

Smart city trends across Canada



Carly Livingstone is a Senior Program Manager with Evergreen – a national non-profit organization dedicated to making cities more liveable, green, and prosperous for everyone. Carly can be reached at clivingstone@evergreen.ca.

Communities of all sizes across Canada continue to grapple with the challenges and opportunities presented by data and connected technologies.

Last year, the Community Solutions Network, a program of Future Cities Canada led by Evergreen and OpenNorth, traveled across the country, convening regional gatherings with municipal and community leaders. The objective was and is to support communities in advancing their thinking on smart cities approaches to help improve the lives of residents.

From Victoria, British Columbia to Moncton, New Brunswick; Iqaluit, Nunavut to Quebec City, Quebec, 150 communities have been engaged to date, each in at least one of three ways and with a specific objective:

Advisory service – The advisory service provides personalized support by sharing knowledge, expertise, and guidance to municipal staff and Indigenous communities to build internal capacity on topics such as security, privacy, data, governance, and public engagement.

Solutions portal – A digital hub on smart cities and a space for collaboration for communities of all sizes. On the portal communities can access resources, connect with other practitioners and see examples of smart cities approaches.

Event-based programming – Community roundtables, collision days, and idea camps are events that facilitate connection between municipal staff, Indigenous leaders and stakeholders from all sectors, and that allow communities to engage in matchmaking, knowledge sharing, and networking activities.

Five Smart City Themes

Five themes emerged from these conversations with local leaders and stakeholders at the 16 events held across Canada. All transcend specific Smart Cities Challenge themes like mobility or health, and speak instead to the broader approaches to smart cities by diverse communities from coast to coast to coast.

1. Technology as a Tool, not a Solution

Canadian communities are shifting away from identifying the right tech- or data-based solutions, and toward identifying the right problems and challenges facing residents. This approach allows communities to make better and more informed decisions about what (if any) tech-based solution is required, and how it should be tailored to ensure it responds to particular social, geographic, and infrastructural contexts and delivers the desired outcomes.

In approaching technology as a tool, communities working with solutions providers are better able to maintain ownership over desired outcomes and governance. Solutions providers have a role to play, but those solutions are driven by the community. Participatory engagement and ethnographic data collection are critical to the ability of local governments to identify priorities that then drive toward solutions.

Saskatoon, Saskatchewan

The City of Saskatoon saw the Smart Cities Challenge as an opportunity to take on the complex challenge of Indigenous youth incarceration.

A challenge finalist, Saskatoon took a human-centered design thinking approach to harness data and technology to break the cycle of incarceration. Participatory research approaches and in-depth engagement with stakeholders were used to amalgamate descriptive data, recognize patterns, and find innovative solutions that would be impactful.

The ConnectYXE platform prototype was established from this process. The central business intelligence system would coordinate data and deliver up-to-date data and analytics to community-based organizations that require a macro-picture of the demands placed on their services at any given time.

By having the challenge drive the solution and placing youth at the centre, the city opened the space for a solution that would position local organizations and decision makers to find better ways to respond.

2. Collaboration versus Competition

Focusing on community needs and challenges reduces the typically competitive innovation environment and instead incentivizes communities to work together toward a shared vision. The Smart Cities Challenge sought to overcome regional silos, resource constraints, and competitiveness by incentivizing partnerships and regional collaboration. A specific challenge category for small communities, for example, recognized differences in scale and capacity and became an opportunity for local governments to collaborate with other small communities in their region.

Town of The Pas, Opaskwayak Cree Nation and the Rural Municipality of Kelsey, Manitoba

Finalists in the Smart Cities Challenge, the tri-council region in Manitoba, including Opaskwayak Cree Nation came together with a proposal to address community needs around food security, community health, and climate change. Utilizing LED smart farm technology led by the Opaskwayak community, the tri-council sought to support local, nutritious food growth, reduce the amount of imported vegetables, and reduce high rates of Type 2 diabetes in the community.

The challenge was a positive first step to promote collaboration between First Nations and municipal communities. There is demand for the development of more programs that incentivize collaboration between communities to share adaptable, replicable, and scalable ideas and initiatives.

3. Changing Face of Innovation

The term innovation tends to elicit ideas of newness, and, as it particularly relates to “smart,” newness of technologies, products, hardware, and software. There is often less emphasis on the underpinning policies, procedures, regulations, and social processes that drive innovation. The communities engaged with, however, are building local innovation capacity through organizational restructuring, process improvement, and building skills and expertise. This shift is driven in part by resource constraints, but also demand from citizens for more participation in the decision making, development, and use of innovation.

Fredericton, New Brunswick

Prior to the Smart Cities Challenge, the City of Fredericton took a generalized approach to consultation with residents. Challenge criteria around public engagement encouraged the city to change existing processes to re-imagine the way the city approached civic engagement.

A five-step approach was developed to empower residents and stakeholders to be more deeply involved in problem definition as well as in the design of solutions that would make Fredericton a more accessible and inclusive city (Laurie Guthrie, “Connecting People with what Matters,” Future Cities Canada Summit, November 8, 2019). The steps were outlined in a presentation given at the 2019 Future Cities Canada Summit. First, the city sought to recognize the “customer” using ethnography; insights were then gathered by discovering the pain points preventing them from having a good day by using tools and techniques like walkabouts and journey mapping; ideation to come up with prototype ideas to address the challenges came next, followed by testing; and finally connecting the resident to what matters to them.

By adjusting their approach to engagement, Fredericton was able to experience

civic innovation in action. Multiple projects were piloted, working prototypes were created, and human-centered design enabled them to test assumptions about residents and their needs.

4. Community-Owned Solutions

Across the country we are seeing community innovation hubs take center stage. The desire to build local capacity and legitimacy, create participatory processes for public engagement, make digital access more inclusive, grow and retain talent, and avoid the pitfalls of vendor lock-in that can come with private-public partnerships are becoming central to “smart” conversations in many communities.

Stratford, Ontario

Stratford, Ontario has adopted a living lab approach to leverage local advantages and encourage business start-up growth. Stratford’s unique municipal-wide broadband network, reputation for innovation, and strengths in IT and automotive make it the ideal real-life location to demonstrate new auto-tech in a living lab environment. Not only does the city benefit from attracting new and existing business, but it is also able to support local business, grow talent in core industries and maintain negotiating power to avoid vendor lock-in.

5. Localizing Smart

A one-size-fits-all approach to smart city initiatives in Canadian communities does not exist. Vast differences in geography and population, along with unique environmental, economic, social and health challenges make a context-relevant approach a necessity.

Iqaluit, Nunavut

The impacts of climate change are radically impacting the Inuit Nunangat, where coastal sea ice conditions are becoming more unpredictable and dangerous for Inuit harvesters, and for mobility on the land and sea. The Sea-ice Monitoring and Real-Time Information for Coastal Environments (SmartICE) program is a federal government funded community service working to inform harvesters and community members about ice stability and where it is safe, or unsafe, to travel. Battery-powered sensors sealed in floatable plastic tubes transmit data

to a SmartICE data portal via satellites, to inform harvesters and community members of ice stability. SmartICE has been successfully piloted in Nain, Nunatsiavut, and Pond Inlet, Nunavut, and is currently being implemented in other communities across the Arctic region.

The contextual relevance and success of environmental monitoring systems like SmartICE are enhanced by the weaving together of Inuit traditional knowledge and Western science. Informed by and for Inuit communities, SmartICE demonstrates that initiatives driven by communities and based in Indigenous or local knowledge and needs result in innovations that are more culturally-relevant, accessible and adaptable.

Shifting Toward Open Smart Cities

Echoing a 2019 report by OpenNorth (“State of Open Smart Cities”), Canada is shifting toward the Open Smart City. The principles of the Open Smart City are defined in the report as, “one where all sectors, including residents, collaborate to mobilize data and technologies to develop their community through fair, ethical, and transparent governance practices that balance economic development, social progress and environmental responsibility,” emerging in our work with communities across the country.

That work is only just beginning. We have seen first-hand the exciting ways that Indigenous, small, mid-sized and large communities are boldly innovating

from within. With the launch of a second Smart Cities Challenge a potential likelihood in 2020, we could see more opportunity for communities to take on new challenges to radically improve the lives of residents. Now more than ever we must be prepared to tackle these challenges head-on and harness opportunities provided by data and connected technology. [MW](#)

This article is part of a series curated by Future Cities Canada – a cross-sector collaborative platform accelerating innovation to transform cities for the benefit of us all.

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