City of Saint John
Smart Cities Challenge Application

Applicant information

Question 1	**Community (City of Saint John)**
Please provide information on the community that is submitting this application. If this application is being submitted by a group of communities, add each community separately using the button. If this application is being submitted by a regional entity, please include the name of the regional entity with each individual community (e.g. City of Dunn/Smith Region). Do not include the regional entity as a separate, stand-alone community.	**Name of community** City of Saint John **Province or Territory** New Brunswick **Population based on** 67575 **Indigenous community** No
Question 2 Please select a prize category.	$10 million (population under 500,000 residents)

Problem definition

| **Question 3**

Please define your Challenge Statement in a single sentence that guides your preliminary proposal. It should describe the outcome (or outcomes) you hope to | Growth through Migration: Saint John will reverse its status as the only CMA in Canada to report population decline in the 2016 Census by exceeding the national average of five per cent population growth through the attraction and retention of more newcomers to contribute to a welcoming and prosperous city. |

achieve.	

| **Question 4**

Please describe the outcome (or outcomes) your proposal seeks to achieve by elaborating on your Challenge Statement.

This section should include:

Specific goals you hope to achieve by implementing your proposal, justifying both the level of ambition and the achievability of the outcome (or outcomes) sought. Baseline data and evidence to establish the current state with respect to the metrics used in your Challenge Statement, and context around the outcome (or outcomes) sought. Evidence to support the selection of this/these outcome (or outcomes) over others, in reference to the needs of the | The City of Saint John needs more people to stay. Such a simple statement for a chronic and complex problem. Population growth: it is the single biggest challenge plaguing Saint John for over 40 years. In 1971 the city's population was just over 89,000; in the 2016 Canadian Census it sat at 67,575, a decline of almost 25 per cent. Saint John's population fell by 2.2 per cent between 2011 and 2016, making it the only Canadian CMA to record a population decline during that period. Saint John must reverse this trend before it does greater harm to Saint John's economy and quality of life. For instance, the 2016 Census population loss resulted in the Government of New Brunswick reducing Saint John's unconditional municipal grant by $3 million annually until it is reassessed following the results of the 2021 Census.

Saint Johners live with the practical effects of population decline in reduced municipal services, crumbling urban infrastructure and the absence of family and friends who have moved away. It is why residents have consistently identified population growth as the biggest issue facing our community. Growth was the dominant issue in the May 2016 municipal election and in response the newly-elected Saint John Common Council struck a standing Growth Committee in July 2016. It isn't a secret why most people leave Saint John: to find better job opportunities, earn more money, pursue education or specialized training, live closer to people with similar cultural characteristics or simply to pursue a different quality of life. This is also what people told the Smart Cities Saint John team during public engagement activities in support of this proposal: without good-paying jobs and strong social and community ties, people move to places where they think they can find both.

There are four main components to population change: births and deaths, intra-provincial migration (within a province), interprovincial migration (between provinces) and international migration. In 2015 Saint John's death rate overtook its birth rate, making it one of the first places in Canada to experience a natural population decline. This is part of a North American trend towards smaller families, which means Saint John's growth is unlikely to come from the city's maternity wards. Neither is intra-provincial migration the answer. New Brunswick was the only province in Canada to record a population loss in the 2016 Census, which means population growth is a province-wide imperative. That leaves interprovincial and international migration. Achieving both will be difficult – Saint John has reported a net interprovincial decrease in each year of this new century – but there is some hope in the data. Between 2014 and 2016 Saint John's net interprovincial migration losses began to shrink, from a loss of 1,017 people in 2014 to a loss of 661 people in 2016. At the same time, international migration rose year-over-year with a net gain of 473 people in 2014 to a significant jump of 1,319 people in 2016 courtesy of Saint John residents' strong community-led sponsorship of Syrian refugees. |

- community.
- Rationale for applying a smart city approach to achieving the identified outcome (or outcomes).
- Strategy for measuring progress toward outcome (or outcomes) and achievement of outcome (or outcomes).

The Saint John Vision: A Prosperous, Welcoming and Sustainable City Residents know our shared prosperity depends on attracting and retaining more people who want to live, work and study in a vibrant urban centre.

A prosperous Saint John builds community wealth by connecting people with jobs, supports world-class organizations, accelerates the creation of new businesses, reduces barriers to work, attracts new ideas and investments, and ensures the free flow of people, goods and services to markets across town and around the world.

A welcoming Saint John builds community vibrancy by connecting people to each other in friendly and inviting ways to facilitate the exchange of information, improve access to services and supports, increase participation in city events and activities, and reduce social isolation.

A sustainable Saint John builds community trust by identifying community-led priorities to increase population density, create safe and desirable neighbourhoods for people to live, build infrastructure and networks that attract jobs and meet business needs, and develop active, reliable and affordable transportation options to connect people with jobs, schools, housing, child care and other daily pursuits.

To achieve this vision and maximize community benefits Saint John will need to employ the combined force of data, connected technologies and ongoing community engagement.

Saint John's Primary Outcomes
Saint John has identified two interconnected outcomes to create a prosperous, welcoming and sustainable city.

Outcome #1: Exceed the national average of five per cent population growth by 2024 by attracting and retaining more newcomers.
Saint John aspires to be an urban centre that welcomes and encourages the free flow of people, ideas and investment. This will require the city to achieve net increases in both interprovincial and international migration to exceed the national average of five per cent population growth. This ambitious and transformational target builds upon the vision presented in the City of Saint John's February 2018 Population Growth Framework to "be a City whose population is growing because new residents from around the world, across Canada and New Brunswick choose our community as their new home."

It also complements three federally-funded Saint John initiatives: the Atlantic Immigration Pilot Project which seeks to increase economic migrants to Saint John, and the Local Immigration Partnership whose role is to retain them in a welcoming community. It also complements Tackling Poverty Together Project, which seeks to reduce social isolation for refugees and others living in poverty. These initiatives aim to eliminate silos

between government, business and community organizations, which was also a suggestion during Smart Cities Saint John's public engagement sessions. When asked what big problems could be tackled using data and connected technologies, population growth was the top priority, specifically reducing barriers for newcomers trying to settle in Saint John, including feelings of social and economic isolation within a city that prides itself on its close ties. This led to a second community insight: Saint John's much-celebrated connectedness could also be an unintended barrier to making newcomers feel a part of the city.

Outcome #2: Create an open community network rooted in trust and mutual benefits.
Saint Johners have deep, oftentimes multigenerational roots in the city. Many families have been here for a long time and some residents spend their whole lives in the same neighbourhood. This results in friendships forged in grade school and still going strong into adulthood, surrounded by extended family. This creates a tightly woven net of personal and professional relationships that can be impenetrable for newcomers.

If we think of the Saint John community in the language of technology, it is an example of a highly-successful closed network. People, products, services and information travel quickly through this network, in multiple directions and at all times. However, access to this network is limited to a narrow band of participants, each of whom gains access to this network in the same way: by knowing someone already in the network. While this method maintains the network's high level of trust, newcomers must rely on luck to meet the right person at the right time to help them get a job, a home or a circle of new friends. For instance, during the preparation of the Smart Cities proposal, a newcomer with software development skills attended the public engagement sessions after hearing about it from the Saint John Multicultural and Newcomers Resource Centre – a community organization whose mandate is to help with newcomer settlement. He told his story of being unable to find work and some of the locals in attendance offered to help. They forwarded his information to their contacts in the tech sector and within two weeks he had a job. This story illustrates the opportunity and challenge of Saint John's existing network: people want to help but gaining access to the network is restrictive and arbitrary.

Saint John's Smart Cities Approach
Saint John needs an 'all-of-community' approach to develop sustainable and scalable solutions to achieve its two primary Smart Cities outcomes in order to increase its population. The starting point for Saint John's Smart Cities solution is My Saint John (MySJ), a digital solution that will utilize data and connected technologies to facilitate meaningful connections between newcomers and locals so Saint John residents can:
• gain meaningful employment;
• explore and access education options from pre-school to post-graduate;
• locate affordable housing;
• create high-value social and cultural experiences;

• leverage community resources and goodwill;
• reduce cultural barriers;
• build and strengthen trust in civil institutions; and,
• gain valuable insights to inform government policies and programs.

Saint John has a long history of using multi-sectoral networks to drive systems change through the introduction of new technologies. It was the first community in British North America to be granted local self-rule in 1785 and was the only self-governed municipality for 50 years. During that time the community financed and built what we today would recognize as the foundations of a modern city. Saint Johners established Canada's first chartered bank, the Bank of New Brunswick to finance new businesses and increase trade; Canada's first public water system and police force to increase public safety; Canada's first public high school and public library to increase public access to information; Canada's first 12-hour work day and dockworkers union to improve labour conditions; and Canada's first public playground and public health office to improve health outcomes. In the late 20th century Saint John-headquartered NBTel was a national leader in the development of digital technologies. It was the first company in Canada to install a fully digital switching network in 1993 and today Saint John has the country's fastest Internet speeds. Now Saint John is poised to be a national Smart Cities leader in data and connected technologies with this proposal, which builds upon the foundational work of the newly-created Smart and Connected Community Data Project and its central piece, the Community Data Repository.

The Repository is a cloud-based community data analytics platform and the first in North America to bring together public and private sector data to solve problems and drive innovation. This public asset will increase access to data, enhance decision-making and accelerate the development and commercialization of data-driven solutions for Saint John's public, private and non-profit sectors. Participants will share anonymized and aggregated datasets through the Repository, which will make the data available for other projects to drive new insights. The Smart and Connected Community Data Project provides stakeholders with four key supports.
• Access to a big data platform to analyze and store data.
• Access to a variety of data sets to be used alone or integrated with own-sourced data to develop public, private or community solutions.
• Access to data scientists and data analytics tools to analyze data and produce new insights to increase revenue and efficiencies.
• Ability to launch proof-of-concept projects to solve problems that lead to innovative, exportable solutions.
In addition, the Smart and Connected Community Data Project will expand the public wireless network and install sensors in the City's urban core to enhance use of digital technologies and deepen understanding of community mobility patterns.

Saint John will leverage the Community Data Project's data and digital infrastructure and its longstanding collaborative community culture to solve

its population challenge. Quite simply, Saint John must employ a Smart Cities approach to fundamentally change the way it addresses population growth or risk accelerated and irreversible decline. It will do this by leveraging four fundamental benefits of data and connected technologies.

Openness: Smart Cities projects will adhere to existing Community Data Project principles of openness, which include building a common community data platform, an open approach to sharing data, and publicly-available data insights. This approach facilitates transparent decision-making, drives innovative thinking and strengthens the relationship among public, private and community organizations and builds public trust.

Integration: The Community Data Repository will enable a Smart Cities community data platform and create opportunities to capture disparate data sets in one common place, breaking down silos between organizations and accelerating integration of information and processes.

Collaboration: Public engagement for the Smart Cities Saint John proposal and the Community Data Project have already increased collaboration between traditional and non-traditional partners, both within Saint John and by attracting new private sector partners to our city. It will serve as an important asset in capturing and analyzing data related to newcomer attraction and retention from a variety of stakeholders.

Transferability: Saint John will share its learnings with other communities that want to manage or increase population growth. This includes using open source, transparent and standardized technological solutions, and tools that can be used by other communities and sharing insights, processes, challenges, and successes with all interested parties.

While Saint John's population crisis may be most acute, similar demographic challenges exist in communities across Canada. A focused, smart city approach prototyped in Saint John could help create an open, country-wide network to scale and support spatially-based network challenges (i.e. population growth, newcomer services, aging in place, youth services) in other communities. Smart Cities Saint John envisions a system that allows people to seamlessly transfer their profiles, access community-specific information and services and tap into local networks as they move around Canada. Innovation from the ground up.

Strategy for Measuring Progress
Overall Project Management: In mid-2017 the City of Saint John created the position of population growth manager to oversee a multi-sectoral effort to address the city's demographic challenge. The first major initiative was the creation of the Population Growth Framework, which includes 30 action items, each led by either a municipal department or a community organization. The population growth manager, in collaboration with the Smart Cities Saint John team will manage the design, development and roll-out of the Smart Cities projects. The team will work closely with its partners

to manage the scope and impact of this preliminary proposal as it relates to Saint John's primary outcomes and in measuring progress towards those outcomes.

Outcome #1: Exceed the national average of five per cent population growth by 2024 by attracting and retaining more newcomers. Smart Cities Saint John will contract with the New Brunswick Institute for Research, Data and Training (NB-IRDT) at the University of New Brunswick, which is part of a Canadian research network with both national and region focus. NB-IRDT will use a variety of government data sources to track and report data related to interprovincial and international migration to measure Saint John's progress in exceeding Canada's five per cent population growth rate. In addition, NB-IRDT will work with Smart Cities Saint John during the second phase of this proposal to identify other measurements to provide meaningful insights to track Saint John's progress.

Outcome #2: Create an open community network rooted in trust and mutual benefits. The MySJ digital platform will generate large volumes of data that, once analyzed, will provide quantifiable measures for reporting targeted performance indicators related to attraction and retention, economic development and job creation, and community support and engagement. In addition, data will provide critical information to policy makers to support data-driven policy development to increase newcomer-focused growth and to inform ongoing community engagement. A detailed explanation is offered in Question #6 of this proposal.

Question 5 Please describe how your community residents have shaped your Challenge Statement. Describe your plans for continuing to engage and involve them in your final proposal going forward. This section should include: • Descriptions of previous engagement with	The issue of increasing and diversifying Saint John's population has percolated beneath the surface of community conversations for two decades, but secondary to the larger economic issues of the day. That change in 2009 when Saint John began a comprehensive review of its 40-year-old Municipal Plan. Known as PlanSJ, it was led by a team of young, digitally-savvy planners who set out to engage citizens in a conversation about the relationship between the delivery of city services and population density. Decades of haphazard planning and municipal amalgamation had converted Saint John from a compact city of 73,000 people living on 36 square kilometers in 1951, to a sprawling community of 70,000 people spread across 316 square kilometers by 2011. It made Saint John one of the largest cities in Canada by area, which meant the cost of delivering city services was higher per capita than other cities with similarly sized tax bases. Between 2009 and 2011 the PlanSJ team employed a number of engagement methods to explain the City's population density challenge to residents, including: • interviews and focus groups with over 70 stakeholder groups; • targeted youth engagement exercises; • ongoing public engagement at the PlanSJ storefront in a high-traffic

- residents, businesses, organizations, and other stakeholders on topics related to the Challenge Statement.
- Descriptions of feedback that came to light through past engagement processes.
- Links between the Challenge Statement and engagement feedback.
- Evidence of efforts made to be inclusive and to represent the community's diversity.
- Plans to sustain engagement through the development and implementation of the final proposal.

shopping concourse;
• several facilitated community workshops;
• the PlanSJ website and social media channels; and,
• numerous presentations to community groups.

PlanSJ also had a 13-member Citizen Advisory Committee, that acted as community ambassadors for the plan, actively promoting public involvement and advising City officials. In 2011 Common Council approved PlanSJ which was, "based on the aspirations of Saint Johners to grow the City in a more compact and sustainable manner." PlanSJ's framing of the problem and its extensive community engagement provides the foundational model for Smart Cities Saint John current and future activities.

While PlanSJ gave Saint Johners a better understanding of the root of their city's problems, progress on solutions was harder to achieve. Public frustrations coalesced during the May 2016 election around one dominant issue: Saint John's lack of growth. "We need to make Saint John an attractive place to live," one voter told the New Brunswick Telegraph-Journal a week before election day. "The retail is not going to go to the west side if the people aren't living there." In response, the newly elected Saint John Common Council created the growth committee in July 2016 to oversee initiatives related to the interconnected issues of population growth, economic development and the municipal tax base. Six months later Statistics Canada released the 2016 Census population counts and Saint John residents faced up to a hard fact: their community was the only CMA in Canada to experience population decline. Meanwhile, PlanSJ was beginning its next phase of work: the development of neighbourhood plans, beginning with the central peninsula, the most densely populated area of the city. Initial engagement, held in spring 2017, included 70 diverse stakeholder interviews including the newcomer community, use of the TakingShapeSJ digital engagement platform, pop-up engagements at community events and Neighbourhood Action Team meetings.

It was in this environment of public engagement and commentary on population decline and urban development that the Smart Cities Saint John team undertook its community engagement activities to define the challenge, develop the Challenge Statement and identify preliminary technology-enabled projects. This included two multi-stakeholder sessions, one online poll, and two facilitated workshops with a diverse mix of newcomers, locals, and representatives from public, private and community organizations.

Smart Cities Stakeholder Session: February 2, 2018
Work began with a stakeholder engagement session involving 50 people, drawn from Saint John's technology, government and non-profit organizations. Co-led by Mayor Don Darling and Enterprise Saint John CEO Ron Gaudet, the session sought to identify local challenges that could be addressed using a combination of data and connected technologies, either as part of the Smart Cities Challenge application or as projects for the

Smart and Connected Community Data Project. The workshop identified six issues:
• climate change;
• rising energy costs;
• population decline;
• citizen engagement through digital connectivity;
• underutilized heritage assets; and,
• social isolation due to poverty, immigration and aging.

Smart Cities Challenge Online Poll, February 26 to March 9, 2018
The online poll asked residents to identify what they thought were the most significant challenges facing Saint John and how data and connected technologies could be used to solve them. People were asked to offer their own suggestions and feedback on the six short-listed challenge themes. The survey received 325 responses, with 250 detailed comments and 125 specific offers of support. Population was the top priority across each age group and in 12 of 18 postal code areas. Other identified challenge areas included immigration, poverty, taxes, transit, roads/parking, health, technology, the economy and tourism.
Below are sample quotes from survey participants.
• "Strategically attract immigration to reverse population decline. Attract immigrants who will invest in the city, begin businesses, use advanced technology. Measure through census, # of new businesses, $ invested, # of technology jobs."
• "Declining population. Lived away for so long, I miss the lack of cultural and community events, as well as diversity in shopping I experienced other places."
• "Declining population = outcome is the number of young people staying here to work in a job that pays a living income 40k."
• "Declining population = better measure job fill rates. SJ has many open jobs that are not being filled, if we can find ways to bring people in to fill these jobs we would be tackling not only the population issue but generating multiple other spinoff benefits."

Theme Evaluation Workshop, March 21, 2018
Community champions from each of the six identified themes who had attended the Feb. 2 workshop were invited to pitch to the Smart Cities Challenge Saint John evaluation group, co-led by the Mayor and Enterprise SJ CEO and which included senior leaders from the technology, non-profit and public sectors. Each champion had five minutes to pitch on the importance of their respective issue, followed by a roundtable Q&A session. The evaluation group then used a set of defined criteria to rank the six challenge themes based on its importance to Saint John and how well it aligned with the Smart Cities Challenge requirements. Addressing population decline was the selected challenge.

Defining the Challenge Facilitated Workshop, March 27, 2018
Participants from the public engagement survey and community members with unique insights into population decline were invited to attend this

workshop, including newcomers, international students, employers, health sector professionals, academics, and representatives from economic development agencies, educational institutions, the municipal government, provincial government agencies, settlement groups and social organizations. Facilitators used the Simplexity System developed by Dr. Min Basadur, professor emeritus of organizational behavior and innovation at McMaster University, to guide 35 attendees through a five-hour creative problem-solving session to consider 'how might we' solve the issue of population decline and identify the following top five choices.
• How might we use technology to discover the communities needs and engage newcomers in the sustainable solution.
• How might we ensure newcomers gain employment by connecting newcomers + employers in innovative ways for mutual benefit.
• How might we market a concierge service (online pre-visit + in-person arrival for newcomers) to show positive view of Saint John.
• How might we gather all newcomer services under one easy-to-access umbrella with opportunity to provide feedback to improve the system.
• How might we engage the broader community to connect newcomers in all aspects of life to create a vibrant multi-cultural city.

Defining Preliminary Smart Cities Projects Workshop, April 4, 2018
The final facilitated public engagement session brought together newcomers, non-profit leaders and members of Saint John's technology sector to consider how data and connected technologies could address population decline. Once again, the Simplexity System was employed to encourage creative problem-solving, with the group generating ideas to the following challenge statement, developed by the Smart Cities Saint John team based on the cumulative results of the previous engagement activities.

How might we build a system that enables meaningful connections between newcomers and the community that becomes smarter over time, for the purpose of:
• gaining meaningful employment;
• creating high-value social and cultural experiences;
• enabling people to live well in Saint John;
• developing engaged citizens;
• leveraging community resources and goodwill; and,
• reducing cultural barriers.
A number of compelling ideas were generated during this session to inform Smart Cities Saint John's Challenge Statement, the outcomes and the preliminary projects, most notably the creation of an open digital platform to reduce silos and increase engagement between newcomers and local people, employers and organizations.

Ongoing Project Community Engagement
Smart Cities Saint John will combine its existing community engagement process with the successful and established PlanSJ model to deepen interactions with Saint John residents, employers and community

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	organizations. This will include the creation of a Smart Cities Saint John Advisory Committee, comprised of both newcomers and local residents. Committee members will act as community ambassadors to encourage participation in Smart Cities Saint John projects and advise the management team on how to use data and connected technologies to co-create community solutions for sustained population growth.

Preliminary proposal details

Question 6 Please describe your preliminary proposal and its activities or projects. This section should include: • Planned activities or projects to achieve the outcome (or outcomes) set out in the Challenge Statement. • Clear links from the identified projects to the attainment of the outcome (or outcomes). • Scope and size of each planned project in your preliminary proposal, describing how it is feasible and suitable for achieving the outcome (or outcomes) in a manner that is	Smart Cities Saint John's preliminary proposal will create an adaptable technology platform and an aggregation of innovative services and solutions to solve our City's greatest challenge – population decline. This unified vision reflects the ideas and feedback received at our community engagement sessions and in collaboration with our partners. Our goal is to develop projects that address the many facets of Saint John's population challenge such as access to employment, education, housing, transportation and social supports. Saint John is the ideal city to solve this significant challenge, which affects economic growth in Saint John and other mid-sized Canadian cities, because we have a clear vision and goal. Smart Cities Saint John has identified two interconnected outcomes: to exceed the national average of five per cent population growth by 2024 through the attraction and retention of more newcomers, and to create an open community network rooted in trust and mutual benefits. Both outcomes will be accomplished by leveraging a unique combination of technologies; open and available data at the community, municipal, provincial and federal level; aggregation of existing and/or new services; and, guidance from our comprehensive group of community stakeholders. Our strategy is to identify and strengthen existing factors, policies, services and pathways that enable newcomers to stay; identify and reduce barriers to retention; and, analyze qualitative/quantitative data to identify new processes, policies, products and services to support increased attraction and retention. We have already completed some of the foundational work with the adoption of a new municipal plan (Plan SJ) and the City's Population Growth Framework, the launch of the Saint John Smart and Connected Community Data Project and the ongoing work of community-led multi-sectoral networks that employ innovative methods to address poverty, entrepreneurship and immigration. My Saint John Digital Platform and Mobile App ("MySJ") Smart Cities Saint John will develop a digital platform and mobile app to assist newcomers in gaining meaningful employment, provide settlement services and connect newcomers to our community. Specific activities

impactful for the community, ambitious, and transformative.

- Measures put in place to 1) make the proposal open, interoperable, scalable, and replicable or a description of your plan to do so going forward for the benefit of your own community and other communities in Canada; and 2) enable other uses of the technology, innovation, and data in your proposal.

include:
• solution delivery, which includes architecture, design, delivery of solution and needs release structure to facilitate a phased introduction; and,
• technical infrastructure, which includes specification and implementation of technical infrastructure to support solution, and development/implementation of an operating business model to manage the dynamic aspects of the solution.

Building solid relationships root people in a community and each relationship starts with a conversation. Whether it is a newcomer inquiring about jobs from a potential employer, or seeking youth recreation activities, conversations between community members are the essence of building trusting and long-lasting relationships. Therefore, the core of the MySJ solution will be a conversational interface that leverages chatbot, AI and machine learning technologies to drive conversations between stakeholders to qualify them in terms of type and role within the network. Using qualification questions, this app will prompt additional interactions (Q&A) to provide pertinent information in response to the initial query. It will provide access to information on different topics such as neighbourhoods, rents/housing costs, city/network services, employers and connecting with other newcomers. It will also provide the primary interface to other solution processes.

MySJ Conversation App is the primary conversation interface (e.g. chatbot) that links stakeholders with information and services. It will ask intelligent, context-based questions to elicit information and provide information in response, delivered within the interface or through other channels such as text or email. Aside from the primary interface the app will leverage the following components:
• a conversation engine that manages conversations, retrieving information and providing answers to questions asked;
• a language/translation management engine that manages conversations in the language of the participant's preference; and,
• an admin interface used to configure and maintain the conversation engine and question and answer flows.

Other major components within the MySJ solution include:
• messaging engine that receives messaging requests, and in response, gathers/structures/sends messages to stakeholders over the preferred channel;
• registration engine for stakeholders, including pertinent information. Stakeholders include newcomers, local connectors and representatives from public, private and community organizations;
• connections engine will use service information to make connections between appropriate stakeholders. Connections that can be established include newcomers to touch points such as employers/job opportunities, community sponsors/advisors, industrial associations and cultural communities;
• a Passport Guide engine helps migrants move to Saint John by tracking

individuals' progress and providing on-going guidance/support as to next steps and processes. Intervention alerts will be based on progress monitoring and situational analysis to ensure newcomers proceed to completion;
• support websites, both existing and new, to provide users with information about community organizations and supports;
• services/solutions databases and info sources used to drive and support the MySJ solution, which will contain and leverage existing and new databases required by the solution;
• an analytics/measurement interface and engine by which measurement can be established and tracked;
• a content management engine that will add and maintain content; and,
• an alerts management engine to create alerts and monitor statuses of different services and user progress.

Architectural Principles
Like any engineering effort, it is important to consider the foundational principles – the building codes – that will underpin the Smart Cities Saint John effort. We do this so that oft-repeated mistakes are avoided, considerations on ease-of-use and accessibility are made, safety and security are assured, and accommodation can be made for future changes in form and function. Whether applied to a physical building or to software technology, it is well-acknowledged that the architecture must be sound. The following principles form the roadmap for the MySJ development, with exact scope and schedule for more complex areas to be refined in the next phase.
• MySJ will leverage open, non-proprietary standards for interoperability, including, but not limited to, RESTful interfaces and web services. Hadoop and R will be used for data manipulation, analytics, and visualization/reporting. Open content management and platform-independent workflow will be supported.
• This solution will expose key functional (business) interfaces so a community of like-minded developers may plug their own solutions into MySJ to create additional capabilities not yet imagined. The mix of independent, third party developed applications, along with those foundational to the MySJ application, will provide a single point of contact for all services relevant to the attraction and retention of newcomers.
• A highly decoupled, layered and interoperable architecture will permit incremental updates and improvements for key solution components without impact to other components, including other third-party applications developed to integrate with MySJ.
• The solution will be delivered via a hybrid mobile client/cloud platform designed to ensure high availability and broad accessibility while respecting data residency concerns and privacy requirements.
• The architecture will implement a data sharing policy modeled on Saint John's Smart and Connected Community Data Project. All applications (third party/foundational) will conform to the policy.
• Identity management will be realized through federated mechanisms, leveraging Digital ID frameworks already implemented or contemplated in

New Brunswick or federally. Integrating identity management for the attraction components (registration of individuals not known to Canada) with those for retention (once arrived in Canada and have established provincial/federal identifications) is critical to ensure ease of access while maintaining service/data integrity. Ideally, the federated identity management framework will avert retaining significant amounts of personally identifiable information.

• A robust internationalization ("I18N") framework will support localized content delivery and communication exchanges (localization, or "L10N"). Interactivity in real time, whether via human or robotic driven logic (chatbots) will leverage these language capabilities. Artificial intelligence and machine learning principles will be explored to integrate cultural L10N in addition to generally expected language translation. All related I18N and L10N features will interface with open solutions (e.g. Google Translate and other emergent, more sophisticated engines) to ensure the progression of linguistic and cultural L10N capabilities are not limited by a proprietary implementation.

• Finally, a critical design goal is to realize MySJ app generality in form/function via use of open standard templating, so other municipalities can tailor look and feel, policy realization, and other forms of customization.

The following projects will support the My Saint John digital solution.

Data Capture and Information Development
This project will capture and normalize data and provide timely information to support various functions of the MySJ app by leveraging existing or new/innovative data sources drawn from the MySJ app and other public, private and community sources. The sourced data, once normalized, will be housed within a central data repository to support the following:

• data gathered will be used to develop baseline measurements and quantifiable targets;

• ongoing data collected will provide quantifiable measures for reporting targeted performance indicators as required by the Smart Cities Challenge such as attraction/retention, economic development/job creation and community support/engagement;

• data analytics will provide critical information to policy makers for the purpose of supporting data-driven policy development;

• data will provide critical support services to users of the platform; and,

• structured and non-structured data gathered will enable alerts to monitor statuses of different services, progress and interventions as required.

Economic Development and Job Creation
Timely and meaningful employment is critical to attracting and retaining newcomers. This sub-project focuses on using data and connected technology via the MySJ app to accomplish the following:

• allow newcomers to promote skills sets and work experience;

• match newcomer skills and experience with job opportunities;

• connect newcomers with employers and community sponsors to eliminate the barriers of Saint John's existing closed community and business

network;
• connect newcomers to employment support and entrepreneurial services;
• provide a forum for short-term internship opportunities;
• share employment success stories;
• provide ability to transition international students, post-education, to permanent employment;
• metrics to baseline and measure employment statistics relating to lag time between landing and employment; and,
• aggregate/streamline existing public organizations that support and promote newcomers to perspective employers.

Settlement Services/Support and Social Connectedness
Smart Cities Saint John's public engagement process identified social isolation and awareness of support services as significant challenges faced by newcomers. In response, the MySJ app will provide a single point of services and social connectedness that will be customizable and unique to each newcomer. This project will aggregate existing community, municipal, provincial and federal services to provide critical information for newcomers to facilitate settlement in Saint John. This Passport app will act as a social and cultural liaison to connect newcomers to our community. Features include:
• information/links to community services such as public transit, schools, community/ cultural/religious centres, community/cultural events, etc.;
• ability to connect to own cultural community using language of choice;
• Crowd-sourcing capabilities to allow users to be edit content; and,
• ability to provide feedback on issues/challenges facing newcomers that can be analyzed and acted upon by policy makers.

Solution Engagement Strategy
To drive adoption of our Smart City platform, we will:
• develop a city-wide wireless network solution to increase solution adoption, building on the foundational work of the Smart and Connected Data Project; and,
• develop digital marketing campaigns, content creation, and newcomer stories to drive adoption and attract prospective newcomers.

Progress indicators for these projects can be classified in three categories.

1. Data-driven Policy Development
• Data generated through online platform used to:
i. shape urban development and municipal planning policies, resulting in increased newcomer-focused growth and development;
ii. Develop informed public engagement strategies to increase local support for immigrant attraction and retention; and.
iii. deploy marketing strategies to attract international, inter/intra provincial migrants to settle in Saint John.

2. Economic Development and Job Creation Through Connected Technologies

	• Increase in awareness/usage of entrepreneurial programs/supports by newcomers, measured by volume site access to these services. • Increase in businesses actively recruiting newcomers through open-job searches, measured by volume adoption of platform by businesses. • Increase in newcomers gaining meaningful employment, measured through employment support agencies own-source data reporting. • Increase in international students gaining employment in Saint John, post-graduation, measured by employment statistics. 3. Community Engagement Through Connected Technologies • Increase in awareness and usage of newcomer services measured by adoption rate of newcomers to platform. • Increase in usage of community partners' socialization services available via platform, measured by adoption rate. • Increase in community-led socialization of newcomers measured by volume adoption/access to socialization services via platform. • Increase in adoption rates and newcomer support by community in general measured by local adoption rate of platform and volume of newcomer referred to the platform.
Question 7 Please describe the ways in which your preliminary proposal supports your community's medium and long-term goals, strategies, and plans. To supplement your response, please upload any relevant documents and make clear linkages and references.	This proposal aligns with five significant strategies. City of Saint John 1. Population Growth Framework is Saint John's outcomes-based work plan for population growth. Its three primary objectives are to attract new people to Saint John, enhance the newcomer experience in Saint John and retain the population in Saint John. The framework includes 30 new or enhanced actions, many of which will require coordinated work plans and leveraged funding. The overarching goals and accompanying targets are: • Increase and support the annual amount of admissions of permanent residents to Saint John CMA by reaching a target of 1,585 permanent residents annually by 2021. • The City of Saint John will see a net increase in population by 2019 by reaching a target of over 400 net new residents between 2019 and 2020, over 70 per cent as economic class. • Saint John will take a coordinated approach to stem out-migration to other parts of Canada by recording a reduction in interprovincial migration by the 2021 Census compared to the 2016 Census. 2. Plan SJ reflects the shared vision of residents to employ smart growth principles in municipal planning, by reinvesting in the Saint John's urban core neighbourhoods, promoting denser more complete suburban communities and protecting our traditional rural character and landscape. The plan supports more efficient and cost-effective development patterns

and leverages the City's unique natural and heritage assets to enrich our quality of life.

Enterprise Saint John-led Multi-Sectoral Partnership
3. Saint John Smart and Connected Community Data Project is a community-wide data analytics and innovation initiative designed to provide the City, community organizations, and businesses with the tools and support to leverage the power of data to solve a wide range of business and community problems. Private sector founding partners Cisco, T4G, EY, Bell Aliant, Innovatia, Mariner Partners, the University of New Brunswick, the City of Saint John, Enterprise Saint John, ACOA and the Province of New Brunswick are key to its success. A critical component of the Smart Cities framework is its common data analytics platform and data repository, which will enable public and private data to be captured, analyzed and developed in to applications that will enable smarter decision-making, allow the community to measure success, and develop exportable data-driven solutions to problems.

Community
4. Local Immigration Partnership (LIP) is a federally-funded community-based initiative to improve settlement and integration outcomes for newcomers. Through partnership and coordination with key stakeholders in the community, the LIP aims to address the multi-faceted needs of both newcomers and the community. The LIP's actions will be informed and driven by rigorous, local data.

5. Atlantic Immigration Pilot Project is a three-year employer-driven project to address skill gaps and labour market needs. The Saint John Multicultural and Newcomer Resource Centre is a local Settlement Service Provider and will work with employers to ensure all critical factors are in place for successful integration of new arrivals. The Centre provides one-on-one and group orientation sessions for newly arrived professionals as well as comprehensive Cultural Competency Training to local employers.

| **Question 8**

Please describe your community's readiness and ability to implement your proposal successfully.

This section should include: | The Smart Cities Saint John application builds upon the city's rich culture of collaboration via multi-sectoral networks to develop export-focused products and services and drive social innovations. Saint John's experience with implementing complex, multi-stakeholder and multi-dimensional projects stems from the community's response to a previous economic crisis. Between 1989 and 2003 the city had the largest drop in Canada for employment in the goods-producing industries – 26 per cent. This galvanized Saint John's professional, business and non-profit sectors to devise cross-sectoral organizational structures to enable collaborative thinking and decision-making across departments and sectors. This is now standard procedure for large initiatives, such as the Smart Cities Challenge, which will follow best practises from Saint John's past experiences to |

- Experience with implementing complex projects (i.e. multi-stakeholder, multi-dimensional) that span multiple business lines and functional units.
- Structures, processes, and practices in place or planned for managing and implementing complex projects that span multiple business lines and functional units.
- Organizational strengths and potential weaknesses for managing and implementing a smart city proposal, and plans to address weaknesses to ensure successful proposal management and implementation.

develop its project management, public engagement and service delivery structures and processes.

The City of Saint John and Enterprise Saint John (ESJ) will lead the development of the Smart Cities Saint John team, which will bring together expertise from both ESJ's Smart and Connected Community Data Project and the City's municipal planning department (Plan SJ) and population growth manager, all of which have current responsibilities to enable community-wide innovation. To ensure continued strong community engagement, we will create an Advisory Team, comprised of newcomers and local residents. Team members will act as community ambassadors to encourage participation in Smart Cities Saint John projects and advise the management team on how to use data and connected technologies to co-create community solutions for sustained population growth.

In addition, NouLab, New Brunswick's social and public innovation lab, has launched a three-year economic immigration lab in partnership with the Government of New Brunswick's Population Growth Secretariat, a Smart Cities Saint John partner. Smart Cities Saint John has already begun exploring ways of working with NouLab to achieve our stated outcomes during the second phase of this proposal.

Finally, as part of the second phase of this proposal, Smart Cities Saint John will apply a recognized planning methodology that would include developing a project charter, scope of work, detailed budgeting, project team structure, detailed business and technical requirements, feasibility assessments, resource and technical gap analysis, solution design, stakeholder/community engagement plan, detailed work plan, and development-phase project and team structures requirements. A three-year plan will identify key milestones and performance indicators (KPIs) and inform the resourcing requirements of the Smart Cities Saint John projects and team. It will also inform the management team of any organizational weaknesses that need to be addressed to ensure the successful implementation of the project.

The Saint John community's previous experience with implementing complex projects includes the following initiatives.

Municipality-led
Plan SJ (2009, ongoing) led to the development of a new municipal plan with a vision to "grow the City smarter" and enrich quality of life as a driver for economic prosperity. With more than 60 service improvements, the project redesigned the City's development service and modernized all City development processes and bylaws, while creating new tools such as an urban development incentive program to seed sustainable urban growth. Additional initiatives include:
• Central Peninsula Neighbourhood Plan includes broad community engagement and consultation designed to encourage a diverse range of residents and stakeholders to provide input on the plan at each phase. The

draft neighbourhood plan will be released for a final round of public input in spring 2018.
• One-Stop Development Shop is a service delivery model that creates a 'one counter' approach to ensure development and building permitting process is clear, consistent and efficient. It pulls together online building permits, community planning and infrastructure services information. The Shop won the 2016 Willis Award for Innovation from the Canadian Association of Municipal Administrators.
• Roadmap for Smart Growth has a preliminary list of 30 action items, all focused on the linked priorities of population growth, economic development and increased tax base. This population growth strategy spans multiple organizations as the action items will be implemented by both the Municipality and a variety of community organizations.

Enterprise Saint John-led
Enterprise Saint John is the regional economic development agency and has extensive experience planning and executing innovative cross-sectoral projects to achieve long-term economic sustainability.
True Growth (2003-2016) was an innovative regional development strategy that drew on Saint John's deep networks to drive business, social and cultural development. It conducted broad community engagement to identify Saint John's priority economic areas and key initiatives to drive growth. : energy and advanced manufacturing, health and life sciences, tourism, and information and communications technology (ICT). The True Growth network, made up of twenty-five organizations, including five Municipalities supported the development of sector-specific projects and organizations. The collective efforts of these organizations combined with private sector leadership led to the creation of the Atlantica Centre of Energy, PropelICT, Saint John Waterfront Development, the Tucker Park Health and Life Sciences Collaborative, and the Saint John Multicultural and Newcomers Resource Centre, all organizations that have had a significant impact on economic growth in the region.

Community-led
Technology Sector: PropelICT (formerly PropelSJ) (2004, ongoing) is Atlantic Canada's original tech accelerator. It was started by a group of former NBTel executives to mentor New Brunswick's emerging ICT sector. PropelSJ was a different sort of industry association and tech incubator. The 12 founders didn't believe the traditional tech incubator model, which provides a combination of financing, office space and mentorship, would work in Saint John. At the time, venture capital investments in Atlantic Canada were almost non-existent and the big venture capital firms in Toronto and New York rarely looked east of Montreal for ideas. PropelSJ's founders knew financing would come through the development of strong relationships with would-be angel investors in Saint John and the Maritimes. In its first 36 months, PropelSJ nurtured 21 Saint John start-ups. In 2008, it went province-wide, renaming itself PropelICT. Today it is Atlantic Canada's premier start-up program, operating virtually across four provinces and attracting investment from major venture capital firms across North

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	America. Many of PropelSJ's founders are executives with Enterprise Saint John's Smart and Connected Data Project founding private sector partners.
Question 9 Describe your plan for using the $250,000 grant, should you be selected as a finalist. Provide a high-level breakdown of spending categories and an accompanying rationale.	The Smart Cities Challenge provides Smart Cities Saint John with a foundational investment to enable us to leverage additional funds and partnerships to expand our use of data and connected technologies to address Saint John's critical problem of population growth. If selected as a finalist, Smart Cities Saint John will use the $250,000 grant to assign dedicated resources to fully assess the scope and feasibility of our selected projects, including building talent and laying the groundwork for ongoing community engagement. High-level Breakdown by Category Professional Services – $65,000 The Smart Cities Saint John team will retain the services of private sector partners to provide professional services such as management advice, IT support and expertise, partnership development support, and other services, such as accounting, legal and engineering required to supplement City of Saint John's existing capacity. Platform Feasibility Assessment and Pilot Project Testing – $75,000 A research and feasibility assessment, including an architectural design assessment, will be conducted for the My SJ platform and accompanying technologies. Its focus will be to conduct research on available technology and develop a detailed architectural design for the My SJ platform, as outlined in Question 6 of this application. These activities could include, but are not limited to: decoupled, layered, interoperable architecture services; client/cloud platform design; identity management; open, non-proprietary design standards; functional inter-operability interfaces to support third party services; and, delivery planning, needs release strategy, and operating model. A small-scale pilot may be beta tested to gauge initial feedback from the community and with potential investors as we prepare the final submission. Data Feasibility Assessment – $70,000 This assessment will focus on identifying available open data, data capture and analytics potential, identifying services and organizations, and determining data gaps to support the My SJ platform as outlined in Question 6 of this application. This may include but is not limited to: data sources required to deliver the prescribed services and progress indicators; data gaps and sources solutions for said gaps; data capture and analytics

	opportunities, data sharing policies modeling our existing Smart & Connected data Community project; data localization/language services; and, form/function standardization to allow for transferability of solution. Community Engagement and Communications – $30,000 Smart Cities Saint John will concentrate on framing the story of the Smart Cities approach to population growth through the creation of original content to build awareness with residents and to draw interested participants into the next phase of our community engagement process. We will be particularly interested in gathering together a diverse stakeholder group to apply for membership on the Community Advisory Team, to provide input on the functional requirements of the platform, and to provide the Smart Cities Saint John team with feedback on the small-scale technology pilot. Communications will also be developed to support partnership development initiatives as Smart Cities Saint John seeks additional public and private sector partners. Relevant Training, Travel and Other Expenses – $10,000 Funding for any other project expenses in support of training, seeking additional help or travel to engage potential partners.
Question 10 Describe the partners that are or will be involved in your proposal. Where partners are not yet determined, describe the process for selecting them. This section should include: • A description of existing partners (what type of organization, what they do, etc.), their relevance, and expected contribution to the outcome (or outcomes).	A cross-section of private, public, non-profit and academic organizations are involved in the design and implementation of Smart Cities Saint John projects. Moving forward, we will leverage existing relationships and funding to seek additional partners and projects, with preference given to organizations willing to locate staff in Saint John to help us achieve our transformational population growth outcomes. We will adhere to the City's procurement policies and will utilize the collective impact model, which encourages collaboration among public, private, non-profit and academic partners to solve complex social problems and maximize community benefits. The Cities of Fredericton, Moncton and Saint John have a strong working relationship and actively partner on a range of operational and strategic initiatives such as continuous improvement, performance management and procurement issues. For example, the three Mayors recently co-led a successful investment attraction and population growth mission to Toronto. Staff of the three cities support each city's respective Smart Cities Challenge application and will share key learnings and best practices, beginning with a Tri-City Smart Cities webinar in June, and actively participate with successful second round proposals. There are five partnership categories. • Public sector partners provide project leadership and strategic direction, help facilitate connections, coordinate public engagement activities, and support research.

• Where partners are not yet determined or where it is anticipated that additional partners are required, describe the process for selecting them.	• Technology partners provide technical leadership in all areas of the project, including project management. • Community partners will provide insights and advice on how to co-create community solutions for sustained population growth. • Academic sector partners support both qualitative and quantitative data analysis and research. Academic institutions also provide insight on attracting and retaining international students. • Public engagement and communications partners will assist with public engagement strategic planning and activities. Partners involved in the design and writing of this application are: • City of Saint John; • Enterprise Saint John; • EY, a global professional services firm with a Saint John-based data analytics team; • T4G a national ICT consultancy and lead technology partner for Community Data Project; • Saint John Multicultural and Newcomers Resource Centre, the lead settlement agency for newcomers arriving through economic streams; • Urban and Community Institute at the University of New Brunswick Saint John; and, • Wicked Ideas Media, a public engagement consultancy and solutions journalism site. Partners that submitted letters of support or provided subject matter expertise and will be part of the next phase include: • New Brunswick Government's Population Growth Secretariat, responsible for developing and implementing strategies to attract and retain newcomers; • Office of Saint John MP Wayne Long • Teczen, an independent ICT strategy and solutions company; • New Brunswick Community College; • New Brunswick Institute for Research, Data and Training at UNB; • IMPART at Dalhousie Medicine NB, a Saint John-based medical research group that seeks to attract and retain medical entrepreneurs and researchers; • Mariner Innovations, the largest independently-owned ICT company in Atlantic Canada; • Bell Aliant, the City of Saint John's technology partner; • Human Development Council, a social planning council and lead agency for Local Immigration Partnership; • YMCA of Greater Saint John, the lead settlement services agency in Saint John; and, • United Way Serving Saint John, Kings and Charlotte Counties.
Question 11	N/A

(confidential annex) Please provide, if and only if required, confidential third party information. Information provided in this section will be exempt from the requirement to be posted online. Third party information in this section should be supplemental to the information provided elsewhere in the application and be limited to those details that are deemed confidential. Please clearly indicate to which question(s) the information provided in this section relates.	

Other requirements

Question 12 Provide a summary of your preliminary proposal. This summary, along with your Challenge Statement, will be posted online in both official languages. You have the option of providing the summary in both official languages. If you provide it in one official language, Infrastructure Canada will translate it prior to posting online.	Growth through Net-Migration: Saint John will reverse its status as the only CMA in Canada to report population decline in the 2016 Census by exceeding the national average of five per cent population growth through the attraction and retention of more newcomers to contribute to a welcoming and prosperous city. Saint John's population fell by 2.2 per cent between 2011 and 2016, making it the only Canadian CMA to record a population decline during that period. Saint John must reverse this trend before it does greater harm to Saint John's economy and quality of life. Smart Cities Saint John has identified two interconnected outcomes: to exceed the national average of five per cent population growth by 2024 through the attraction and retention of more newcomers, and to create an open community network rooted in trust and mutual benefits. The starting point for Saint John's Smart Cities solution is My Saint John (MySJ), a digital solution that will utilize data and connected technologies to facilitate meaningful connections between newcomers and locals to gain meaningful employment, explore and access education options, locate affordable housing, leverage community resources and goodwill, reduce

	cultural barriers and gain valuable insights to inform government policies and programs.
Question 13 Provide the link to the online location where you will post your responses to questions 1 to 10. You may also provide your responses to any other questions. Your responses must go live on the URL provided once you have received confirmation in early to mid-May that your application is eligible.	http://www.saintjohn.ca/en/home/cityhall/legislativeservices/citymanager/smart-cities-challenge.aspx
Question 14 In accordance with your governance structure, provide evidence of the commitment to your preliminary proposal from your community's leadership. This can be a letter of support with signatures from your mayor(s), chief(s), or equivalent or a council resolution, a band council resolution, etc.	CSJ_CCEndorsement.pdf (272.88kb)