



SMART CITIES CHALLENGE APPLICATION

APRIL 23, 2018

SECTION I: APPLICANT INFORMATION

Question 1

Please provide the following information on your community.

Name of community: **City of Clarence-Rockland**

Province/Territory: **Ontario**

Population: **24,512** (based on the 2016 Census)

Indigenous community: Yes/**No**

Question 2

Please select a prize category.

- \$50 million (all population sizes)
- \$10 million (population under 500,000 residents)
- \$5 million (population under 30,000 residents)**

SECTION II: PRELIMINARY PROPOSAL

SUB-SECTION 1 – 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 achieve.

Challenge Statement - 50 words maximum

Clarence-Rockland will leverage smart city sensors and geospatial analysis to drive change and create a complete active transportation network allowing 100% of residents to access key community destinations within walking and bicycling distance, accelerating our progress towards becoming a connected, healthy city that cultivates a sense of place and possibility.

Question 4

Please describe the outcome (or outcomes) your proposal seeks to achieve by elaborating on your Challenge Statement. – 2,500 words maximum

Clarence-Rockland residents are frustrated. Many residents spend hours every day commuting by car to Ottawa and can't find the time to exercise. Others feel isolated and have trouble meeting their daily needs because of poor public and active transportation options. All our residents want to live in a strong community with thriving local businesses and good job opportunities, so that they can live, work, shop, and play here, not an hour away. The city itself wants to attract more investment and new residents as it grows. With our limited budget, our city has struggled to achieve this vision.

Consider the journey children in our community would take if they wished to get some ice cream after hockey practice. While the bike ride from the hockey arena would only take about 10 minutes, it would require crossing a 4,600 square meter surface parking lot, then traveling in the street through an industrial area, then crossing busy Highway 17, and then riding with traffic or on the narrow sidewalk along arterial Laurier Street. This is not a journey many parents would allow their children to embark on, quite understandably. Instead, the children must be driven by parents who already spend much of their time imprisoned in their SUVs, commuting long distances to work. Businesses respond to the car-dependency of our community's design by holding tightly to on-street parking. The result for our community is increased pollution and congestion, costly wear-and-tear on the roads, more public space paved over and devoted to car storage, worse physical and mental health outcomes, and increased social isolation. The poor conditions for walking and cycling lead to more driving, which further degrades the cycling and walking environment and erodes support for reallocating public space to active transportation.

The highway between Clarence-Rockland and Ottawa where 75% of residents work is being widened. The environmental assessment includes a proposal to build pathways for active commuting. Our city has an interest in linking to these future active transportation routes while also improving walking and biking opportunities in our community. The region is getting an LRT system in 2021 and Clarence-Rockland residents needs attractive options for cycling to the stations.

Residents face similar barriers to getting to the library and schools and commuting to work in town. Unsurprisingly, residents tend to see walking and cycling not as everyday regular activities, but as recreational options. Today, 25% of employed residents with a usual place of work commute to a job within Clarence-Rockland. Many of these local jobs are likely to be within a reasonable walking or cycling distance, but only 3.2% of our residents commute by walking and bicycling.

Even walking and bicycling just for recreation can be a challenge. For example, the Prescott-Russell trail runs east-west through our municipality, but there are currently only signed bicycle routes connecting the trail through rural communities to the urban centre, no supportive infrastructure like bike lanes, paved shoulders, etc.

We want to be a city where children can bike or walk to the community centre with library and local pool, but, like so many other Canadian cities, we've so far been unable to make that dream a reality using conventional planning processes alone. We also are in a place where residents do not see walking or biking to a swim practice as an option. We would use technology and other planning tools to help represent it as a viable option through design of our infrastructure and the use of technology to break down barriers.

Our challenges are ordinary, but our solutions are not. We will leverage smart city technology and data analysis to accelerate our progress towards becoming a connected, healthy city that cultivates a sense of place and possibility. In the process, we'll create a new path forward that brings to bear the untapped potential of smart city technology to transform local transportation options. We'll show the many cities that share our challenges that a project like this can have a significant, transformative impact in a small city. That small doesn't have to mean unsophisticated. That isolated doesn't have to mean disconnected. That rural doesn't have to mean left behind. Through our strategic planning exercise, we continually heard the positive nature of Clarence-Rockland as a blend of urban and rural. Our proposal here today reflects that blend. LaRose Forest is at the southern end of Clarence-Rockland with trails but the only way to get there at present is by car. Our proposal will seek to link the urban centre of Rockland to the trail network in this nature space.

Extensive community outreach for this and previous projects has revealed that better active transportation options is a high priority for our residents. When we surveyed residents, we heard the word "connection" repeatedly: residents want connections to existing trails, connections to businesses, connections to the river. They want to see local businesses thrive, and they want to be able to walk and bike to those businesses safely. But where do we need to invest our limited dollars to make real progress toward becoming the connected community that our residents envision? How do we know that the City's time and money are well spent, and how do we communicate our progress to residents and businesses? This is where the Smart Cities Challenge will enable us to do what we have not been able to do through conventional city planning and limited funding. The majority of our available funds is directed to infrastructure repair as identified by municipal staff but also through political pressure from ratepayers. In order to change the conversation to active transportation (which is a value residents have identified that they want) we need Smart Cities technologies to drive this change.

We will undertake a comprehensive two-part process that uses smart city technology to help us overcome challenges that prevent progress towards our community's goals. The process, described in detail in Question 6, includes A) Deployment of sensors and smart bike lights that monitor traffic volumes and speeds (car, bicycle, and pedestrian) and environmental quality paired with resident engagement and behavior change through gamification of public space and real-time information on progress toward community goals; and B) Geospatial analysis augmented by data from sensors to determine key weaknesses in network connectivity for active transportation and use of tactical urbanism strategies to quickly test and evaluate solutions to network gaps, leading to permanent investments.

The primary outcome we aim to achieve is this: Every resident of Clarence-Rockland will be able to connect to all key community destinations within walking and bicycling distance of their homes. We will

be able to achieve this outcome because our smart city data collection and analytics will pinpoint critical investments that are necessary to complete our active transportation network, so we can make strategic investments that maximize the impact of each dollar. The data collection and network analysis made possible by smart city technology will allow us to measure our progress towards the goal of total connectivity, giving us a solid, easily understandable outcome that the community can rally around.

Connecting every resident to key destinations would be a significant achievement for our community all by itself, but our proposal is designed to help us achieve additional secondary outcomes on the way to achieving our primary outcome. We will increase the number of people using our trails and reduce car traffic, leading to improved air quality and better health outcomes. We will improve our readiness for the array of Internet of Things technologies in use and under development. We will enhance resident engagement with public space and create incentives for residents to travel on foot and by bike. We will spark a culture shift within our City operations towards iterative, responsive street design that puts people first.

The Smart Cities Challenge comes at exactly the right time for our community, as the City of Clarence-Rockland is expecting significant growth in the coming years. Recent census data shows that, as of 2016, the population had increased by 18% since 2006. With new residential subdivisions, and development occurring throughout the urban area of the City of Rockland, the existing transportation network continues to experience increased transportation demands.

We know that if the City continues to conduct business as usual, the community will face several negative outcomes as a result of the projected growth and associated increased car traffic, chief among them poor health outcomes. Changing the built environment to support active transportation is a proven strategy for improving health and wellness. A 2009 report from the Canadian Senate attributed 10% of population health outcomes to the physical or built environment and 50% of health outcomes to social and economic determinants (which are interconnected with the built environment). Alta Planning + Design has teamed with Clarence-Rockland to develop this proposal. We are leaders in Integrated Health and Transportation policy. We are currently on the team developing the Transportation Association of Canada's Integrated Health and Transportation research project.

When the Canadian Institute of Planners reviewed 96 peer-reviewed journal articles and 16 reports from Canadian Agencies, they found overwhelming evidence that health is tied to physical activity and physical activity is tied to the built environment. They conclude that "physical activity is among the most significant modifiable behaviours that can influence a person's likelihood of developing chronic diseases, such as diabetes, heart disease, stroke or cancer...Recent Canadian research, supported by a considerable body of US and international data, has associated the built environment, including active transportation and physical activity infrastructure, with more physically active lifestyles...Healthy community design has been demonstrated to support health objectives, including facilitating physical activity, reducing injury risks for pedestrians and cyclists, and improving public safety and perceptions of safety."

Health outcomes in Clarence-Rockland are currently poor: the Eastern Ontario Health Unit, of which we are a part, ranks 95 out of 101 health units in Canada, meaning that only 6 health units experience

worse health outcomes than our unit. In our health unit, we have an asthma rate of 11.2%, a diabetes rate of 9.1%, and an overweight rate of 36.3%. The neighbouring City of Ottawa Health Unit has much better health outcomes, ranking 11 out of 101. There is a noticeable difference between our health units in levels of leisure-time physical activity, which likely explains part of the difference in health outcomes. In Eastern Ontario, 54.9% of the population is moderately active or active, while in Ottawa, 63.3% of the population is moderately active or active. This Smart Cities project seeks to improve conditions for physical activity to support better health outcomes for our community.

Beyond improved health outcomes, we can expect improved environmental quality and economic benefits as a result of improving our active transportation network and incentivizing physical activity through the Smart Cities project. Non-motorized transportation does not require fuel and does not cause air pollution. Not only that, but when people bike or walk rather than drive, they are exposed to less air pollution. Multiple studies have shown that people inside vehicles are exposed to much higher levels of pollution than those walking or biking along the same routes, because fumes from other vehicles become trapped inside the car. The higher pollution levels inside cars are especially harmful to children because air pollution can stunt lung growth and lead to asthma and other respiratory conditions.

The Toronto Center for Active Transportation notes several positive economic impacts of active transportation supported by research: “A worldwide survey revealed a significant upward trend in retail activity within areas where there had been a concentrated effort to improve safety and comfort for pedestrians.” They report that a survey of the Annex neighbourhood in Toronto showed that customers “arriving by foot and bicycle visit the most often and spend the most money per month.” In addition to positive retail outcomes, communities benefit economically when they support travel by walking and biking: costs for walking and biking infrastructure are significantly lower than costs for motorized vehicle infrastructure, they report.

The safe, connected bicycle and pedestrian networks we will build through the Smart Cities project will lead to innumerable positive outcomes for our community—and for communities across Canada who will be inspired to follow our lead. The above noted text outlines our strategy for measuring progress toward our desired outcome. As we work towards our goal we will apply metrics around connectivity (based on the FHWA Multi-Modal Connectivity guide written by Alta Planning and Design), participation rates in in-person engagement events, usage of our apps, vehicular/bike/walk counts, online reporting, participation rates in our gamification proposals and then concurrently working with the local health unit, school boards and other community organizations to track data and to demonstrate change over time. Our team has an understanding of metrics and evaluation and is well-positioned to put data and analytics behind our statements of progress. This stems from baseline data and moves forward through reporting and check-ins. We know how to translate statements around "our city is more connected" or "our city is healthier" to one with outcomes and measurement.

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. – 1,500 words maximum

Clarence-Rockland's Smart Cities proposal to achieve a city with a complete active transportation network is grounded in extensive community engagement over multiple years and builds on several major community planning efforts. Our Recreation Master Plan, Strategic Plan, and Official Plan update all identified active transportation connections to key destinations as high priorities for our city, and outreach conducted specifically for the Smart Cities Challenge confirmed these as key areas of concern.

The feedback described here comes from every corner of our city. Both rural and urban residents weighed in through our planning efforts, as well as residents with disabilities. In an effort to capture as many viewpoints as possible, all community outreach was conducted in both English and French. Clarence-Rockland is designated an Officially Bilingual municipality. We offer residents all services in the language of their choice. This commitment extends through all levels of our operation.

Smart Cities Challenge (SCC): In response to the Smart Cities Challenge, the municipality conducted an online survey of community stakeholders in February 2018 to identify the most pressing challenges they face on a daily basis. Respondents could choose from seven (7) answer choices or write in a response. They were also invited to provide additional comments.

In order to reach as many stakeholders as possible, the municipality advertised the survey through Council meeting TV broadcasts, Facebook boosted posts, Twitter, the City's website, and e-newsletters, and issued invitations to participate to the Chamber of Commerce, community associations, developers, and more. This inclusive approach provided an opportunity for all community stakeholders to voice their perspectives. 842 stakeholders responded to the survey. For the Strategic Plan, outreach events were also organized at targeted locations throughout the municipality (one per ward). It was an hands-on approach including a booth at a local fair.

As anticipated, stakeholders voiced a variety of views in the survey. Many of the respondents identified specific projects such as the widening of Highway 17/174, transit service improvements, ability of local businesses to survive, high municipal taxes, road maintenance, and lack of local job opportunities as issues. While respondents identified many different issues, a common thread throughout the responses was a concern with transportation and health in the community. "Enhanced transportation options" was the most commonly identified challenge by far.

Some representative comments from the survey include: "Walking in Rockland is not very safe and roads are in bad shape but better than sidewalks where sidewalks exist, so we have to walk on the roads." "The speed of cars on my street scares me and makes me fear for the safety of my children." "Rockland is set in a wonderful place along the river, but the setting is not integrated into community life...the water is inaccessible for those without cars to drive to it and there are no community trails. It's like the town was just plopped down here but could have gone anywhere." "My challenge is finding time to get healthy and active without breaking the bank, especially in the winter." "Sidewalks don't connect

to major establishments.”

Recreation Master Plan: In 2015, the municipality conducted a Recreation Master Plan (RMP) study which involved an extensive community survey to identify priority stakeholder recreational needs in the municipality through 2030. The inclusive public engagement process included public workshops, online surveys, and user group surveys. The RMP reported that “bike paths were the most frequently cited community need in all consultations.”

Goals 1 and 4 of the RMP directly connect to the municipality’s Smart Cities Challenge goal. Goal 1 is “Promote health, wellness, and active living,” and goal 4 is “Prioritize and enhance outdoor recreational opportunities through trail, bike path, and park development.”

Strategic Plan: As part of the planning process for the Strategic Plan, the municipality asked community stakeholders to identify those services which are most important to them, their level of satisfaction with services, strengths and weaknesses of the municipality and future opportunities.

The municipality asked for community feedback through online communications as well as in person at Town hall meetings and community events. A specific Town hall meeting was also convened for community businesses. Community feedback from over 1,300 members of the public identified sidewalks and pathways as a priority item for the community.

The Strategic Plan was formally approved in February 2018 and recognized four major goal areas for the municipality, one of which is Health and Wellness. Under this pillar, active transportation is identified as a strategic priority for 2019-2021. One of the goals under this initiative is promoting active transportation by developing an integrated bike path and cycling system. As part of this consultation process, the city went directly to high schools to solicit input as well as stood outside the doors of Walmart to speak with anyone interested.

Official Plan Update: Municipalities are required to update their official plans every five years. Clarence-Rockland initiated an update in 2011. The City utilized its website, public open houses, and public meetings to solicit input into the Official Plan update process. The update enabled all stakeholders within the municipality to provide feedback for proposed amendments to the Official Plan. The development community was particularly involved in reviewing and providing comments on proposed policies.

The approved Official Plan highlights the important role of walking and biking in promoting health lifestyles and providing a transportation option. It declares that “Protecting and expanding the existing pedestrian and bicycle network in the City is essential to creating quality of place. Trails promote healthy lifestyles and provide an alternative transportation network.” The Plan encourages people to walk for health reasons and reduce their dependence on the automobile.

Section 7.11-7.14 of the OP reflects the results of feedback received from our stakeholders in relation to pedestrian policies, cycling policies, multi-use policies and an Active Transportation, Pedestrian and Cycling Network. Section 7.11 Pedestrian Policies asserts that “streetscapes should be safe, convenient,

and attractive for pedestrians...the Council shall establish a pedestrian walkway plan for the urban area that outlines areas where walkways exist and where they should be created within an overall network. Such a plan shall encourage pedestrian interconnections between home, schools, recreational areas, and shopping areas.” Section 7.12 Cycling Policies calls for “a plan for the urban area that identifies cycling routes. Such a plan shall encourage the interconnections between bike routes and open space areas. Such a plan shall be designed to improve the viability of cycling as an alternative to car use.”

Accessibility Committee: The City has a long-standing Accessibility Committee made up of community members and a council member. It was created in 2003 to identify priority accessibility needs for City facilities including sidewalk infrastructure. The Committee provides a forum for persons with disabilities to raise issues and concerns regarding accessibility and provide advice, guidance and recommendations regarding accessibility policies and programs.

The Committee oversees an approved five-year accessibility plan to ensure that the city’s programs and services are accessible for people with disabilities. The current plan has identified construction of accessible pathways to designated points of interest and completion of a master transportation plan (inclusive of Active Transportation) as priority initiatives in 2019.

The City has gone to great lengths to ensure that all stakeholders (residential, business sector, developers, and institutional) have had the opportunity to provide meaningful two-way feedback in the development of municipal policies and programs. As noted above, extensive use has been made of the City’s website, town hall meetings, open houses, social media, televised Council meetings etc. to ensure that all stakeholders are aware of City initiatives and have the opportunity to provide vital feedback so that the municipality is able to respond to the community’s needs in a timely fashion. In an effort to be more inclusive, the city council meetings are held in a rural area while city hall is in the urban area of Rockland.

To sustain community engagement for the duration of the Smart Cities Challenge, the administration will continue to use the communication tools referenced above but will go even further. The City will form a Smart Cities Steering Committee to establish a clear two-way information exchange as development and implementation of the project proceeds. The Committee will comprise members of the public, the Chamber of Commerce, development community, school boards, the Chief Administrative Officer and selected senior staff to coordinate the dissemination of regular updates, secure stakeholder feedback on program development and implementation issues, and develop performance objectives and evaluate progress. A reporting schedule and template will be developed to provide regular updates/feedback to Council, the Department of Infrastructure, and key community stakeholders. The CAO will work with the community to ensure that the leadership considers Age-Friendly and all inclusive perspectives.

As discussed in Question 6, community members beyond the Steering Committee will be engaged through the distribution of smart bike lights, interactive public art, community goals reporting displays, and tactical urbanism events..

SUB-SECTION 2 – PRELIMINARY PROPOSAL DETAILS

Question 6

Please describe your preliminary proposal and its activities or projects. – 2,000 words maximum

Part A of our proposal centres around deployment of data collection technologies, with four goals: (1) collecting information on demand for active transportation facilities to inform planning efforts; (2) laying the groundwork for the city to take advantage of future Internet of Things (IOT) applications; (3) real-time information on progress towards community goals; and (4) and resident engagement through the gamification of public space.

The first step in deployment of data collection technologies will be the establishment of basic smart city infrastructure. The City will install a Low Power Wide Area Network (LPWAN), a low energy, low bandwidth, long range wireless system that allows objects to talk to the internet without using 3G, WiFi or Bluetooth. The system will be built with open data technology. This infrastructure will support the projects outlined in this proposal, as well as setting the city up to integrate future IOT technologies as they become available.

Data collection technologies deployed for this proposal will include sensors and smart bike lights.

Sensors will be attached to existing street furniture like poles and benches that are capable of monitoring traffic volumes and speeds as well as environmental quality. They will transmit information back to a central network server.

Smart bike lights, like those under development by our partner See.Sense, will monitor road surface quality and produce real-time journey maps (refer to See.Sense Letter of Support). The bike lights will use the LPWAN network to communicate this information to the city, while offering several benefits to cyclists. The lights work in conjunction with an app that users can install on their cell phones, and provide theft and vandalism alerts, warn of upcoming potholes, and alert the user's designated contact within 30 seconds of a crash. Bike lights could potentially communicate with smart street lights to give cyclists priority at intersections. The distribution of the bike lights is also a form of connecting the project with the community. The city will organize events to hand them out and communicate the benefits of the project. For example, a booth would be organized at the Riverfest in July. The added benefit is simply the distribution of lights (a common positive practise in encouraging cycling regardless of the technology). Information will also be posted to the city's website and through social media channels.

In addition to the numerous safety and data collection benefits they provide, smart bike lights will also allow us to incentivize bicycling and beautify public space. Smart bike lights will allow data collection on how frequently residents ride and how far they ride. The City will set up challenges like "ride three days in a row" or "ride ten miles in a week." When a cyclist achieves the goal, they will automatically receive benefits, like discounts at local businesses, gifts from a partner organization, and more.

But we won't stop there--the city will take the smart bike light technology to the next level by

“gamifying” public space. We will connect cycling to control over interactive public art pieces at key community destinations. When cyclists meet a challenge goal, they will receive a code allowing them to control elements of a public art piece. While the exact nature of the art piece will be determined in collaboration with artists and partners, it may look something like this: cyclists who have the code can influence the behavior of water jets at a fountain, or can control the colour of lights in a display, or can input a message that will be projected on a billboard. The possibilities for engagement are endless. We will create a virtuous cycle wherein cycling leads to the beautification of public space. If this doesn't get adults excited, it will certainly get children and youth involved in the experience. We will develop a corresponding plan for walking promotion applying the same principles.

Locations with interactive public art pieces will also display real time information about progress towards community goals. Changes in pollution levels, average traffic speeds, and total miles walked and cycled in the community will all be displayed visually. The city will use this platform to tell the story about its efforts to build smarter, and in so doing help the public and political leaders to envision a better future—and support spending the dollars necessary to reach that future. The billboard on the well-travelled highway will also contain this information for drivers to read when bumper to bumper heading to Ottawa or home.

We have the resources in place to ensure wide distribution of the bike lights and sensors and an approach to encourage participation. We understand that wide uptake is necessary for success. This concept is both ambitious and achievable. At an early stage the municipality will strategize and workshop an approach to distribution and participation. We acknowledge that this will not happen through traditional approaches and channels. We will work with partners and be deliberate in our efforts to expand our reach. We will engage people with specific expertise in this area to make it happen. There is no shortage of opportunities for outreach: the bus stop, place of worship, schools, arenas, library, Riverfest, Walmart, etc. Clarence-Rockland has state-of-the-art rural and urban medical centres which would assist in distributing and encouraging participation. This will help demonstrate the linkage between health and transportation at a local level.

Part B centres on using the data collected in Part A to identify and construct needed connections.

We will combine data collected through sensors and bike lights with network connectivity analysis methodologies made newly available by the U.S. Federal Highway Administration's Guidebook for Measuring Multimodal Network Connectivity. Our partner Alta Planning + Design wrote this guide with the FHWA. The guide outlines five core components of pedestrian and bicycle network connectivity, including network completeness, network density, route directness, access to destinations, and network quality. The guide provides a step-by-step framework for selecting and applying connectivity measures to help make decisions that are grounded in a comprehensive vision, supported by clearly defined goals and measurable objectives.

We raise this guide as an asset for a particular reason. Municipal policies such as Official Plans always talk about the goal of a connected network but it is often a broad overarching statement with no metrics. The guide helps make it measurable. It talked about network connectivity and measures: how complete is the network? how dense is the network? how direct is the network? and what destinations

can you access with the network?

We will put this information on active transportation needs to use immediately. We will use a tactical urbanism approach to quickly test solutions to network gaps. With data provided by sensors and bike lights, we'll be able to monitor results and adjust solutions as needed. These experiments will help us design permanent infrastructure changes and build the public support needed to make those changes. The need to engage and undertake this challenge hand-in-hand with public is the only way to make it happen.

Tactical urbanism is a proven approach becoming popular with cities of all sizes around the world to make the changes communities desire now, with a low investment of time and money, rather than wait for years to construct a permanent solution. The tactical urbanism approach will include testing short-term installations like curb extensions, bike lanes, and parklets using paint, bollards, planters, and other materials, allowing residents and business owners to experience potential changes and give feedback. Alta Planning + Design also has direct experience with the implementation of tactical urbanism projects. We continue to raise this issue of the experience of Alta as it is necessary to help a community like Clarence-Rockland take on this kind of challenge together. Through sensors and smart bike lights, the city will collect real-time information on the impact of these installations. Depending on partner and community interest, the city may introduce these short-term installations at an Open Streets event.

The primary outcome of these interdependent efforts—data collection, engaging the public with incentives and public art, testing solutions—will be a complete active transportation network that is well used by our residents. Not only will our residents be healthier because of increased physical activity, they'll feel safer and more connected to their community too. Residents who spend hours driving to work in Ottawa will be freed from their cars when they come home to Clarence-Rockland—able to walk or bike to grocery stores, to the arena, to the river, to the library, and more. The city will also be in a better position to tie-into the future active commuting pathway system associated with the highway widening and future regional LRT. This is an example of our forward looking nature. Clarence-Rockland will be a more attractive place for prospective residents, businesses, and tourism supporting the City's economic development. Our smart city approach will allow us to achieve this outcome by making strategic, rapid, responsive investments, all using open data and transparent processes that will allow any city in Canada to replicate our results.

Investments in active transportation will also help to revitalize the downtown core. Like many Canadian municipalities the downtown core has many challenges and is often put aside. It revitalization has been studied but not funded. The downtown core is often a busy arterial route or even a County truck road. Dependence on on-street parking also drives decisions around beautification. The smart cities challenge will trigger added benefits to our downtown core. When a vision with quality, protected and connected cycling routes and associated walking routes in a downtown core is a vision but not a reality. When someone in a leadership position at the city sees examples from other communities and wonders why it is not possible here, the Smart Cities challenge is needed to help make that change a reality.

Question 7

Please describe the ways in which your preliminary proposal supports your community's medium and long-term goals, strategies, and plans. – 500 words maximum

Clarence-Rockland has developed several plans through extensive community engagement, all of which direct us to invest in active transportation. The Parks and Recreation Master Plan directs us to “promote health, wellness, and active living,” and “prioritize and enhance outdoor recreational opportunities through trail, bike path, and park development.” The Official Plan asserts that “protecting and expanding the existing pedestrian and bicycle network in the City is essential to creating quality of place. Trails promote healthy lifestyles and provide an alternative transportation network.” Our adopted Accessibility Plan sets a goal for 2019 of constructing of accessible pathway improvements to specified points of interest within the municipality.

The principle plan guiding our future direction is our Strategic Plan. The foundation of the recently approved Strategic Plan is extensive community interaction and feedback. As such, it is reflective of the short, medium and long-term goals of our community. This proposal is designed to accelerate our progress in all four of the priority areas: sense of community, health and wellness, financial stability, and environmental responsibility.

The proposal will support the objectives of our sense of community priority: riverfront development (by connecting residents to the river), downtown revitalization (by incentivizing walking and biking to local businesses and making it safer to do so through tactical urbanism demonstration projects, followed by long term infrastructure), communication (by creating a community dashboard reporting on progress towards goals), and image and promotion (by shining a spotlight on our Smart City transformation).

The Smart Cities project will also support our health and wellness objectives: active transportation (AT)(by connecting every resident to key community destinations by walking and biking), accessibility standards (by identifying and remedying accessibility barriers), emergency preparedness (by laying the foundation for future Internet of Things applications that could connect to emergency vehicles), and recreational facilities (by filling the gaps in our AT network that prevent residents from connecting to recreation centres).

This project will support our financial stability objectives of economic development, commercial/industrial growth, tax base, and funding opportunities by drawing national and international attention to our city’s strengths and highlighting our collaborative, responsive governmental culture.

Finally, this project will support the environmental responsibility objectives of our Strategic Plan: growth management (by strengthening our relationships with developers, providing clear guidance on incorporating new developments into a complete AT network, and providing real-time data on traffic conditions), planning (by providing data on current conditions and identifying key network gaps), and asset management (by providing data on roadway conditions and preparing the city’s IT infrastructure to collect data from sensors embedded in assets).

In addition to building on these adopted plans, the Smart Cities project will work in concert with our Transportation Master Plan (TMP) process, kicking off in 2018. The TMP will identify AT needs in the municipality. The network connectivity analysis that is proposed in this application will build on and enhance the TMP. A project such as the Smart Cities Challenge is needed in order to move away from traditional approaches to TMPs.

Accessibility Plan.pdf (151.4kb)

Official Plan.pdf (593.74kb)

Parks and Recreation Master Plan.pdf (2.76mb)

Strategic Plan.pdf (1.83mb)

Question 8

Please describe your community's readiness and ability to implement your proposal successfully. – 1,000 words maximum

Clarence-Rockland has experience successfully implementing complex projects, and has worked to put the necessary capital development, technical, financial, partnership and community engagement processes in place to deliver the Smart Cities project. We will build off this framework and augment our capacity during the final proposal phase to ready ourselves for managing the Smart Cities project.

Project management and approvals: Both the Community Services and the Infrastructure and Planning Departments have the necessary staff and expertise to deliver complex and multi-disciplinary projects. The recent restructuring of the infrastructure and planning disciplines of the municipality has provided a “one-stop shopping” capability in terms of receiving approvals, implementation of capital programs and liaising with our stakeholders. Committee of the Whole/Council meetings are each held two times a month, enabling prompt approvals for the delivery of capital programs. As the need arises, Council has a demonstrated history of calling special meetings to fast-track a project.

Technology: The City has experience implementing new collaborative technologies to enhance efficiency. For example, we currently utilize a connected technology process (EScribe) to prepare Committee of the Whole and Council reports. It enables the Committees of Council (which represent our community stakeholders) to review and provide input into the staff reports as they are developed. This facilitates a two-way communication process with our stakeholders. Additionally, the municipality will have a SharePoint program that is to be implemented by the end of 2018. This collaborative tool will improve document management and ensure that project information is available to our stakeholders in a timely fashion. It will also provide a venue for stakeholders to provide feedback and suggestions to the project team through collaborative sites.

Finances: The City has the dedicated financial staff to develop, monitor and control budget expenditures. A financial controller would be assigned specifically for the Smart City’s Project.

Partnership and community engagement policies: The municipality has well established policies that will be critical in communication with our community and for the development and implementation phases

of the project. Continuous public consultation and feedback and monitoring and quantifying performance successes are key requirements of this program. The municipality will rely extensively on existing policies such as its Public Consultation Policy, Bilingualism Policy, and Procurement Bylaws to meet and exceed these requirements.

While we have staff and systems in place to handle complex projects, we recognize our limitations as a small city. We've learned to work with partners to extend our capacity and achieve our goals. For example, from 2001 to 2008, Clarence-Rockland worked with local stakeholders, engaged community members and oversaw multiple consultants to successfully plan, fund, and build an \$18.6 million recreational and cultural complex. The planning process began, as the Smart Cities project will, with the creation of a planning committee comprised of residents, community group representatives, school boards, and other stakeholders. We worked with consultants to extend the capacity of the city, hiring consulting firms for a feasibility study, community outreach, a funding work plan (including establishing partnership guidelines and a working financial plan), as well as a fundraising campaign. We met with community, sports and cultural groups, convened four public meetings, and partnered with the local school boards. The result was a beautiful recreational and cultural complex that is now a centrepiece of our community. Since then, the City has continued to strengthen partnerships with recreation program partners such as local sports associations, the YMCA, and the Optimist Club, most recently engaging with them around the Parks and Recreation Master Plan in 2016.

The City will continue to build capacity before the project begins by developing partnerships, hiring staff, and beginning a comprehensive transportation planning process.

The City already has good relationships with existing partners. Bi-annual meetings are held with developers to share information from City Hall. The relationship with the Chamber of Commerce has also recently been strengthened through membership and regular attendance at Board meetings by the Mayor and CAO. This project provides opportunities to strengthen these existing partnerships and to build new ones.

We are laying the groundwork for the Smart Cities project's comprehensive network analysis by conducting a Transportation Master Plan in 2018. There will be an active transportation component of this study to recommend programs to promote, educate and encourage people of all ages to choose active transportation modes more often. The study will begin to identify the need for sidewalks and trails, multiuse pathways, cycling facilities on roads, segregated cycling lanes, paved shoulders, bike rack, and other supportive facilities. The Smart Cities project will build on and extend this planning process.

Recognizing the complexity of this project, the City will create two FTE positions tasked with spearheading the management of the Smart Cities project. These staff leads will report to the Chief Administrative Officer. They will form a Smart City Implementation Team comprising representatives from the community, Chamber of Commerce, developers, the Health Unit, the Chief Administrative Officer and senior staff. When the Team is created, additional consideration will be given to ways to ensure representation in this leadership group reflecting age-friendly and inclusive policies. The staff leads will work with the Smart City Implementation Team and consultants to deliver all aspects of the

project during the final proposal phase and in implementation. Their tasks in the final proposal phase will include development of a community consultation plan, establishing partnerships, establishment of a performance analysis program to measure success, educating staff and stakeholders on new technologies and data management, and readying the city's systems to receive and process data from sensors.

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. – 500 words maximum

The CAO has committed to dedicating 2 FTE positions to delivering the smart city project. While some funds will be directed at staff resources, the city is committed to this need to focus staff efforts to make the project a success. All of the funds necessary for increasing staffing will not come from the grant alone.

This is an opportunity for Clarence-Rockland to continue to champion innovation. We need this help to build capacity on all fronts (technology and physical infrastructure). We have a solid base and the cultural of innovation but we need this type of assistance to create change.

The 2 FTE positions will be charged with: 1) educating staff and stakeholders on new technologies and data management; 2) developing relationships with partners and engaging community members; 3) creating and managing a Smart Cities Implementation Team; 4) running a pilot data collection program with a volunteer group of residents; and 5) overseeing consultants.

Funds will be dedicated to this pilot data collection program. This includes professional services to aid in its development and implementation. The small-scale data collection pilot will include a test of the bike light and sensors with a small group of residents.

For things to be successful they must be funded. This includes a strong communication strategy for the overall project that is staffed with resources available to ensure success. Funds will be used to develop a communications plan far beyond the typical approach with an ultimate goal of significant reach into the community.

Solid baseline data is an important component of this task. The baseline data has two component, the first being the baseline health data. Resources will be dedicated to working with the local health unit and other agencies and community groups to develop this baseline.

The other component is baseline GIS data about the current state of our active transportation network. This includes readying our systems for data collection, storage, and processing, and purchasing materials for the pilot data collection program. Solid GIS data related to sidewalk systems is often missing from existing municipal GIS systems and its collection will help with future level of service calculations for walking. Other data is needed for our GIS analytics tasks.

The City needs a comprehensive workplan for physical implementation. This includes consideration for

capital projects and the integration with other municipal policy (i.e., Official Plan, TMP, Strategic Plan, etc). This relates to the implementation element of the project. Leveraging investment but also the plans for tactical urbanism in a meaningful way. Funds will be used for a feasibility assessment of a tactical urbanism project in the City of Clarence-Rockland.

A feasibility assessment is also needed for the public art project related to the gamification element of this initiative. Funds will be dedicated to engagement with stakeholders and the public to identify the appropriate location for this public art feature. Also, the physical modifications required to implement the lighting project.

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. – 500 words maximum

Achieving the ambitious goals laid out in this proposal will require collaboration with partners from local businesses and community organizations to companies with technical expertise and smart city technology vendors.

Many of these core partnerships are already in place. The City will rely on its longstanding relationship with the YMCA and Optimist Club for the public engagement and program promotion elements of the Smart Cities project. It will work with our development community to promote and sponsor the project, but also to ensure that new developments are connected to the active transportation network and outfitted with smart city technology. The City will also engage the United Counties of Prescott Russell (UCPR), inviting UCPR to join the Smart Cities Implementation Team. UCPR is responsible for the County road network within the municipality. In order to ensure continuity of cycling and pathway networks, it will be necessary to involve them to facilitate the coordination of a continuous network.

Clarence-Rockland has already begun development of relationships with companies with technical expertise and smart city technology vendors. Attached to this application are letters of support from Alta Planning + Design and See.Sense. Alta is a leader in bicycle and pedestrian analytics, planning, design, and engineering, and can support network analysis, community engagement, and tactical urbanism demonstration projects. See.Sense produces smart bike lights that will help the city to crowdsource data and incentivize cycling.

The administration has contacted the key partners identified above and they have confirmed their participation in this initiative. The precise roles and responsibilities of these partners will be formalized in the Final Proposal phase of the award process.

Additionally, the City now has a formal "twinning relationship" with Boeun City of the Republic of Korea. We are aware that they have adopted Smart Cities approaches and associated technologies. This will provide an opportunity to share experiences, exchange views and identify Smart Cities technologies that may be considered in advancing our project.

Beyond these existing partners, the City plans to select partners to support deployment of the Low Power Wide Area Network (LPWAN) and traffic/pollution monitoring sensors, development of internal data management protocols, and creation of interactive public art pieces.

The City also anticipates involving additional community partners in sponsorship, promotion and community engagement, including the Chamber of Commerce (which can support the participation of the retail sector), Canadian Tire Corporation, Rockland Sports, the four school boards, and the Regional Health Unit (which can also assist in performance measurement).

Partnerships or service procurement that involve financial compensation will be secured in keeping with the principles outlined in the city's Procurement Policy. The procurement policy's goals are to 1) encourage competitive bidding; 2) ensure objectivity and integrity of the competitive procurement process; 3) ensure fair and equitable treatment of all bidders; 4) ensure openness, accountability and transparency while protecting the financial best interests of the City; 5) obtain the best value when procuring goods and/or services for the city; 6) avoid conflicts of interest; and 7) ensure compliance with trade treaties or agreements.

SECTION III: OTHER REQUIREMENTS

Provide a 200-word summary of your preliminary proposal. This summary, along with your Challenge Statement, will be posted online in both official languages.

Our residents have made themselves heard: they want better active transportation options to connect to parks, businesses, and schools in our community. In response, we have planned a comprehensive two-part process that uses smart city technology. The process includes A) Deployment of sensors and smart bike lights that monitor traffic volumes and speeds (car, bicycle, and pedestrian) and environmental quality paired with resident engagement and behavior change through gamification of public space and real-time information on progress toward community goals; and B) Geospatial analysis augmented by data from sensors to determine key weaknesses in network connectivity for active transportation and use of tactical urbanism strategies to quickly test and evaluate solutions to network gaps, leading to permanent investments.

The primary outcome we aim to achieve is this: Every resident will be able to connect to all key community destinations within walking and bicycling distance of their homes. Along the way to that goal, we'll increase trail usage, reduce car traffic, improve our readiness for Internet of Things technologies, enhance resident engagement with public space, create incentives for active transportation, and spark a culture shift within our City operations towards iterative, responsive street design that puts people first.

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.clarence-rockland.com/index.php/en/visitors/smart-cities-v>