

Indigenous Innovation

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Abstract

This report explores Indigenous Innovation across Ontario and beyond using Infrastructure Canada's 'Smart Cities Challenge' as the focal point. Out of the 20 selected finalists, 7 reflected Indigenous Innovation encompassing innovation in education, health and nutrition, housing and community building. Innovation finalists span 6 provinces including New Brunswick, Manitoba, Quebec, Nunavut, Ontario and Northwest Territories. Other innovators focused on Indigenous technology and self-empowerment encompassing Alberta and British Columbia.

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Literature Review

The Government of Ontario is entering a 'Digital Age' which means improving the online experience for citizens and transforming government services.

The purpose of this literature review is to explore Indigenous Innovation across Ontario and beyond.

Five themes were identified from initial research including (1) Digital Skills Capacity, (2) Mobile Technology, (3) Digital Voting, (4) Democratic Implications and (5) Smart Cities.

The Smart Cities Challenge is the focus of the report and discussed further in the Case Studies below.

1

DIGITAL SKILLS CAPACITY

Rural and remote First Nations face a significant digital divide across Canada. It is important to be aware of the colonial remnants of the digital divide and how we can bridge the gap through innovation.

2

MOBILE TECHNOLOGY

The widespread usage of mobile devices makes them the most important of all technologies in the toolkit of digital government and the communities that they serve. Many projects have been underway to develop mobile services in remote First Nations across northwestern Ontario.

3

DIGITAL VOTING

Based on research, First Nations appear to be one of the early adopters of digital technologies for decision making, consultation and elections. Indigenous citizens' participation in federal and provincial elections are among the lowest levels of any socioeconomic group in Canada.

4

DEMOCRATIC IMPLICATIONS

Canadian First Nations are at the forefront of experimenting with new forms of institutional design and self-government. In recent years there have been efforts to reduce the power of the Minister of Indian Affairs in the governance structure of First Nations.

5

SMART CITIES

In 2017, Infrastructure Canada established a pan-Canadian competition to encourage bold ideas to improve the live of community residents through Technology, data and innovation. The Smart Cities challenge was open to all communities including municipalities, regional governments and Indigenous communities,

Case Study: Smart Cities Challenge

The Government of Canada established a pan-Canadian competition in November 2017 known as the 'Smart Cities Challenge' to encourage bold ideas to improve the lives of community residents through technology, data and innovation. The challenge was open to all communities including municipalities, regional governments and Indigenous communities encompassing First Nations Metis and Inuit communities. Winners will receive prize money through contribution agreements with Infrastructure Canada ranging from \$50,000 to \$5,000. Payments will be made once projects attain milestones that demonstrate progress made towards the desired outcomes.

The application process closed on April 2018, with 130 eligible applications from various communities across Canada. Among the 130 applicants, 20 represented Indigenous communities or focused on Indigenous populations. For the final stage of the competition, 20 applications were selected by a jury. From the 20, 7 finalists reflected Indigenous Innovation or innovation for Indigenous communities. A summary of each smart city proposal is listed below.

The following are descriptions of the Smart Cities Challenge Finalists with the award they are in line for:



1. Communities of Nunavut

(10 Million Award)

The Community, Connectivity and Digital Access for Suicide Prevention in Nunavut is a collaborative effort to implement protective and preventative measures to reduce the risk of suicide in Nunavut through a decentralized and community-based digital health and wellness platform.



2. Saint Mary's First Nation & Fredericton, New Brunswick

(10 Million Award)

Fredericton will collaborate with First Nations to create an accessible, welcoming supportive city for youth, newcomers and an aging population, empowering everyone with a 'Personalized Inclusion plan' that connects people to create an exceptional quality of life.



3. The Pas Opaskwayak Cree Nation & Kelsey, Manitoba

(10 million award)

The community will utilize LED Smart Farm technology to support local nutrition food growth and promote food security, create a smartphone distribution system and integrate wearable technology to achieve a 40 percent reduction in the number of imported vegetables and a 20 percent reduction in community diabetes by 2023.



4. Bitigong Nishnaabeg First Nation, Ontario

(5 million award)

Community will transform youth into better educated, more employable, better grounded, and more holistically Nishnaabe people through the medium of Nishnaabe language, and the bilingual delivery of modern K-12 STEM knowledge. This will be accomplished by means of active, cross-generational, technology empowered, real-world participation in the intergenerational transfer of traditional Nishnaabe knowledge.



5. Cree Nation of Eastmain, Quebec

(5 million award)

The community will develop an affordable Net Zero Energy Housing Program, offering culturally appropriate designs, using smart technologies, innovative building techniques and alternative energy systems in order to address the housing shortage crisis, the poor quality and costly construction of houses in Eastmain and Indigenous communities across Canada.



6. Mohawk Council of Akwesasne, Quebec

(5 million award)

The community will decrease the rate of new cases of diabetes per year in Akwesasne to the Canadian average of 0.5 percent; 5.9/1,000 by improving community wellness using traditional approaches encompassing holistic Indigenous practices, improved access to community services and health diagnostics.

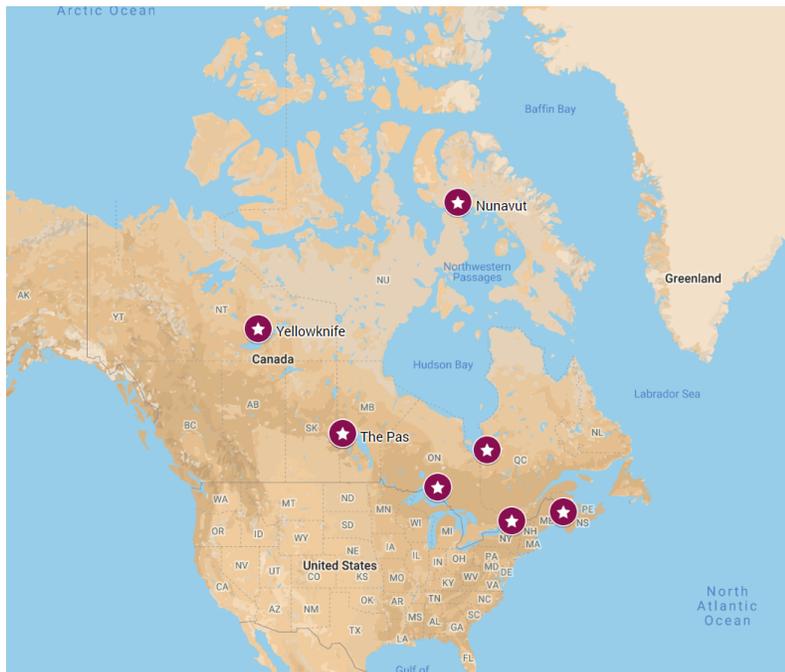


7. Yellowknife, Northwest Territories

(5 million award)

The proposed concept is to make the lamppost a beacon for sustainability. The sustainability reference in this challenge statement ranges from ecological to financial to social sustainability, which we will realize by incorporating a variety of technological innovations into the lampposts around the city to improve quality of life for residents and visitors in several ways. The first step will be creating a mesh network among our lampposts that then can communicate with each other and with a central location.

Geomap: Indigenous Innovation



The smart city challenge finalists encompassed innovation across sectors and also span the nation. They are mapped across Canada.

Indigenous Innovators span 5 provinces including New Brunswick, Manitoba, Nunavut, Ontario, Quebec as well as the Northwest Territories

Broadband connectivity in Canada

Considering that digital divide is prominent issue and is included among the 5 themes of the literature review, it is insightful to note the parallels between smart city finalists communities and their locations and broadband connectivity.

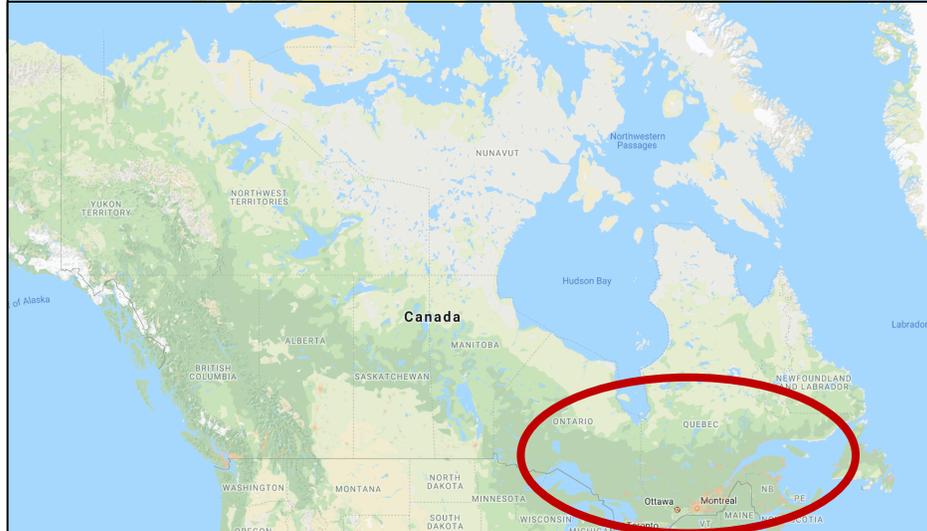
Map 1

Areas with consistent 5/1mbps coverage



Map 2

Areas that get consistent 50/10mbps coverage



Most of the smart city challenge finalists are located near the south close to the American border. This is also where there is consistent high-speed broadband connectivity. Leading to the possibility that greater resources and connectivity lead to increased ability for innovation.

Indigenous Innovators Breakfast

On April 11th, 2019, the Public Policy Forum held an Indigenous Innovators Breakfast in partnership with Indigenous Services Canada and the Rideau Hall Foundation. Indigenous innovation is an important contributor to the growth and economic development in Canada. The breakfast was an event to highlight indigenous

innovation and focus on their achievements. Among the guests, we were invited to explore the Indigenous Innovation Space where the panelists and other invited show casers represented their works and interacted with attendees.

There were three panelists showcasing innovation:

1. **Billie Schibler**– Currently the Chief Executive Officer for Manitoba’s Metis Child and Family Services Authority. She spoke with regards to the innovative Live-in Family Enhancement Program. It is a comprehensive Program for Healing and Family reunification. An Indigenous agency in Manitoba has devised an innovative approach in which parents were fostered along with their children.
2. **Stan Kapashesit** – Director of Economic Development for the Moose Cree First Nation and a proud member of the remote island community in Northern Ontario. He spoke about the Moose Cree First Nation’s commercial delivery program. The drone program is to deliver goods where it is normally difficult to deliver by land.
3. **Karen Nutarak** – Co-founded the Pirurvik Preschool in 2015 with Tessa Lochead. The Pirurvik Preschool in Pond Inlet, Nunavut provides early childhood education that is child centered and based on the Inuit Qaujimajatuqangit (IQ) principles and is enriched oin the utilization of Montessori materials.



Indigenous Innovators' Words of Advice

In efforts to understand the challenges for Indigenous Innovators, the PII team contacted Innovators from the Indigenous Innovator's Breakfast for some of their recommendations:

Billie Schibler – CEO for Manitoba's Metis Child and Family Services Authority

1. What were the challenges you faced as an Indigenous Innovator and how did you overcome them?

I have never thought of myself as an innovator so I am honoured and humbled to be considered as such. I just know what needs to be done and I do it. I don't wait for permission, I just do everything in my power to make it happen. I also work with a team of people who share my determination. They help me take my vision to reality.

2. How do you think Canadian governments (federal, provincial or municipal) can better aid Indigenous innovators to scale their new ideas?

Governments need to listen to Indigenous "innovators/visionaries". Many of us are experiential. We aren't just speculating. We know what we know. Many of us have personally lived it – that's where our passion comes from.

3. What advice would you give other Indigenous innovators who are trying to make advancements in health, social or education fields?

Don't give up. Stay determined. Remain passionate because it can be contagious. It is the spirit of determination that works magic. You can move mountains if you dream it, believe it, speak it, live it.

Stan Kapeshesit – Director of Economic Development for PAED, Moose Cree First Nation

1. What were the challenges you faced as an Indigenous Innovator and how did you overcome them?

There are a number of logistical challenges due to our location in Ontario. Getting the Drones and equipment here from Southern Ontario presents travel logistics, as the Drone Delivery Canada (DDC), had to get a number of vehicles including Cargo Vans, Passenger Vans, an RV and trailers to bring their required equipment up to our community. This required the long-haul

drive from their offices in Vaughan, and drive north for a good 8 hour drive to Cochrane (800kms approx.) Then they had to load onto flat cars and freight trains, and to add in moving their crew of approximately 20 people to come up as well. While here during testing the equipment there are other natural elements such as weather, river conditions, and feeding and housing the crew is also another element. Another added element is that because we are First Nations we need to ensure when pursuing the ideas that the partner and team is well suited and the idea truly has merit. In our case, the cost of delivery in the north is high. With the majority of our First Nation communities being fly in only it makes sense to explore options that can lower the cost of deliver

2. How do you think Canadian governments (federal, provincial or municipal) can better aid Indigenous innovators to scale their new ideas?

The major obstacle in scaling out projects that are innovative is securing capital to make the initial start-up investment. As well with being an innovator, usually it's the first time that a community is trying a new initiative, so there is no other comparative model (usually) that is out there to gauge or compare to. This of course leads to hesitancy and delays funding commitments as programs usually want more concrete and substantive evidence that the idea will actually work. When there are Business Plans and such in place, and a solid team ready to implement, then full support ought to be given – especially when there are higher costs in alternative freight requirements for communities that are remote.

3. What advice would you give other Indigenous innovators who are trying to make advancements in health, social or education fields?

The advice I would give is to never give up. Although there are naysayers that will be out there, and the crab in the bucket syndrome that seems to plague many communities, is to keep focused and remain strong in the pursuit. Jumping through hoops to prove a need and point will be an opportunity to prove that the model works – and when it does come to fruition, that the satisfaction of helping your community in a new innovative way of providing services is something to be proud of.

Next Steps

On April 11th, the Federal government announced a \$30 million investment in an accelerator called the Indigenous Homes Innovation Initiative to close the housing gap for Indigenous peoples. Given the incredible depth and diversity in innovation across Indigenous communities in Canada and in recognition of the digital divide across the nation, it is integral that the federal government continue to provide more support and resources to indigenous communes to make advancements in their communities. It is crucial to continue partnering with various Indigenous communities across all levels of government as well as provide the means to innovate in order to solve current policy issues, not only faced by Indigenous communities, but Canadians at large.

Conclusion

Across Canada, there is an abundance of innovation occurring in Indigenous communities. The Smart Cities Challenge established by Infrastructure Canada was one way where Indigenous innovators could showcase their work, but it expands beyond the challenge and extends to all sectors, provinces and people across the nation. According to interviews with specific Indigenous Innovators at the Innovator's Breakfast, Indigenous innovators face specific challenges when it comes to scaling their work due to the remoteness of some Indigenous communities, along with finding comparable evidence base to make their work more attractive to investors. Policymakers and investors need to collaborate to mitigate these issues for Indigenous Innovators, as there is incredible potential in Indigenous leaders creating solutions for their own communities. With successful solutions now for housing, child development, healthcare already begun in these communities despite the overwhelming challenges today speaks to how much can be done, if these challenges were mitigated with the proper support. Indigenous communities are pushing forward into their digital age, and it will be imperative that transformations are made within the government and across sectors to support this progress.

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