



Canada's Horizons

A look into the
Canada of 2040

Brock Carlton, CEO,
Federation of Canadian Municipalities

in collaboration with
David Coletto, CEO, Abacus Data



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Introduction

Brock Carlton

One late evening 20 years ago, I was sitting in a hot tin shack. Bare lightbulbs hung by their wires from the rafters cut through the darkness at the Erez Crossing between Israel and the Gaza Strip. I was waiting for the X-ray guy to clear my luggage so I could get to the Tel Aviv airport and make my way home to my wife and three young children. While sitting with the border guard, I couldn't help but think about how the world was becoming smaller. I had to look no further than the border guard himself. He was an American teenager, carrying an Israeli Uzi, wearing a Toronto Blue Jays t-shirt, guarding the border between the Israelis and the Palestinians while idly chatting with me, a Canadian. In this young man, I saw our increasingly globalized future.



► Brock Carlton
CEO, Federation of
Canadian Municipalities

Twenty years ago, the Federation of Canadian Municipalities (FCM) was part of the vanguard of international cooperation focused on urban development and building international networks of cities. We believed that a better urban experience was necessary for the future of our world. Across the planet, as in Canada, cities were growing and rural areas struggling,

yet for most, urbanization was some distant future concept. Globalization was not yet part of the vernacular.

Alvin Toffler's 1970 book *Future Shock* predicted a future of ever-faster change in technology that would be disorienting. In 1998, we were on the cusp of that change. So while we watched TV on the three stations we could catch via rabbit ears and our kids prepared their homework using our Shelf of Knowledge — a bookcase in our living room holding the *World Book Encyclopedia*, *Popular Science* and the like — a small startup called Google was just being formed, and Sony produced the first high density floppy disc. The pace of change, while tangible 20 years ago, was about to get even faster and go even deeper into our lives.

To begin to grasp what the next 20 years may bring, FCM has partnered with Abacus Data to produce Canada's *Horizons: A look into the Canada of 2040*. This comprehensive report brings together some of Canada's leading thinkers and research to examine the trends that will shape our country over the next two decades. Our hope is to help people begin to imagine the steps we need to take as a country to seize the opportunities and meet the challenges ahead. And in particular, we hope to spur a conversation about the role that our cities and communities — as well as FCM — can play, and where we can lead. After all, our future as a country depends on the vibrancy of our cities and communities. As I like to say, community-building is nation building.

In his introductory letter, David Coletto of Abacus Data says: “The next two decades bring exciting potential.” I am conflicted by my excitement for the future and my apprehensions about a warming planet and a world where growing diversity could also bring growing disparity. Will everyone enjoy the benefits of deep technological change? Will our Indigenous peoples be embraced in the next Canada?

What will the changing climate bring us? And what about me and my wife? We will be in our early 80s, on the back-end of the baby boomer curve. What will our lives and our support systems be like?

As you read this report, remember: now is the time to start finding answers to these questions. And together, now is the time to start shaping what’s to come.



Introduction

David Coletto

Twenty years ago, I was still working toward getting my driver's license and stocking shelves at a local grocery store in Richmond Hill, Ontario. I rode public transit to and from high school every day from suburbs around Toronto. Unlike today, when almost every transit passenger can be seen staring at a device, there were no smart phones or tablets to entertain me on my daily commute. If I got a seat on the bus, I usually pulled out a book from the library and read or poured over baseball box scores at the back of the sports section of the Toronto Star.



► David Coletto PhD
CEO, Abacus Data

When I got home from school, I didn't do my homework on a laptop. My family had one desktop computer that we all shared. The Internet — the “information superhighway,” as it was then called — was in its infancy. I wasn't able to use Google or Wikipedia to research my school projects but relied on my family's own “Shelf of Knowledge” (I like that one Brock!).

Outside of school, I worked part-time in a grocery store, earning a whopping \$6.40 per hour, less than half the current minimum wage in Ontario. About a third of Toronto residents were born outside of Canada, compared to more than half today. The average price of a home in Toronto was less than \$217,000, about a third of what it is today. Back then, there was still farm land around my parents' home off Yonge Street in Richmond Hill. Today there are 15-storey condos lining the street.

So much about our lives is different from just two decades ago, and the rate of change is only escalating. It's almost impossible to imagine what the world will look like in the year 2040. Will public transit and human driving be a thing of the past? Will smart phones be replaced by innovative new devices we can barely conceive of today? What jobs will the children being born in the next five years have when they are teenagers? Will robots be stocking those grocery store shelves like I did or will there even be grocery stores at all, thanks to the dominance of online shopping?

The next two decades bring exciting potential, including the ability of technology to create equality of opportunity and access to education for people across Canada and around the world. Even though I don't know exactly where it will take us, I'm excited about the future.

For this forecasting exercise, the Federation of Canadian Municipalities partnered with my research firm, Abacus Data, to help build a picture of the trends moving Canada towards our collective future, bringing to light the opportunities and challenges it could face.

In this process, we reviewed leading research on demographic and technological trends and interviewed 20 thought leaders across the country. Our interviews took us from Microsoft's artificial intelligence unit in Montreal to rural and northern development scholars from the Rural Development Institute in Manitoba; from climate change and sustainable development policy leaders at the Canadian Green

Building Council in Vancouver to local governance experts in Ontario. What we learned and share in this report is by no means exhaustive or complete, but we're confident it reflects a diverse and thorough look at the emergent trends that will shape the Canada of 20 years from now.

**Look at the
emergent
trends that
will shape
the Canada
of 20 years
from now.**



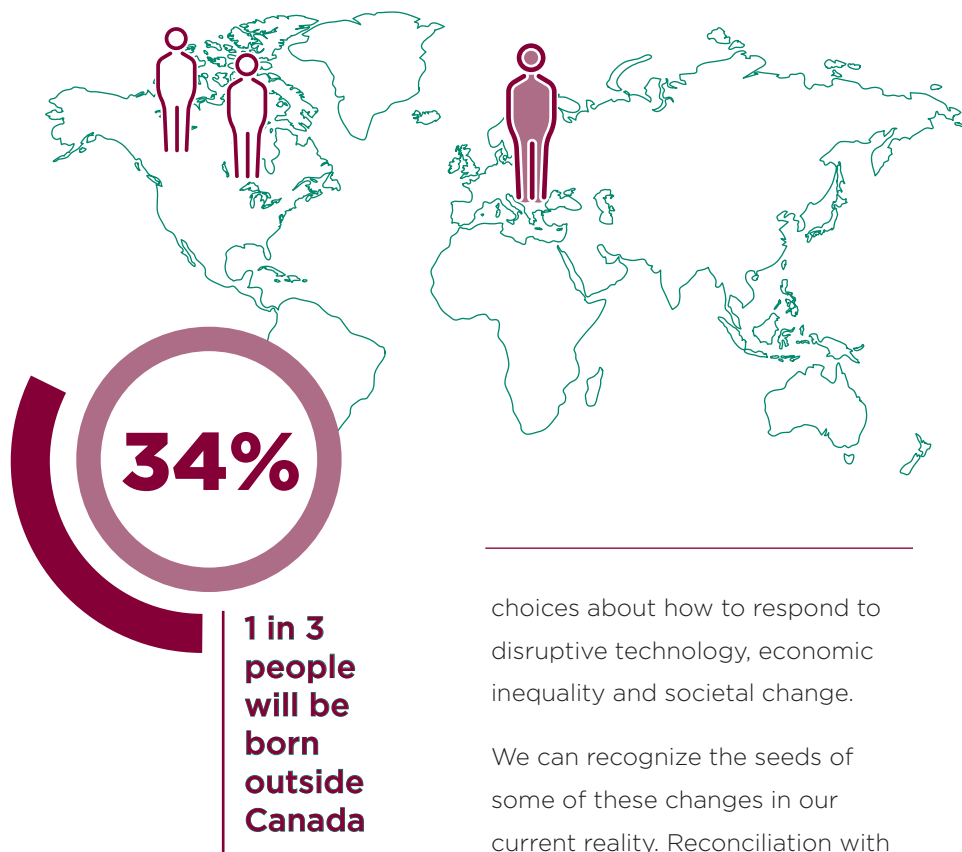


Through the looking glass: Canada in 2040

A few years ago, people could only imagine a world with automated transportation systems, smart homes, powerful communications technology and efficient, renewable energy. Today, we are on the cusp of a new age that will dramatically improve our lives but also pose considerable challenges.

Revolutionary new technologies, from driverless cars to artificial intelligence, are about to transform the way we work, live, shop, interact and vote. Every component of Canadian society, from families to private businesses to governments, will function differently in just a few decades.

The rate of change is unprecedented — creating unique challenges and opportunities — while presenting major legal, ethical, social and economic dilemmas. The impact will be felt in workplaces, on public transit and other transportation infrastructure, in energy and water consumption, in economic development and more. Governments, businesses and citizens will have to make significant



choices about how to respond to disruptive technology, economic inequality and societal change.

We can recognize the seeds of some of these changes in our current reality. Reconciliation with Indigenous communities has become a significant national priority, but there are still substantial barriers to improving quality of life on and off reserves. The aging population and increased income inequality will put more pressure on Canada's social safety net. New Canadians, including refugees, will continue to arrive in larger numbers. Climate change and its impacts will touch every community in Canada in new ways.

This is a snapshot of what we heard from our interviews with a diverse group of thought leaders across the country, as well as an analysis of dozens of research studies, projections, and commentaries. This report summarizes what we heard and learned through this process. It is not a comprehensive set of predictions about the future, but a signal of trends that will affect us in significant ways. This report serves as a starting point for a meaningful conversation about the challenges and opportunities Canada will face in the next two decades. It's critical for all of us to work together, as early as possible, to confront those challenges and capitalize on those opportunities with clear and reliable information, informed ideas and productive dialogue. The Federation of Canadian Municipalities is doing this by engaging citizens and leaders across Canada to embrace and respond to the changing world together. This report aims to do the same.

So let's start the discussion.

New Canadians, including refugees, will continue to arrive in larger numbers.





People

Canada is already one of the most diverse countries in the world, but in the next two decades the rate of change in our population will be the most dramatic in four centuries. Projections suggest that by 2040, all of Canada's growth will come from immigration — a level not matched since European settlement of the 1600s. The change will be enormous, permanently altering Canada demographically, culturally and socially.

If anti-immigration sentiments in other countries continue, Canada will be in even greater demand as a safe haven for immigrants and refugees. In addition to political and economic migrants, some may arrive as climate change refugees, from countries ravaged by environmental disasters. There are projections that anywhere from 25 million to one billion humans could be displaced by climate change by 2040, their homes and habitats destroyed by weather events and rising sea levels.

Among new Canadians, Statistics Canada forecasts that 55 per cent will arrive from Asia. Others will come from the Caribbean and Eastern Europe. Nearly all of these newcomers will settle in larger cities, particularly Toronto, Montreal and Vancouver. Within a few decades, just under one-third of Canadians will be members of a visible minority and about half will be either foreign-born or have at least one parent who immigrated to Canada.

"Increased immigration is not only a positive, it is a necessity," says Alan Broadbent, Founder, Chair and CEO of Maytree. "With a larger population we would have more resilience,

Canada's population is aging. Are we ready to handle the economic, social, and infrastructure challenge this presents?

and economically we would have a bigger internal economy with greater economies of scale. Canada stands to benefit from this more diverse future.” The change will be much more pronounced in major urban centres. In Toronto, foreign-born residents will make up 51 per cent of the population; in Vancouver, 44 per cent. The majority of immigrants will be university educated, but they will not necessarily transition smoothly into appropriate job opportunities in Canada. Delays in qualification and certification recognition could lead to significant underemployment, at a cost to economic productivity and social infrastructure.

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In 20 years I see Canada being a much more diverse and urbanized place. Our diversity won't solely come from abroad but also from home as the Indigenous community will continue to increase in size. However, the growth and diversity won't be

spread out evenly. The urban experience will be increasingly different from the rural one.

— Jane Hilderman, Executive Director of Samara Canada.

This wave of new Canadians will bring their own cultures and perspectives to Canada, reweaving the national fabric. The impact will be felt everywhere from homes to workplaces to hospitals. Governments will have to respond to the needs of new Canadians and reorient their services to cater to a rapidly changing population. Public health officials will be presented with new medical and communications challenges.

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Our communities are going to change over the next 20 years. Every town, city, and village needs a welcoming community program to help settle new immigrants and refugees. We need to invest in multi-sectoral roundtables in communities across Canada and we need awards, education programs, and assistance for communities welcoming new residents. It will be a golden age for Canada, or it's going to be hell if we fight it.

— Paul Born, Co-CEO and Founder of the Tamarack Institute

164% increase in the number of Canadians aged 85+



164%

2016 – 2041

While this transformation is taking place, many Canadians will be aging. The final segment of baby boomers will be entering long-term care facilities and seniors' homes (the youngest of the boomers will be 81 in 2040).

Health care spending will rise dramatically as new treatments are developed and there is a greater demand for geriatric services. Today, there are approximately 700,000 Canadians aged 85 and older. In 2040, the number will more than triple to approximately 2,200,000. How we manage this demographic shift must be a critical part of our public policy debate over the next 20 years.

Beyond sharp demographic shifts, inequality can quickly grow if left unchecked. Despite all the social progress achieved in the past few generations, inequality will very likely become more pronounced in the years ahead. The "gig economy," the term used for transient employment or project-related opportunities, will continue to replace permanent full-time employment, putting downward pressure on wages. Already, part-time employment growth has surpassed full-time, increasing on average 2 per cent faster and accounting for more than 60 per cent of new jobs in 2016. Today, 30 per cent of the workforce is made up of freelance or term-position

workers. Some forecasts suggest that as early as 2025, nearly 85 per cent of workers could belong to this temporary or "agile" workforce.

In addition, globalization and technology will make it easier for work to be exported to lower-paid employees in other countries. The ratio of debt to income will continue to rise, particularly if the cost of housing continues to increase at the rate we have seen over the past few years.

Across the employment spectrum, the rapidly evolving workplace will put pressure on the education system to produce people with highly specific skills and abilities rather than general knowledge. There will be a need for regular retraining and re-education of experienced employees to keep up with change and replace obsolete skills with relevant ones. Coding, computer programming, and other highly specialized or technical skills will need to be taught and regularly updated for the next generation workforce.

One of the youngest and fastest growing populations in Canada will be Indigenous peoples. Members of First Nations will comprise 2.6 million Canadians in 2040, about 6.1 per cent of the population (compared with 4.4 per cent today). Picture a child being born on a reserve today. If reconciliation initiatives over the next few years lead to meaningful improvements, within two decades that young man or woman could have much greater quality of life and access to clean water, health care, education and employment opportunities.



Indigenous youth could be a big part of bridging the skills gap of the new economy.



Canada's Indigenous population will be young and growing

The rate of post-secondary education among Indigenous peoples is lower than the rest of the country, but that story is changing. If education continues to grow, especially in fields like science and technology, tomorrow's Indigenous youth could be a big part of bridging the skills gap of the new economy.

City Building Institute. "We need to improve on the basic outcomes before we can have a more in-depth conversation. Until core social needs are met we can't effectively deal with inter-generational trauma."

"I believe that graduation rates for the First Nations population will continue to grow and that we will see many more First Nations people joining the work force in all fields across the board," says Phil Fontaine, former National Chief of the Assembly of First Nations. "This will benefit not only First Nations but also Canada as a whole. Education is the key to moving from poverty to prosperity."



**40%
increase in
Aboriginal
population
growth**

40%

“

We are now beginning to see the benefits of First Nations people graduating from post-secondary studies in the last 20 years and I know that this trend will only grow over the next 20.

— Phil Fontaine, former National Chief of the Assembly of First Nations

However, if these advancements in reconciliation and investments in education do not occur, the most youthful and dynamic segment of Canada's future population will never meet their incredible potential.

"We need meaningful actions for reconciliation," says Graham Haines, Research Manager at the Ryerson

If current trends continue, approximately 90 per cent of Canadians will live in urban areas. This is not to say that rural areas will go unpopulated. Canada's rural communities will continue to grow, but at a much slower rate compared to cities. These communities will feed the country's economic engine with the agricultural products and raw materials needed for the modern economy. So long as essential government services, such as education, healthcare and

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emergency services are maintained, the indispensable goods and services produced in rural communities will continue to feed the technical hubs of the Canadian economy. Nevertheless, those residing in rural, remote and northern areas will have access to fewer new economy jobs and will have a lower earning potential compared to their urban counterparts. There will be social-economic differences between the people who live in urban and rural Canada, but the extent of these differences will rely heavily on government policy.

Housing and residential infrastructure will also undergo revolutionary changes. The growth in urban centres will put pressure on both the availability of affordable housing and transportation infrastructure, but also on expectations about home size and available space. Canadians both young and old will continue to migrate towards cities in large numbers. Younger people, in particular, will seek residential properties close to the downtown core, choosing smaller living spaces out of both preference and financial constraint. Most of the growth will be seen in rental properties and smaller homes or condominiums.

At the same time, both housing and infrastructure from the last building boom in the 1980s will be in need of renewal or demolition. Older and larger buildings could be demolished or revamped to smaller apartments or residential infill, including detached and semi-detached housing. In 2040, the inner suburbs of large metropolitan areas — those

communities 10 to 20 kilometres away from the core — will be the site of the next wave of densification.

The finite supply of housing and the rising cost of centrally located homes will contribute to a growing divide between urban and suburban dwellers, with wealthier Canadians closer to downtown. Governments may choose to limit this growing gap by investing in extensive and affordable rapid transit and centrally situated affordable housing, as well as employing inclusive public policies.

Municipalities have been feeling the impacts of this disruption. Over the past decade, revenue streams for local governments have been trailing behind steadily rising expenses. Local governments are expected to do more, and budgets are being stretched thinner and thinner, leaving many municipalities more reliant on transfers from other orders of government. With the economic and societal changes that Canada is anticipated to experience over the coming decades, traditional sources of revenue — including property taxes, user fees, and transfers — are predicted to become insufficient to cope with the increased service and infrastructure burden. New and innovative sources of revenue generation will become necessary, and different orders of government will have to review their funding models to keep up with demand.



Technology

It's almost impossible to portray the extraordinary role of technology in our lives in the year 2040.

Picture the widespread impact of just one innovation: the driverless car. Automated vehicles will likely alter everything — from our daily routines to the way cities are configured. Will people still use public transit? Will parking lots no longer be necessary? Will we need to build large drop-off areas? What will people do while travelling, now that they don't have to take the wheel? Will it affect where they live and how they travel for work and tourism?

It's not just *how* we travel, but *why* we travel that will change. Consumers will be much less likely to drive to stores to shop for groceries or other products. We've already witnessed significant growth in online shopping. Today, 52 per cent of Canadians regularly shop online and 25 per cent of Canadians purchase their household products online rather than buying them at the store. Soon, the consumer experience will evolve exponentially. The more we buy online, the fewer retail stores will be required, leading to sweeping changes in the use of real estate. Instead of shopping malls, consumer demand will require warehousing and storage space. We will require more integrated and extensive logistical systems to deliver the groceries, clothing, electronics, and other products we will increasingly purchase online.

"Convergence will be the greatest trend we'll see over the next 20 years," says Chris Philip, Chair and CEO of ITS Canada, "particularly in the fields of transportation, autonomous

vehicles, electrification and others. We are already seeing the advent of this with cars like Tesla, being both electric and self-driving. Moving forward, all new vehicles will fall into this trend — instigating an inevitable need for greater smart-infrastructure investments.”



How we interact with businesses will evolve rapidly. Amazon’s Alexa, the voice-controlled personal assistant, is just the beginning of a new wave of sophisticated interactive technology. Some estimates suggest that up to 30 per cent of customer service jobs could be replaced by chatbots even today. Within 20 years, that number will be close to 100 per cent. As the technology evolves, the difference between interacting with a human and a computer will become almost imperceptible; the one difference being speed.

Many government service jobs may be replaced by technology as well. The price of many products and services may go down as labour and prime real estate no longer

play as large a role in the cost structure of products and services.

But lower prices will come with a cost to the economy. Automation will be ubiquitous, changing our lives and eliminating many traditional jobs. Much of the manual labour in manufacturing could be replaced by machines in the next 20 years. Major manufacturers will have fully automated plants. Drones will be delivering packages to our doors and computers might be driving our trucks.

More sophisticated technology will also play a larger role in our daily lives, in ways we can barely imagine. Artificial intelligence will be widespread. Human-interfacing technologies will change how we interact with machines, appliances and services. Sophisticated workplace tools will augment our performance.

The very nature of work will be altered. As some jobs are eliminated or moved off-shore, new ones will be created — but they will require greater skills and more specialized training, and will increasingly be project-based rather than permanent positions.

**Interacting
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“While we are losing more manual professions, fields which currently require PhDs in computer science are blooming,” says Jessica Mastronardi of Microsoft. “This is a challenge. Our education system needs to respond to the shifting labour market needs and broad re-skilling is going to need to occur over the next decades.”

Canada has the potential to be a world leader in innovation, but it’s difficult to forecast the extent to which knowledge-based jobs will replace traditional labour. One of the great challenges will be how to retrain workers displaced by technology. Ethical questions will be debated over whether to allow robots and other machines to replace human workers if the result is a rise in unemployment. How do we capitalize on the opportunities of innovation but also limit the economic devastation it could create?

As the sharing economy grows, different models of ownership and product use will evolve. Will people still buy cars and cottages, or just share them with others as part of vast and comprehensive networks? Privacy will become an enormous ethical issue. Who will own the data associated with a wide range of trackable devices, from home security systems to fitness devices? Will the authorities or individuals be able to access data about where a vehicle has travelled, who was inside it or even what they were talking about

while travelling? Instead of using a still image from Google Earth, will we be able to look at a live satellite shot of our street and track the movements of specific people? Will we have the “right to be forgotten,” as it’s sometimes called in Europe, or will governments increasingly own data about our movements and activities?

In an increasingly data-driven economy, governments will have to decide the extent to which digital infrastructure should be publicly regulated, managed or even owned. Where will all of the data be stored and what ethical issues, from personal privacy to national security, arise from an increased reliance on digital records?

More broadly, governments will have to make critical economic development decisions about the extent to which public resources should go toward supporting the industries driving worldwide innovation.

“Municipalities need to see themselves as the most agile form of government,” says Paul Bien, Senior Manager and Director of Insights at Deloitte Canada.



Municipalities are on the frontline and will have to adapt before other orders of government will witness aggregate change.

— Paul Bien, Senior Manager and Director of Insights at Deloitte Canada.

Changes in consumer behaviour will mean the notion of “space” and the design of communities will change.



**55% of
online
product
searches
begin on
Amazon**



A scarcity of high-quality jobs could create significant competition between federal, provincial and municipal governments to host the facilities of major international players. Investments in specific centres of innovation will create regional inequalities, creating regional haves and have-nots. Additionally, as cities compete for the leading technical employers of the new economy, professionals will cluster to the areas with the greatest economic opportunity, leaving some communities — particularly smaller urban centres and rural municipalities — to cope with a potential exodus of their best and brightest.



As the sharing economy grows, different models of ownership and product use will evolve.



Energy and sustainability

With the proliferation of digital technology, by 2040 Canadians could be consuming 10 times the electricity they are using today, perhaps even more. That demand will create a wide range of challenges and opportunities. Given Canada's commitments to dramatically reduce the amount of carbon-emitting energy production, the pressure on new, renewable sources of energy will be substantial.

"Mass electrification presents a big challenge for us into the future," says Thomas Mueller, CEO of the Canada Green Building Council. "If all buildings, vehicles and energy consuming products were solely electric today we would not have the capacity to power them. Electrification is more costly, will increase demand on the current system, and create a less resilient grid."

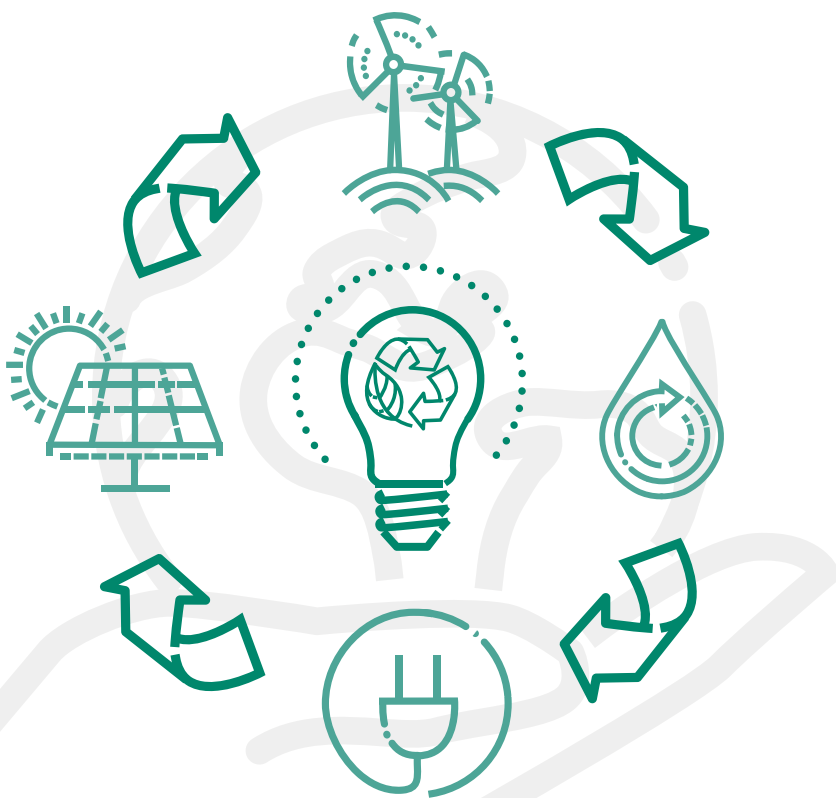
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We will need significant innovation in energy efficiency and production before we can go 100 per cent electric.

— Thomas Mueller, CEO of the Canada Green Building Council.

In the future, energy will almost certainly be greener. But the scope of the transformation to clean energy will be the subject of considerable debate. Canada has already made significant commitments to reduce greenhouse gas emissions and impose a price

Our energy sources will be more sustainable and clean



67%

67% of Canada's power will be renewable energy

on carbon, which will stimulate a transition to renewable energy. But for Canada and other countries to meet their targets, significant improvements are required in traditional renewables like wind and solar power so they can assume a greater share of the generating burden. Even if capacity increases, the cost of producing renewable energy could be significantly higher than other sources, with the initial capital costs being a leading driver. Governments will face big decisions about whether to invest in much costlier sources of renewable energy or fall short of their commitments to reduce emissions.

As we increase our reliance on electrical energy, we could reduce the resiliency of our energy supply. Any disruptions in service would have much broader implications than they do today. Transportation and other infrastructure would be at risk as well. As the energy mix changes over the next few decades, governments will need to consider not just the capacity, but the security of the system.

As we increase our reliance on electrical energy, we could reduce the resiliency of our energy supply.



It's possible that a significant transformation in electricity generation could mitigate the strain caused by the increased demand. New models of electricity generation could evolve to address such challenges. California is already generating more energy using a distributed grid. Instead of a public or private utility managing generation and transmission centrally, a distributed grid gives individual residential and commercial properties the opportunity to produce power for themselves and others, creating not just an increased supply but a less centralized and less vulnerable system.

It's estimated that by 2030, nearly 25 per cent of California's energy will come from distributed sources.

We could also see an increase in residential power units, including rooftop solar panels or wind turbines, in a way that democratizes energy distribution. But even an explosion of home generation will not keep up with the overall demand. Some communities may choose to create energy parks, in which neighbourhoods invest in solar or wind generation to fuel their needs or produce a revenue stream.



Climate change

Climatologists predict that extreme weather events will only continue to rise in frequency and severity over the next decades. Sea levels are projected to rise and temperatures could fluctuate greatly. As a wealthy nation with a climate that is often harsh, Canada has much experience responding to and rebuilding after major weather disasters. But the pressure may increase dramatically in the years ahead.

The impact on urban and rural communities will be equally significant, but remarkably different. Typically, urban areas are more dramatically affected but bounce back more quickly; rural and remote areas sustain less damage but take much longer to recover. In the case of a climatic event, the high density of urban areas leaves more people and infrastructure at risk of injury and damage. However, this density also speeds up the recovery from the disaster. The large concentration of expendable capital and industrial capacity can be used for initial and sustained triage and rebuilding after the disaster. Northern, remote, and other rural communities are more spread out. So, although the same area might be covered by a climatic event, fewer people are affected and less infrastructure is damaged. This low density also slows the response and recovery time, and because there are fewer people spread out over a larger distance, there is less disposable capital and industrial capacity to be spent on the recovery process.

How will governments prepare for such change? How much political capital will be expended on vital long-term projects to prevent or respond to climate change beyond the short-term mandates of elected officials? Will building codes change? Will infrastructure like spillways and firebreaks become more prevalent?



Will remote communities be deemed “high risk,” causing insurance to become unaffordable and forcing governments to intervene? How will governments respond to the unique challenges of northern communities?

“We need to have appropriate metrics to measure what smart risk-reducing infrastructure looks like,” says David McGown, Senior Vice-President of Strategic Initiatives at Insurance Bureau of Canada. “Right now, there is no clear correlation between risk-reducing infrastructure investments and insurance premiums.

Municipalities need to work with insurers to communicate the risk-mitigating value of infrastructure investments and collectively we need to develop metrics to measure their effectiveness and how that relates to insurance risk.”

In the Netherlands, where most land is either at or below sea level, the discussion has already begun. Some municipalities have begun to “waterproof” themselves by sharing detailed water flow and elevation data with municipal planners, allowing them to create sophisticated systems for channeling water away from high-risk areas.

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We need to think of new ways to make our cities resistant to climate change. Multi-purpose infrastructure such as streets that direct water to safe collection areas or public art that doubles as storm infrastructure.

— Jennifer Keesmaat, former Chief Planner for the City of Toronto.

If any country is wealthy enough and has the capacity to mitigate climate change — and perhaps even lead the way with innovative solutions — Canada is a front-runner. Nevertheless, it will take political and community leadership, a willingness to proactively confront the issue and take the necessary steps to address it, even if there aren’t political payoffs — and perhaps there are even political costs — in the short term.

**We will have
to rise to
the climate
challenge and
manage the
impacts.**

230 Million

**The number of
climate refugees
Parliament
expects to be
displaced in the
next 20 years**



Climate change is also going to have serious implications on Canada's immigration and refugee claimant system. Climate refugees are predicted to become an increased percentage of Canadian refugee applicants. These are persons who have been forced to relocate due to a climate-related event, such as rising sea levels or desertification. It has been predicted that up to one billion people could be displaced due to climate-related disasters by 2040. Many of these displaced people will look to Canada for aid and settlement.

For many of these refugees, their homes will have permanently disappeared. Many will also come from lower-income nations with poorer health standards, lower educational attainment, and different cultural backgrounds. Canadians, and all orders of government, will need to rise to meet this impending challenge.



**How much
political
capital will
be expended
on vital long-
term projects
to prevent or
respond to
climate change
beyond the
short-term
mandates
of elected
officials?**



Infrastructure

Our roads, bridges and water systems are the foundations of our society and our country. The demands on Canadian infrastructure will change dramatically in the years ahead. Driverless cars have the potential to reshape how we use roads. Parking lots will evolve into automated storage facilities. Future homes may be built without driveways or garages.

The digital revolution will create demand for more sophisticated sensory, communications and energy technology to support the swift and efficient movement of vehicles. And much more bandwidth will be required for driverless cars to communicate with central traffic hubs and other vehicles.

As the number of devices connected to — and communicating with — each other grows, digital infrastructure will become even more critical. Significant investments in communications networks are required to fulfill the demands of the next generation of cars, appliances and other equipment that will be constantly connected to the Internet.

To face climate change and meet a wave of energy and communications requirements, Canada needs to invest in its most basic infrastructure. Across the country, all networks will need to become smart grids and all telecommunications arrays must be equipped with next generation technology. Canada's climate resilience will be put to the test and leaders will need to rethink where and how to build communities.

Young Canadians are choosing other modes of transportation.

Young Canadians

are opting out of cars



Despite pressure on public finances, dual-purpose infrastructure built for both climate and commerce will need to become standard practice.

“We need to rethink how infrastructure is built,” says Murtaza Haider, professor at Ryerson University. “We know that our old infrastructure is expiring and is unable to cope with future demands. We need strategic investment in projects that have an economic case and are built to sustainably enhance economic activity and individual wellbeing.”

Significant investments in communications networks are required to fulfill the demands of the next generation.





Governance and citizenship

With an increasingly diverse population, a growing number of new Canadians, an aging population, a larger income gap and other challenges, all orders of government will face major decisions on priorities and spending. They will also require new ways to communicate with citizens and engage them in the democratic process.

Pressure on government finances will drive innovation in funding models, from an increase in toll roads to new forms of taxation and user fees. Governments may turn increasingly to private-sector partners to share the load and non-traditional players are likely to play a big role in this area. Already, Sidewalk Labs has partnered with the tri-government Waterfront Toronto group to co-develop a property on Lake Ontario. Will governments be able to maintain control over such developments, or will they surrender some standards and scrutiny in order to attract private investment and save taxpayers money? To what extent will these developments become living labs for technology companies to test products and gather data about how we live?

The division of power and responsibility between various orders of government may also change. Municipalities facing a greater burden to deliver smart infrastructure and respond to social needs may require further collaboration between all orders of government and greater autonomy for municipalities. As an increasing number of people live in cities, new forms of regional governance may

Increasing diversity and social inclusion will not be theoretical. It will be a real challenge for all of us.

90% of population growth in 2040 will be through immigration



evolve to oversee transit, energy and other critical infrastructure.

As Edmonton Mayor Don Iveson recently pointed out, “The way to determine where a cohesive community starts and ends: who do you trade with and who do you cheer for?”



Our cities are growing at an unprecedented rate. Growth boundaries are being passed and surpassed and governments of the future both horizontally and laterally are going to have to work together. As cross-jurisdictional services increase, we will need to balance the efficiency with local representation.

— Joseph Lyons, the director of the local government program at the University of Western Ontario.

To save costs and respond to increased demand from a more technologically savvy population, governments will increasingly provide their services online. That will lead to faster service

and greater responsiveness and also allow public officials to respond more quickly to shifting demands. The change may disadvantage some citizens who are less adept at navigating online platforms and reduce the personal connection between governments and their constituents. It will also require a public sector workforce with a high level of technological skill and expertise.

“With the loss of many of our local news outlets, municipalities are going to have to be proactive with community communication,” says Stephanie Potter, head of research and analysis for the City of Stratford. “I think going forward we are going to have to leverage social media to talk directly with our citizens.” Governments will also turn increasingly to social media to understand and interact directly with constituents, through a combination of communication and research tools. The dialogue between governments and their clients will be faster and more effective, but it will create higher expectations on the part of citizens for immediate response and action from all orders of government.



As traditional media companies continue to cut back or even disappear, conventional forms of advertising will be replaced by more targeted and segmented digital campaigns. Some people fear a loss of accountability, as governments no longer have to answer to beat reporters in traditional media. Others expect a new level of direct accountability to citizens, as demonstrated by some of the citizen revolts on social media against airlines and other companies that have been perceived as delivering bad service. But it's still not clear what will replace daily and weekly newspapers as the main source for news about local government. Where will citizens turn for information about their communities?

Rural communities will not grow at the same place as cities, but they will still be expanding. As the rate of growth in urban areas increases, there's a risk the needs of rural municipalities could be overlooked or underfunded.

“

The rural issue is not just one silo. It overlaps with resource development, First Nations issues, environment and others. We have to stop equating rural issues to small scale agriculture and dying industry. A strong rural strategy needs to take into account the multiple facets of the rural environment.

— Ryan Gibson of the University of Guelph.

Both large and small communities will have similar hurdles to overcome in the next 20 years. The transition from a manufacturing base to technological employment will be difficult, particularly for smaller communities that have less diverse economies, depending on a few extractive or manufacturing companies to provide a majority of employment and local tax revenue.

Rural areas will have to be particularly proactive about economic development. Working with other orders of government, they will have to make consistent investments in core services and modify the education system to reflect the new needs of the job market. Local governments will also have to work at attracting businesses that represent the new economy, just as they did centuries ago at the start of the industrial revolution. For Canada to thrive, both rural and urban communities must succeed.

For Canada to thrive, both rural and urban communities must succeed.



Conclusion

We recognize that nothing is certain and that the trends outlined above only indicate a general direction and not an outcome. However, based on our research and consultation with leaders and experts from across the country, we see the trends shaping the Canada of 2040 in the following ways:

- ▶ Canada will be prosperous and advanced enough to face the challenges of growing inequality, economic instability and disruptive technology. However, if this innovation is linked only to certain metropolitan regions, it may create winners and losers
- ▶ Canada will become more diverse and rely more heavily on immigration to drive population growth. Nevertheless, this rapid increase in immigration will bring challenges to social inclusion and immigration settlement capacity.
- ▶ Canadians will remain open to and accepting of higher levels of immigration, with diversity continuing to be one of the country's greatest strengths. The torrent of new ideas and cultures will force us to reimagine what Canada is — much like we did a generation ago.
- ▶ Investing deeply in infrastructure and advanced clean energy technology will be key to meet the growing demands of an increasingly digital, automated and electricity-dependent world.

- ▶ The dramatic changes to Canada's demography and economy will require all Canadians and those who govern them to adapt to the new realities.
- ▶ Canada will need to meet reconciliation with Indigenous peoples head on in order to improve quality of life, health care and education on reserves — or risk spoiling the potential of the largest and most youthful generation of Indigenous peoples in Canada's history.
- ▶ Our education system will need to be ready to meet the sophisticated demands of training and retraining workers for a rapidly evolving workplace. Failure to do so would see Canadians at a loss in competing for increasingly globalized jobs.
- ▶ Governments and communities will be increasingly reliant on public-private partnerships for infrastructure and community development. This reliance will come with thoughtful questions about protecting the public domain.
- ▶ Governments will be more open and transparent and communicate directly with constituents. Canadians will increasingly expect immediate responses and service delivery. Failure to

meet their expectations could result in disengagement with governments and turning to those that are more responsive.

- ▶ Proper investments in climate and telecommunications infrastructure will be necessary to assist rural, remote, and northern communities in a more volatile climate and highly technical economy. Failure to make these investments will make it difficult for these communities to navigate the rapidly changing landscape.

Canada will look very different in 2040 from how it does today. But our wealth, diversity, and innovation will be an enormous strategic advantage. People from all over the world will want to join us as we prepare for and embrace the future. We need our leaders at all orders of government to begin to think about how we can confront the challenges and capitalize on the opportunities of the next 20 years. Only then can we build a better country — and a better life for all Canadians.

**Our goal:
A better
life for all
Canadians.**

Report prepared by



FCM is the national voice of Canada's local order of government. Our nearly 2,000 municipal members represent more than 90 per cent of Canadians living in communities of all sizes from coast to coast to coast. As a federal advocate and through our own programs, FCM empowers local governments to deliver local solutions to national challenges.

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