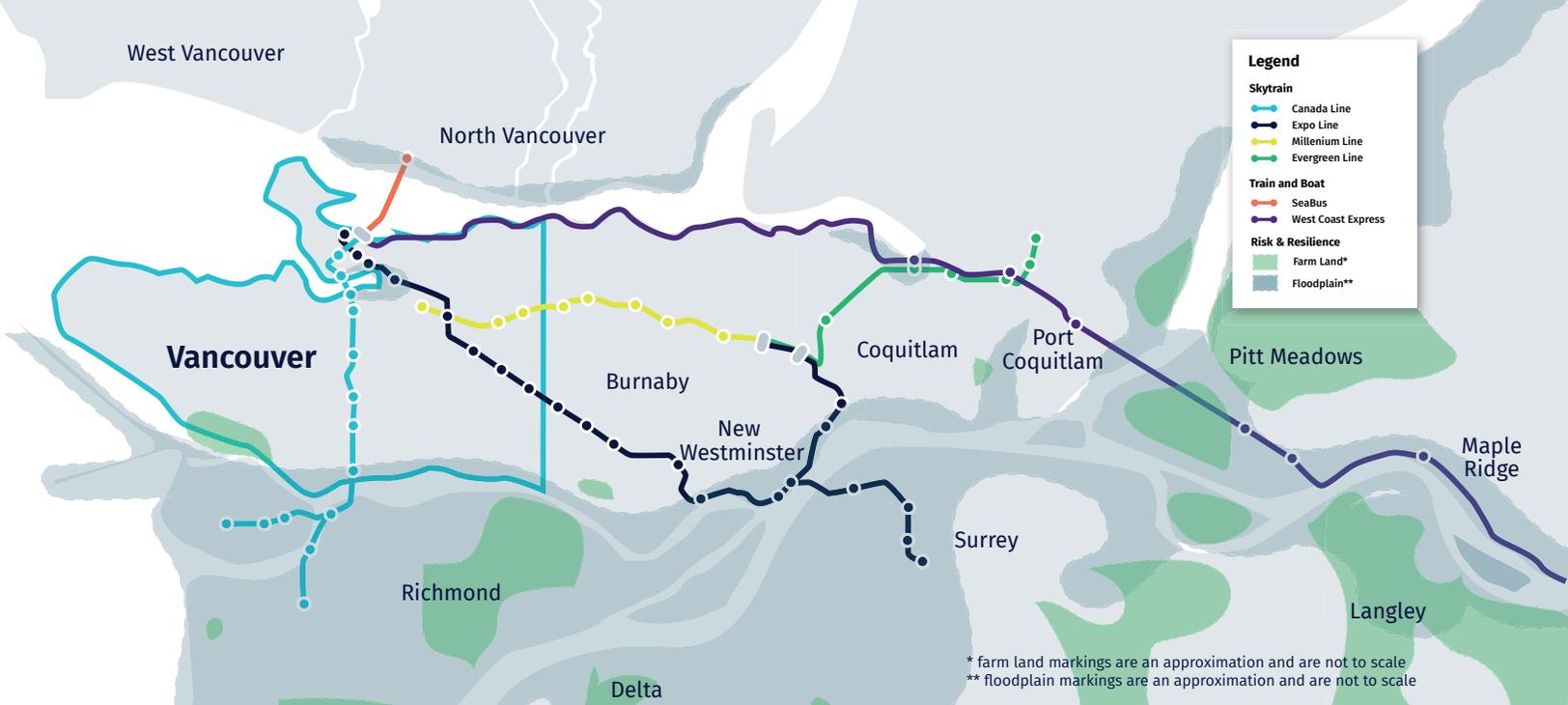
Economic Snapshot
Beyond GDP
Interest Rates
Anti-fragility

Photo: Juan M. Sanchez, [YouTube Channel](#)

Summer 2022



**VANCOUVER
ECONOMIC
COMMISSION**



A collaborative, systems thinking approach is necessary to imagine, let alone achieve, economic resilience.

Economic resilience refers to a region or economic system’s ability to withstand or absorb shocks and disruptions, which can be physical, environmental, social, political, financial, or any combination.

While Vancouver’s position as a global gateway for the Pacific Northwest makes it a significant node in the provincial, national and global trade economies, the city is more than just a port of call. Our region is its own vibrant system – one that could benefit from additional risk-proofing and transformation beyond a resilient system. Our goal should be an antifragile region and economy.

“ Our goal should be an anti-fragile region and economy ”

To achieve this, policymakers and business leaders must recognize and account for the connection between climate action and the economy and get into the habit of setting aside economic growth as the end goal. We must instead leverage economic transformation to solve critical economic issues, such as labour

shortages, retaining the IP we commercialize, vital industrial land expansion, circularity, wage inequalities, financing innovation, and how to move around in a growing region.

It has been nearly a year since the Vancouver Economic Commission’s strategic initiatives and sector development team underwent its own metamorphosis to become the economic transformation team. This reflects our own pivot towards a sector-agnostic and issues-focused approach to building a robust, inclusive, resilient and zero-carbon economy for all in Vancouver, while remaining competitively positioned in the global market.

If this is a vision you share, please get in touch. We look forward to collaborating with you.

Tell us what you think

Thank you for downloading the Vancouver Economic Commission's latest economy report. As you read it, please note we are always open to feedback to improve this publication. We invite you to complete our brief survey on its value to you.

Provide Feedback

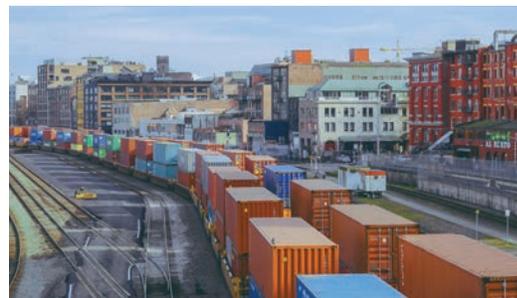
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VEC respectfully acknowledges that it is located and operates on the unceded ancestral territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səliłwətaʔ / səliłwitulh (Tsleil-Waututh) Nations.



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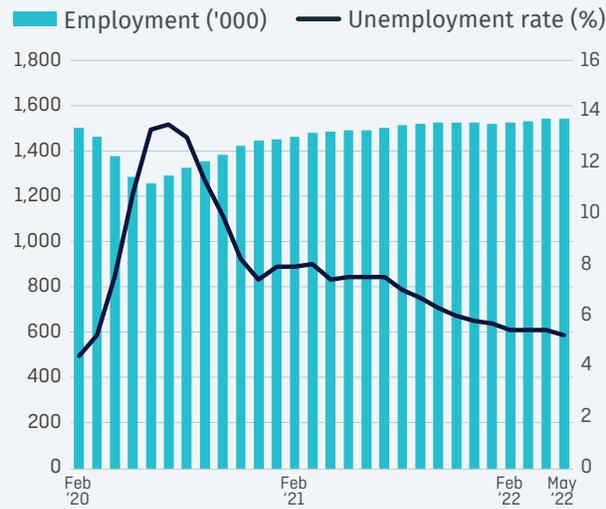
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Photo: Juan M. Sanchez, YouTube Channel

Metro Vancouver Employment



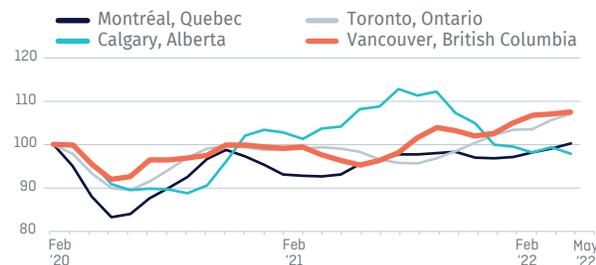
Source(s): VEC Analysis; Labour Force Survey, Statistics Canada

Metro Vancouver employment: continues to strengthen

Total employment in Metro Vancouver has steadily increased since summer 2020. While the beginning of 2022 marked the COVID-19 omicron variant and the pandemic’s fifth wave triggering a brief decline in employment, total numbers reached 1,539,900 (+0.3% from April 2022) in May 2022. Vancouver has held the lowest unemployment rate among Canada’s four largest cities for most of 2021/2022, dropping to its lowest level (5.2%) since the pandemic.

Employment Indexes

55 years and over, February 2020 = 100



Employment rebounding: for 55+ age group

Workers aged 55 years and over have recovered best from the pandemic within Vancouver. Compared with other major Canadian metropolitan cities, this group’s employment index (February 2020 = 100) reached 107.5 in May 2022, increasing in both full-time and part-time jobs and all genders.

The recent census shows Canada as a country is getting older. The national median age is now 41.6 compared to 33.5 in 1991.

Source(s): VEC Analysis; Labour Force Survey, Statistics Canada

Metro Vancouver Employment Shortage



Industry employment: sees staff shortages abound

Although overall employment in Metro Vancouver has recovered from pre-pandemic levels, with some industries' employment indexes reaching 165, there are still many industries experiencing a labour shortage. Vancouver’s lowest employment index (84) in May 2022 was in construction, with a shortfall of 20,100 workers. The many capital infrastructure projects underway in the city and region – including the Broadway Line – have resulted in a steep labour gap. This trend holds true across the country and overseas.

Source(s): VEC Analysis; Labour Force Survey, Statistics Canada

Metro Vancouver Business Numbers

Experimental estimates, Active Businesses, February 2020 to February 2022



Source(s): VEC Analysis, [Statistics Canada](#)

Business numbers: active business increasing

Metro Vancouver businesses continue to bounce back from COVID-19. Opening businesses increased by 21.9% and closing businesses decreased by 12.0% from pre-COVID-19 February 2020 to February 2022 (the most recent month of data available).¹ Active businesses increased by 4,237 in the same period.² Tourism and wholesale trade continue to suffer.

Hardest hit

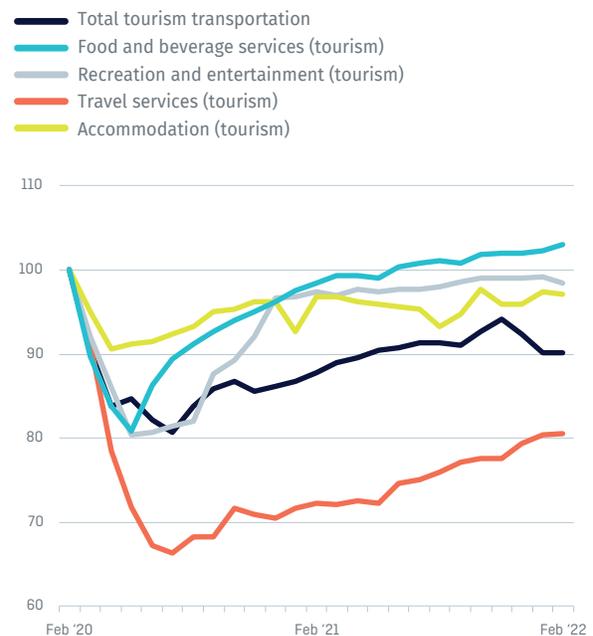


Tourism recovery well underway in absolute terms

The tourism industry's business index declined by 20 to a low of 80 in May 2020. As of February 2022, the sector has almost recovered to pre-pandemic levels, with new business starts offsetting the permanent closure of many others. Business counts in tourism sub-sectors (see graph) still fall short of pre-pandemic baselines. The lifting of COVID-19 restrictions and the upcoming summer travel season should help the industry make a much-anticipated recovery this year.

Metro Vancouver Business Indexes, Tourism

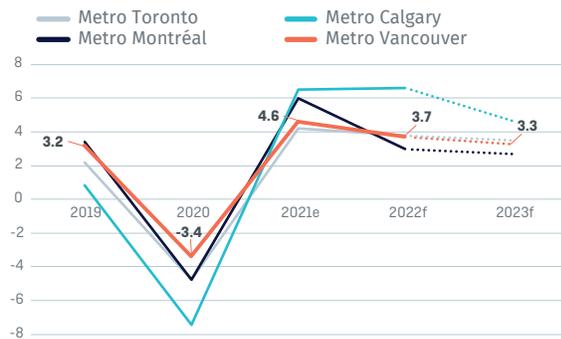
February 2020 = 100



Source(s): VEC Analysis; Labour Force Survey, [Statistics Canada](#)

¹ defined as businesses that transition from having no employees in the previous month to having at least one employee in the current month
² those businesses that reported having one or more employees in a given month

Real GDP* Growth Rate Forecast



*: Chained (2012) dollars, (%) | e: estimate | f: forecast

Source(s): [Mayor City Insights](#), The Conference Board of Canada

Urban productivity: rebounding strongly despite sixth COVID-19 wave

Metro Vancouver's economy fared better than other Canadian metropolitan cities during the pandemic in 2020. Real GDP surpassed pre-pandemic levels at \$153,482 million by the close of 2021.

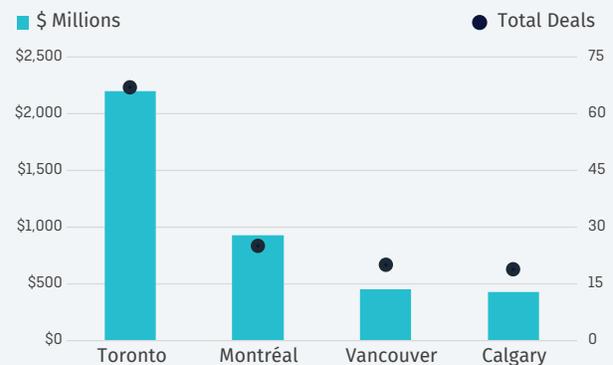
With COVID-19 restrictions lifted in the first quarter of 2022 and resulting in increased commerce, Metro Vancouver's GDP growth could hit 3.7% in 2022. However, the region's labour shortage could keep it from achieving even stronger growth.

Venture capital: strong start to the year

Investment deals across Canada in the first quarter of 2022 have surpassed the five-year average: Q1 2022 volumes totalled \$28.4 million, and included 17 mega-deals (CA\$50 million and up). Vancouver saw 20 deals representing \$454 million in investment, ranked third behind Toronto and Montréal.

LayerZero Labs, a Vancouver-based blockchain technology company, was among Canada's top 10 deals in Q1 2022, raising CA\$169 million in early-stage capital.

Top Venture Capital Deals Q1 2022



Source(s): [Venture Capital Canadian Market Overview Q1 2022](#), CVCA

Vancouver's most notable deal in 2022



Total Raised:
CAD\$ 168 million

Status:
Unicorn, early stage

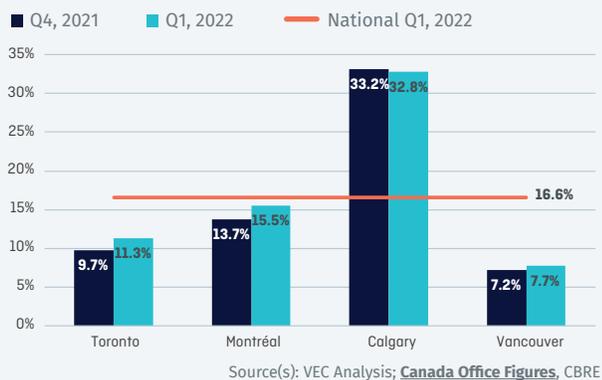
About LayerZero

[LayerZero](#) is the latest Vancouver-based startup to attain unicorn status (a startup valued at over \$1 billion). LayerZero is developing an omnichain interoperability protocol that unites decentralized applications (dapps) across disparate blockchains. Essentially, as the blockchain market grows, it becomes more and more fragmented. LayerZero will help dapps communicate (and also transact) across multiple blockchains. Cool, right?



Office vacancy: rates remain lowest in Canada

Downtown Office Vacancy Rate



According to CBRE, office availability in downtown Vancouver increased to 7.7% (up from 7.2% in Q4 2021) in Q1 2022 despite positive net absorption for the fourth consecutive quarter. Meanwhile, suburban markets declined in Q4 2021, marking the first vacancy contraction since the pandemic began. Of the 2.9 million square feet under construction in downtown Vancouver, 67.6% is pre-leased. The city is also set to maintain its position as the tightest major downtown office market in North America.

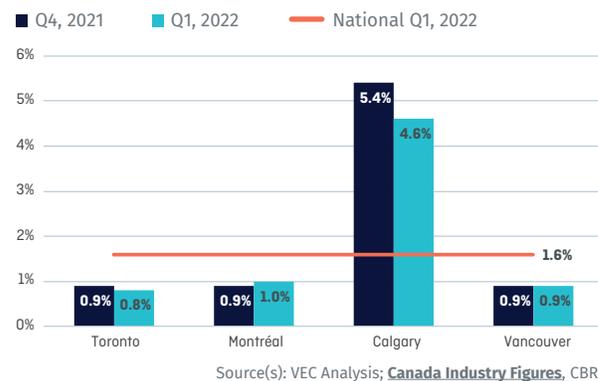
Looking for more data?

Refer to our online **Economic Snapshot** for the latest data sets, rankings and economic metrics.

[Go to Snapshot](#)

Industrial vacancy: vacancy crisis continues in Metro Vancouver

Industrial Vacancy Rate



According to CBRE, industrial availability in Metro Vancouver remains at a record low of 0.9% in Q1 2022, with Vancouver vacancies hovering at 1.2%. While no longer the lowest rate in the country, the average asking lease rate has jumped to a new high of \$17.40 per square foot (up 6.6% quarter-over-quarter) and remains the highest in Canada. Despite 1.45 million square feet of space becoming available in Q1 2022, strong demand of industrial lands will likely drive down the vacancy rate even further and lift rents to new record highs.

beyond GDP Metrics



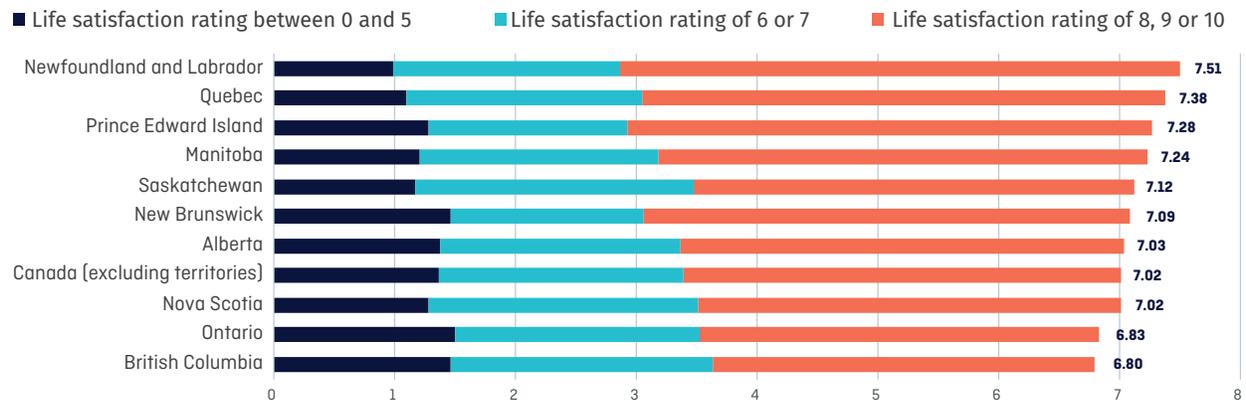
In addition to important economic indicators, such as GDP, employment and total business counts, each issue of the Economy Report curates the best of VEC’s research into other indicators and metrics that are traditionally overlooked but help measure prosperity “beyond GDP.”

As part of this work, our Senior Manager of Research James Raymond recently **sat down with Dr. John Helliwell**, one of the world’s foremost experts in happiness, to discuss what makes people happy, why we aren’t happier, and how we can act on these insights to shape a happier economy.

Life satisfaction:

How good are our lives in BC vs the rest of the country?

Life Satisfaction** Q1, 2022

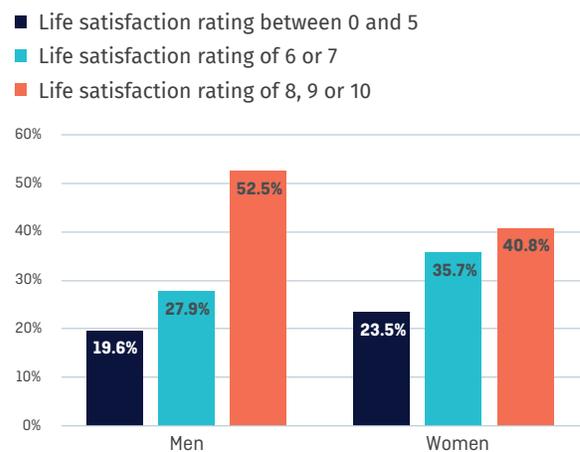


** Using a scale of 0 to 10, where 0 means 'Very dissatisfied' and 10 means 'Very satisfied'
Source(s): VEC Analysis; [Statistics Canada](#)

Life satisfaction is one of the most important personal well-being indicators and as such supports the measurement of Canadians’ quality of life. According to the latest index, BC’s average life satisfaction was 6.80 (scale of 0 to 10 as low to high level) in Q1 2022 – slightly lower than the national average level, and the lowest in the country.

In BC, 52.5% of men and 40.8% of women reported a high level of satisfaction (rating 8, 9, 10) with their lives. However, the global pandemic has had significant impacts on people’s mental health, and life satisfaction has not yet returned to pre-pandemic levels, with fewer than 3 in 10 British Columbians satisfied with their quality of life.

BC Life Satisfaction by Gender Q1 2022

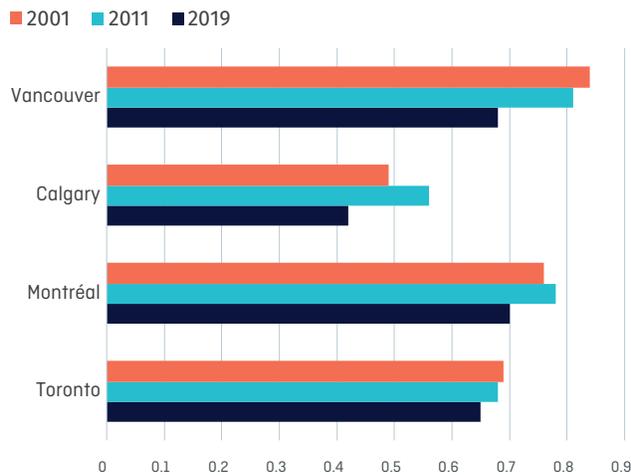


Source(s): [Statistics Canada](#)

Urban greenness: Are we farther from our global greenest city goal?

Urban Greenness

By large urban population centre, %



Source(s): [Statistics Canada](#)

According to [Statistic Canada's urban greenness study](#), satellite image data shows 68% of the Metro Vancouver region was classed as green* in 2019 – ranked second among the top four large urban population centres in Canada, behind Metro Montréal – but reached just 84% of its 2001 levels, experiencing one of the largest decreases in overall greenness.

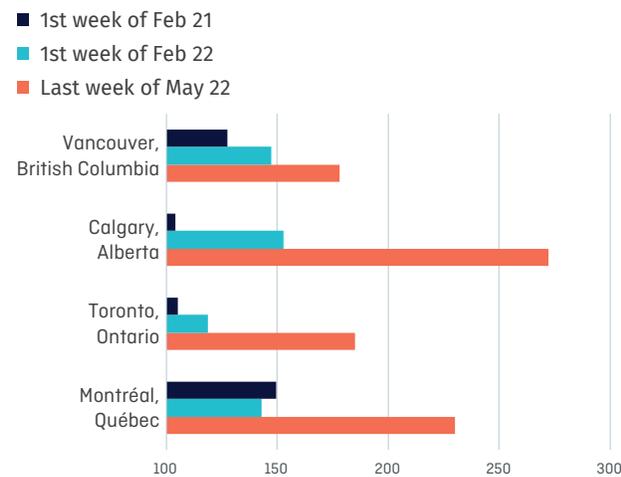
Urbanization and abnormal drought are the main drivers of green space loss across the country. Approximately three-quarters of large- and medium-sized population centres were less green in 2019 compared to 2001. This class of data can help regions monitor the effects of their land-use planning and suggests Metro Vancouver communities may need to urgently re-evaluate their policies.

*Parks and other publicly and privately owned green spaces

Local business conditions: Are businesses bouncing back from COVID-19?

Real-time Local Business Conditions Index

August 2020 = 100



Source(s): [Real-time Local Business Conditions Index](#), Statistics Canada

Statistics Canada launched its experimental statistic Real-time Local Business Conditions Index (RT-LBCI) last year, providing timely information on business activities in 15 population centres across Canada. The index focuses on three components across 27 industries: business size (static component), business operating conditions (real-time component) and business level of activity (real-time component).

The index (August 2020 = 100) was highest in Montréal last year, but as of May 2022, Calgary holds the highest score among major Canadian population centres, with an index of 272. From August 2020 to late May 2022, Vancouver's local business conditions index increased by 78%. Although a large improvement, it remains much lower compared to other major population centres in Canada.

Transportation & Logistics

Global gateway. Connected city. Vancouver is a vibrant nexus for transportation leadership.

The [Port of Vancouver](#) is the largest and busiest port for Canada and the Pacific Northwest, serving as the gateway for \$550 million in consumer goods per day – or \$200 billion per annum – with more than 170 trading economies. The port is served by three Class 1 railways: the transcontinental Canadian National Railway (CN Rail); the transcontinental Canadian Pacific Railway (CP Rail) and Burlington Northern Santa Fe Railway (BNSF). Local railway services also transport freight across the Metro Vancouver and Fraser Valley regions.

[Vancouver International Airport](#) (YVR) is Canada’s second-busiest airport by passenger and by cargo weight received. In 2021, it was recognized as North America’s best airport for the 12th year in a row, with carriers moving more than 278,000 tonnes of cargo through the airport that year.

When it comes to transportation, the city of Vancouver is more than just a prized node in the global trading system. More than half of all trips by city residents are made by walking, cycling, public transit, or by options other than vehicles. Of those automobile users on the road, a rising number of people are choosing alternatives to private vehicle ownership, such as car-sharing services and car co-ops like [Evo Car Share](#) and [Modo](#).

Related subsectors

- Public transit
- Rail
- Trucking
- Aviation
- Cyclelogistics
- Ride-hailing
- Ridesharing
- Zero emissions transportation

#1
busiest port
in Canada
(Port of Vancouver)

#1
airport in
North America
(YVR)

3
Class 1 railways
serve Vancouver

#3
North American
trade hub in port
tonnage capacity



Policy and public support are driving innovation in zero emissions transportation and logistics

Vancouver's strong environmental ethos, coupled with its proven track record of excellence in logistics and transportation, has catalyzed its leadership in ambitious net-zero transportation policies, a powerful cleantech sector and smart cities. For decades, Vancouver has been home to Canada's most significant hydrogen and fuel cell industry cluster. Infrastructure and transportation accounted for 9.8 percent of Vancouver's green jobs growth from 2010–2020, including new service models like cyclelogistics.

Both the Vancouver Fraser Port Authority (VFPA) and YVR are worldwide trailblazers in innovation, sustainability, equity and transportation planning, working to improve the global sector with commitments to people and planet. The Port Authority's Centerm Expansion Project and South Shore Access Project recently won the [highest-ranking award](#) from the Institute for

Sustainable Infrastructure, while YVR achieved [carbon-neutral](#) operations in 2020, and has set a goal of becoming net zero by 2030. The [Vancouver Maritime Centre for Climate](#) (VMCC) is an industry-led initiative solely dedicated to accelerating the transition to a zero emissions shipping industry in BC, with a focus on helping members acquire, test and implement solutions.

Zero emissions transportation regulations have unlocked a clear market demand, but it is consumer and industry demand that is moving the dial. However, there are growing pains and a long road ahead for electrification and other zero emissions solutions.

See Emerging Sectors: [E-mobility and Zero Emissions Transportation](#) profile

Vancouver public transportation sector recovering faster than average in wake of COVID-19

Prior to the pandemic, public transit use was at an all-time high, and TransLink had just won the 2019 [Outstanding Public Transportation System Achievement Award](#) while Vancouver had recently been highlighted by Business Insider as home to one of the [top three subway systems](#) in North America.

Then the pandemic came, and public transit use plunged worldwide with transit operators struggling to keep their lights on. TransLink was no exception, sustaining losses averaging \$75 million per month from operating essential transportation services during a pandemic.

However, things are looking up. A recent report from TransLink shows that public transportation ridership has recovered to roughly 70 percent of pre-pandemic levels, with bus ridership bouncing back more strongly than any other public transportation mode (71 percent in May 2022). The same report shows that this recovery rate is stronger than most transit systems in North America, exceeding the average recovery rate of systems in Montréal, Toronto, Washington D.C., Chicago and San Francisco. For more information, refer to TransLink's "[Bus Ridership Leading the Return to Transit.](#)"

Drivers and Trends

Warehousing has everything to do with the storage of goods and raw materials for inventory, repair or sale, while logistics applies to the transportation of goods from storage and processing to various destinations.

Together with transportation, they act as the circulatory system of our economy, working in tandem with the natural, built and informational environments to store and move goods, services and people within and between the places we live, work and play.



Ride-hailing services outpace taxi hailing

January 2020 marked the introduction of ride-hailing services like Lyft and Uber to Vancouver. Since then, they and other ride-hailing services have gradually taken the lion's share of the market of all passenger hailing. In May 2021, a study commissioned by the British Columbia Passenger Transportation Board noted that the use of ride-hailing services now outpaces the use of taxis by more than two to one.



“Long-haul” symptoms from pandemic on economy’s logistics and warehousing highlights ongoing challenges

Vancouver has been hard-hit by the pandemic and localized natural disasters. Massive impact to tourism and low passenger loads have led to high unemployment and lost businesses in the transportation industry, but the meteoric rise of e-commerce during the pandemic has meant increased need for warehousing space and expansion of delivery and logistics services.

The initial pandemic suspension of port operations caused a tremendous backlog from which the industry gradually recovered, but the fall of 2021 saw extreme rainfall devastate the southwest BC region, with severe flooding cutting the region’s road and rail from the rest of North America.

These spikes in backlog and activity resurfaced ongoing concerns by municipal and regional planners, the Port Authority, and businesses in the sector on how to solve the problem of dwindling warehouse space in land-strapped Vancouver.



Photo: Maximilian Ruther, via Pexels

Land planning and transportation planning go hand in glove

Metro 2040's Regional Growth Strategy encourages land-use and transportation infrastructure that reduces energy consumption and GHG emissions, improves air quality, and is resilient to climate change and natural hazard risks.

This includes taking a regional perspective on low-emissions transportation infrastructure, with a focus on first and last-mile transportation and fleets other than public transit to focus on goods movement, including e-cargo bikes and zero emissions medium- and heavy-duty vehicles.

The Vancouver Fraser Port Authority is planning developments of new berths to accommodate anticipated increases in cargo and container traffic. However, acute shortages in industrial lands from competing needs of industrial space users, as well as pressures to convert industrial spaces to residential or commercial uses, have resulted in serious shortage of space for expanding port and rail operations in the city of Vancouver in particular.

Cycling and cyclelogistics

As one of North America's top cycling cities, boasting more than 450km of bike routes and a strong commuter, leisure and athletic cycling culture, Vancouver has led in the adoption of e-bikes and e-scooters. In the late 2000s, the City of Vancouver began building out its extensive infrastructure of protected cycling lanes, which sharply increased cycle mode share over the next decade, helping to convey volumes of goods and commerce as well as people. The integration of bikes into the goods movement network is called cyclelogistics. In 2021, the City of Vancouver released a memo on its upcoming partnership with the Province of British Columbia on a pilot project for a temporary shared, small-scale urban cyclelogistics hub.

See the City of Vancouver for resources on [moving goods and services by bike](#)

Growing demand for skills in zero emissions and electric mobility

The British Columbia Institute of Technology (BCIT) launched a pilot for an EV Maintenance Training Program in 2019, helping to train thousands of new EV technicians to support BC's shift to electric vehicles. Funded by the Province of British Columbia, this program is the **first of its kind in Canada**, and will be critical to growing the green workforce in BC to meet sustainability targets. Technicians from the City of Vancouver, whose municipal fleet is more than 120 vehicles strong, were instrumental in developing and testing the program.

Go to [page 12](#) to read more about electric bikes and other micromobility modes



key opportunities for innovation in logistics and zero emissions transportation

1. Hydrogen

British Columbia's bench strength in hydrogen fuel cell technology its ready supply of renewable energy and hydroelectric infrastructure mean that BC Hydro – the province's primary electric utility provider – could have a critical role to play in building the hydrogen value chain. According to Natural Resources Canada's national hydrogen strategy, hydrogen fuel cycles require sites for electrolysis. Power generation facilities are therefore prime sites at which to build electrolyzer farms. As a side bonus, these could provide an alternate, high-value revenue stream for its providers.

2. Novel materials

Most electric vehicles require up to six times as many rare earth minerals as their conventional combustion counterparts. Accelerating their adoption means wrestling with the full scale of their rarity – which could mean supply chain challenges – and the environmental and social impact from sourcing, refining and processing lithium and cobalt. It requires building out appropriate waste management infrastructure and designing vehicles, batteries and services alike to better manage battery lifetimes.

3. Charging service providers

In July 2021, Vancouver City Council approved proposed policy changes that would significantly increase the number of EV-ready parking stalls in new, non-residential buildings. In May 2022, City Council also approved a new \$10,000 annual business license surcharge for gas stations and commercial parking lots without EV chargers, that will go into effect in 2025. These policies, and others like them, create a market demand for charging-as-a-service – for instance, EV charging operators could partner with parking businesses to install and maintain charging infrastructure on their behalf.

4. Smart cities

Route optimization software for all classes of vehicles and traffic optimization software for cities and traffic grids could go a long way to helping reduce net GHG emissions by keeping vehicles moving efficiently.

5. Carbon-neutral fuels

As carbon capture technology improves and scales, and with an argument to be made for diverse use-cases of conventional vehicles both during and after the net zero transition to keep transportation options resilient through diversity, carbon-neutral fuels have gained significant attention in recent years. While these are molecularly similar to petroleum-based fuels, they produce no net-GHG emissions or carbon footprint, as atmospheric carbon forms the basis of the carbon content.

Plus, some of the
local companies
leading the charge



HTEC develops hydrogen supply solutions and station networks to support the rollout of hydrogen fuel cell electric vehicles (FCEV)



CORE is apply its track record in heat and energy recovery systems towards FCEVs



Mangrove Lithium is commercializing scaleable solutions to synthesize low-cost, low-impact lithium from various waste streams



7Gen provides full-service expertise in installation, operation, maintenance and leasing for EVs and charging infrastructure, with a focus on commercial vehicle fleets



Routific offers a delivery route optimization service



Volterra developed its EVCare software to aid in EV battery health management



Ionomr's ion-exchange membrane technologies have applications in converting CO2 into carbon-neutral fuel

E-Mobility & Zero Emissions Transportation

Electric and hybrid transportation comprises just one facet of Vancouver's vibrant clean transportation cluster

Vancouver is teeming with transportation operators and service providers tackling the transition to a lower carbon footprint while moving goods, services and people, whether it be through the streets, by rail, by sea, or by air.

Since May 2021, Metro Vancouver-based commercial seaplane company **Harbour Air** has worked with electric aircraft experts **magniX** and high-performance battery supplier **H55** to electrify the aviation industry. The partnership will help Harbour Air develop and certify its electric Beaver commuter plane and work towards an ultimate goal of operating the world's first certified all-electric commercial airplane.

In 2021, the Province of British Columbia kicked off a **three-year electric scooter pilot** permitting the operation of e-scooters in select cities, including the **City of Vancouver**. This has sparked their integration into the cycle-logistics value chain in addition to their usage in recreation and commuting.

Related sectors and specializations:

- Hydrogen fuel cells
- Micro-mobility
- New mobility
- Hybrid drivetrains
- Electric boats
- Electric aviation
- Tourism and transportation
- Battery and energy storage

#1

EV adoption in North America

3%

of vehicles on roads are electric

\$50 billion

size of domestic market for hydrogen by 2050

39%

of GHG emissions in City of Vancouver are from transportation (net-zero opportunity)



Public transportation and policy revving region's clean transportation ambitions into high gear

Through TransLink's [Low Carbon Fleet Strategy](#), the province's main public transportation provider has committed to reducing greenhouse gas emissions by 45 percent by 2030 and 80 percent by 2050; and transitioning to a fleet operating entirely on renewable energy by 2050. Electrification is key to achieving these goals, and a significant part of the strategy relates to building the electric charging infrastructure and making necessary changes to fleet operations. Until a few short years ago, Vancouver's famous [SkyTrain](#) network was the world's longest, fully electric, autonomous light rail system. Today, it still ranks in among the world's top five longest.

While BC's ambitious policies on zero emissions transportation makes it a North American thought leader, some local industry associations feel it could be taken a step further. [BC Trucking Association](#), for example, has asked the Province of British Columbia for a low-emissions and zero emissions mandate for medium-duty vehicles.

Support for e-mobility and electrified transportation

Consumers, companies and researchers in Vancouver benefit from robust ecosystem support, including government project and program funding streams, rebates for private and company vehicle purchase, tax reliefs for R&D, and increased investments into educational and research institutions.

- [SR&ED](#) provides internationally competitive federal tax rebates for scientific research and development activities in Canada.
- [CleanBC](#) has committed to 100% electrified private light vehicle registration in BC by 2040.
- [Plug In BC](#) offers a hub of information and incentive programs for consumers and fleets to go electric.
- [Go Electric Program](#) aims to encourage and accelerate the adoption of zero emission vehicles in BC by making them more affordable and easier to charge or refuel, while supporting research, training and economic development in the ZEV sector. Indigenous workplaces and residences are [eligible for increased rebates](#).
- [Permitting ZEVs on BC HOV lanes](#) allows owners of low emission vehicles to apply for permits to drive on high-occupancy vehicle lanes.
- [Electric Vehicle and Alternative Fuel Infrastructure Development Initiative](#) (EVAFIDI), launched in 2016 by Natural Resources Canada, is helping to establish fast-chargers along core routes and highways from coast-to-coast, as well as hydrogen refueling sites in major cities.
- The City of Vancouver's [electric vehicle charging for rental buildings program](#) encourages the owners or building managers of existing rental buildings who meet eligibility requirements to apply to have City-owned EV chargers installed in their buildings for use by their tenants.

Drivers and Trends

Vancouver and BC have a key advantage in leveraging e-mobility to achieve a net-zero transportation sector: our access to abundant hydroelectricity, a renewable energy source.

Many jurisdictions would see limited reductions in lifetime emissions from facilitating the switch from a combustion fuel engine to some form of electric vehicle because of electrical grids powered by non-renewable sources like coal or natural gas.

Tourism charges forward

With the visitor economy booming pre-pandemic, there has been a growing trend in tourism transportation operators gradually retrofitting or converting their fleets of tour buses, boats and bicycles for more sustainable sightseeing. However, the pandemic stalled or forced companies to focus on survival.

As tourism operators and services gradually recover from the pandemic, some have also taken advantage of new pilot programs and sector stimuli initiatives to pivot or find entirely new niches. One example is [GoScoot](#), whose e-scooter rentals specifically service visitors.

E-bike uptake spiked worldwide

The pandemic triggered a worldwide surge in electric bike and e-scooter sales. Indoor restrictions, for example, saw restaurants and retail operators turn towards e-commerce and delivery options. This, in turn, appears to have accelerated e-bike adoption among gig delivery riders as well as recreational cruisers. Notable Vancouver-founded e-bike manufacturing and distribution companies include [Ohm](#), [Voltbike](#), and [Surface 604](#).

Shore power

The Port of Vancouver's world-leading shore power berths provide select cruise and container ships the means to plug into land-based electrical power, as well as reduce harbour rates for those who qualify through its EcoAction program. In 2009, Canada Place harbour became one of the first terminals in the world to offer shore power for cruise ships. While not all vessels are capable of plugging into shore power, these initiatives still save an estimated **51.7 tonnes** in net air contaminants and greenhouse gas emissions per call. Shore power demand will continue to grow with the establishment of international standards.

Car-sharing services, rental companies and co-ops are leaders in electrification strategy

From the launch of Evo Car Share, an all-hybrid electric vehicle car share run by the BC Auto Association, to the Modo car co-op introducing plug-in electric, hybrid electric and hydrogen fuel cell electric vehicles, Vancouver's carsharing services have been forerunners in providing Vancouverites with alternatives to car ownership. This trend is accelerating, with players like ZeroCar (formerly EV Rentals), a company boasting an all-Tesla fleet, and Evo rolling out its first battery-electric cars in 2021.

Photo: Modo Coop



Electric bikesharing services ready to move beyond pilots

Zygg is a Toronto-founded e-bike subscription company that just launched in Vancouver. BC-based Evo Car Share has announced plans to expand into the realm of e-bikes with a new Evolve e-bike fleet. City of Vancouver bike share provider Mobi by Shaw Go will likewise be rolling out an electric bike fleet. Other e-bike sharing options in the region include U-Bicycle, or **Lime**, which operates in Richmond, the City of Vancouver, and North Vancouver, and is beginning a pilot program in West Vancouver.



3 challenges, barriers and considerations for accelerating net zero

1. Leveraging policy and design to tackle EV charging infrastructure. Parking and EV charging infrastructure across every single class of vehicle and transport option is necessary, and it has been slow to materialize. For the City of Vancouver, one challenge is that sidewalks are premium real estate with competing uses, including pedestrian ways, patios, bike locking infrastructure, bus stops, and parking. The City of Vancouver is exploring various design and implementation solutions to this quandary, including advocating for charging stations integrated into street lighting points, designed so EV drivers can plug their own cables into a universal, standardized outlet – an option common in Europe but slower to take off in North American cities.

2. Prohibitive up-front costs. Purchasing private light-duty vehicles may still be out of reach for many households due to limited access to EV charging infrastructure. Retrofitting, overhauling or otherwise replacing aging fleets could be similarly challenging for logistics and transportation companies. Many orders of government have incentives ranging from permitting eligible EVs **access to HOV lanes** on provincial highways to rebates to offset the purchase of EVs and charging infrastructure.

3. Need for resilience in public transit requires diverse options. TransLink's bevy of initiatives into zero emissions transportation speaks to the organization's commitment to transportation planning. While TransLink has made significant commitments to electrification, there are many challenges to tackle: resilience, battery life, and battery lifetime, for starters. Moreover, the organization is a public transportation provider, with a mandate to keep bus lines and other modes of transportation active and punctual. Battery electric buses may require longer turnover times than hydrogen fuel buses (with battery charging taking longer, relative to refuelling), and new infrastructure accommodating these must be planned and built. Lastly, in the event of natural risk events disrupting any one of these options, there need to be redundancies in place in the form of other modes of transportation.



Ionomr manufactures a high-performance hydrocarbon proton exchange membrane

Vancouver Spotlight

“[Ionomr Innovations](#) is the type of new company and breakthrough technology that can provide cost, performance and environmental advantages for fuel cells, hydrogen production and carbon capture processes to truly help facilitate a speedy shift to the hydrogen economy. Ionomr’s ion-exchange membrane and polymer technology is already well underway in its scale-up and commercialization efforts, with primary research and development and manufacturing facilities located in Vancouver, the global hub for fuel-cell and hydrogen-technology development.”

Bill Haberlin, CEO, Ionomr Innovations Inc.

Further Reading and Resources



Zero Emissions Transportation

- [TransLink unveils first 10 years of Transport 2050 priorities](#)
TransLink
- [BC Hydro’s Electrification Plan](#)
BC Hydro
- [Electric Vehicles](#)
City of Vancouver
- [CleanBC Roadmap 2030](#) and [Go Electric](#)
Province of BC
- [Metro 2040 Regional Growth Strategy](#)
Metro Vancouver Regional District



Transportation and Logistics

- [“A Bit of History on the Port of Vancouver”](#)
Colley West Shipping Ltd.
- [Reporting, Statistics and Resources](#)
Port of Vancouver
- [NRCan Hydrogen Strategy for Canada](#)
NRCan
- [Cargo Congestion Surge Swamps Vancouver](#)
Business in Vancouver
- [Walk, bike, roll, transit](#)
City of Vancouver
- [2022-2024 Strategic Plan](#)
Vancouver International Airport (YVR)
- [Ride-hailing trips in Metro Vancouver outnumber taxis nearly 2-to-1: report](#)
Global News

Traditional Economics Explained

Interest Rates

“At the end of the day, it’s not a normal condition to have interest rates at zero.”

Lloyd Blankfein, former CEO of Goldman Sachs

What is an interest rate?

An interest rate is the amount charged on top of the principal (i.e. the original amount of a loan or investment) by a lender to a borrower for the use of assets. It also applies to the amount earned at a bank or credit union from a deposit account.¹ Many factors affect interest rates, including money supply, inflation rate, monetary policy and the length of time funds are borrowed.

While interest rates can apply over different periods, such as daily or a monthly, they are commonly annualized (also known as an annual interest rate).

The first known interest rates were set in Italy by bankers during the 1350s.² In those days, rates of 20-25% were reported for borrowers with good credit – not dissimilar to interest rates charged by credit card companies today.

How to calculate interest rates

$$\text{Simple Interest} = P (1 + rt)$$

Where

P = initial principal balance

r = annual interest rate

t = time (in years)

$$\text{Compound Interest} = P \left(1 + \frac{r}{n} \right)^{nt}$$

Where

P = initial principal balance

r = annual interest rate

n = number of times interest is compounded per year

t = number of time periods elapsed (in years)

Historical Canadian interest rates (%)



From April 2020 to February 2020, the policy interest rate in Canada dropped to 0.25% – a rate last seen in the 2008 global financial crisis and the biggest decline seen in Canadian history.

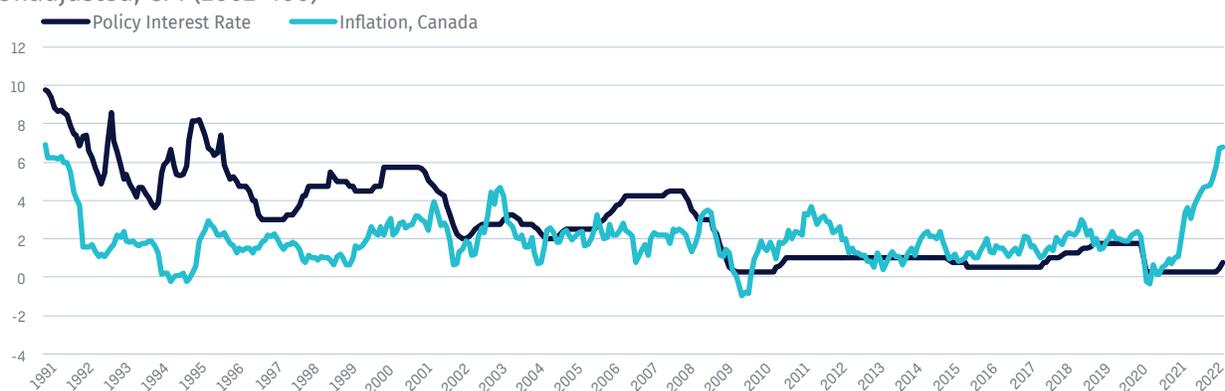
Source(s): VEC analysis, Bank of Canada

1 [Interest Rate](#) by Investopedia

2 <https://btcm.co/13th-century-interest-rates/>

Policy Interest Rate vs. Inflation (%)

Unadjusted, CPI (2002=100)



Source(s): VEC Analysis, BC Stats, Statistics Canada

Inflation and interest rates

The overnight rate – also called the policy interest rate – is the interest rate major banks charge for overnight loans to each other it's also the primary tool the Bank of Canada uses to control inflation. When inflation is below 2%, the Bank of Canada might lower the policy interest rate so other interest rates across the economy go down. The decreasing cost of debt encourages people to borrow and stimulates consumption, helping to boost the economy. Policy interest rates tend to move in the same direction as inflation, but often lag because policymakers require data to estimate future inflation trends, and the policy interest rate they set takes time to fully affect the economy.

Refer to the [Fall 2021 Economy Report](#) for a deeper dive into inflation.

In Canada, there are **eight fixed dates** each year for the Bank of Canada to adjust the target for the overnight rate. The current policy interest rate was set at 1.5% on June 1, up 50 percentage points since the last announcement on April 13. The next scheduled date for announcing the overnight rate target is July 13. According to the Bank of Canada, consumer price index inflation reached 6.8% in April 2022, largely driven by higher prices for energy and food. As such, the central bank is continuing its policy of quantitative tightening to return inflation to its target levels.

References

- [Understanding Our Policy Interest Rate](#)
Bank of Canada
- [Monetary Policy Report April 2022](#)
Bank of Canada
- [The History of Interest Rates Over 670 Years](#)
Visual Capitalist
- [What is the Relationship Between Inflation and Interest Rates?](#)
Investopedia



21st Century Economics

Antifragility

What does it mean to be *antifragile*?

Antifragility is a property of systems that increase in capability to thrive because of stressors, shocks, volatility, noise, mistakes, faults, attacks, or failures. It is a concept developed by Nassim Nicholas Taleb in his book *Antifragile*, and in technical papers.[1][2] As Taleb explains in his book, antifragility is fundamentally different from the concepts of resiliency (i.e. the ability to recover from failure) and robustness (i.e. the ability to resist failure).

How does antifragility relate to economic development and the economy?

Today, “resilience” is a big buzzword in economic development and among city-builders. But we’d like to introduce a term to economics that goes way beyond resilience – antifragility. Put simply, this is a concept to explain how systems – for example, an economy like Vancouver’s – can potentially grow stronger from a stress or a shock, such as an earthquake, financial crisis, or traumatic event.

Whether something proves antifragile or not depends on several factors: how well the system is designed, how big or horrendous the stress or shock is, and even our attitudes towards the stress or shock (such as the willingness to “build back better”).

“Antifragility is beyond resilience or robustness. The resilient resists shocks and stays the same; the antifragile gets better.”

Nassim Nicholas Taleb,
Author, [Antifragile: Things That Gain from Disorder](#)

One can consider antifragility on a spectrum alongside resilience:

Fragile ||||| **Resilient** ||||| **Antifragile**

Resilient systems or economies, which are commonly seen as being opposite to fragile or volatile systems or economies, could be considered only partway towards being antifragile. Antifragility's relevance to 21st-century economic development is a vital concept to bear in mind as we deal with the continued effects of the pandemic. Despite the massive and mostly terrible impacts of COVID-19 we've seen already, we must use this opportunity to build back our economy better than it ever was before.



Here's how the antifragility concept could apply to Vancouver's post-COVID economy:

Fragile ||||| **Resilient** ||||| **Antifragile**

Vancouver can't cope with COVID-19 impact

Businesses close and do not reopen

Jobs are lost and never come back

Vancouver copes with COVID-19 impact

Businesses close, but reopen

Jobs are lost, but are refilled

Vancouver emerges from the pandemic stronger

New, better business models emerge

New, greener, fairer and more inclusive jobs emerge



One final thought...

This is not to belittle or downplay the terrible impacts of the pandemic, extreme weather-related events like floods, heat domes, landslides or wildfires, or any other similar traumatic events BC recently experienced. Some stresses are too much and forever weaken the system or individual. However, we must make the most of these crises by doing all we can to make Vancouver an antifragile economy to survive and emerge better from COVID-19 – and the next shock or stress to hit our city.

VEC Highlights

ACTION PLAN

Zero Emissions Economic Transition Action Plan (ZEETAP)

The Vancouver Economic Commission created the [Zero Emissions Economic Transition Action Plan](#) (ZEETAP) to help workers and businesses navigate the transition to a net-zero economy and market context. The actions outlined in this three-year plan kick off a suite of initiatives to help Vancouver businesses and workers access, understand, navigate, purchase and otherwise adopt climate change solutions.

PROGRAM

Greater Vancouver Circular Economy Network Series

A six part series to support the emerging circular economy businesses of the Metro Vancouver region by providing educational content tailored to circular entrepreneurs while facilitating peer-to-peer interaction. Topics will include carbon accounting for circular goods and services, accessing R&D, how to practice inclusive circular employment, and preparing for growth and export beyond BC. In partnership with Share, Reuse, Repair Initiative. Watch the VEC website for details and registration - coming soon!

FEATURE

22 Indigenous Leaders to Watch

A growing body of research suggests that organizations with diverse leadership generally outperform less-diverse ones in terms of financial health and risk management. Vancouver companies and organizations looking to hire people from underrepresented groups as consultants, advisors, or executives may want to follow the work of the people on this list. It highlights educators, entrepreneurs, visionaries, artists, planners and activists that are making an impact in their respective fields – and beyond – but who may still be less-known in the economic development ecosystem.

[Read the post.](#)

Additional Economic Development Reports and Resources

- [Quality of Life Hub](#)
Statistics Canada
- [Canadian VC & PE Market Overview Reports](#)
CVCA
- [Provincial Outlook – March 2022](#)
RBC Economics
- [Canadian Market Reports](#)
CBRE
- [Green Retrofit Economy Study Summary Report](#)
CaGBC & Delphi Group
- [A Global Roadmap for An Inclusive Circular Economy \(For Stockholm +50\)](#) Chatham House
- [British Columbia Major Projects Inventory Fourth Quarter 2021](#)
Province of BC
- [World Development Report 2022: Finance for an Equitable Recovery](#)
World Bank Group
- [The Short and Winding Road to 2030 – Measuring Distance to the SDG Targets](#)
OECD
- [Update: COVID-19 Recovery Dashboard](#)
BCREA
- [Sustainable Cities Report Card](#)
Corporate Knights

Looking for more?

Browse previous editions of the Vancouver Economy Report online:
www.vancouvereconomic.com/economy-report

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