

Smart Cities Challenge

City of New Westminster

2018



This proposal is the City of New Westminster's entry into the Smart Cities Challenge competition, a pan-Canadian competition open to communities of all sizes, including municipalities, regional governments and Indigenous communities (First Nations, Métis and Inuit). The Challenge encourages communities to adopt a smart cities approach to improve the lives of their residents through innovation, data and connected technology.



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Q1 – NAME OF COMMUNITY

City of New Westminster

Q2 – PRIZE CATEGORY

\$10 million (population under 500,000)

Q3 - CHALLENGE STATEMENT

We will be Canada's first digitally democratic society with the highest rate of participation in local decision-making that is inclusive of our diverse population and most vulnerable citizens.

Q4 - SPECIFIC GOALS

We implemented a comprehensive engagement strategy to determine our community's priorities for this proposal. Our citizens believe that the power of new connected technology and data will enable a more informed and democratic society, where higher levels of local decision-making that is inclusive of our most vulnerable citizens, is the foundation for achieving the following goals:

- *Citizen empowerment* – from higher levels of civic participation, education, and voting;
- *Economic inclusiveness* – through new jobs, local businesses, and improved access to services;
- *Social connection* – by providing new opportunities for community building and social outreach;

To truly achieve a digitally democratic society all our goals must address the specific needs of the community's most vulnerable including the elderly, youth, new immigrants, at risk citizens, the economically disadvantaged, the physically impaired, and many others.

Citizen Empowerment

Citizen empowerment is our first major goal. This will be achieved through higher levels of *education, voting, and civic participation*. This goal reflects our community's shared vision to become Canada's first digitally democratic society where informed and engaged citizens are prerequisites for increased participation in local decision making.

Baseline and Evidence

Empowering citizen's means effectively engaging and educating a diverse and rapidly growing population. In recent years, New Westminster has the second highest population growth (21%) across



Metro Vancouver, and the highest projected growth (52%) by 2041. Around 61% of this growth is from new immigration with 35% of the population reporting visible minority status, and 3% claiming Aboriginal identity.

Reaching out to vulnerable populations such as new immigrants, the elderly, youth and at-risk citizens are major priorities for the City. Around 40% of the elderly (+65 yrs.) currently live alone in private households; and from 2010 to 2012, around 33% of youth (18 yrs.) in New Westminster did not graduate from high school, which is among the highest rates in Metro Vancouver. And in recent years, criminal offences in New Westminster have exceeded BC provincial averages.

As part of the City's Official Community Planning process, a 2014 study found that relatively few people in New Westminster had ever participated in a community project, neighbourhood meeting or Council meeting. And, almost three-quarters of parents and half of city youth felt that they were not actively involved in their city. In the last 2014 election, less than one-third of eligible voters participated, which is among the lowest voter turn-outs in Metro Vancouver.

Rationale and Strategy

The right to civic engagement and good governance are fundamental to quality of life. Good governance depends on the participation of citizens in public and political life (political parties, trade unions, etc.). This also depends on the level of trust that citizens have in their institutions, and satisfaction with public services. Full and meaningful public participation can be challenging for citizens due to a variety of reasons including ethnic and cultural differences, physical isolation, socio-economic disadvantages, and many more important factors.

The appropriate use of new digital technologies and data can close physical distances, overcome language barriers, provide timely and tailored information for different audiences, and potentially attract more public engagement. However, many factors come into play including costs, time, relevancy, digital literacy and access to technology and the internet.

The city has identified the need to improve citizen engagement and participation using new and innovative technology and data and has invested in a number of on-line tools including: The Open Data Catalogue, which curates and disseminates information on city operations, assets, public events, and governance; PlaceSpeak is an online resource that improves citizen consultation about city initiatives (e.g. Master Transportation Plan, Public Engagement Strategy); and, MyCity is a secure online services that allows residents and businesses to access services including eBilling and online payments (e.g. business license renewal, permit fees).



Importantly, the City recognizes the need to engage its growing and diverse immigration population and has received funding from Citizenship and Immigration Canada to provide multiple on-line services made available in 8 different languages.

The City has also developed seniors and child and youth Engagement Toolkits that identifies actions to help the City engage with these under-represented groups. This involves holding sessions at locations and times that are accessible, and involving service providers they trust.

The City also recognizes that other stakeholders, including First Nations, may require different methods to ensure meaningful and respectful engagement regarding City policies and projects. The City is currently exploring how to develop these services on-line to improve access and broader coverage.

Those are examples of important initiatives, but during our community consultation, citizens expressed the need to consolidate these services into a single place, improve their quality and coverage, and deploy them more quickly and effectively.

This proposal will allow the City to build upon existing initiatives and develop new more powerful participatory digital tools. We will create a new *Citizen Engagement Platform* that leverages off our current initiatives but provides a more comprehensive, and user friendly on-line service that improves accessibility and meets the specific needs of diverse citizens.

By putting appropriate tools and information in the hands of our citizens, our goal is to increase community participation in local decision making across a wide spectrum of public affairs including education, governance, and public consultation. Key metrics to measure outcomes include:

Measureable Outcomes

- Percentage of city population with access to platform services;
- Number of on-line services available to public (billing, queries, educational content);
- Number of citizens actively using information-enabled city services (e.g. accessing open data);
- Number of people using and completing on-line educational programs and services;
- Number of online social interactions and engagement on public issues;
- Number of citizen participation in city hall and public consultation events;
- Number of voters using traditional paper ballots and on-line ballots;
- Number of vulnerable citizens accessing platform services;
- Number of vulnerable citizens engaging in civic affairs;
- Number of city decisions and policies based on new citizen generated data, platform analytics and community feedback.



Economic Inclusiveness

Economic inclusiveness is our second major goal. This will be achieved by creating new *local businesses, jobs and improved access to services*. By innovating and collaborating with community stakeholders across sectors we will create new career opportunities, mentorship and training programs to help our diverse citizens prosper in the new digital economy.

Baseline and Evidence

New Westminster has transformed in the past decade, with over \$1 billion in building and infrastructure investments over the past 10 years. This has generated remarkable economic growth. In 2016, for a population of 70,000, there were nearly 4,000 active business licenses and over 600 home-based businesses. However, these economic benefits have not reached our entire community, with an unemployment rate of 8% among the highest in Metro Vancouver.

There are around 11,000 people living in poverty comprising 17% of the population. This includes nearly 1,800 children and 1,400 seniors that are economically disadvantaged. Vulnerable citizens can be impacted the most for example new immigrants who may still be coping with language barriers, and without family support. Currently, immigrant residents on average receive 20% lower incomes than the general population, and their rate of unemployment is nearly 9% in New Westminster.

Addressing economic inequality is of major importance to the city because people with lower incomes can become socioeconomically entrenched and rising above poverty can be even more challenging. This can lead to stress and poorer health. For example, children coming from low-income families tend to repeat the cycle of poverty, and as adults, they may also have worse health outcomes themselves.

Additionally, the city's most vulnerable populations can be cut off from basic necessities because of digital exclusion. Access to government funding and assistance, rental accommodation, and employment applications all require access to the internet and basic digital literacy skills. Consequently, they may struggle with such things as maintaining a digital copy of their resume, submitting applications by email, or registering for websites that only accept online applications.

Rationale and Strategy

New Westminster aims to diversify its' economy and provide necessary infrastructure to attract new investments. A major part of this strategy was to establish our own dark fibre network called BridgeNet, to attract new technology and knowledge-based start-ups to locate in the city. Funded 100% by the City, the \$10 million fibre network has about 50 kilometers of in-ground fibre in 2018.



BridgeNet is providing superfast internet connectivity to approximately 130 high-rise apartment buildings (over 12,000 units) and over 50 business premises. With a \$1.2 billion expansion of the nearby Royal Columbian Hospital in coming years, the City is exploring the development of a new Economic and Healthcare cluster expected to provide 4,105 new jobs and \$70 million in economic output for the City. Having an open-access fibre optic network is critical for enabling new industries to grow and thrive in New Westminster.

The City believes that making it easier and faster to start and grow a business in New Westminster provides the community with a competitive advantage. Focusing efforts on collaboration with residents, businesses, and institutions with the result of creating a pipeline for talent will expand access to the funding and investment the city needs to be recognized as a place where fast growing and innovative companies will flourish.

New Westminster is well-positioned to build on its existing open-fibre network (BridgeNet) and the future expansion of the Royal Columbian Hospital to develop a new *Innovation-Mentorship Hub* that will create new technology and data driven businesses with a specific mandate to provide opportunities to train and mentor diverse and vulnerable citizens. The Hub will be a cutting edge facility that enables new partnership networks that connect the tech ecosystem to non-profits and community-based organizations to tackle the specific challenges that marginalized communities face. Key metrics to measure outcomes include:

Measurable Outcomes:

- Percentage of broadband connectivity throughout the city;
- Number of successful partnerships across sectors (business, NGOs, non-profits, social services);
- Number of new business licenses;
- Number of new investments into local businesses and partnerships;
- Number of new digital services, technologies and patents;
- Number of new knowledge and technology based jobs;
- Number of new internships, mentorships, and volunteers completed by vulnerable citizens;
- Number of local commercial spaces available;
- Number of local residents who commute to other cities to work;
- Number of vulnerable citizens in the city (homeless, unemployed, at-risk youth, etc.).



Social Connection

Social connection is our third major goal. This will be achieved by creating new physical spaces and virtual opportunities for community-building and outreach. Our aim is to improve digital literacy and provide new social outreach programs for our community's marginalized citizens. This will ensure that everyone has the necessary information and resources to fully participate in all aspects of community and civic life.

Baseline and Evidence

Social connection and interpersonal relationships influence the well-being of individuals and communities because of the impact on perceived life satisfaction. One of the main challenges for building social connection is a high rate of relocation. Between 2006 and 2011, over half of the City's population moved, with almost two-thirds relocating from somewhere outside of the city. It takes time to settle and integrate in a new place, particularly for recent immigrants that face cultural and language barriers.

In New Westminster, 21% of the municipality's 21,735 immigrants arrived to Canada since 2006. This proportion of recent immigrants is higher than in neighboring municipalities including Vancouver (16%) and Surrey (19%). The challenges associated with re-locating can reduce participation in support programs such as language skill development and job placement. For example, New Westminster has the lowest proportion of English Language learners at 13% compared to nearby cities.

A growing elderly population in the city also faces challenges of isolation, loneliness and being disconnected from the community. New Westminster has 40% of its elderly population living alone, which is the highest in Metro Vancouver. And there are nearly 30% of single parent families living in the city that may not have access to support programs due to time and resource constraints.

Progress has also been made in the City. Between 2008 and 2014, the number of unsheltered homeless persons counted in New Westminster decreased by 53%. From 2003 to 2012, reported crime has also decreased by 44%. While progress has been made, these are still important challenges that need to be solved in the city.

Rationale and Strategy

Digital equality, literacy and inclusion are principles that mean everyone in the community deserves access to broadband technologies and the skills to use them. The broadband economy can worsen the exclusion of people who already play a peripheral role in the economy and society, whether due to poverty, lack of education, prejudice, age, disability, or simply where they live. New cost effective, on-line tools and customized data driven training program can reduce the digital divide.



A major initiative aimed at closing the digital divide for vulnerable citizens while also promoting social connectedness in public spaces is deployment of City Public Wi-Fi. New Westminster is among the first in British Columbia to install free Wi-Fi access points in all public civic facilities including the public library, arenas/stadium, skating rinks, museum, community centers, conference facilities, and city parks. The City is also currently planning to extend free Wi-Fi coverage to all public schools in the community.

The City Public Wi-Fi project has been very successful and well utilized since its inception in 2010. It has gained excellent publicity on public and social media and is well liked by residents and civic patrons in the community. This proposal will leverage the City's investment into Public Wi-Fi by building new access points and create complimentary social and civic outreach programs at locations throughout the city to increase accessibility for diverse and marginalized citizens.

We envision this project as *Neighbourhood Hearts* which are new physical and virtual public spaces and facilities in each neighbourhood that provides opportunities for people to interact, learn, enjoy and engage in creative and meaningful activities that are enabled by new digital media, arts and technologies. Key metrics to measure outcomes include:

Measurable Outcomes:

- Percentage of Wi-Fi coverage and number of access points in the city;
- Usage rate of Wi-Fi network overall and at different locations;
- Number of new Neighborhood Heart facilities throughout the city;
- Number of new open access on-line services (education, entertainment, arts, etc.) at each location;
- Number of new in-person services and outreach programs at each location;
- Attendance rates of new center programs (on-line and/or in-person);
- Completion rates of new center programs (on-line and/or in-person);
- Attendance of community public events;
- Number of new civic organizations and activities;
- Change in perception of neighbourhood safety and changes in crime rates;
- Change in perceived or actual well-being of vulnerable citizens;
- Change in homelessness;
- Change in digital literacy by test scores or completed programs.



Q5 – COMMUNITY CONSULTATION

Engagement Activities

We implemented a comprehensive engagement strategy to determine community priorities for this proposal. This includes the following activities:

Smart City Public Workshop

On January 31, 2018 around 30 New West residents participated in a workshop convened at City Hall to identify priorities for this proposal. Participants included representatives from our Intelligent City Advisory Committee, City Council, residents associations, Business Improvement Areas (BIAs), tourism, local and regional business owners, higher education, and local residents.

The purpose of the workshop was to collaboratively identify challenges and opportunities for improving the lives of New West residents through innovation, data and connected technology. Discussions built on previous community input gathered through the Intelligent Cities Initiative, the Official Community Plan, and the Public Engagement Strategy.

On-line Survey

The outcomes of the Public Workshop were developed into an on-line survey and publicized at a number of events from March to April. The survey provided information about the Smart City Challenge and asked respondents to rank their top Challenge statement. The survey received 115 respondents and provided multiple categories for respondents to identify their age, ethnicity, gender and language in an effort to reach a representative cross section of community members.

Innovation Week

From February 23 to March 3, New Westminster hosted Innovation Week which was sponsored by Amazon, Vancity, TransLink (the regional public transit authority), and local government. The aim of Innovation Week was to help create Federal and Provincial government engagement opportunities in order to increase funding and partnerships to help advance the New Westminster's Strategic Priorities including the City's Intelligent City Initiative and to promote the local technology ecosystem.

Over 1800 people registered to attend events throughout the week focusing on collaboration, technology and local innovation. Information booths were set up during the week to inform residents about the Smart City Challenge and encouraged people to complete the on-line survey on tablets that were provided at each booth.



Smart City Dialogue Event

On February 28, 2018 as part of Innovation week, a Smart City Dialogue event was held, which was attended by around 90 people. The goal of the event was to raise awareness of how New West became a SMART 21 community, and inform the audience about its intention to compete in the Smart City Challenge as part of its overall Intelligent City Initiative moving forward.

A panel discussion and key note speaker engaged the audience on how the City can help create multi-stakeholder partnerships to improve economic and social inclusivity and build community as part of the Smart City Challenge competition. Audience members were encouraged to complete the on-line survey.

Business Expo

Later in the day, a Business Expo was held to promote how local and regional businesses are innovating to gain a competitive advantage in the new digital economy. The Expo helped businesses and government engage with the public on various initiatives through a speaker series such as Children and Youth Entrepreneurship, which aimed to connect the youth community to the local tech sector.

Over 500 people registered for this event, where the Smart City Challenge was discussed and participants were encouraged to complete the on-line survey. This gave audience members and local companies information about the competition and considers their role in providing solutions to address the challenge statements.

Pop Up Kiosks

On March 7 and 8, Pop Up Kiosks were set up in popular public locations including the River Market and Douglas College to publicize the competition, inform community members, and encourage people to complete the on-line survey.

Citizen Jury

On April 4, a twelve person Citizen Jury was convened. The Jury was vetted by city staff and council members to be representative of gender, age, ethnic diversity, local business, higher education, government and NGOs.

Employing two professional facilitators, the goal was to have the Citizen Jury discuss the survey results to further enhance community deliberation instead of having city staff choose the final challenge statement. The Citizen Jury did not need to choose the top result from the on-line survey although that was an option. They instead were encouraged to take a holistic approach considering all relevant information to date, and choose the top priorities that reflected the needs of the community.



The City took a decision to ultimately let community members decide on the final challenge statement through a deliberative voting process.

Metrics Workshop

The Citizen Jury was followed by a Metrics Workshop that included 15 community members. Facilitators led the group through a series of interactive exercises to identify specific goals, projects, activities and technologies to achieve the agreed upon Challenge Statement. An important part of the workshop was to also identify potential project partnerships, strategies and metrics for measuring progress towards achieving project outcomes over time.

Engagement Feedback

Feedback that came to light after the engagement process was that citizens believe that new digital technologies and data can have an important role in achieving a truly democratic society. In particular, citizens noted the existing challenges around being inclusive of under-represented and vulnerable citizens in local decision making processes, and active public engagement more generally.

Other major findings included the priority to help all citizens, especially at risk and vulnerable people connect with career opportunities, mentorship and training programs, different forms of support, and encouragement to live healthy lives.

A third priority was to be recognized as a safe and secure community, where everyone has access to affordable housing, services and transportation; and, to ensure that everyone has adequate resources to fully participate in all aspects of societal activities.

Those community priorities and goals directly informed our final challenge statement and the specific goals to be achieved as part of this proposal including: citizen empowerment, economic inclusion and social connection.

Inclusiveness

A strong effort was made to be as inclusive as possible throughout the community engagement process. The combination of public wide and targeted events provided an opportunity for all community members to provide feedback on the challenge statement and goals. Innovation Week for example was widely publicized and held over the course of a week with multiple events with over 1800 registered people.

We used this event to broadly inform citizens about the Smart City Challenge and the City's intended participation. Throughout the week and at specific events including the Smart City Dialogue, the



Business Expo and popular public locations, Pop-Up kiosks were set up and staffed to provide information, guidance, and access to devices to help people complete the on-line voting.

Despite these efforts, the on-line survey received 115 respondents capturing a small cross section of age groups ranging from 28% respondents in the 18 – 34 age category to 14% in the over 65 age category. The highest number of respondents at 42% were 35 – 54 years of age.

Around 42% of respondents were male and 54% female, with the remaining not self-identifying although other options were included in the survey including transgender, neutral, none of the above, and prefer not to say.

In terms of ethnicity a number of categories were given with the most respondents identifying as Western European (58%) followed by other (11%), Eastern European (10%), prefer not to say (9%), East Asian (8%), aboriginal/First Nations (2%), and African (1%).

Around 83% of respondents indicated they live in the city followed by 27% working in the city, 13% owning a business, and 12% going to school in New Westminster.

The Citizen Jury and the Metrics Workshop group were also carefully selected by the city to be inclusive and representative of multiple community stakeholders.

Next Steps

We recognize that more can be done to achieve better representation in feedback for the next round of proposal development. The first step is to raise more broad awareness and gain public support in the next round of competition. The City will implement a much broader media campaign to gain the support of local residents and get people excited about the competition.

We also intend to refine and deploy the on-line survey with more exposure and lead time we will achieve a higher response rate. The on-line survey will also be supplemented with a paper based survey to reach residents that may not have access to the internet, or are more comfortable with traditional surveys. We will also set up Pop Up Kiosks at multiple locations and facilities to include more under-represented groups such as after school care, health clinics, schools, community centres, etc.

We will also rely on the Citizen Jury and the Metrics Workshop group to continue participation through the next round of proposal development. We will expand these working groups and achieve better representation of all community members, convene more regular meetings, and design professionally facilitated workshops to provide more in-depth feedback to inform proposal development.



Q6 - PROJECT DESCRIPTIONS

Citizen Engagement Platform

This project will see the City taking on a new role as a trusted source of information and a curator of citizen generated data. The City will be an active enabler of citizen discourse around core public issues.

This project will create a *Citizen Engagement Platform* offering an integrated on-line experience to improve city service delivery, and provide new tools for public collaboration. The platform will facilitate citizen-to-government, and citizen-to-citizen dialogue to ensure issues are tackled in a timely manner.

The platform will provide a central repository of information on city services, public works, planned developments, and public events. Security protocols will be provided to encourage on-line conversations in a protected and safe environment that is managed and overseen by elected public officials to build community trust on data privacy issues.

This project will design the platform in close collaboration with community stakeholders, with particular attention to the needs of vulnerable citizens to improve end-user experience (language translation, culturally sensitive content, resources for at-risk citizens).

Outcomes

Civic Participation

New open access digital tools and resources will make it easier for people to access city services and participate in local decisions that affect them. The platform will offer multi-channel communications including public and private chat rooms, look-up functions to connect with peer groups around specific issues, engage with elected officials, or access social media and local news feeds vetted by City staff to build public trust in on-line content.

To measure changes in civic participation, different proxies can be used including: adoption rate and use of the platform, access to open data, and volume of citizen generated content. This will be combined with monitoring changes in public attendance of events (town halls), and on-line and paper based surveys on where and how people obtained information, and change in civic engagement.

Education

The platform will offer free on-line educational resources for basic and advanced digital literacy (computer programming). The project will collaborate with the Public Library and specialized vendors to access e-collections and self-directed learning tools (video tutorials). The project will partner with social services, and non-profits to curate customized resources (on-line doctors, counselling) for vulnerable



citizens. The platform will record the number of on-line resources accessed, training programs completed and overall use and access by different end-users (elderly, youth, gender).

Voting

The City currently has a low voter turnout. The platform can be leveraged during the voting cycle to engage citizens on topical issues, for political candidates to share views, quickly respond to queries, and reach more marginalized citizens that may not attend live events.

The platform could also trial on-line voting. However, this requires consideration and public consultation since the effectiveness of on-line voting systems for improving voter turnout trialed abroad remain unclear. The longer-term goal is to provide accurate and timely information around public concerns and increase voter turn-out. Voter turnout can then be measured before and after platform deployment to assess any change.

Scope and Impact

The City can fill an important gap in being a trusted data provider and manager, which is vitally important given the current lack of public trust in on-line service providers and news media outlets. This project can transform how people interact in public discourse by offering a platform that is curated and overseen by elected city officials.

Lessons Learned

The platform will be developed based on open data and open access principles where applicable. APIs will be used to engage the developer community, and system architecture will be flexible to incorporate future data, new services, and technologies.

The community-driven platform design, especially with vulnerable citizens in mind is an important innovation of this project. The platform will be piloted with social service agencies and focus groups to understand the specific needs of marginalized citizens before full deployment.

The processes and frameworks by which the platform is designed, piloted, and monitored will be shared across Canada and internationally. New information on the collaborative technology design, adoption rate, and user satisfaction will inform other communities looking for new strategies and technologies to better engage their citizens.



Innovation Mentorship Hub

This project will create an Innovation Mentorship Hub that brings together industry, NGOs and non-profits to tackle social challenges faced by the community. The Hub will be the region's first Business-To-Citizen (B2C) incubator space focusing on marginalized populations.

The Innovation Hub will have on site-expertise (social services, health professionals, developers) to provide a trusted environment to engage and collaborate with at-risk individuals and other marginalized citizens to better understand their motivations and behaviors.

This will inform the collaborative design of new tailored programs and solutions that will be more cost-effectively developed and trialed using advanced tools including: virtual and augmented environments (emergency response), simulation models (predicting risky behavior), data analytics and visualization (homeless movement patterns), and 3D printing (prototyping medical devices). This will enable rapid design, experimentation, and testing before full-cost deployment.

The Hub will also provide on-site mentorship opportunities and be a networking platform to connect citizens to nearby businesses. It will develop criteria for participating companies and organizations for cost competitive access to advanced facilities and services in exchange for implementing new programs to engage local citizens.

Outcomes

New Local Businesses

The City provides competitive broadband rates, affordable multi-use flexible office space, and attractive living conditions. The Hub will leverage off of those favorable conditions to create a multi-use facility to incubate new local businesses and provide opportunities to collaborate with the Economic and Healthcare Cluster, local government services, and value-added technology vendors in the City. These investments and initiatives will enhance the City's image as an attractive place to invest and grow new businesses.

Jobs and Opportunities

With the expansion of the Royal Columbian Hospital an estimated 4,105 new jobs will be created across multiple sectors over the next 10 years. The Hub will capture part of this market. Large organizations will actively collaborate with the Hub for R&D or rapid trialing of new technologies. The Hub will help citizens network and connect with local employers and larger established enterprises looking to partner, or procure services from the Hub.



The Hub will provide a collaborative space that connects local stakeholders across multiple sectors while also helping companies achieve their corporate social responsibility goals by providing jobs, volunteer opportunities and mentorships for local citizens.

New Digital Services

The Hub will be in close proximity to many government organizations and institutions such as Royal Columbia Hospital, Queen's Park Care Centre, Douglas College, TransLink, the Law Courts and the Justice Institute of British Columbia. The Hub will be able to collaborate with these larger organizations develop new services across multiple verticals.

Importantly, by working with local stakeholders the Hub will be able to innovate tailored solutions for specific community needs. The Justice Institute of British Columbia for example, is a multi-award winning institution that creates new e-learning tools and simulations to train public safety professionals to cope with high risk situations (police, firefighters).

By collaborating with social services and community members, improved understanding of at-risk individuals can inform VR/AR training programs to improve emergency response, or help medical teams design wearable early warning systems to detect potential overdoses.

Scope and Impact

This project is complex and ambitious but can potentially transform industry practices by actively building into the business case, new unconventional partnerships (non-profits, social services), collaborators (citizens) and incentives (access to city owned fibre network) to develop the Hub into a physical and virtual incubator tasked with meeting the City's broader goals for economic inclusiveness.

This Hub will provide the resources and tools to enable a two way exchange where citizen participation can help improve the design and deployment of new digital technologies, while companies in turn provide on-site training for citizens, or access to other opportunities through the Hub's network.

Lessons Learned

This project will formalize new multi-stakeholder relationships, develop and deploy new digital technologies and services, and provide policy incentives for local businesses to innovate, while actively participating in local community and social change.

The technologies, data, frameworks and policies that will evolve out of this project will adhere to open data standards. The results will be scalable and applicable to many cities around the world that are exploring how to invest in their local tech sectors, but have not considered how to incorporate a community needs component into their planning and policies.



This project will be a model example in Canada for how the tech industry can innovate with cities and contribute to the local community through collaborative engagement with its most vulnerable citizens.

Neighbourhood Hearts

This project will create *Neighbourhood Hearts*, which are central places in each neighbourhood where people can gather to learn, play, create and meet their neighbours. The City will site new locations in coordination with the expanding Wi-Fi and fibre networks to provide high-speed reliable on-line services (social media, entertainment, tourism, education) to attract citizens to each location.

Each location will be a modern neighborhood scale digitally connected center that will offer on-line services developed in partnerships with civil society organizations, athletics clubs and educational institutions to provide programs on education, entertainment, arts and leisure. These services will be delivered in innovative ways including gaming and simulation, digital media and design. Workshops, public lectures, talks, and creative opportunities will also be available.

New locations will be selected to improve access for marginalized populations, such as social housing, youth shelters, and care facilities to improve social integration. Each centre will build social connections by providing new physical and virtual opportunities to overcome barriers that keep people from meeting and connecting, such as where people live, physical disabilities or cultural differences.

Outcomes

Digital Literacy

In 2016 the City launched its' Digital Literacy Outreach Program to engage our most vulnerable populations. This project will implement the literacy program in a structured way directly into each community. These centers will provide the equipment, and programs to identify gaps in basic computer skills and provide personalized training.

New Westminster is unique in having four alternate secondary school options to assist at-risk youth in completing school. These programs offer smaller class sizes, more events to help connect students to each other, flexible schedules, and more meetings with teachers. Neighbourhood Hearts will integrate digital literacy into after school programs for each neighborhood and tailor programs to the specific needs of each community (culture, language, age).

New programs for citizens

We will work with multiple partners to design diverse outreach programs. For example, we will collaborate with the New Media Gallery, which is dedicated to public outreach through new media art



from around the world and has achieved international recognition. The gallery specializes in working with youth using innovative approaches such as AR/VR for education and entertainment.

We will work with the Gallery to bring its vision and programming to each Neighborhood Heart to engage all citizens and specifically children. Personalized programs will be developed for marginalized community members that face specific challenges.

Scope and Impact

This Project will transform how people gather and engage with each other in public spaces. It will demonstrate how to collaborate with community organizations to improve digital literacy and help vulnerable citizens. It is ambitious in scope with a longer-term goal of establishing a center for each neighbourhood in the City.

This project will be an example for Canada and globally on how strategic investments in digital infrastructure and services can help build community by overcoming existing barriers such as isolation, or social and cultural differences that hinder full engagement in social life.

Lessons Learned

All on-line programs will be open access and disseminated broadly to communities and civic organizations. The Wi-Fi and Fibre network will be deployed with extra capacity to meet future population demands and new data intensive applications.

This project requires coordinating multiple capital projects (facility location, Wi-Fi and fibre network) and working with different stakeholders to deploy on-line and in-person civic programs. These lessons learned will be shared with communities throughout Canada and abroad on how to leverage digital infrastructure, and civic stakeholder partnerships to tackle local social challenges.



Q7 – SUPPORTING COMMUNITY GOALS

In 2012, the City of New Westminster began its journey to become an Intelligent City with the decision to build a city-owned dark fibre network called BridgeNet. When completed the high-speed fibre network will position the city as a test bed for technological and social innovation to benefit the community.

By 2013, an Intelligent City Advisory Committee (ICAC) was established to oversee the deployment of BridgeNet, and includes representation from city council, city departments, and local stakeholders. The advisory committee works closely with five community-led working groups: Digital Infrastructure, Digital Inclusion, Innovation, Knowledge Workforce, and Advocacy (See Terms of Reference).

In 2014, the New Westminster Intelligent City Strategic Plan was established with the goal of, “becoming a leading Intelligent City in British Columbia by 2020”.

In 2016, BridgeNet was launched is being deployed throughout the city, and in 2017, New Westminster was recognized out of 400 cities as a SMART21 community by the Intelligent Community Forum (ICF), a non-profit think tank based in New York that sets best practices for Smart Cities around the world.

The Intelligent City Strategy is now embedded in nearly all other city departments to help shape and achieve policy goals. This proposal will directly support the Intelligent City Strategy and help us achieve a more ambitious goal of becoming a leader in Canada and abroad.

Our proposal also supports many other city policies and goals. Our challenge statement of becoming a digital democracy and empowering citizens is aligned with the Public Engagement Strategy (2016) that supports the democratic process and helps foster community involvement and ownership.

In 2018, the updated Engagement Strategy and Action Plan focuses on leveraging new technology to enable participation from all citizens, especially marginalized populations. Our proposal sets new and ambitious goals to tackle those challenges through the Citizen Engagement Platform and Neighborhood Hearts projects.

The Economic Development Plan (2018) and Sustainability Framework (2013) aims to increase knowledge-based and creative industries that cultivate innovation, promote entrepreneurship and generate employment. These challenging goals will be more fully realized through the Innovation Mentorship Hub, which aims to increase economic inclusiveness for all citizens.

The City’s Official Community Plan (2017) encourages social connectedness, neighborliness, community building and closing the digital divide. Our proposal will help achieve this objective by improving social connections through new outreach programs and tailored training for digital literacy.



The City of New Westminster has made important strides towards its Intelligent City Strategy and other policy objectives. However, this proposal sets the ambitious goal of becoming Canada's first digitally democratic society that is inclusive of all citizens.

This is a multi-faceted challenge that we are tackling from complimentary perspectives (citizen empowerment, economic inclusiveness, social connection) that leverages the City's investment into digital infrastructure, and enables complex, but realistic multi-year, multi-stakeholder project deployment strategies.



Q8 – READINESS FOR SUCCESS

Implementing Complex Projects

The City has a strong track record of managing and implementing large complex digital infrastructure projects including the dark fibre network (\$10 million), the City Public Wi-Fi (\$2 million), and the Sapperton District Energy Project (\$60 million).

Led by the City owned Electrical Utility, the Sapperton District Energy system is a collaborative, transformational project that will deliver up to eight megawatts of clean, renewable heating energy by 2032. The system will provide low-carbon heating to the Royal Columbian Hospital (RCH) campus, new multi-residential, commercial, and mixed-use transit developments in the surrounding area.

It will reduce 8,600 tonnes of CO₂ per year contributing to the City's emissions reduction target of 80% by 2050. From a strategic and long-range perspective, this project supports multiple objectives for a robust, sustainable, and diversified economy.

Another added layer of complexity is coordinating this project with deployment of the Fibre Network to enable smart meter upgrades, and transition to a smart grid as part of the Utility's Strategic Plan and the Intelligent City Initiative.

Although initial work began with the City's Electrical Utility in 2011, The City and Fraser Health Authority signed an MOU in June 2014. Since then, multiple stakeholders and collaborators are now engaged including Metro Vancouver, and TransLink. This project also involves nearly all departments within the City including, Engineering, Planning, Information Technology, Economic Development, and the Intelligent City Advisory Committee.

To date, the City led multi-stakeholder collaboration has achieved the following milestones:

- Detailed design on the new RCH heating plant began in September 2015 to develop finalized performance and equipment specification for district energy integration at the hospital (RCH).
- MOU signed on June 2014, with Fraser Health Authority to collaborate jointly to develop a business case for a low-carbon district energy system in Sapperton.
- The business case plan demonstrates feasibility to begin supplying renewable heat to Royal Columbian Hospital, and larger residential and commercial buildings in proximity to RCH by 2020.



- The City and Fraser Health Authority continue to work closely on the urban design, transportation, and underground infrastructure improvements necessary to support current and future phases of RCH expansion.
- Technical work is now completed and has been incorporated into the design-build bid documents.

Managing Complex Projects

The Intelligent City Advisory Committee (ICAC) is an innovative, community led governance structure that has successfully managed and implemented major capital projects. The ICAC was initially formed to manage the fibre network. However, as this project catalyzed the broader vision of becoming a leading Intelligent City it became imperative to develop other priority areas following the Intelligent Community Forum (ICF) model, and build out our working plans to use broadband technology to drive innovation, economic growth and digital inclusivity.

In 2015, the ICAC was restructured into a unique bottom up management model that works closely with 5 community-led working groups to prioritize and implement major projects. A community member chairs each working group. This chair also sits on the ICAC as a voting member. Working groups include a minimum of 3 to 4 community members and at least one city staff along with the Intelligent City Program Manager.

The working groups meet regularly (monthly or more frequently) as a mini think tank to define objectives and projects aligned with the Intelligent New West strategy, that they believe would enable traction within their mandate (Digital Infrastructure, Digital Inclusion, Innovation, Knowledge Workforce, and Advocacy). These are then brought forward as recommendations to the ICAC for review.

Two years later, this management structure has effectively deployed a number of initiatives and collaborations contributing to our success as being recognized as a SMART21 community by the ICF. The community led approach and cross-cutting nature of the ICAC is ideal for managing the complex multi-disciplinary projects described in this proposal.

Mitigating Risks

The ICAC has an excellent track record of achieving results. Each project in this proposal builds from the successes of existing city initiatives including: the city's portfolio of on-line services and open data, the dark fibre network, and the Public City Wi-Fi.

While the work of the ICAC intersects with nearly all other departments, lack of effective communication and engagement between city staff still occurs and could be a risk to implementing our



projects due to their cross sectoral nature, differing time scales, procurement processes and coordination efforts.

Another important risk is the added organizational complexity that comes with additional stakeholders. All of our projects will include additional government services, NGO's, the research community and charitable organizations to help us understand and address the needs of vulnerable citizens that are central to each of our challenge statement goals (Citizen Empowerment, Economic Inclusiveness, and Social Connection).

To overcome institutional barriers, we will pair a representative from each ICAC working group with a city staff member to collaborate on each project. This will build internal capacity and break down silos between city departments to ensure a more coordinated approach for project planning and deployment.

To address the risks from engaging multiple new stakeholders to address the challenges for vulnerable citizens in each project, we will initiate another ICAC community-led working group that focuses specifically on marginalized populations.

This new group will inform all the other ICAC working groups so that vulnerable citizens are not just part of a digital inclusiveness mandate, but mainstreamed in all other priority areas such as digital innovation, knowledge workforce, and advocacy. The new working group will help coordinate and be a point of contact for additional project stakeholders to help guide each project.

For full proposal development and project execution, we envision undertaking a comprehensive stakeholder and community engagement process that will be challenging. To mitigate this risk, we will formalize the Citizen Jury and Metrics Group that were convened during our preliminary proposal consultation process. These groups will continue to bring their expertise from diverse community backgrounds and provide active citizen input throughout the process.



Q9 – PLANS FOR GRANT

Community and Expert Stakeholder Consultation

The first step will be to implement a broad stakeholder engagement strategy to receive feedback on the preliminary proposal and reiterate as necessary. This step is important to receive community buy-in for the full proposal. We will deploy a sustained community engagement program including: on-line and paper based surveys, information workshops, pop-up kiosks, leveraging public events, broad media campaign via on-line and print, and a community wide town hall involving all stakeholders.

Concurrently, we will implement at least two expert focus groups involving domain experts (academia, industry, etc.). The goal will be to understand the full scope, limitations and potential outcomes for each project, and feed this information back to the community and revise accordingly.

Feasibility Analysis and Data Collection

The expert focus groups will help identify additional technical studies and data collection necessary to inform the proposal. Technical and feasibility studies will be conducted by city staff and/or vendors as necessary. This will ensure each project is technically sound and building upon best practices to deliver results with lasting community benefits.

Baseline data will be collected to develop a performance monitoring strategy, appropriate indicators and metrics will be specified, and reporting procedures built into a deployment strategy. The strategy will also identify project risks (financial, technical, management, personnel) and develop a risk management plan.

Any additional data collection will be conducted to feed into the technical studies, feasibility analysis and monitoring frameworks. Where the data does not exist, systems and processes will be built to collect or generate the necessary data to successfully implement each project, and monitor outcomes to inform proposal development.

Capacity Assessment, Partnership Building and Piloting

A capacity assessment will be conducted to understand the organizational, management, and personnel capacity in the city to deliver each project. If necessary additional city staff will be trained during this time to ensure the successful implementation and management of each project. Professionally facilitated capacity building workshops may be used to build broader institutional competencies and awareness.



The partnership procurement process will be implemented to fill any identified gaps in institutional or technical capacity. Partnerships will be identified and partnership-models evaluated and agreed upon, which may require external legal counsel. Letters of support will be solicited and MOUs signed.

Where appropriate, piloting preliminary supporting projects may be conducted to test new data collection techniques, trial new technologies, or beta release new software to inform project development in the full proposal.

Business Plan

All previous activities will be used to inform development of the full business case for each project as the core part of the full proposal. This involves developing the program management structure, partnership models, financing models including a risk and mitigation strategy, Intellectual Property procedures and a commercialization strategy, a long-term community engagement strategy including an organizational diversity and inclusiveness plan, full project deployment and scaling strategy, performance monitoring, and securing additional project investors with agreements in principle signed.



Q10 – BUILDING PARTNERSHIPS

We currently collaborate with more than 30 community, business and local institutions as part of our Intelligent City Initiative. We highlight existing local community based partnerships and their contributions to project outcomes. We also outline a framework for building new partnerships for the full proposal.

Highlighted Existing Partnerships

Public Library - has extensive digital resources and has worked with non-profits to develop on-line training programs to meet the specific needs of elderly, youth, and new immigrants. Over 3,000 courses are viewed every month. The Library will help with design of on-line training modules for the Citizen Engagement Platform and Neighbourhood Heart centers.

Artefactual Systems – is a local company that specializes in open-source digital preservation systems designed for standards-based, long-term access to digital material. They have worked with Harvard University, the Rockefeller Archive Centre, and will provide technical guidance for managing digital resources on the Citizen Engagement Platform.

The CG Masters School of Animation and 3D FX – is a local company providing training in Animation and Visual Effects. Currently 100% of graduates get careers in industry (film, TV animation, and VFX industries). The school will contribute to program design and delivery at the Innovation Mentorship Hub.

Powertech Inc. – is a locally based research firm with extensive experience in smart metering, networking, intelligent automation, sensors and data analytics. They bring technical expertise and training experience to the Innovation Mentorship Hub.

British Columbia Institute of Technology - delivers technical apprenticeship programs focusing on future growth sectors. The program has an 80% success rate of students finding apprenticeships. They will collaborate on program development at Neighbourhood Heart centres and training programs at the Hub.

Elizabeth Fry Society – is a charitable organization that provides support services to some of society's most vulnerable populations – women, girls and children at risk or affected by the justice system. They will work with Neighbourhood Heart centres on design and delivery of social outreach programs.

The Purpose Secondary School - serves students who struggle in the traditional school system. They have extensive experience with relationship-based learning environments where students feel safe to learn. The school is part of a larger social service agency focusing on health, childcare, and counselling. They will help with program development at Neighbourhood Heart Centres.



New Partnerships

We will implement a transparent procurement process to identify partnerships through a Request for Proposal (RFP) or Request for Information (RFI). Our selection criteria will include:

- A shared vision for the project;
- A clear plan on the scope and timing of the resources it will contribute;
- Requisite knowledge, skills, personnel, services, capacity, and equipment to successfully deliver;
- Proven track-record of performance on projects that involve multi-stakeholder partnerships; and the capacity to scale the project where appropriate;
- Fiscal stability and strong management frameworks in place.

Depending on the partner selected, we will determine the most appropriate partnership model to achieve project outcomes including: Private sector-led partnerships; Government-led and private sector supported partnerships; Government-led and non-profit supported partnerships; Joint ownership; or an agreed upon combination of the above.



Q12 – 200 WORD SUMMARY

Our citizens believe that the power of new connected technology and data will enable a more informed and democratic society, where higher levels of local decision-making that is inclusive of our most vulnerable citizens, is the foundation for citizen empowerment, economic inclusiveness, and social connection.

By putting new and powerful digital tools and information in the hands of our citizens, we will increase community participation in local decision making across a wide spectrum of public affairs including education, governance, and public consultation.

We will create new virtual partnership networks and maker spaces to connect the tech ecosystem to non-profits and community-based organizations to innovate and tackle the specific challenges that marginalized citizens face. This will create new knowledge based jobs and opportunities for our diverse community.

We will build new places and technologies to help people connect, overcome the digital divide, and use new media arts and social outreach programs to engage our community's marginalized citizens. This will ensure that everyone has the necessary information and resources to fully participate in all aspects of community and civic life.

Q18 – FOCUS AREAS

- Empowerment and inclusion
- Economic opportunity

Q19 – COMMUNITY SERVICES IN PROPOSAL

- Arts and culture
- Economic development
- Education and training
- Social services
- Community engagement
- Electric utilities
- Information technology
- Land use planning and development
- Public health
- Recreation and parks



Q20 – TECHNOLOGIES IN PROPOSAL

- Artificial intelligence (AI)
- Assistive technology
- Augmented reality (AR) or Virtual reality (VR)
- Big data analytics
- Cloud computing
- Enterprise solutions
- Geospatial
- Health or Medical technology
- Internet of Things (IoT)
- Mobile applications
- Networks
- Open data platforms
- Payment platforms
- Sensors
- Video analytics
- Wearables

