

OUR RESILIENT FUTURE

A collection of opinion pieces
from thought-leaders from
across the country.

•I.C•L•E•I
Local
Governments
for Sustainability



The Adaptation Changemakers:

District of Ucluelet (BC)

Town of Qualicum Beach (BC)

City of Prince George (BC)

City of Peterborough (ON)

Town of Caledon (ON)

City of Windsor (ON)

Town of Conception Bay South (NL)

Town of Portugal Cove-St. Philip's (NL)



Many of the impacts of climate change are upon us and they are being felt across social, built, natural, and economic systems in complex and interconnected ways.

Are we confident we're moving in the right direction towards the collaborative, community-level action required to build sustainable, healthy and equitable communities?

What is the future of climate adaptation and resilience building in Canadian municipalities?



We asked 13 super-smart people to tell us what they think the key issues are as we move towards building our resilient future.

Thoughts From:

**Louise Aubin
Mark Boysen
Elliott Cappell
Lo Cheng
Brandon Cooney
Deborah Harford**

**Lisa Helps
Paul Kovacs
Megan Meaney
Peter Nimmrichter
Karina Richters
Mary Rowe
Paul Shorthouse**

BACKSTORY

ICLEI Canada pulled together this collection of opinion pieces to mark and celebrate the completion of the Adaptation Changemakers Project, which built agents of change for resilience and climate adaptation across Canada. This multi-year training and planning project engaged a wide variety of municipalities and community partners in British Columbia, Ontario, and Newfoundland and Labrador. With technical guidance from ICLEI staff and Regional Experts, participating municipalities initiated and advanced their adaptation efforts, engaging local partners and stakeholders, identifying impacts, assessing vulnerabilities and risks, and developing implementation-ready local action plans.

We valued the Changemakers Project for many reasons, two of which stand out most. One – the participating municipalities made great strides to improving their communities’ resilience to climate change, as evidenced in their local action plans. And two – we engaged with a diverse, inspiring, and frankly, super-smart group of Canadians dedicating themselves to building local resilience. No person or community can do this alone. We need each other. We’re better together.



Our Resilient Future is a collection of short commentaries on the future of climate adaptation and resilience building in Canadian municipalities. We've invited experts from many specializations, from elected officials to climate scientists, to draw from their own experiences and each contribute thoughts reflecting their insights into the future of climate resilience (ranging from the provision of climate science to the innovations needed in policy development and the advances needed to ensure unwavering implementation of our well-meaning strategies, etc.) We hope you enjoy reading through these as much as we did, and we invite you to share your thoughts on our resilient future with us through twitter (@iclei_canada) and email (iclei-canada@iclei.org).

Adaptation Changemakers was funded through the Federation of Canadian Municipalities' Climate Adaptation Partner Grants available through FCM's Municipalities for Climate Innovation Program (MCIP). MCIP, delivered by FCM and funded by the Government of Canada, is a five-year, \$75-million program designed to support and encourage municipalities to reduce greenhouse gas emissions and adapt to climate change.



Ewa Jackson is the Managing Director of ICLEI Canada.

LOUISE AUBIN

REGION OF PEEL

Climate change can and is having an impact on our health. In 2009, the Lancet stated that “climate change is the biggest global health threat of the 21st century.” Climate change is affecting health both directly and indirectly through a myriad of ways.

Direct impacts include emerging vector-borne diseases, impacts to air, food and water quality, increases in extreme temperature events and injuries due extreme weather.

Climate change can also result in indirect health impacts. Extreme weather events can affect peoples’ homes and livelihoods leading to social disruption and mental health challenges.

The public health sector is responding. We are conducting vulnerability assessments, monitoring the impacts to health through our surveillance networks, working with a diverse set of partners on climate change plans related to mitigation and adaptation, and ensuring education of the public in our communities.

Many climate change actions are a win-win for public health. When the International Panel on Climate Change reported on global warming of 1.5°C in 2019, it also went on to note actions to limit global warming could have clear benefits to people and natural ecosystems, and that these actions could go hand in hand with ensuring a more sustainable and equitable society.

Climate change poses an opportunity to “multi-solve”. For example, a green, compact, walkable community with good public transportation and that uses renewable energy will emit fewer greenhouse gases and air pollutants, would be cooler (from an urban heat island perspective) and healthier.

People who live in a walkable community tend to walk more, are less obese, less likely to develop type 2 diabetes and have more social connectivity, making them and their communities more resilient.





Adapting and mitigating to climate change is going to require change and that can be hard. It will require leadership and commitment. But change also brings opportunities.

As municipalities continue the mitigation and adaptation journey, incorporating considerations about health into the climate change decision-making can help identify opportunities and address factors that impact our health.

Municipalities are the order of government closest to our citizens and municipalities have a unique role to play. Decisions about housing, land use, transportation, water and wastewater, waste and greenspace, to name a few, affect not only climate change but the quality of life and health of residents.

Decisions need to be considered carefully in the context of climate change to ensure that the decisions being made today don't result in unintended consequences including a worsening of health and inequities.

"Climate change is affecting health both directly and indirectly through a myriad of ways."

Louise Aubin is the Director of Health Protection at the Region of Peel.

MARK BOYSEN

DISTRICT OF UCLUELET

Rural communities, particularly those that are resource-based, are used to being more vulnerable than larger, more economically diverse urban centres. But for residents of these communities, including Ucluelet on Vancouver Island, how far will a changing climate strain their limits?

The resiliency of “Ukee” residents is not in question. Even the newer ones, like my family, take some enjoyment out of extended power outages and being “cut-off” by the occasional short highway closure. However, extended impacts to the systems we rely on for transportation of goods, power, and drinking water will put our communities under increasing strain particularly with changing expectations of visitors. The lurking worries of sea-level rise and warming ocean temperatures also linger in the back of Ucluetians minds.

Every rural community has its own climate adaptation story. For Ucluelet, the effects of increased storm events in an area with a single

set of power lines will have economic and social impacts, respective examples being deterred visitors and reduced health care access for locals. The steep mountain roads have the potential for increased washouts of the road and blowdown impacts on the power lines. While these potential impacts are being addressed through enhanced community emergency response systems, the changing ocean provides the biggest challenge to Ucluelet’s resiliency. Sea-level rise will affect coastal properties and the remaining commercial and growing recreational fishing industries already facing impacts from warming and acidifying oceans. The District is conducting a detailed flood risk analysis to determine how best to manage the rising seas, but the warming ocean is such an enormous challenge that direct actions seem limited to focussing on mitigation plans.





Over 80% of the local governments on Vancouver Island have populations less than 35,000, representing almost half of the nearly 900,000 Island residents. It is a microcosm for the rest of Canada, where the real political and economic solutions we need will only happen by putting our resilient rural communities at par with cities when it comes to support for climate action.

The impacts of climate change will start push the limits of resiliency in smaller towns and the solutions will rest in increased program funding and rural information networks that emphasize rural solutions. But there is also a political opportunity at play here, where momentum in rural areas could lead to a more serious and unified national climate action commitment for a currently divided country.

"Every rural community has its own climate adaptation story."

Mark Boysen is the Chief Administrative Officer at the District of Ucluelet.

ELLIOTT CAPPELL

WSP

Cities operate about 2/3 of the infrastructure that we rely on every day, such as water, energy, waste, or roads. The Insurance Bureau of Canada and Federation of Canadian Municipalities (FCM) estimate about \$5bn is needed annually to adapt that infrastructure to climate change. What can cities do to ensure our daily infrastructure is resilient to climate change, and how can they pay for it?

A top priority for cities is to start thinking about climate risk in financial terms. There is a major funding gap for resilient infrastructure (as there is also for local infrastructure generally). Measuring and disclosing climate risks – such as which infrastructure is exposed to climate risk and the value thereof for each city – is a pre-requisite for closing the funding gap. Everyday there are new insurance tools, investment vehicles, or sustainable investment mandates related to climate change. Cities could capture more of those opportunities if they had a better understanding of climate risk in financial terms.

It would also help cities to prioritize and make more efficient use of their scarce financial resources.

Also within the realm of municipal finance, cities can use their powers of taxation as carrots or sticks for climate resilient infrastructure. The stormwater management fee used in many Canadian cities is a great example: it incentivizes residents and businesses to retain green spaces on their properties as opposed to paving them, which is very useful for protecting roads and pipes from storms.

Cities also need to keep building the business cases for resilience. Resilient infrastructure is an investment; but it is often viewed as an additional cost. Emerging trends such as green infrastructure or circular economy hold serious promise for building resilience, but cities cannot yet articulate that promise in dollars and cents.





Business cases are best when they can be tested in a number of different cities, so cities can benefit by sharing their lessons on resilience through networks like ICLEI, the Canadian Urban Institute, or FCM. Also, outside the largest cities there is scant capacity for developing novel business cases, so those networks have added value for medium-sizes and smaller cities.

Finally, cities need to clarify accountability for funding and delivering resilient infrastructure. As an example, there is no one city division responsible for 'flooding', so accountability for flood resilience often falls between the gaps of water utilities, transportation departments, city planners, and others. Cities ranging from Montreal, QC, to Kingston, ON, through to Drumheller, AB are piloting new governance structures

to break down silos on climate resilient infrastructure. In Toronto, over a dozen city partners have signed on to the 'Flood Resilience Charter', which enables collaboration and sets priorities for flood resilience. There is no one silver bullet, but without exception all Canadian cities need to break down silos on resilience. Infrastructure is the sector which is most significantly impacted by climate change in Canada, as measured by potential losses and damages. Building more resilient municipal infrastructure starts by shifting our thinking from an 'environmental' focus to one which makes resilience an issue for CFOs and budget committees.

Elliott Cappell is the Director of Climate Change at WSP.

LO CHENG

CANADIAN CENTRE FOR CLIMATE SERVICES

We live in an age where we are overwhelmed with information and very few questions go unanswered for long. With so many resources at our fingertips, we've become experts at mining through information to find exactly what we need and yet, on such an issue as crucial as climate change, Canadians have said that it is difficult to access the data and information they need. It's an exciting time to be working in this area and helping to provide people with information that will make a difference in our collective futures. Since we launched at the end of 2018, the Canadian Centre for Climate Services has connected with over 200,000 Canadians and our Support Desk has addressed over 700 inquiries from across the country, connecting Canadians with the data and resources they need to take climate change into account.

There is a certain degree of uncertainty in climate data and information – we can never really know precisely what the future will bring. However uncertainty does not mean that the information cannot be used. One of our greatest challenges is in bringing people tools that they can confidently use to help them make informed decisions. The resources we're working to promote, like ClimateData.ca, and the associated training and support we provide are helping to address those needs. We have made significant progress but we still have a long way to go.





Canadians have a broad range of needs and the way people access information varies from one community to the next; cultural contexts are vastly different across the country, and that affects how people interpret and use the information.

We are taking steps to learn from others, building on what others have already learned, trying to find ways to integrate tools and resources and focus on how to use the data, not just the access to the data. One thing that inspires me in carrying out this work is the recognition that we have to work together, as users and climate service providers, to truly support the needs of Canadians to incorporate climate considerations into their decisions.

It's become clear to me, above all, that the needle in the haystack may not be buried so deeply after all. We just need to work together.

"One of our greatest challenges is in bringing people tools that they can confidently use to help them make informed decisions."

Lo Cheng is the Executive Director, Canadian Centre for Climate Services at Environment and Climate Change Canada.

BRANDON COONEY

CONCEPTION BAY SOUTH

Limited funding and competing priorities suggest that a shift in public awareness and education on climate change, and the urgency in which we need to adapt, is essential to driving change and being adequately prepared. The Town of Conception Bay South is a coastal community dispersed across a large, linear area. As with all communities, budget considerations are prioritized, and the limited available funds are carefully distributed. One of the greatest challenges for adaptation planning in a small community is having adequate financial resources to direct toward adaptation actions with many competing priorities.

In recent years we have seen a major shift in public awareness surrounding climate change, and the urgency to adapt. Residents are starting grassroots initiatives to adapt to food insecurity through community gardening. Stakeholder groups are coming together to form action committees to strategize and facilitate adaptation.

This shift in public support represents an acknowledgement that adaptation is becoming more of a priority.

Prioritization often comes with increased federal and provincial funding; more accurate projections and the refinement of tools that are essential for effective adaptation. Moreover, invaluable strategic work is increasingly being done to assist communities with limited resources in formulating and implementing an adaptation plan. Public awareness and education are the catalysts for shifting priorities, and recent years have shown promising trends.





Although the trend is positive, much needs to be done to address the existing challenges small communities face when preparing for the impacts of climate change. Ongoing education and awareness campaigns will be crucial for widespread understanding and informed decision-making. More funding and research are necessary to help us paint the clearest possible picture of the way forward and increased human resources will be required to implement the strategic direction sought after by experts, stakeholders and the community.

Planning for climate change adaptation is a challenge for every community and small towns across Canada are facing tough decisions.

Through an informed and motivated community working together with a supportive municipal government, we can prioritize proactive action and lead the way to a resilient and prosperous future.

"One of the greatest challenges for adaptation planning in a small community is having adequate financial resources to direct toward adaptation actions with many competing priorities."

Brandon Cooney is the Sustainability Intern at the Town of Conception Bay South. *Written in conjunction with Jennifer Lake and Corrie Davis.*

DEB HARFORD

ADAPTATION TO CLIMATE CHANGE TEAM, SFU

Climate impacts in Canada, combined with impacts in the international context, the sixth mass extinction, and the ongoing global shift to decarbonization and automation, represent a complex set of interconnected challenges that require strategic, integrated systemic thinking, and responses designed to achieve the most effective outcomes possible.

The Paris Agreement notes the parallel importance of adaptation and emissions reduction, and the World Economic Forum's Global Risks report cites the failure of these two climate action streams as one of the top global risks. In Canada, both are becoming business as usual for local governments and many professional practitioners and are beginning to hit the ground for the private sector.

The IPCC's 2018 report notes that integrating the two streams of climate action has the potential to lead to transformative responses. However, despite increasingly significant investment in climate science, data availability, and resources, we are still largely

addressing them in silos, and it's time to remedy this. Early adopter local champions are already leading the way, and others will be able to learn from the conclusions they draw.

But emissions reduction is not the only priority that municipal adaptation must integrate with. In order to position our communities for success in a changing climate, we must mainstream equity, health, biodiversity survival, and other key values into adaptation planning, policy and funding. This thinking and its applications must in turn be mainstreamed through all decision-making processes.

This integration with other priority areas can be supported through identification of key co-benefits – an approach known as “multi-solving” – which not only offers multiple entry points into sustainable climate action, but also points to an expansion of project funding sources.





It is crucial that we develop effective communications and case studies. These increasingly important tools require more innovation and investment.

We must also stretch our capacity to imagine the future and begin preparing for large-scale, long-term systemic challenges that have local solutions, such as sea level rise and climate migration.

As we work on these issues, our advances spell hope for a resilient future in a changing climate, and point to opportunities, including the fact that communities that can brand themselves as resilient and prepared will be increasingly attractive locations in which to live, work and invest.

"In order to position our communities for success in a changing climate, we must mainstream equity, health, biodiversity survival, and other key values into adaptation planning, policy and funding"

Deborah Harford is the Executive Director of the Adaptation to Climate Change Team, at the Faculty of Environment, Simon Fraser University

LISA HELPS CITY OF VICTORIA

Local governments are best positioned to create community resilience and adapt to climate change. We're also the least resourced to deliver. This isn't stopping us.

As the government that's closest to people's everyday lives and as those responsible for approximately 60% of infrastructure in the country, local elected officials are keenly aware of what needs to be done to adapt to climate change. We are on the front lines – often the public face of a community's response to a disaster or extreme weather event. Residents and businesses alike look to us for guidance, reassurance, and a calm voice of reason in stressful situations.

With all this pressure on us and despite inadequate resources, local elected officials are using our most important tool – our power to convene. In Victoria we've created a Climate Champions program to build a network of champions to share ideas, undertake partnerships, and encourage fun and innovative climate actions among residents and businesses.

While we're explicitly focussed on mitigation efforts, the program builds community resilience at the same time.

We gather people together once a month on Saturdays, share food, and get to work on community emissions reduction efforts. But at the same time, we're creating intergenerational opportunities – our youngest champion is 12 and our oldest close to 80. And we're building connections that wouldn't otherwise happen – teachers sitting down with business owners sitting down with home-retrofit experts sitting down with faith leaders.

And we know that we're not alone. In October 2019, as part of the Liveable Cities Forum Elected Officials Day in Victoria, we heard similar stories from coast to coast to coast of local leaders convening residents and business owners to build community resilience. These activities also create a sense of purpose and joy, connection and belonging.





In her recent budget speech, BC Finance Minister Carole James said that “resilience is the strength of the community we build around us.” Local elected officials are community builders. It’s on us, working side by side with residents and small business owners to strengthen the social fabric.

"With all this pressure on us and despite inadequate resources, local elected officials are using our most important tool – our power to convene."

What we need going forward is both more resources and more authority from the federal and provincial governments to help us implement the creative, forward looking resilience and adaptation solutions that our communities come up with.

This will help ensure that local solutions can be implemented and replicated elsewhere. To be meaningful and lasting, national resilience and adaptation efforts must be rooted in local communities.

Lisa Helps is the Mayor of the City of Victoria, British Columbia.

PAUL KOVACS

INSTITUTE FOR CATASTROPHIC LOSS REDUCTION

Local governments have a critical role to support society's transition to a resilient, low-carbon future. This includes support for the transition to net zero greenhouse gas emissions and improving preparedness for floods, wildfire, heatwaves and other severe weather hazards. Each year Canadians experience billions of dollars of preventable loss and damage resulting from climate extremes. The Institute for Catastrophic Loss Reduction partners with ICLEI Canada and its member communities to provide science-based solutions to advance climate resilience.

Case studies are one of the tools the Institute has developed. The Institute has published 60 reports of local communities across Canada that have successfully adapted to some aspect of change in the climate, and 40 more should be completed soon. [Cities Adapt – Celebrating Local Leadership](#) case studies showcase successful local actions in Canada founded on science.

Some cases involve proactive action. Public health agencies and local fire officials in particular have developed a culture of prevention that some communities have used to anticipate future hazards. The Institute would like to see the focus on prevention and risk reduction increasingly extend across local government activities. Private industry is increasingly building climate change into the mainstream of risk management activities, demonstrating that local governments can also do so. Each dollar invested typically reduces future losses in the community by 5 to ten dollars, representing an outstanding investment.

Most cases involve reactive adaptation. These communities experienced an extreme event and decided in recovery to build preparedness for future climate risks. For 12 to 18 months after an extreme event we find a window of opportunity for action to enhance community resilience.





There is a combination of political will, public support and available funds to support action. The boldest efforts involved implementation of risk reduction plans developed before the event but not implemented until the recovery. Pre-disaster recovery planning is an emerging approach the Institute is promoting to achieve transformational improvement in climate-resilience.

The Institute found many stories of local successes, nevertheless severe weather losses remain unacceptably high and continue to rise at an alarming rate. Communities, property owners and public agencies must take additional action to enhance preparedness for future climate risks. The Institute for Catastrophic Loss Reduction is

proud to support ICLEI members that invest in climate action to reduce emissions and improve preparedness for extreme events.

"Each year Canadians experience billions of dollars of preventable loss and damage resulting from climate extremes."

Paul Kovacs is the Executive Director at the Institute for Catastrophic Loss Reduction, University of Western Ontario.

MEGAN MEANEY

ICLEI CANADA

She's always been there. Cleaning the air we breathe, pollinating the food we eat, purifying the water we drink, regulating the climate we thrive in, and providing us places to play and pray. She's so commonplace, so ubiquitous, it's not surprising that we take her for granted. They say when you take things for granted, the things you are granted get taken, and that's the predicament we find ourselves in now. We are losing the life-sustaining benefits of nature.

When we view this problem through an urban lens, we come to realize that no matter how dense a city is, it will always depend on nature. Every urban resident depends on healthy, functioning natural systems to supply the necessities of life. All communities, large and small, critically depend on healthy interconnected ecosystems, so it is essential that nature and nature-based solutions are fully integrated into urban planning and resilience building.

Wicked problems such as this, with no simple solution, push us into the world of multi-solving. We need many solutions to address one problem and solutions that address many problems. By focusing on the interconnection between issues, we can look for opportunities to solve two or more problems with the same budget and resources, focusing on cutting across the silos we find in our governance and policy making structures.

Nature-based solutions to climate change are inherently multi-solving solutions. We have been incorporating nature-based solutions into our BARC activities and we promote platforms such as CitiesWithNature.org to help recognize and enhance the value of nature-based solutions. We are seeing nature-based solutions being integrated into plans from small to large communities. They are embedding nature-based solutions into their adaptation plans as key solutions towards reducing the risk of climate impacts.





We must go beyond the discrete pilot project, beyond the demonstration site, beyond the case study, and concretely (pardon the non-natural word choice) mainstream our dedication to implementing nature-based solutions. Local governments have key mechanisms they can enhance, as highlighted in [biodiverCITIES: A Primer on Nature in Cities](#).

We are at a crossroads on nature-based solutions, with Canada co-chairing the year of implementation on advancing nature-based solutions under the [Global Commission on Adaptation](#) and the Government of Canada's commitment to supporting these efforts domestically. And as with any crossroads, our future lies in the decisions we make now to seize this momentum.

Let us not lose this opportunity to make the right decisions, decisions that will help to secure nature's place in building our resilient future.

"Wicked problems such as this, with no simple solution, push us into the world of multi-solving."

Megan Meaney is the Executive Director of ICLEI Canada.

PETER NIMMRICHTER WOOD

In 1900, 14% of the population lived in cities and today more than half of the global population live in urban areas with 1.5 million increase to the population every week. By 2050 68% of the world is expected to live in cities. A staggering 90% of this urban population growth is expected to take place in Africa and Asia. Three of the five countries with the greatest infrastructure need are in Asia (China, India and Japan), with those countries comprising 39% of global infrastructure investment needed. Rapid urbanization is placing huge demands on infrastructure, with consequent impact on our society, environment and economy. If this trend in rapid urbanization continues, coupled with a changing climate, the stress to cities is imminent.

The infrastructure that citizens depend on, both abroad and in Canada, typically has not been designed to withstand climate change. In the coming years, cities will need to build and invest in infrastructure that can address both natural and economic stresses such

as floods, droughts, economic equality, lack of affordable housing and inadequate public transport systems.

Key infrastructure such as roads, water supply and sewers, electrical grids and telecommunications are the backbone of economies providing daily services needed for society to function. The World Bank estimates there is an \$8 trillion infrastructure investment gap worldwide in roads alone so, smart funding schemes are a necessity. In Canada, the infrastructure gap could be as high as \$270 billion.

Integrating sustainability design principles into infrastructure is paramount to making cities resilient to future impacts and providing the benefits required for people to thrive.





Sustainable infrastructure is based on four interconnected attributes:

- Connected - embeds the right technologies and service solutions
- Sustainable - meet the needs of the present without compromising future generations
- Resilient - ability to maintain continuity and performance through all shocks and stresses
- Liveable - generates co-benefits from the project resulting in improved quality of life and well-being of urban settings and their inhabitants.

The decisions city leaders need to make on which infrastructure projects should move forward, how they will be funded and how they will be built, are also questions reverberating in Canada. Today's investments in infrastructure are critical to our ability to address societies' most pressing needs for tomorrow. This unparalleled opportunity for cities to embrace sustainable infrastructure by leveraging innovation, new ways of funding, and creative planning will not only improve livability in cities, but also safeguard industries, assets and billions of lives.

"Cities need significant investment in sustainable infrastructure to avoid future shocks."

Peter Nimmrichter is the Climate, Resilience and Sustainability Lead for Canada at Wood.

KARINA RICHTERS

CITY OF WINDSOR

The City of Windsor has been working in the Climate Change adaptation space for over a decade. Early work, in partnership with Health Canada, focused on developing emergency response plans for extreme heat events. Then in November 2010, Windsor City Council approved participation in ICLEI Canada's Climate Change Initiative, which resulted in the approval of the City's first Climate Change Adaptation Plan in 2012.

Without many municipal examples to guide direction of the plan, the City of Windsor, using a predecessor of the ICLEI BARC tool, actively engaged all City departments and agencies through the development of the plan.

The 2012 plan, had a limited focus on extreme heat and precipitation, two impacts that the City was already experiencing. This plan development, also lacked community stakeholder engagement.

However, this plan received immense support from City Administration with 18 of the 22 actions being completed or underway by 2017. Unfortunately, even with implementation well underway, the City of Windsor experienced a number of impacts including: extreme precipitation events in 2016 and 2017 resulting in over \$232 million dollars in insured losses; high wind storms (2017 and 2018) resulting in significant damage to City trees; increased risk of vector borne disease (West Nile and Lyme disease) and in 2019, high water levels resulting in risk to property and the closure of the City owned marina. These events and other identified risks, highlighted the need to review and update the City's plan.

Updating the 2012 plan provided an opportunity to review climate projections and historical events, re-evaluate vulnerability and risk, identify new climate change impacts and outline actions required to reduce risk.





Updating the 2012 plan also provided the City opportunity to engage key community stakeholders and the public. This was a critical component in the updated plan, as the success or lack thereof, of a number of the actions in the 2012 plan was tied directly to community participation. It was important to the City that the updated plan clearly address the concerns of the Community and increase buy-in for future actions that requires Community involvement.

Another key addition to the 2020 plan was a local analysis of the cost of doing nothing. The City of Windsor recognizes that the 2020 adaptation plan must be a living document. Through this plan, the City has identified the need to regularly review climate projections, assessments of events and changing vulnerabilities and risks posed by a changing climate.

In November 2019, City Council declared a climate emergency which includes recognition that the City must act quickly on both mitigating and adapting to climate change

"The City of Windsor experienced extreme precipitation events in 2016 and 2017 resulting in over \$232 million dollars in insured losses;"

Karina Richters is the Supervisor for Environmental Sustainability and Climate Change at the City of Windsor

MARY ROWE

CANADIAN URBAN INSTITUTE

I was first exposed to the term resilience fifteen years ago during the wake that (literally) followed Hurricanes Katrina and Rita in the fall of 2005, provoking the most massive infrastructure failures in the history of the United States, along the Gulf Coasts of Louisiana, Alabama and Florida. I learned the hard way how local people responded to the hordes of ‘helpers’ that descended upon them for the months and years that followed, suggesting how their communities could (and quite often ‘should’) rebuild. The temptation to ‘arrive and proscribe’ was too often irresistible to even well-intentioned outsiders. In the immediate aftermath of the levee failures, communities were so vulnerable I suspect it was hard to resist even the mostly sanctimonious assistance. But as the months wore on, and New Orleanians began to self-organize, it became much clearer to me – as an outsider – that the only solutions that were going to make any sense and ‘stick’ would have to come from inside the communities themselves.

Resilience began to emerge as the watch word, the term that seemed to apply universally to every part of the recovery and rebuilding process. Unlike sustainability, which for many implied a fixed state that you either were – or were not – resilience spoke to a continuous capacity, an evolutionary process of adaptation, strengthening and adaptation.

The term is fundamentally relative: are we building our own resilience, strengthening our existing assets to become more resilient? And it’s fundamentally subjective: places – just as families and households – measure for themselves their resilience against the risks they anticipate they will experience. Although obviously there are lots of common challenges, places face specific challenges unique to their topography, history, population, economic and cultural life, and demographics. Their resilience needs to mirror that uniqueness.





In the intervening years since those storms, resilience has become the newest buzz term, giving engineers, planners, architects, charitable foundations and insurance companies – and people like me – a new way of framing our core businesses. But with that proliferation has come serious downsides.

On the 10th anniversary of Katrina social justice advocate from the Louisiana Justice Institute Tracie Washington emblazoned the streets of New Orleans with posters bearing the words: “Stop calling me resilient. Because every time you say, ‘Oh, they’re resilient,’ that means you can do something else to me. I am not resilient.”

"The essence of resilience will always emanate from the local"

I think we need to be wary of efforts to systematize a process, or dictate an outcome – that by definition must be organic. It has to come from the place, from the people most directly impacted. The city and community building apparatus’ can create tools and indices all they like, and some may be useful – but the essence of resilience will always emanate from the local and the particular. It’s the communities’ – defined by their place – word to own and define.

Mary Rowe is the President and CEO of the Canadian Urban Institute

PAUL SHORTHOUSE

DELPHI GROUP

Climate change risks and opportunities are impacting all industries, including reshaping the finance sector and its investment and lending practices. Changes to the finance sector will inevitably impact on cities and their residents. Will cities, for example, be able to afford their infrastructure needs as climate risk reshapes the market for municipal bonds? What will happen to homeowners (and property tax revenues) if mortgage lenders can't estimate the impact of climate risk over the length of a 30-year mortgage and if there is no viable market for flood or fire insurance in impacted areas?

The need to apply a climate lens to urban planning is particularly urgent for cities because the many components of municipal infrastructure and service delivery – from roads to sewers to transit to emergency services – have been built for tolerances and weather conditions that do not align with the new climate reality. Applying a climate adaptation lens to a local government's infrastructure and financial planning is essential to

ensuring that a city remains economically viable and resilient over the long-term. This, in turn, means extending the climate change discussion beyond the engineering and sustainability groups to more actively engage the finance department.

Fortunately, a process for applying a climate lens to financial planning, reporting, and risk disclosure has now been developed for local governments in Canada. The recently published document by CPA Canada, entitled “Enhancing Climate-related Disclosure by Cities: A Guide to Adopting the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)”, is based on the TCFD framework originally developed for the private sector and is designed to help cities determine what climate-related information is valuable for internal decision-making to support budgeting and capital planning.





The benefits of applying the TCFD framework to municipal operations include:

- Enhanced data collection and sharing to improve decision-making;
- Using cross-functional teams to integrate climate change considerations into existing risk assessment processes and build internal capacity for managing climate risks;
- Quantifying climate-related information in financial terms, such as infrastructure investment needs and the costs of inaction, health and other social costs, economic growth potential from clean-economy investments;
- Integrating climate-related risks and opportunities into operational budgeting and long-term capital planning to allocate resources where needed;
- Enhancing access to external funding for green infrastructure and projects, as well as attracting new investors and businesses by creating climate-resilient cities; and
- Building public awareness of climate change impacts to enhance local support for action.

In this time of climate risk and uncertainty, the Guide is a useful tool for municipal government decision-makers to enhance the long-term resiliency and financial viability of their communities.

"Changes to the finance sector will inevitably impact on cities and their residents."

Paul Shorthouse is a Senior Director at Delphi Group.

