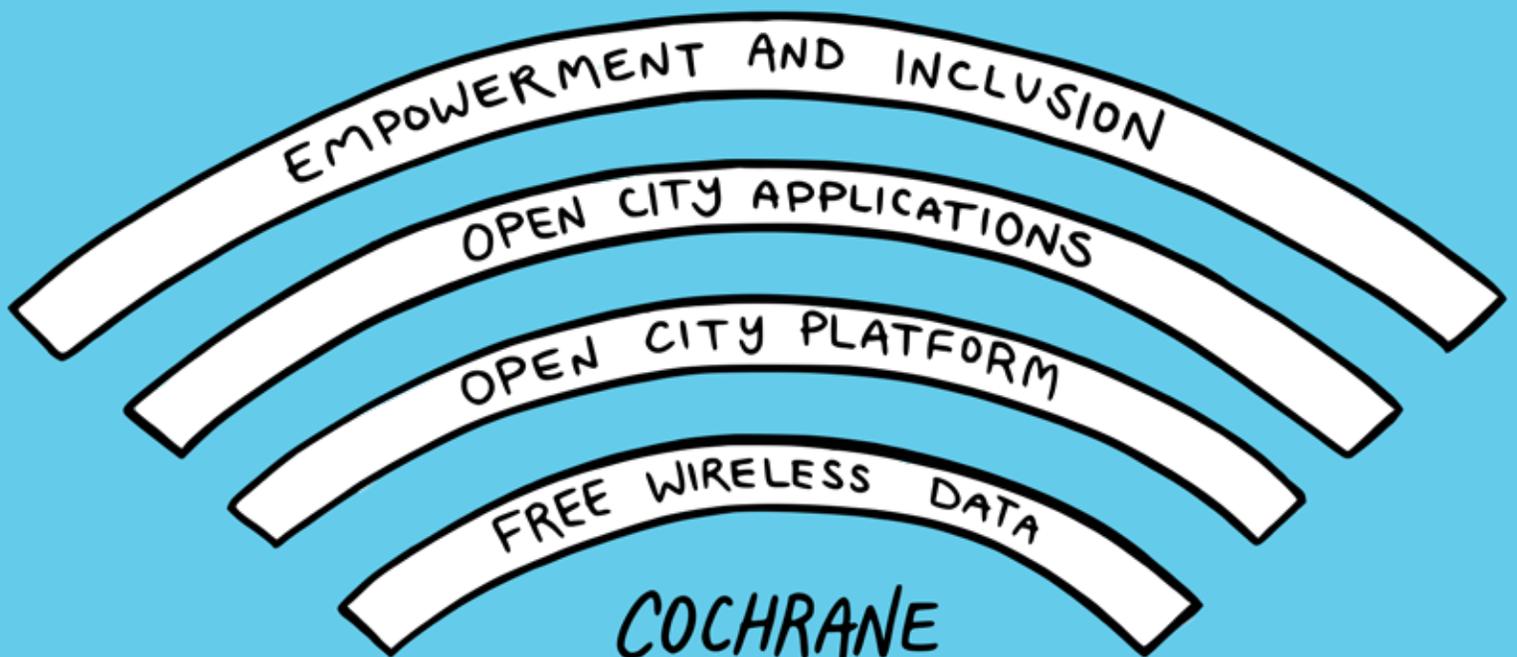


Smart Cities Challenge Proposal

Town of Cochrane

April 2018



COCHRANE
CARES



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I. Applicant Information

Question 1:

Please provide the following information on your community.

- Name of community: Cochrane
- Province/Territory: Alberta
- Population: 25,853
- Indigenous community: No

Question 2:

Please select a prize category.

On April 23, 2018, Council supported competing for the \$5 million prize based on the following approved motion:

That Council supports the Smart Cities Challenge Statement - "Working together, our community will build a culture that empowers every resident who feels isolated or lonely to engage in local community life and develop meaningful relationships that inherently create a strong sense of belonging for everyone in the Cochrane area, and ultimately Canada" and further

That Council supports submitting the Cochrane Cares - Smart Cities Application on the Impact Canada Platform to Infrastructure Canada and declares it is competing for the \$5 million prize.

II. Preliminary Proposal

Sub-Section 1 - Problem Definition (Total of 55/100)

Question 3:

Please describe your Challenge Statement in a single sentence that guides your preliminary proposal. It should describe the outcome (or outcomes) you hope to achieve.

Working together, our community will build a culture that empowers every resident who feels isolated or lonely to engage in local community life and develop meaningful relationships that will inherently create a strong sense of belonging for everyone in the Cochrane area, and ultimately Canada.

Question 4:

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

Over 40% of people living in Cochrane, Alberta, feel lonely or isolated, according to a recent community report (Cochrane Cares, 2017). In 2016, almost half (46%) of youth, 44% of adults, and 29% of seniors reported that they always or sometimes felt lonely or isolated. This statistic is shocking and alarming for our town, yet, unfortunately, the numbers are not unusual.

Across Canada, loneliness and social isolation are growing into significant public health crises that are harming our relationships, health, and economy. Although Canadians have a global reputation for being friendly and welcoming, 50% of us rarely interact with our neighbours (Statistics Canada, 2000). Statistics Canada (2011) reports that nearly one-quarter (21%) of people who live alone have a strong sense of social loneliness and are more likely to have poor quality personal networks. This is of great concern knowing that the number of Canadians who live alone is the highest that it has ever been, representing the most common household for the first time since Confederation. In Vancouver, residents recently identified social isolation as their most pressing concern, over other issues such as homelessness and addiction (The Globe and Mail, 2013). A recent survey by the Canadian Association of Retired Persons (2017) found that more than 14% of seniors have nobody to talk to. A recent study of Canadian university students found that more than 66% felt “very lonely” in the past year (National College Health Assessment, 2016).

Canadians are not the only ones suffering from loneliness. In the United States, over one third (35%) of older adults suffer from chronic loneliness, equating to over 42.6 million people (AARP, 2010). In 2013, Britain’s Health Secretary Jeremy Hunt gave a speech about the isolated many in his country, calling attention to the “forgotten million who live amongst us ignored, to our national shame.” Britain has since launched a national campaign to end chronic loneliness. As William Sadler (1987) observed, “many of us in today’s world are living on the verge of a lonely life. A significant number of us have experienced the ravages of loneliness; some of us have become debilitated, depressed, and demoralized by it.”

Loneliness and social isolation may seem to be trivial matters, but Ami Rokach, psychologist and lecturer at York University in Toronto, believes this is a bigger problem than we realize (The Globe and Mail, 2013). Research by Julianne Holt-Lunstad, professor of psychology and neuroscience at Brigham Young University, found that loneliness contributes comparable risks to well-established risk factors such as physical activity, obesity, substance abuse, responsible sexual behaviour, mental health, injury and violence, environmental quality, immunization, and access to healthcare. Moreover, social isolation has comparable risks to smoking 15 cigarettes a day, and having few social connections has been associated with various health problems, such as decreased immune function, poorer sleep, and higher blood pressure (Holt-Lunstad, 2015) as well as cognitive decline (Zhong, 2017), coronary heart disease and stroke (Valtorta, 2016).

Loneliness has also been linked to depression, anxiety, hostility, alcoholism, psychosomatic illnesses, and even suicide (McWhirter, 1990). One study concluded that lonely people have a 64% increased chance of developing clinical dementia (Holwerda, 2012). Another study found that seniors who identified themselves as lonely had a 59% greater chance of functional decline, and a 45% greater risk of death (Perissinotto, 2012). According to Britain’s Campaign to End Loneliness, “loneliness and social isolation are widely recognized as among the most significant and entrenched issues facing our society,” costing employers £2.5 billion a year (\$4.5 billion CAD).

Loneliness and isolation are often interchanged, but there are important distinctions between these two terms. Social isolation is an objective state, characterized by living alone, having few social network ties, and having infrequent social contact, whereas loneliness is a subjective emotional state associated with the dissatisfaction of the gap between desired and actual social relationships (Holt-Lunstad, 2015). Despite this distinction, research from 70 independent prospective studies, with 3.4 million participants followed for 7 years, has demonstrated that social isolation and loneliness contribute similar health risks (Holt-Lunstad, 2015). Therefore, efforts must be made to eliminate both social isolation and feelings of loneliness. Since loneliness is deeply personal, it is a complex and often time-consuming issue to address. However, it is an issue that “must be addressed given the far reaching and devastating impacts that it has on those who experience it on a daily basis” (Campaign to End Loneliness).

“In light of the mounting evidence that social isolation and loneliness are increasing in society, it seems prudent to add social isolation and loneliness to lists of public health concerns,” writes researchers in *Perspectives on Psychological Science*. If action is not taken, researchers have predicted that loneliness will reach epidemic proportions by 2030 (Holt-Lunstad, 2015).

Cochrane Wants to Take Action:

Considering the significant proportion of Cochranites (41%) that feel lonely or isolated and the risks associated with such feelings, we are compelled to take action to restore the health and well-being of our residents. Cochrane residents have expressed their earnest desire to have improved community connections on multiple occasions, such as public engagement sessions and periodic community surveys.

During public discussions about the Smart Cities Challenge, the vast majority of residents expressed that they want a solution that will build community and support the social fabric of our town. Some want to socially re-engineer the town by breaking down barriers that limit engagement, thus empowering every resident to fully participate in all areas of civic life. Others have suggested that we should establish a network that can provide information about local issues and opportunities to help individuals better engage with each other. It is very apparent that if we are to improve quality of life for our residents, we need to restore social well-being and community relationships.

The feedback we received from community engagement sessions agreed with the feedback we received from our Cochrane Cares report, published in 2017. Across demographic groups and feedback channels, residents identified several key issues and themes including the need to enhance feelings of inclusion and belonging, the need for public transportation, less traffic congestion, affordable recreation opportunities, 'things to do' for youth, and increased awareness of existing programs and services. The Cochrane Youth Council confirmed that youth are looking for easier ways to serve the community.

The Cochrane Cares report also revealed residents' feelings of loneliness and social isolation, as well as a significant decrease in quality of life in the town since 2014. In 2014, 99% of respondents felt that quality of life in Cochrane was good (31%) or very good (69%) (Community Satisfaction Survey). However, in 2016, only 72% of respondents were satisfied (48%) or very satisfied (24%) with the quality of life in the community.

Cochrane has been one of the fastest growing communities in Canada over the last decade, with our population more than doubling in size from 12,000 residents in 2001 to over 26,000 in 2017. The infrastructure to support this growth has not kept up, and residents are dissatisfied with traffic congestion and mobility problems that are keeping us separated. Moreover, quality of life in Cochrane has likely decreased due to emerging trends in the social sector. Cochrane Cares identifies the five key drivers of social change in our community:

1. Growing complexity and the need for collaboration: Cochrane faces unique socio-economic pressures from demographic groups such as youth, seniors, First Nations, and newcomers.
2. Increasing cost of living: rapid increases in the cost of living and housing are increasing disparity among residents of Cochrane. Issues such as housing affordability, transportation accessibility, food security, and social services availability have emerged in the community.
3. Increasing economic disparity: the gap between rich and poor is growing in Cochrane, and certain populations are facing health and/or social problems resulting from this inequality. This rising disparity diminishes social cohesion and challenges the idea of equal opportunity for success.
4. Changing technology and expectations of government: residents want an open government that shares and communicates data with the public, and a system that gives everyone a greater voice in the decision-making process.
5. Demographic change: significant demographic changes and challenges to sustainability are emerging in Cochrane as a result of rapid population growth, shifting immigration patterns and an aging baby boomer generation. These challenges are affecting the cost, diversity, and types of services required by residents in the community.

These emerging trends are placing pressures on residents and likely contribute to increased feelings of loneliness and isolation.

In 2017, Infrastructure Canada launched the Smart Cities Challenge to help bring bold and innovative ideas to life and find solutions that achieve real outcomes and improve the quality of life for residents. This Challenge provides us with an opportunity to take action and eliminate isolation and loneliness from our town. Our residents are suffering from loneliness and isolation and have expressed that they want a “smart cities” solution that will build a stronger, more connected community. Residents want to bring back our small-town feel. They want to know others in their community and be accepted for who they truly are. We all experience loneliness and isolation at times, and we need to work together to meaningfully connect once again.

Our Vision:

We propose to create a smart solution that leverages technology, collaboration, and transportation to heal our communities and bring us together as a town and nation. As stated in our challenge statement, our Smart Cities initiative will empower every resident who feels isolated or lonely to engage in local community life and develop meaningful relationships that will promote a strong sense of community for everyone in Cochrane.

Specifically, our goal is to achieve the following by 2028:

- The percentage of residents who feel lonely or isolated decreases from 41% to under 5%.
- The percentage of residents who regularly volunteer in the community increases from 74% to 95%.
- The percentage of residents who are satisfied with the quality of life in town increases from 72% to 99%.

To track our progress towards outcomes, we will monitor the following metrics:

- The number of residents who report feeling lonely or isolated.
- The number of residents who feel like they belong to local community.
- The number of times residents:
 - (i) give back to the community
 - (ii) interact with friends and family
 - (iii) participate in local events, programs, and activities.
- The number of residents who are satisfied with their quality of life in town.

Family and Community Support Services (FCSS) in Cochrane has proven expertise obtaining such metrics and will be instrumental in monitoring the progress of our Smart Cities initiative.

The Role of a Smart Cities Approach:

The goals that we have set are ambitious, yet achievable through a smart cities approach. Infrastructure Canada defines a smart cities approach as one that “aims to achieve meaningful outcomes for residents by leveraging the fundamental benefits that data and connected technology have to offer: Openness, Integration, Transferability, [and] Collaboration.” Each of these benefits will have a great impact in achieving our outcomes and building community in Cochrane:

- **Openness:** our solution calls for the provision of data and information that is fully accessible and usable by every resident. Being able to access this information will empower residents with choices concerning how to better engage in community.
- **Integration:** providing equal access to data and connected technologies will remove barriers that prevent people from engaging in community, such as lack of finances or lack of mobility.
- **Transferability:** developing technological, open-source, transparent, and standardized solutions will contribute to increased feelings of connection and compassion all across the country as our solutions are applied to numerous communities, regardless of size or capacity.
- **Collaboration:** implementing connected technologies will enable partnerships between local government, businesses, public organizations, clubs, and residents, which will result in improved quality of programs and services, and increased opportunities to participate in community life.

Recent advancements in technology and growing trust in technological solutions make now the perfect time to implement a smart cities solution. Technology has advanced to the point where it can provide fully accessible communication platforms and services, such as virtual gathering places and ride-sharing applications. Moreover, people are expectant of technological solutions and are ready to adopt digital changes.

The impact of technology on social connection has been hotly disputed, with some arguing that increased use of technology has exacerbated feelings of loneliness and isolation. However, a recent systematic review by Hagan (2014) found that technology-based initiatives were among the most effective of all studied interventions in tackling loneliness. Technology has been proven to be vital in enabling social connection, not only in helping residents to maintain existing relationships but also to enable services that support the development of new connections (Campaign to End Loneliness).

While our goals and desired outcomes are ambitious, we strongly believe that we can eliminate loneliness and social isolation from our community through accessible technology. Canadians spend more hours online (36.7 per month) than anyone else in the world, the vast majority (98%) of Canadians having at least one internet-connected device in their home (CIRA, 2016). To reach our residents, we need to meet them where they are and transform technology from being a barrier to connection to becoming a catalyst to foster meaningful relationships. In the words of IBM: “individual technology use isn’t the answer. Using technology to find and create more moments of meaningful engagement is.”

We hope that our solution will help people like Ellen (name changed for privacy) whose story was shared by the Helping Hands Society of Cochrane and Area:

Ellen is a divorced adult who lives alone with her dog. She has always worked part-time jobs where her co-workers are very transient, and, as a result, she does not have many friends in town despite having lived in Cochrane for many years. Her adult children have moved to other provinces, leaving her without a social support network. Due to deteriorating health conditions, she no longer drives and finds it hard to move around the community. She often remarks that she is lonely and would like to get out more to meet with others. However, on a limited disability income, she cannot afford to take taxis very often. Ellen’s quality of life would improve greatly if she could be affordably connected with others in her community.

We are burdened by the social isolation and loneliness felt in our community. Yet, we have hope that we can use technology to build connection and compassion. Through technology, we can enhance collaboration and mobility and develop a solution that is flexible, open, sustainable, and transferable. We will empower residents to shape our community by providing them with tools to create their own solutions. We will test our solution in Cochrane, and then transfer it to any municipality of any size throughout our country. No individual social program or initiative could be so flexible.

As we work together to make Cochrane a better place to live, we can restore the health of our community, and, ultimately, our country.

(2,486 / 2,500 words)

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.

Through our Cochrane Cares (2017) report, ongoing public engagement sessions, weekly Technical Advisory Committee meetings, and online surveys, our community residents have provided feedback that has significantly shaped our Challenge Statement.

After considering the findings in the Cochrane Cares report, we engaged residents through a public engagement session, held on March 1, 2018, from 7-9 pm, and conducted Town of Cochrane staff engagement sessions on March 6th, 7th and 8th. Wanting to attract diverse residents throughout the community, we advertised the public engagement session through multiple channels including local newspapers, outdoor signs, the Town of Cochrane website, community posters, social media (Facebook and Twitter), and word of mouth.

We presented two sample challenge statements at the public and staff engagement sessions and invited residents to share their feedback. These challenge statements, originally drafted by the Town of Cochrane and local technology businesses, are provided below:

Challenge Statement #1:

“Cochrane Alberta will become the ‘Wired West’ with an extensive municipally owned fibre optic utility network supporting an array of Internet of Things (IoT) technologies in our Historic Downtown and adjacent business and residential developments. We’ll connect 90% of businesses and residents within 0.5 km of the fibre optic network.”

The first challenge statement did not catch the attention of residents. They focused more on the second challenge statement.

Challenge Statement #2:

“Led by local high-tech innovators and the Town, Cochrane will develop a transferable wireless platform and applications that will power clean, scalable high-tech growth, data-driven decisions and economic diversification by connecting 99% of businesses, residents, visitors and Internet of Things (IoT) devices to free and open internet.”

Overwhelmingly, all participants supported the second challenge statement but wanted to see a link between the wireless network and real benefits that would improve their everyday lives. Residents were particularly interested in solutions that would increase social connectedness in Cochrane. This feedback supports findings in the Cochrane Cares report that contains input from over 1,200 residents.

Specific examples of the feedback on the second challenge statement include:

- “Reasonable statement, the infrastructure is already there and expanding.”
- “Needs to serve the community.”
- “Families can use this to identify and connect with each other (find friends).”
- “Data can be used to promote community here and throughout Canada.”

Residents were then invited to create their own challenge statements and provide other notes and feedback. Examples of this feedback include:

- “Create an environment for youth to grow up and stay here.”
- “Tap into community skills, don’t just bring in new talent from elsewhere.”
- “Encouraging inclusion, being local.”
- “Community Connections to enhance community well-being.”
- “Create greater quality of life in town through better data collection, information sharing, and internet connectivity achieved by a collaboration of town, businesses, and residents.”
- “Connecting the community with an advanced Wi-Fi network available to ALL. This network would connect individuals and help them to be engaged in society, being aware of local issues and opportunities.”

Keywords such as “community,” “sustainable,” “town,” “local,” “service,” “social,” “people,” “culture,” and “connect” surfaced on multiple occasions.

Subsequent to the public engagement session, a survey was posted online at www.letstalkcochrane.ca/smartcities/ from March 1-13, 2018, to provide more opportunities for residents to express their opinions. Feedback from the online survey was combined with feedback received at the public engagement session and analyzed to identify common trends.

As we looked through resident feedback, we noticed that ideas generally fit into broad categories: community; economic development; energy and environment; information and data collection; mobility; health; safety; and scholastic success. Of these responses (260 in total), “community” was mentioned the most frequently, making up 40% of responses. “Energy and environment” and “information and data collection” were the next frequent topics, both making up 17% of responses.

Residents were also asked to rank issues of importance. The top three issues that residents selected are:

1. Nurturing Innovation: establishing partnerships between local businesses, school districts, and social support networks, and creating an innovators incubator centre to fuel economic development in town.
2. Build Community Connections: providing residents with free Wi-Fi across the entire community via a municipally-owned fibre optic utility network. Residents expressed that this should also include socially connecting individuals.
3. Mobility (Smooth-Flowing Traffic): installing and using sensors to improve traffic flow. Residents expressed that this should also include mobility problems in town (for example, lack of public transit).

Other issues of importance that residents identified include cultural development; healthy families; incentives to keep people and business here; public safety and security; cybersecurity; affordable housing; creating a community (making physical connections among community members); inclusion; improved quality of life; real-time municipal service data; tourism; social benefits; and education (personal and professional).

To continue engaging residents during the preliminary proposal stage, the Town of Cochrane Mayor Jeff Genung and Chief Administrative Officer Dave Devana met with a group of residents, informally known as the Technical Advisory Committee, weekly in the evenings. These sessions were held on March 18th, 21st, 28th, and April 4th, 11th, and 18th. The Technical Advisory Committee was established as a small group of local high-tech business representatives and residents to discuss the technical feasibility of proposed solutions. The group spontaneously grew from week to week as more local business leaders became involved. The group currently includes Jeff Genung, Dave Devana, and 12 residents from various backgrounds.

Each week leading up to the application deadline, the Technical Advisory Committee brainstormed problems that Cochrane could solve through data and connected technology, using resident feedback as a guide. As we reviewed resident feedback and community reports, such as the Cochrane Sustainability Plan (2009) and Cochrane Cares (2017) report, we realized that loneliness is a significant issue in our community.

Loneliness and isolation were not directly mentioned in resident feedback, but residents frequently mentioned their desire to build community, create culture, and improve social relationships. These desires for community are likely motivated by feelings of loneliness and isolation, which are difficult to admit due to the associated stigma. In light of this feedback and research in Cochrane Cares that states that a large proportion of Cochraneites feel isolated or lonely, we decided to focus our challenge statement on this issue.

We drafted our proposed Challenge Statement and presented it to Cochrane’s Family and Community Support Services (FCSS), who is keenly aware of social issues in our community. FCSS is enthusiastic and supportive of the direction of the proposal, which confirms that addressing loneliness and isolation is important to our residents.

We recognize the importance of transparency and equal opportunities for all residents and propose to increase resident engagement as we work through the development and implementation of our final proposal. We plan to work with FCSS to ensure that we are receiving input from every resident, including minority residents, youth, families, adults, seniors, newcomers, residents with disabilities, and so forth. FCSS knows our residents well and will, therefore, be instrumental in engaging residents and learning how a smart cities approach can best meet the needs of our community. We also plan to host more public engagement sessions at various times of day and in various locations to ensure that there is an opportunity for every resident to be involved in the decision-making process.

Furthermore, we plan to continue meeting with the Technical Advisory Committee through the development and implementation of our final proposal. To ensure that this committee is inclusive and representative of our town, we will invite public organizations such as Seniors on the Bow and the Cochrane Youth Council, as well as neighbourhood representatives, to regularly meet with this committee.

A smart cities solution is only smart if it engages residents and provides solutions that are relevant and important to them. Therefore, we need to make every effort to ensure that residents are the driving force behind our solution. Receiving maximum resident engagement will also increase the likelihood of success for our solution since residents will be excited to use the solutions they have designed. As more residents are actively engaged in our solution, we can build a better community together.

(1,329 / 1,500 words)

Sub-Section 2 - Preliminary Proposal Details (Total of 45/100)

Question 6:

Please describe your preliminary proposal and its activities or projects.

Working together with residents and partners, we propose to implement the following projects to meet our community's needs and achieve the outcomes set out in our Challenge Statement.

1. Cochrane Cares about Connectivity as a Utility

Providing residents with free, basic access to wireless data will be essential in bringing our community together. Residents in our community and throughout Canada have limited access to internet due to high prices, low speeds, and/or lack of connection. These barriers contribute to feelings of isolation and social divide by limiting one's ability to contact friends and family and access the digital resources and tools that are becoming increasingly essential to daily life. Through our proposed solution, we can close the "digital divide" in our community and provide equal connection for everyone.

The United Nations declares access to the internet as a basic human right. The Canadian Radio-television and Telecommunications (CRTC) mandates that every Canadian has access to broadband internet speeds of at least 50 Mbps for downloads and 10 Mbps for uploads. Communication via internet is now standard. Yet, Canadians are still limited by their lack of connection.

A Cochrane business survey (Fall 2017) shows that:

- Over 50% of download speeds were below 19 Mbps.
- Over 50% of upload speeds were below 4 Mbps.
- Overall satisfaction with reliability, speed, value, and customer service was 3.4 out of 5.
- 78% of respondents agreed they could operate more efficiently if they had access to better internet speeds.
- 80% of respondents favour the municipality taking a lead role and investing in better internet services with or without the private sector.
- 93% of respondents state they "can't live" without the internet.

Instead of having individual households and businesses pay private firms for internet and data connections, which cost an average of \$90 per month, we propose to provide free basic high-speed internet as a municipal utility in a manner that is more economical to the community.

We will provide a minimum of:

- Speeds of 100 Mbps for downloads and 100 Mbps for uploads.
- Ubiquitous internet access for all residents.
- Support networks using local resources to ensure reliability, value, and customer satisfaction.
- Local contractors for ongoing installation and expansion.
- Forward-thinking designs for new communities with built-in internet.

To provide this service, we propose to use emerging wireless technologies to reach the home/business locations and partner with cellular network providers to link the municipal and cellular network into one virtual "account" when roaming. In this way, residents will have ubiquitous access to their data regardless of location. For more details of how emerging wireless technologies are rebuilding how we access data, refer to <https://en.wikipedia.org/wiki/5G>.

Due to Cochrane's topology, a completely wireless development is almost impossible. As such, Cochrane has 5.8 km of municipal fibre optic networks already in use for both municipal and private sectors. An additional 3.9 km of unused conduit has been strategically placed to expand our network as our community grows. This will be the backbone of our network to allow cost-effective delivery of internet access.

We propose to install fibre optic into the empty conduit and expand the network to include every community and future development area. We estimate our fibre optic network and wireless technologies to be deployed by 2020 at a cost of \$13.2 million.

Providing free basic wireless internet may help some residents feel more connected by providing access to community services and programs, but it will not be enough to eliminate loneliness on its own. We need to take our solution one step further and develop online tools that can help nurture compassion and community.

2. Cochrane Cares about an Open-City Platform

We propose to develop a community platform that can serve as a tool to combat loneliness, empowering and motivating every resident to meaningfully participate in community life. This Cochrane Cares platform, in itself, will not cure loneliness; the platform will function as a catalyst to bring our community together and foster the meaningful relationships we desire.

The proposed platform will be fully accessible to every resident, regardless of income, age, or digital literacy. Residents will be able to access our platform using any internet-enabled device, such as a mobile phone, desktop computer, laptop, or tablet. Like Lego blocks, the platform will provide the ability for everyday users to create and develop applications that make a difference in their lives.

The platform will be a blockchain-based platform that is capable of operating anytime and anywhere, with the following characteristics:

- Decentralized network.
- Tamper-proof ledger.
- Trustless validation.
- Smart contract enabled.
- Open-source.
- Application development ready.

Our platform will be low-cost, efficient, and available for all, without requiring complex server farms or long-term contracts with private vendors. It is truly the platform of the future. We estimate the Cochrane Cares platform will take approximately 2 year to develop at a cost \$2.5 million.

Using this platform, we will develop specific applications to encourage community engagement.

3. Cochrane Cares about Open-City Applications

Research demonstrates that mobility and community connections are effective strategies for reducing loneliness and social isolation. Therefore, we propose to develop applications that incorporate these two strategies.

3.1 Mobility

Lack of appropriate transport can be a major barrier not just to the maintenance of existing social connections but also to the successful operation of services designed to reduce social isolation (Campaign to End Loneliness). By improving mobility, we can empower residents to travel to see friends, participate in local events, and access community groups and services, all of which can help reduce loneliness and isolation.

We will develop applications and partner with existing and new vendors to provide the following transportation options:

- Real-time ride-sharing: Residents can request or offer rides to others throughout the community.
- Car-sharing: We will establish a network of shareable vehicles for use either on a sponsored or pay-per-use basis.
- Bike-sharing: Similar to the car-sharing network, shareable bicycles will be available for use on a sponsored or pay-per-use basis.
- Next generation transit: We will develop an innovative transit platform (including full integration of Paratransit, School and Regional Transit Services) that enables users to book trips that meet their needs.

These open transport solutions will empower every resident to move throughout the community in a cost-effective manner and participate in any community activity.

3.2 Community Connections

We propose to develop applications that can empower residents to access information about the community, find neighbours with similar interests, post requests for help, and find opportunities to volunteer and engage in community service. We believe that providing such a space will build compassion and connection in our community.

Our integrated platform will be able to:

- Connect volunteers to opportunities.
- Connect those in need with volunteers.
- Validate volunteers through a user ID system.
- Geo-locate and broadcast requests to appropriate users based on location and abilities.
- Send notifications for current events.
- Provide rewards (tokens) for completed tasks.
- Allow those tokens to be traded in the community for other services or donations.

The platform will also enable residents to access community information, such as:

- Recreation and culture programming.
- Emergency services.
- Business licensing.
- Animal licensing.
- Waste and recycling.
- Water utilities.
- Property taxes and bill payments.
- RancheHouse event centre and community events.
- Family and Community Support Services programs.
- Spray Lakes Sawmill Family Sports Centre programs.
- Human resources recruitment and job postings.
- Economic development.
- Development services.

People who feel lonely often feel crippled by their pain and find it difficult to take the initiative to engage with others, even though they truly desire this deep down. Feeling vulnerable and insecure, they do not want to experience the pain of rejection and either “withdraw into their shells or attempt to soothe their pain by lashing out,” writes Elizabeth Renzetti. Renzetti points out that “saying ‘just get out and make friends’ is like telling an asthmatic to climb Mount Everest.” Taking this into consideration, our platform needs to make it very easy and safe for residents to engage in society.

Connecting Volunteers:

Providing lonely people with opportunities to volunteer in their communities has shown to be effective in helping them overcome social inertia and engage with others. As neighbours share their burdens with each other and serve with compassion, they form meaningful relationships that go beyond the weather. Research has highlighted the central importance of volunteering in effectively preventing and alleviating loneliness, experts arguing that volunteering in itself should be seen as part of the solution to loneliness (Campaign to End Loneliness).

One of the main functions of our platform will be collecting community needs and presenting these needs to residents who are willing to help. Often neighbours do not help each other simply because they are not aware of each other’s needs. Our platform can be the spark that connects these people, helping them to feel less lonely and more loved.

Consider the following scenario, for example. Margaret, a widowed senior, needs help shovelling her sidewalk but does not know who to call. Using our digital platform, Margaret can post her need and broadcast her request to nearby users. Margaret’s neighbour, Kareem, can accept this request and complete the task. Once Margaret confirms that Kareem has completed the job properly, Kareem will receive a token that he can use as he sees fit within the system.

Promoting Community Events:

In addition to connecting residents with volunteer opportunities, the Cochrane Cares platform will engage residents by promoting local events, such as block parties, skating parties, and so forth. Residents can post these events online, and the platform will use location data to send notifications to neighbours. These events will provide easier ways for neighbours to get together in person and meet each other.

The platform will also promote large city-wide events where residents need to form diverse teams, providing additional opportunities for residents to engage with each other. An example of such an event could include the “Cochrane Hill Climb,” an annual event where teams of Cochranites compete to see who can run up and down the hill the quickest. Teams for this event, coordinated through the platform, would need to include at least one youth, adult, and senior, and be represented by at least two households.

Due to the open nature of our platform, residents will be empowered to create and post their own events and gather people for groups focused on specific interests, such as knitting, golfing, dog walking, and so forth. Once applications begin to be developed and community needs are recognized, an explosion of apps will result through open-source software, solving issues we have not identified yet.

4. Cochrane Cares about Data

Beyond the functions listed here, our platform has the potential to offer countless benefits for communities across Canada. For example, our platform could gather large amounts of data through smartphone sensors. This data could then be used for enhancing city management, reducing traffic congestion, increasing public safety, and improving quality of life. To ensure that we are respecting the rights of our residents, our data usage policies will be clearly stated and collected data will be made public.

Conclusion:

We expect that our proposed project will cost \$19.83 (including contract management/administration and contingency) to develop and implement. Final costs will be determined with the completion of the full proposal.

We are excited about this solution, and we are eager to share our findings with every community in Canada. We will develop our solution using open architecture and industry standards, ensuring that it is robust, transferable, and scalable. We will document our procedures, successes, and failures, and publish a public report sharing our findings.

We believe that providing access to the internet and meaningful community life will provide residents with creative ways to engage in community and receive support through life’s ups and downs. We envision that our Smart Cities initiative will transform our town into a compassionate, connected, and included community where people serve and learn to be served. Loneliness will be healed, and our sense of community and vibrant neighbourhoods will be restored.

(1,968 / 2,000 words)

Question 7:

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

Our preliminary proposal strongly supports our community's vision to be a smart city. In our Council Strategic Priorities report 2018-2021, we state our commitment to approaching all priorities and functions through a "smart cities lens" with a focus on Community Connectivity, Community Development and Planning, Community Engagement, and Community Facilities and Services. Moreover, our proposal supports our medium and long-term goals, strategies, and plans, as outlined in the Cochrane Sustainability Plan, Municipal Development Plan, Economic Development Plan, and Cochrane Cares: A Regional Well-Being Review.

Cochrane Sustainability Plan:

The Cochrane Sustainability Plan (2009) is our highest-level plan that outlines 13 pathways to our future. Our proposal supports a number of these goals:

- (1) We are a socially responsible and empowered community.
- (7) Everyone has an opportunity to pursue their potential in Cochrane.
- (8) We are a caring community that lives and celebrates together.
- (11) Wherever you are in Cochrane, you're close and connected.
- (12) There are diverse options for getting around.

Municipal Development Plan:

The Municipal Development Plan (2008) outlines Cochrane's long-term vision regarding specific values. Our proposal supports our value of Social Responsibility and Respect: "The community of Cochrane cares for its people. This compassionate spirit is exhibited through the provision of a variety of accessible services. Cochrane also experiences a high rate of volunteerism."

Our proposal also supports our second principle, Social and Cultural Well-Being: "Social well-being and high quality of life is a reflection of living in a community that creates a safe, healthy, and comfortable environment in which to live, work, and play," as well as our fifth principle, Community Engagement: "Community engagement builds trust, ensures accountability, and improves the quality of decision making as the public plays a valuable role in formulating plans and developing services."

Economic Development Plan:

Our plans to extend our fibre optic network and nurture partnerships with local businesses will contribute to achieving objectives stated in our Economic Development Plan (2013).

Cochrane Cares:

The Cochrane Cares report (2017) is intended to be a community action plan that encourages residents and stakeholders to be active members in shaping Cochrane's social footprint. Our proposal supports a number of goals identified in this report:

- Diversity and Inclusivity: "All Cochrane and area residents feel welcome, included, and have a sense of belonging with every opportunity to participate in civic life."
- Accessibility, Availability, and Affordability: We are a community that provides "accessible and affordable recreation, arts and culture programs and services for all residents of Cochrane and area."
- Leisure Opportunities for Youth: We are a community that provides "accessible and affordable recreation, arts and culture programs and services for youth."
- Social Services Information Hub: We are a community that provides "access to agency, service, and program information."
- Transit and Alternatives: We are "a community with a variety of public transportation options."

These references from our higher-level planning documents clearly demonstrate how our proposal is directly related to initiatives, plans, and frameworks that are already in progress in our community.

(492 / 500 words)

Question 8:

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

We are ready and able to successfully implement our proposal, as evidenced by our experience, strengths, and preparations.

Experience with Advancing Complex Projects:

The Town of Cochrane has experience managing multi-million-dollar projects that span numerous business lines and functional units. Our two largest projects include:

- The construction of the Spray Lakes Sawmill Family Sports Centre (SLS FSC): this \$48.6 million project was completed in early 2018.
- The construction of the Bow River Bridge and James Walker Trail: this \$53.5 million project commenced in 2018.

To ensure that our roads, water, wastewater, and facilities keep up with the rapid growth in our community, we are planning to expend \$293 million on infrastructure projects. Details of these plans are found in our Ten-Year Capital Financial Strategy.

Organizational Strengths and Weaknesses:

The Town of Cochrane is a unique place within Canada's social, geographical, and meteorological landscape. Sunset Magazine based out of Oakland, California, has named Cochrane number 11 out of 20 Game-Changing Places to Live, recognizing our expanding tech industry that includes reputable companies such as Garmin, 4iiii Innovations Inc., and at least half a dozen others that compete internationally. These high-tech companies are willing and more than capable of developing and implementing the technology described in our proposal. Cochrane was the only Canadian community named in this list.

In addition to our thriving tech industry, we have proficient social support services such as our Family and Community Support Services (FCSS). The mission of FCSS is to encourage, strengthen, and stabilize family and community life. This established organization oversees Cochrane's Resource Centre, Parent Link Centre, Volunteer Cochrane, and the Cochrane Society for Housing Options. The Helping Hands Society of Cochrane and Area is another local organization that actively works to meet needs in our community. Since our proposal focuses on the social health of our community, these and similar organizations will be imperative in helping us achieve our objectives.

Although our community is well set-up to achieve our proposed objectives, we will need to address certain weaknesses. Our community faces several challenges, such as rapid population growth and proximity to a major urban centre (Calgary). Our town also experiences every type of weather and season that a typical Canadian community would experience and contains major social, geological, topographical, and meteorological impediments including:

- Lack of affordable housing.
- Lack of high-value companies.
- Lack of high-value jobs.
- Lack of public transportation.
- Major highway crossings with congested intersections and uncontrolled access.
- Three railway grade crossings bisecting the entire town.
- A large river and valley bisecting the town with only one bridge.
- Significant Elevation changes on roadways and pathways.
- Temperature changes of -35°C to +35°C annually.
- Temperature fluctuations of plus/minus 30°C in a matter of hours (yes hours, welcome to Chinook country!).

Although these challenges and weaknesses will need to be carefully addressed, they will enable us to create a solution that can apply to any other community who faces these obstacles. Our diversity makes us the perfect testing location to research how technology can solve social and transportation issues.

Smart City Preparations:

To best prepare for the implementation of our Smart Cities initiative, we have saved funds, initiated pilot projects, and partnered with key organizations.

In response to our community's rapid growth, we have been preparing to implement a public transportation system. Over the past several years, we have set aside funds for this transportation system and currently have \$9 million saved.

In addition to this transportation system, we have been planning a fibre optic network (fibrewest.ca) and currently have a preliminary network established: 5.8 km of fibre optic and 3.9 km of empty conduit. We have invested \$500,000 in expanding this network to the Business District in Cochrane's historic downtown. Moreover, to ensure the efficacy of this network, we have initiated a fibre optic pilot to connect key businesses (such as Garmin, 4iiii Innovations Inc, and professional buildings) to the network. We have hired a Fibre Optic Administrator to coordinate all activities related to expanding our municipal fibre optic network. This position will work directly with the Chief Administrative Officer who is responsible for directing our Smart Cities initiative.

We have involved all Town of Cochrane staff in implementing our Smart Cities initiative, equipping them to use a "smart cities lens" to guide all future decision-making. We have also partnered with several skilled organizations and have established a Technical Advisory Committee to support the development and implementation of our final proposal.

To effectively manage and implement our proposal, we will regularly track our progress towards outcomes and our alignment with our Ten-Year Capital Financial Strategy. We will also ensure that our proposal is fully integrated with all aspects of the Town's operations and plans.

Our town has demonstrated perseverance and innovation since 1903, when the village of Cochrane was established. Despite the radical societal and technological developments that have occurred since then, we have grown from a little industrious village into an international hub for technological excellence. We have adapted and prospered through great changes and will continue to advance through the Fourth Industrial Revolution. While holding on to our small-town hospitality, we are ready to become a "smart city."

(861 / 1,000 words)

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.

Should we be selected as a finalist, we will spend the \$250,000 grant on feasibility assessments; small-scale pilots; community engagement and communications; and professional business planning services.

We plan to allocate \$155,000 towards feasibility assessments and a small-scale pilot of our platform. Our plan is to provide free internet for willing participants and businesses in Historic Downtown and the East End, on the condition that these users download our platform. At regular periods throughout the test phase, we will monitor the quality of the network and residents' user experience of the platform. The results of this test phase will guide and shape the details of our final proposal.

We have budgeted for the following costs:

- Hardware: \$50,000
- Network agreements (1 year): \$24,000
- Community application development: \$25,000
- Cloud services: \$5,000
- Integration with other town services: \$1,000
- Participant engagement: \$50,000

In this phase, we will offer limited platform functions to ensure that our pilot platform is high-quality, understanding that a positive first impression of our platform is crucial for resident adoption.

We plan to spend the remaining funds, \$95,000, on professional services; widespread community engagement and communications; and social science research. We will hire professionals for assistance in (1) managing and deploying our fibre optic network, and (2) developing our business case and plan. These professionals will help us cost the proposal and identify milestones and implementation strategies. We will supplement the grant with the hiring of a Fibre Optic Coordinator that will bring in-house expertise to Town of Cochrane Administration. This expertise will also assist us with the development of our Smart Cities Business Plan.

Widespread community engagement will be needed to educate residents on the platform, and social science research will be needed to better understand how to build community and reduce feelings of loneliness and isolation. We will also need to research what kind of platform functions we should offer first. We will conduct extensive public engagement and outreach initiatives with our support groups and at-large community to determine the specific applications residents would like to see developed for improving mobility options, volunteer opportunities, and community services. We will also use a portion of community engagement funds to explore regional partnerships with Rocky View County hamlets (Springbank, Springbank Airport, Harmony and Cochrane North) and the Stoney Nakota First Nation community of Morley, Alberta.

We believe that our plan for spending the \$250,000 grant will enable us to better understand our residents and our proposed use of data and technology, which will equip us to develop an impactful final proposal.

(420 / 500 words)

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.

Collaboration will be essential in implementing our proposal and successfully building compassion, connection, and culture in our town.

The following primary partners (in alphabetical order) have contributed to the creation of this proposal and will be instrumental in implementing our Smart Cities initiative:

1. Bird's Eye Technologies Ltd: a local IT services business that will be a key leader in establishing and supporting our wireless blanket.
2. Cochrane Community: residents in Cochrane and area were fundamental to the creation of this proposal, with over 1,200 participants engaging in the Cochrane Cares (2017) report and public and staff engagement sessions that shaped the direction of our proposal. Residents will continue to shape the development and implementation of our final proposal.
3. Cochrane Youth Council (CYC): a committee organized through the Boys and Girls Club of Cochrane and Area that has a mission to "actively and responsibly represent the youth in Cochrane and Area and be a strong voice that helps advocate positive change in the community." The CYC will guide us in creating solutions that benefit the youth in our community.
4. The Corner Coworking, Inc: a local coworking space that is key to encouraging and supporting emerging tech businesses in Cochrane. The Corner has been a key member of the Technical Advisory Committee supporting the creation of our proposal.
5. Family and Community Support Services (FCSS): a division within the Town of Cochrane that provides social and community support services to the citizens of Cochrane. FCSS will provide valuable insight into how we can achieve social health in our community.
6. 4iiii Innovations Inc (4iiii): a local tech company and global leader in providing state-of-the-art sports electronics for both elite and casual athletes. 4iiii has proven expertise in wireless technologies and will play an important role in developing our platform.

7. mcThings: a local tech company that provides businesses with access into the world of the Internet of Things with products that are affordable, easy to manage and highly scalable. mcThings has proven expertise in wireless technologies and will play an important role in developing our platform.
8. Smart Cities Technical Advisory Committee (TAC): a group of 12 local volunteers that meets with Mayor Jeff Genung to resolve technical details. This group will continue to work through the development and implementation of our final proposal.
9. Velocity Networks Inc: a wireless high-speed internet provider in Cochrane. Velocity Networks will work alongside Bird's Eye Technologies to establish and support our wireless blanket.

Other supporters expected to have significant roles in the development of our final proposal include:

- Garmin
- School Districts
- Transit providers (Local, Schools, Paratransit and Regional Services)
- Community Associations
- Cochrane Tourism Cochrane Economic Development
- Chamber of Commerce
- Greystone Mixed Use Development
- Town of Cochrane staff and Council
- Surrounding Indigenous Communities

Our primary partners and supporters will provide the business and community expertise to fully develop and implement our Smart Cities initiative. We will continue to seek local partnerships throughout the remaining stages of this proposal.

(495 / 500 words)

Question 11 (confidential annex):

Please provide, if and only if required, confidential third party information. Information provided in this section will be exempt from the requirement to be posted online.

Not applicable.

III. Other requirements

Question 12:

Provide a 200-word summary of your preliminary proposal. You may also provide an image that represents your preliminary proposal.

Over 40% of people living in Cochrane, Alberta, feel lonely or isolated. This statistic is shocking and alarming for our town, yet, unfortunately, the numbers are not unusual. Across Canada, loneliness and social isolation are growing into significant public health crises that are harming our relationships, health, and economy. To address these widespread issues, we propose to implement a smart cities approach that leverages the benefits of data and connected technologies. Working together with community residents and partners, we will close the “digital divide” in our community and provide every resident with free access to wireless data, empowering everyone in our community to access online resources and connections. We will build on this ubiquitous network to develop a community platform that is open and accessible to all. This platform will support applications that can spark connections between residents, making it easy for lonely people to participate in local community life. Furthermore, these applications will empower every resident to affordably move around the community, access support networks, and meaningfully serve their neighbours. Through our proposed smart cities approach, we believe that we can build fully connected, caring communities in our town and throughout our nation.

Question 13:

Provide a link to the online location where you will post the full version of your application.

The Cochrane Cares - Smart Cities Application is posted on the Town of Cochrane website at <http://www.letstalkcochrane.ca/smartcities/>

Question 14:

In accordance with your governance structure, provide evidence of the commitment to your preliminary proposal from your community's leadership. This can be a letter of support with signatures from your mayor(s), chief(s), or equivalent or a council resolution, a band council resolution, etc.

On January 22, 2018, Council fully supported to:

1. Support submitting a Smart Cities Challenge Application on the Impact Canada Platform to Infrastructure Canada by the application deadline of April 24, 2018;
2. Support entering into a public engagement process to seek feedback and input from Town of Cochrane staff and the community at large, on the draft Challenge Statement with a target completion date of March 14, 2018; and further
3. Support partnering with both public and private sector organizations to develop and implement the Smart Cities Strategy.

On April 23, 2018, Council supported competing for the \$5 million prize based on the following approved motion:

That Council supports the Smart Cities Challenge Statement - “Working together, our community will build a culture that empowers every resident who feels isolated or lonely to engage in local community life and develop meaningful relationships that inherently create a strong sense of belonging for everyone in the Cochrane area, and ultimately Canada” and further

That Council supports submitting the Cochrane Cares - Smart Cities Application on the Impact Canada Platform to Infrastructure Canada and declares it is competing for the \$5 million prize.

Question 15:

Please identify the point of contact for the application.

- Name: Dave Devana
- Title and affiliation: Chief Administrative Officer, Town of Cochrane, Alberta
- Phone number: Cell: 403-835-6008, Office: 403-851-2504
- Email address: dave.devana@cochrane.ca

Question 16:

Read the Privacy Notification, Consent and Release form, and Communications Protocol and indicate your agreement.

Agreed

IV: Survey questions

Question 17:

Please provide the following information about your organization.

• 2017 full-time equivalents (FTEs):

- | | |
|--|-----|
| • Number of total FTEs | 212 |
| • Percentage of total FTEs devoted to innovation | 8% |

• 2017 operating and capital budgets:

- | | |
|--|--------------|
| • Total operating budget | \$56,027,473 |
| • Percentage of total operating budget devoted to innovation | 8% |
| • Total capital budget | \$18,454,691 |
| • Percentage of total capital budget devoted to innovation | 22% |

Question 18:

Please select the focus area of your preliminary proposal.

- Empowerment and inclusion

Question 19:

Select all the community system/service areas expected to be implicated in your preliminary proposal.

- Economic development
- Emergency services and enforcement
- Public health
- Recreation and parks
- Roads and transportation
- Social services
- Waste

Question 20:

Select all the technologies expected to be implicated in your preliminary proposal.

- Big data analytics
- Cloud computing
- Enterprise solutions
- Geospatial
- Internet of Things (IoT)
- Mobile applications
- Networks
- Open data platforms
- Payment platforms
- Sensors
- Wearables