

# Smart Cities Challenge Application Bruce County

Energy Applied Research and Training Centre

April 24, 2018





Corporation of the County of Bruce  
Office of the CAO  
30 Park Street, P.O. Box 70, Walkerton, ON, N0G 2V0

[brucecounty.on.ca](http://brucecounty.on.ca)

## Section I: Applicant information

### Question 1:

*Please provide the following information on your community.*

*Name of community:* Bruce County

*Province/Territory:* Ontario

*Population:* 68,147

*Indigenous community:* No

### Question 2:

*Please select a prize category.*

\$10 million (population under 500,000 residents)

## Section II: Preliminary proposal

### Sub-section 1 - Problem definition (Total of 55/100)

### 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. (50 words max)*

Bruce County, and the surrounding region, is an energy economic hub, able to advance Canada as a world-leader in the development, adoption and application of energy and environmental technologies.

### Question 4:

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

The outcome of this proposal is to establish a one-window, coordinated approach to advancing technologies, innovation and addressing labour market supply in the energy



sector, principally the nuclear industry, through the development of an Energy Applied Research and Training Centre ('The Centre').

Development of The Centre from an idea to the concept presented here, represents years of work undertaken by the County and our partners in strategic planning and sector advancement. Through various strategic planning initiatives, which include establishing a critical mass of supply chain expansions, creating a robust supply chain network, the completion of The Centre represents a tipping point - facilitating a coordinated and collaborative approach to advancing the region as a world leader in energy and environmental advancements and nuclear technologies.

The Centre includes 2 integrated pillars:

1. A Skilled Trades Secretariat to address a coordinated approach to addressing labour market supply, and
2. An Energy Innovation Hub to bring together world leaders in developing and adopting new technologies (ex. Artificial Intelligence and Medical Isotopes)

### **Skilled Trades Secretariat**

The Skilled Trades Secretariat will operate out of the Centre and include representation from key industry partners that use data and connected technologies to:

- a. Increase and support the supply of skilled trades to meet future demand through:
  - Collective understanding of existing gaps in supply and future demand;
  - Asset management map of existing training facilities and opportunities that could be collectively utilized to increase supply, and
  - Development of an Industry Action Plan and framework for increasing the supply of skilled trades to meet future demands in the region and across Ontario.
- b. Support industry in career training requirements and skills upgrading opportunities for new or underemployed members of the workforce by:
  - Developing a digital integration platform for employers to share training offerings targeted to increase skills upgrading and avoid duplication of training offerings by various organizations, and



- Offer physical space and use of integrated technology to offer training remotely for industry partners and prospective employees. This would include lab space for prospective employees to upgrade training requirements; complete training programs, etc.

A collaborative model to address skilled trades demand and provide coordinated training opportunities will reduce industry costs for delivering training and provide a 'one-stop shop' platform for understanding existing assets and demand.

For example, in our current state multiple companies compete over a limited number of skilled trades workers; offering similar training programs; and having multiple facilities where this training occurs. Some opportunities for coordination include:

- Employee: enable seamless employment over the duration of one's career. For example, when a job with one company ends, the employee may or may not find another job right away, they may be underemployed or unemployed for a period of time or they may leave our region for work elsewhere. This creates tremendous instability for both the employers and employees. Our aim, the ideal state, facilitated through The Centre, would be to facilitate the movement of employees between companies, offer training upgrades so employees can find other suitable employment when one job ends, or connect them with the resources and information required to identify next steps in a career path in skilled trades.
- Employer: offer access to a database of existing facilities and suitable spaces in the region to provide training for employees; offer a database for supply/demand profiles to help them in future planning; offer shared spaces and labs for training employees.

The demand in future labour supply in the region as a result of Bruce Power's Life Extension Program requires a coordinated approach.

### **An Energy Innovation Hub**

The Energy Innovation Hub will provide a flexible, co-location, incubator and accelerator space that brings together entrepreneurs and leaders in the energy sector to work alongside other like-minded entrepreneurs to share ideas, enhance networks, and discuss challenges and opportunities.



Focused on delivering "innovation through collaboration", the Energy Innovation Hub will provide a partnership ecosystem, a single access point where ideas and people converge to lead change. Serving to satisfy not only a community need but a regional and provincial one as well.

There is currently a gap in this type of collaborative effort for energy advancements in Canada. The establishment of this Centre will solidify the region as an energy hub in Ontario, with world class applied research filling a current gap, complementing and building on successful hubs established in other strategic sectors across the Province.

### **Current Industry Base**

The County is home to Bruce Power, the world's largest operating nuclear facility. In 2015, Bruce Power announced a multi-year, multi-billion dollar Life Extension Program, which will see an increased need for nuclear expertise and skilled trade development for decades, requiring 1,000's of trades people each year for the next 20 years and beyond.

The Life Extension Program, beginning in 2020, will be Canada's largest construction project and extend the life of the Bruce Power reactors to 2064. This multi-billion dollar private sector investment project will draw from several Trades, including: CUSW, Sheet Metal, Millwrights, Ironworkers, Plumbers/ Pipefitters, Insulators, Boilermakers, Carpenters, IBEW, Labourers, Painters and Operating Engineers.

As we begin to embark on Canada's largest construction project, a collaborative and coordinated response to understanding current skilled trade programming, and addressing future skilled trades demand, is critical for ensuring the success and sustainability of our region, and Ontario.

In addition to the requirement for skilled trades, since the announcement of Bruce Power's Life Extension Program - Bruce Power, Bruce County and the surrounding region have been working to position itself as an energy hub. The Nuclear Economic Development and Innovation Initiative was formed between Bruce Power and Bruce County in 2016, designed to engage local communities and leverage economic opportunities as it relates to Bruce Power's Life Extension Program.

The first step in moving the Initiative forward was to develop a framework to set priorities and guide its progress. This was achieved by establishing a Nuclear Industry Investment Strategy (attached).



Collectively, the region established a vision with three goals: expand the regional supplier network to support Bruce Power's long term needs; enhance regional training and employment opportunities, including opportunities for Indigenous communities, that align with the nuclear sectors long term needs, and support and promote community investment readiness to better align with an expanded regional supplier network and increased employment opportunities.

Since the launch of the Initiative, the region has facilitated an increase in its permanent local nuclear supply chain presence, with over twenty-five suppliers expanding into the region, across six communities, committed to collectively creating up to 500 job in the next few years alone, many of them skilled trades.

Many suppliers now located in our region, like BWXT Canada Ltd, Rolls-Royce and SNC Lavalin, are world leaders in the nuclear industry, relocating top-talent and key executives into the area. Additionally, over 100,000 square feet of existing, underutilized commercial and industrial spaces have been filled, nine acres of land has been purchased for new builds and several communities across the region are experiencing a boom in industrial and residential land development.

In addition to office space and warehousing facilities, suppliers are looking to expand their training options and other operations into the region to ensure their local presence is sustainable.

### **Coordination of Supply and Demand**

Bruce County and the surrounding region have an established reputation as a nucleus for highly qualified skilled trades personnel and world leaders in the energy sector. 9.9% of the working population have obtained a trades certificate or diploma (compared to 7% Ontario)<sup>1</sup> and 8.7% are working in the energy industry (compared to 0.5% Ontario)<sup>2</sup>.

With a population in excess of 68,000, the Bruce Region is strategically located in Southwestern Ontario with a growing and diverse cross-cultural demographic. Within

---

<sup>1</sup> Environics Analytics (EA), Source: DemoStats 2017

<sup>2</sup> Environics Analytics (EA), Source: DemoStats 2017



its geographic boundaries the region is also home to Saugeen Objibway Nation and the unceded territory of the Chippewas of Nawash.

The County is two hours from multiple urban centres and is home to Canada's largest operating nuclear facility operated by Bruce Power, employing over 4,000 people with a highly educated workforce and an array of highly skilled tradespeople.

The Bruce region experiences an 84% demand by employers for full-time Journeyperson and 72% full-time Apprentices<sup>3</sup>. The region is a leader in skilled trades workforce across the province - creating significant growth opportunities. The communities from which the region draws the most people include: Waterloo Region, Wellington County, Middlesex County, Toronto Region and Simcoe County.

In their recent "Manufacturing & Construction Sector Partnership Labour Market Strategy" (attached), the Four County Labour Market Planning Board identifies four key trends in skilled trades in our region, including:

1. Rapidly Shrinking Labour Force (population aging)
2. Constricted Labour Market (high participation and low unemployment rates)
3. Substantial Labour Market Churn (workforce turnover - job gains/losses)
4. Lower Skills Gap (high job vacancies and unemployment within lower skill or entry type occupations)

The aim of this report was to identify broad and specific labour market challenges affecting both Sectors in Bruce, Grey and Huron counties, and make recommendations to address identified challenges. The strategy's recommendations include:

1. Identifying High Demand Occupations
2. Engagement Strategies for Filling High Demand Occupations
3. Address Shortage of Welders
4. Implementation of a Sector Focused Soft Skill Program
5. Build a Comprehensive Regional Affordable Housing Strategy

This report was developed using a wide range of secondary and primary data sources. Local large employers, Employment Service providers, College representatives and the Manufacturing and Construction Advisory Committee were all consulted and engaged. This report and associated data used, serve to establish the current state

---

<sup>3</sup> Four County Labour Market Planning Board, EmployerOne Survey Observations 2017



with respect to our regional skilled trades labour market challenges and, provides the context around the need for a Skilled Trades Secretariat.

As a follow up to this report, Bruce County and our partners are currently working to develop a Phased Action Plan. The intent of this Phased Action Plan, is to describe how the Skilled Trades Secretariat will take real, measured action on the Strategy's recommendations, over both the short and long term - establishing key metrics for use in our Challenge Statement. Results of this effort will prioritize workforce planning resources regionally, setting goals to directly address identified labour market gaps and obstacles identified in the Strategy, and support and strengthen local employers' success in meeting labour force needs, while at the same time improving employment prospects for high demand occupations.

### **The Next Step**

Collectively, these main components and their successes to-date serve as evidence on the current state, with metrics defined within the Nuclear Industry Investment Strategy (see page 8 - Nuclear Industry Investment Strategy.pdf). With an increased presence of the local supply chain and a concentration of world leaders in the nuclear industry located in the region - we have established a nuclear energy economic hub and are ready to move into the next phase.

As a result, there is significant opportunity to harness the talent, experience and expertise in the region into a collective, unified approach to advance Ontario's energy industry as a world leader in the broader energy sector. Our current state represents an incredible accomplishment and now is the time to take the next step towards the ideal state.

Through The Centre, our ideal state is one in which Bruce Power, industry partners, associations and organizations, educational institutions and communities are all collaborating, working together towards the collective good, improving efficiency, reducing duplication, sharing knowledge, ideas and resources - fostering innovation.

### **Why this is our Priority**

The significance and importance of the nuclear industry and the need for skilled trades here in our region cannot be overstated. In addition, to the significant labour supply and demand statistics above, it is important to note, the job growth (both direct and indirect), business and supply chain expansions, municipal investment and





growth and the regional network – all of critical importance to our regions long term viability and sustainability (refer to: Bruce Power’s Local Economic Impact.pdf). This is all in addition to Bruce Power’s core function, providing 34% of Ontario’s electricity.

The community need and opportunity for The Centre has been well captured in our engagement efforts to date and this continues to be recognized in our ongoing efforts, leading to our proposal. Evidence in support of The Centre, in reference to the needs of the community, includes (attached):

1. Nuclear Industry Investment Strategy (including the summary of roundtable discussion)
2. Deloitte: Driving Innovation in Bruce County
3. Manufacturing and Construction Sector Partnership Labour Market Strategy - Four County Labour Market Partnership
4. Nuclear Economic Development and Innovation Initiative
5. Our Story: 2017 Bruce Power Annual Report

The rationale for applying a smart city approach towards The Centre are critical to ensure our long term success.

### **Openness**

Open practice and dialogue between companies, government, Indigenous communities and the public, builds trust, facilitates teamwork and collaboration easily (very little organization required), encouraging wider participation across the entirety of the project, from forming ideas and sharing world class knowledge, content, data, communications, creating a simpler, more efficient way to work.

Additionally, openness increases profile, not only of The Centre but of all partner organizations involved. This can be an important advantage in bringing new and different partners into the fold, thereby increasing the reach, depth and breadth of The Centre’s outputs and outcomes.

Lastly, openness can and has led to many wonderfully unpredicted outcomes, the use of a program, product or service in different contexts, new connections and/or the formulation of project ideas – allowing room for experimentation and innovation outside of formal conventions.



## Integration

Integration of The Centre, through a digital platform will incorporate core business tools, produce a variety of user-interfacing experiences and allow us to seamlessly connect and share information and data between users, systems and software. This translates directly into costs savings, improved performance, reducing communication delays, increasing accuracy making The Centre run faster and more efficiently.

## Transferability

Our intent is to learn from what others have accomplished in cluster development and Innovation and Excellence Centres, and apply it to the unique regional and jurisdictional context in which The Centre will operate. Our approach, model, lessons learned and innovative solutions, easily scalable and readily transferable will be available for others to benefit from, as we have.

Any region that has a key sector driving its economy can adopt a similar approach to establishing a coordinated response to growth opportunities - regardless of the sector its focus is on and can use this model to build their own sector specific strategy.

## Collaboration

Collaboration is both fundamental to what we are proposing and the principal benefit to what we have and hope to accomplish. Our collaborative approach not only addresses the recognized industry need for more local training opportunities but promotes and facilitates partnerships across the Energy Sector, driving solutions to shared challenges with new and innovative ideas and strategies.

As part of our effort to advance The Centre, Bruce County, Bruce Power and our partners are working to develop three key strategic documents, including; a Comprehensive Business Plan, an Opportunity Assessment and a Phased Action Plan. These resulting documents, will include a framework for monitoring progress and measuring success for all aspect of this project.

## 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 max)*



The story of how our community residents have shaped our Challenge Statement is a multi-year process that has culminated into the need for a coordinated and collaborative approach delivered through a Centre function.

Engagement begins with Bruce County's Economic Development Strategic Plan (attached) developed in 2016. The Strategic Plan is a multi-year framework for how the County moves forward on setting and delivering on its economic development priorities (i.e. three pillars: Energy, Agriculture and Tourism).

The process undertaken to build the strategy started with an in-depth situational audit that included a review of the Bruce economy, an analysis of the current lower-tier economic development initiatives, a process to identify gaps or duplication of services, research to determine best practices for rural regions and the acknowledgement of the area's opportunities, as well as barriers to growth. It was a highly engaged process with residents, business, organizations and other relevant stakeholders.

The outcome of the analysis determined that:

- a) a holistic economic development approach of working together with lower-tier communities and entrepreneurs was necessary;
- b) Bruce County should focus growth opportunities on competitive advantages across these three pillars: Energy, Agriculture and Tourism;
- c) an action-oriented economic development approach outlining roles and responsibilities of all parties be developed;
- d) measurable outcomes to note economic development progress should be incorporated, and;
- e) measures must be put in place to support the unique needs of Bruce County entrepreneurs.

To advance the energy pillar, the County focused its efforts on a new partnership with Bruce Power. The first annual Economic Development and Innovation Summit's in September 2016 brought together over 60 key leaders, economic development organizations and local government officials in the region to shape our path forward.

It was during this Summit that, Bruce County and Bruce Power launched the Nuclear Economic Development and Innovation Initiative, a jointly funded partnership that



Corporation of the County of Bruce  
Office of the CAO  
30 Park Street, P.O. Box 70, Walkerton, ON, N0G 2V0

[brucecounty.on.ca](http://brucecounty.on.ca)

includes engagement across Bruce, Grey and Huron counties. The initiative is designed to leverage economic opportunities for all communities across the region, given Bruce Power's life extension program. As part of this initiative, the aforementioned Nuclear Industry Investment Strategy, was developed as a key first step to moving the initiative forward and setting criteria to monitor progress and measure results.

The Summit's Roundtable discussions served as the foundation in the development of this Strategy, gathering ideas, input and feedback on a collective vision, goals, action items and measuring results from the broad and diverse group of political, economic development and community leaders in attendance.

As part of this Initiative, a Nuclear Industry Regional Advisory Committee was established with representatives from local government and community leaders across the County to guide this Initiative, providing input and advice on the development and implementation of the Strategy, while also serving as a resource to facilitate opportunities.

In addition, two Action Teams, established under the leadership of the Advisory Committee, have been formed to focus in on key areas of the Initiative that require additional support and engagement.

The Local Training Action Team (LTAT), is focused on developing strategies to strengthen regional training capacity and promote local employment opportunities - linked directly to the Strategy's second goal "*Enhance regional training and employment opportunities, including opportunities for Indigenous communities that align with the nuclear sector's long term needs.*"

As regional businesses and/or new training facilities (ex. Grey Counties Sydenham School initiative), continue to develop, grow and expand, the LTAT works with stakeholders including employers, Indigenous communities, school boards, colleges, and others to develop a strategic, community-based response to labour market challenges and opportunities. The longer term vision will be to take the action plan developed by this Team and use it as a platform for the Skilled Trades Secretariat to deliver its mandate.



Corporation of the County of Bruce  
Office of the CAO  
30 Park Street, P.O. Box 70, Walkerton, ON, N0G 2V0

[brucecounty.on.ca](http://brucecounty.on.ca)

According to Statistics Canada (2016 Census), the tri-county region has an Indigenous population of 6,330, representing 2.86% of the total population. There are many Indigenous families living in communities throughout Bruce, Grey and Huron Counties, including, the two Indigenous communities of Saugeen Objibway Nation and the unceded territory of the Chippewas of Nawash (both located in Bruce County). Nearly half of this population reside in Bruce County, which has a much higher total population percentage at 4.86% (3,160 people).

In an effort to be inclusive and to represent the community's diversity, an Indigenous Relations Supplier Network (IRSN) has been created with Bruce Power and its supplier partners. Through the IRSN, Indigenous communities have the opportunity to actively participate in the company's ongoing investment program. This includes a coordinated and collaborative approach to employment, business partnerships, procurement, community investment, training and education - strengthen relationships with local Indigenous communities and delivering on key goals set out in the Strategy.

Our region is less ethnically diverse than the province as a whole, with less than 3% of residents identifying as a visible minority and a relatively low immigration rate at 8%, compared to Ontario at 22% and 29% (2016 Census). However, the percentage of residents identifying as visible minorities in our region has continued to increase, with the greatest gains made in Bruce County (~1% since 2011). This trend is expected to continue to grow, as a result of both the anticipated influx of newcomers required to meet increasing demand for skilled trades, as well as, Bruce Power's ongoing Employment Equity and Diversity Program, which works to increase diversity sector wide.

This trend and anticipated influx of newcomers was recognized by the Advisory Committee, resulting in the second Action Team - a Welcoming Communities Action Team. This Action Team aims to create more welcoming communities, by identifying and removing barriers, promoting a sense of belonging, meeting diverse individual needs and by offering services that promote successful integration.

Through a series of meetings and open discussions, the Action Team adopted a two-pronged approach. First, they set out to engage with local municipalities to collaboratively review, evaluate and update existing websites, improving content and usability, while increasing inclusivity and integration across the County. Second, a new "welcome" website (Greater Nuclear Energy Area -



Corporation of the County of Bruce  
Office of the CAO  
30 Park Street, P.O. Box 70, Walkerton, ON, N0G 2V0

brucecounty.on.ca

[www.greaternuclearenergyarea.ca](http://www.greaternuclearenergyarea.ca)) was developed to provide a wealth of information to prospective and new residents alike, assisting newcomers re-locating to the local area. The new site is easy to navigate, intuitive and provides comprehensive information on everything from short term housing, to exclusive offers from local businesses.

The “Find Your New Community” page provides interactive links to all 26 municipal websites, connecting users to the breadth of municipal information and services available, including things like, recreational facilities, health care, government services, daycare/preschool, education, as well as local events and festivals. Additionally, this new website acts as a digital gateway, providing access to information and the opportunity to ask question or provide comments on our communities, the Action Team, the website or anything else, through the sites feedback link and email.

More recently, feedback received identified the need to make all website accessible for everyone, with inclusive design and diverse personas throughout. Accordingly, work is well underway to bring sites into Accessibility for Ontarians with Disabilities Act (AODA) compliance, across municipal websites. Also, recognizing language as one of the most significant barriers, the Action Team is investigating options for creating multilingual website through technology like Google Translate.

Going forward, we will continue to maximize partner and community engagement through the established channels and methods developed by the Nuclear Industry Regional Advisory Committee, including: meetings, newsletters, news releases and events, websites, targeted stakeholder sessions and our annual event - the Economic Development and Innovation Summit.

### **Meetings**

As the main forum for communicating information and seeking direction, the Advisory Committee’s quarterly meetings, have proven highly effective at receiving and sharing updates and providing direction and soliciting feedback on key areas of focus, including the various activities they are leading to support growth in their communities.

### **Newsletters**



Corporation of the County of Bruce  
Office of the CAO  
30 Park Street, P.O. Box 70, Walkerton, ON, N0G 2V0

brucecounty.on.ca

Monthly newsletters will continue to be provided to the Advisory Committee to share with their communities and local councils, providing both monthly and detailed annual updates, that track overall progress.

### **News Releases & Events**

Media releases will continue to be issued to local media for any and all newsworthy advancements to inform the general public and connect them with their local Advisory Committee representative and/or upcoming event.

### **Website Presence**

Developing a new website to share information on The Centre while continuing to provide information on Bruce County and Bruce Power's corporate websites and [www.greaternuclearenergyarea.ca](http://www.greaternuclearenergyarea.ca).

### **Targeted Stakeholder Sessions**

Focused sessions with key stakeholder organizations have and will continue to occur from time to time. This includes a forum to engage economic and community development groups on growth projections as well as short and long-term opportunities.

### **Local Council Presentations**

The County presents regularly at all Bruce County municipal councils and is used as a key mechanism for engaging local community members and seeking input as we move forward. (refer to: October 2017 Municipal Council Economic Development Updates)

### **The Economic Development and Innovation Summit**

This annual event, in its third year, brings together community leaders, economic development organizations and other stakeholders together, designed to share experiences on the success of the Economic Development and Innovation Initiative, and make plans to continue building a sustainable regional economy.

### **Sub-section 2 - Preliminary proposal details (Total of 45/100)**

#### **Question 6:**

*Please describe your preliminary proposal and its activities or projects. (2,000 words max)*



Bruce County, and the surrounding region, is a nuclear energy economic hub, able to advance Canada as a world-leader in the development, adoption and application of technologies in the nuclear industry. Towards this, our goal is to establish an Energy Applied Research and Training Centre to advance training opportunities and emerging technologies focused on building a sustainable energy sector and energy innovation cluster in the region.

An Energy Applied Research and Training Centre includes 2 integrated pillars:

1. A Skilled Trades Secretariat; and
2. An Energy Innovation Hub, focusing on:
  - a) Isotopes, Health & Environmental Excellence
  - b) Indigenous Advancement & Economic Development
  - c) Artificial Intelligence & Cyber Security
  - d) Nuclear Operational Excellence

Planned activities to achieve our goal of an Energy Applied Research and Training Centre are currently focused on developing the two pillars within. As part of our effort to advance The Centre, Bruce County, Bruce Power and our partners are working to develop three key foundational documents, including; a Comprehensive Business Plan, an Opportunity Assessment and a Phased Action Plan. The Phased Action Plan represents an advancement from a focus on developing The Centre to delivering its value, advancing training opportunities under the Skilled Trades Secretariat. Work currently underway and proposed, under the Energy Innovation Hub will advance applied research and emerging technologies. Collectively, these two pillars, part of the larger Centre, working symbiotically will shape a sustainable energy sector and energy innovation cluster in the region - impacting and transforming our communities, our region and beyond.

### **Comprehensive Business Plan**

Preparation of a business plan is an integral part of the planning process for a complex, collaborative, community project like this one.

The planned approach is to contract our partner Deloitte to undertake the development of a Business Plan for us. Based on consultations with partners, industry leaders, key stakeholders and potential users, an examination of best practices, existing services and models, and an analysis of the unique regional and jurisdictional



context in which the proposed Energy Applied Research and Training Centre will operate, the business plan will provide recommendations and specifications for the establishment, development, operation, governance, funding, and evaluation of the Centre.

Preliminary discussions with Deloitte would see the Business Plan developed in four chapters.

#### 1. Overarching Strategy

The Overarching Strategy will provide a general framework for the County's specific goals and aspirations and define the scope of what the County should undertake to create an environment of economic development and innovation in the region.

#### 2. Business Case

The Business Case will provide the business rationale for undertaking the project and define the parameters and management factors involved in developing the Energy Applied Research and Training Centre. It will provide us with a tool to guide the design, management and evaluation of the project.

#### 3. Operating Model

The Operating Model will make it possible to deliver the above strategies - how the Centre will deliver value to users as well as how the organization will actually run itself. The Operating Model represents the bridge between the strategy and the day-to-day operations that guide the Centre's team, providing the context, and enabling the behaviours that help realize the strategy and vision.

#### 4. Financial Model (both capital and operating)

The Financial Model will provide details on how potentially profitable the Centre will be, as well as, how much debt and equity capital is required. Its purpose is two-fold: 1) it will help attract investment; and, 2) it will serve as a financial guide to running the Centre. Furthermore, this will help identify future revenue and expenditure trends that may have an immediate or long-term influence on the Centre's policies, strategic goals and/or services.

## Opportunity Assessment



We are in the formative stages with MaRS, working to develop an Opportunity Assessment, which would have them lend and leverage their expertise to the Energy Innovation Hub; helping develop and deliver the program and provide the ongoing support structure. It is expected that this effort will result in an evaluation of our proposed Energy Innovation Hub, including its key components (Isotopes, Health & Environmental Excellence, Indigenous Advancement & Economic Development, Artificial Intelligence & Cyber Security and Nuclear Operational Excellence) to determine whether there is sufficient strategic, market, and financial merit for continued consideration and continued development. Presuming the results of this Opportunity Assessment are positive, the next step will be to undertake a similar effort on the Energy Innovation Hub (including its key components) to the efforts currently underway on the Skilled Trades Secretariat (i.e. Business Plan - Business Case, Operational Model and Financial Model), with the intent of bringing these pillars together under the Energy Applied Research and Training Centre umbrella.

### **Phased Action Plan**

The Four County Labour Market Planning Board has identified four key labour market trends in our region, along with recommendations to address these identified challenges (see Question #4 for details). As a follow up to this report, Bruce County and our partners are currently working to develop a Phased Action Plan. The intent of this Phased Action Plan, is to describe how the Skilled Trades Secretariat will take real, measured action on the Strategy's recommendations, over both the short and long term - establishing key metrics for use in our Challenge Statement. Results of this effort will prioritize workforce planning resources regionally, setting goals to directly address identified labour market gaps and obstacles identified in the Strategy, and support and strengthen local employers' success in meeting labour force needs, while at the same time improving employment prospects for high demand occupations. While still in its infancy, there are a number of anticipated activities and projects expected within the Phased Action Plan categorized by the Strategies recommendations.

#### **1. Identifying High Demand Occupations**

According to the Four County Labour Market Planning Board's "Manufacturing & Construction Sector Partnership Labour Market Strategy" the most pressing Sector labour needs fall within low skill or entry occupations; however, their analysis also revealed a local shortage of Welders. This report also notes that future skilled labour demands resulting from Bruce Power's expansion and

impending retirements is likely to create additional skilled labour shortages in the near future across many skilled trades occupations. Utilizing recently released 2016 Census data along with Bruce Power and supplier data a key activity will be to develop a comprehensive and detailed analysis of high demand Sector occupations. The identification of high demand occupations can then be used to inform and focus Sector engagement strategies.

## 2. Engagement Strategies for Filling High Demand Occupations

Once high demand occupations have been identified, explicit activities can be pursued that focus on developing a funnel of relevantly skilled workers. We anticipate the Phased Action Plan will recommend the following activities at a minimum:

- Establish a strong and successful support program for a high demand occupation
- Promote skilled trades to youth and their parents
- Enhance local training opportunities
- Develop pathways messaging and career development

## 3. Address Shortage of Welders

Current data was able to identify a regional labour shortage in Manufacturing Welder occupations. The regional job vacancy for Welders is well above the average regional vacancy rate and above the provincial rate for the same occupation. 2011 National Household Survey data suggests the local labour shortage of Welders will worsen due to impending retirements. Importantly, a shortage of Welders also exists within the rest of Ontario. This means that attraction and retention of Welders will be difficult, as employment options for Welders are plentiful across the province. Satisfying the demand for Welders within Bruce, Grey and Huron will require two approaches:

- Promotion of welding as an attractive career to young people
- A significant increase in the number of local employers that take on welding apprentices

## 4. Implementation of a Sector Focused Soft Skill Program

Manufacturing and Construction Sector labour markets are defined by a lower skill gap. Sector labour shortages are most acute within lower waged, entry type occupations. At the same time, unemployment levels were shown to be

highest for these same skill groups. The presence of a lower skill gap indicates obstacles to employment within the labour market. High permanent layoff rates for local youth and within the Construction Sector indicate additional obstacles to employment retention within the same lower skill and entry type occupations.

- A Sector focused soft skills training program is recommended to address the Sector lower skill gap.
- A full assessment of local soft skill needs and delivery capacity from both Sector employers and Employment Service providers is recommended to inform an appropriate training program.

#### 5. Build a Comprehensive Regional Affordable Housing Strategy

Improving local employee residents' access to affordable housing within Bruce, Grey and Huron counties should become a regional priority. Sector employers have indicated that a lack of affordable housing has become a significant obstacle to workforce attraction and retention. Migration data indicates that all three counties are losing residents with lower incomes. At the same time, Sector job vacancy and job posting data indicate that labour shortages are particularly acute for lower waged, entry type positions. Thus, the region is losing segments of the local workforce that are most in demand by Sector employers.

- A full assessment of regional housing needs, including the needs of unemployed individuals, those employed with low to moderate incomes and seniors to inform regional housing priorities and build wider community support for a housing strategy.
- A comprehensive approach to housing affordability, around a regional housing strategy.

We will continue to engage our community, making our proposal open, taking advantage of established channels and methods developed under the Nuclear Industry Regional Advisory Committee, including: meetings, newsletters, news releases and events, websites, council presentations, targeted stakeholder sessions and our annual event - the Economic Development and Innovation Summit. By sharing openly and freely, we reap the benefits of openness, integration, transferability and



collaboration described in Question #4. Furthermore, our approach and future intent is to continue learning from what others have accomplished in cluster development and Innovation and Excellence Centres, and apply it to the unique regional and jurisdictional context in which the Energy Applied Research and Training Centre will operate. Our approach, model, tools and resources, lessons learned and innovative solutions, easily scalable and readily transferable will be available for others to benefit from, as we have.

Going forward, our plan is to investigate, develop and implement a comprehensive digital integration platform strategy for the Centre. A scalable, reproducible strategy that manages complexity well, enables rapid development, stimulates innovation, and creates new opportunity for growth. This digital integration platform would contain a set of functional components, for each aspect of The Centre (training, employment, business, applied research, technology and innovation). This could include (but not limited to); data (information) and multi-application integration, communication/collaboration features (messaging, email, phone, online discussion/presenting, video, etc.), interoperability between different applications, programming languages, operating systems and organizations through a one-window interface and mobile application - bringing together, connecting, communicating, collaborating and sharing all things Energy Applied Research and Training Centre.

#### 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 max)*

From broad overarching strategies to focused Initiatives, we have spent the last several years moving towards this step in adopting a collaborative and coordinated approach to advancing our region's established vision and goals.

In 2013, Bruce County developed a 10-year Strategic Plan (attached) to guide policy making by Bruce County which includes the goals of a clean and safe environment, a well-educated community, effective and coordinated governance, enriched quality of life for all residents of the county. The Strategic Plan was developed through various consultations and engagement sessions - with Bruce County staff who represent a broad section of community members in the services and programs they deliver; key external organizations, and local communities.



The Strategic Plan also calls for the development of proud, vibrant communities, becoming an innovative centre of economic development with the goal to ‘stimulate and reward innovation and economic development’ with the element of ‘creating a local small business incubation and innovation centre for local economic development’. (refer to: Bruce County Strategic Plan)

To build on our Strategic Plan, Bruce County’s Economic Development Strategic Plan brought us steps closer to becoming ‘an innovation centre for economic development.’ The Economic Development Strategic Plan, launched in 2016, aims to achieve the following objectives: a) a holistic economic development approach of working together with lower-tier communities and entrepreneurs; b) a focus on growth opportunities on competitive advantages in tourism, agriculture and nuclear/energy; and c) an action-oriented economic development approach. (refer to: Bruce County Economic Development Strategic Plan).

To advance the energy sector, the Strategic Plan developed the objective of focusing on understanding the potential for spin-offs from the Bruce Power Nuclear Generating Station in relation to both energy and engineering cluster development.

The energy sector is one of three recognized sectors in our economy. Bruce Power produces 34% of Ontario’s electricity at 30% less than the average price of electricity. It provides a stable, clean, cost effective source of energy that helps drive Ontario’s economy, keep electricity prices stable, and played a critical role in enabling the provide to close its coal-fired electricity generating stations with a renewed focus on clean, affordable energy.

Recognizing the important role Bruce Power and the energy sector play in shaping the County’s priorities, the County established a focused partnership with Bruce Power to advance Nuclear Economic Development and Innovation in 2016. The Nuclear Industry Investment Strategy was developed to identity goals and strategies for building a nuclear energy economic hub in our region. (refer to: Nuclear Industry Investment Strategy).

The Nuclear Industry Investment Strategy is our guide to moving forward on advancing this priority and was developed using feedback from a series of meetings and



Corporation of the County of Bruce  
Office of the CAO  
30 Park Street, P.O. Box 70, Walkerton, ON, N0G 2V0

[brucecounty.on.ca](http://brucecounty.on.ca)

discussions with key community leaders and economic development organizations - identifying priorities for economic development to support the nuclear industry.

Since 2013, we have focused our plans and priorities on achieving our vision of a shared, collaborative, coordinated approach to advance Bruce County as a world-leader in the broader energy sector.

#### Question 8:

*Please describe your community's readiness and ability to successfully implement your proposal. (1,000 words max)*

Over the past few years, Bruce County has been developing strong working relationships with community partners and industry leaders to advance its economic development agenda. These relationships will be drawn upon to help ensure, as a region, we will successfully deliver this project.

Bruce County is also in the process of building innovative capacity in the region through the establishing of an Overarching Cluster Innovation Strategy. Working with Deloitte, we are laying the foundation for creating the right mindset and opportunities in our region to advance the Centre and other innovative ideas. Our local municipalities strongly support building innovative capacity and have been engaged in the development of this broader strategy. The strategy, expected to be complete in June 2018, will also support advancing the Centre.

We are also able to draw on best practices in the successful development and delivery of the Nuclear Economic Development and Innovation Initiative, which is a complex, multi-stakeholder partnership that created many of the structures and procedures we will use to execute this project.

To successfully execute this project we are in the process of:

- Finalizing a Memorandum of Understanding (with an effective date of May 2018) with our key partner, Bruce Power in development and delivery of the proposal which will include establishing a Steering Committee of key leaders to move this project forward;



- Developing a stakeholder communications and outreach plan utilizing existing platforms and outreach mechanisms;
- Hiring a Project Manager to lead in the design, development and execution of the proposal to build on the positive outcomes of having a dedicated Business Investment Specialist to drive the Nuclear Economic Development Initiative forward, and
- Building on our existing networks, structures and relationships with local municipalities and economic development organizations already established utilizing the Nuclear Industry Regional Advisory Committee structure to move this project forward.

The Project Manager position will reflect those duties established for the Business Investment Specialist position that will undertake a similar structure, as both require:

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

In addition, we have undertaken an Environmental Scan of existing Innovation Centres and will draw on a series of best practices from across the region, drawing on lessons learned and case studies in other jurisdictions. This includes: further establishing relationships with other jurisdictions who have built Innovation Centers including Bayview Yards (Ottawa) and NORCAT (Sudbury), and working with key leaders in Centre development including MaRS and Deloitte who are engaged in developing this Centre's concept.

We have also begun to engage and work with a number of potential industry partners who bring a wealth of experience and knowledge in various capacities and have strong working relationships with the multitude of stakeholders required to successful develop and execute this project. In addition, they will be critical component to making investments in the facility infrastructure and operations with a vested interest





in supporting this Centre given the important role and relationship they have in supporting Bruce Power and advancing skilled trades.

Major players in the nuclear and construction sectors who have a strong local presence, that we have positive working relationships with, include:

- Acuren Nuclear Services
- Aecon
- Framatone (formerly Areva)
- Black and McDonald
- BWXT
- EMC Power Canada
- Kinectrics
- Rolls-Royce
- SNC Lavalin

(attachment - Meet our Supplier Expansions booklet)

(attachment: 2018 CNA Flyer)

Additional industry partners interested in being engaged in the Centre, where ongoing dialogues are occurring) include: Building Trades Unions, the Ontario College of Trades, Provincial Building Trades Council of Ontario, and the Ministry of Advanced Education and Skills Development.

The commitment our industry partners have made in our communities will help us achieve our objective. The success of Bruce County, Bruce Power, their supply chain, our communities, and the success of Ontario depends on us working together, hand-in-hand. This collaborative approach is ingrained our region and will help ensure we are successful in delivering on this project.

In addition to the County and Bruce Power's readiness to move this project forward, our communities have spent the last two years focusing their energy on becoming investment ready to support growth. We have significant residential and commercial developments underway to support growth, with many municipalities focused on community capacity building to support growth as it relates to the nuclear industry. In addition, municipalities are making investments to expand their municipal services to support growth and more recently, three of our municipalities have secured a



contract with EPCOR to bring natural gas to their municipality. Once complete, all of our municipality urban centres will have natural gas and accelerate growth opportunities.

### 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 max)*

Three key outputs are expected as a result of this effort, including:

1. Comprehensive Business Plan - Energy Innovation Hub, focusing on:
  - a) Isotopes, Health & Environmental Excellence
  - b) Indigenous Advancement & Economic Development
  - c) Artificial Intelligence & Cyber Security
  - d) Nuclear Operational Excellence

\$50,000 - Professional Services (MaRS - consultant)

Representing 50% of actual costs, with the other 50% coming from our partner Bruce Power.

Intended as a follow up to the Opportunity Assessment, this investment represents a logical second step, advancing the project towards development and delivery, building on the results and recommendations of the Opportunity Assessment. Using a similar approach, preparation of a business plan will provide recommendations and specifications for the establishment, development, operation, governance, funding, and evaluation of the Energy Innovation Hub. Captured across three chapters (business case, operational model and financial model), this plan will place a keen focus on; 1) developing and delivering the four key components, and; 2) taking advantage of synergies made possible by co-locating with the Skilled Trades Secretariat within the larger Energy Applied Research and Training Centre.

2. Digital Integration Platform Strategy - Skilled Trades Secretariat

\$100,000 - Professional Services (technical consultant)

Representing 100% of actual costs.



Digital Integration Platforms enable teams to work together to design, deploy, operate, monitor and integrate programs, products and services that connect applications, data, information, people and organizations - wherever they are.

Our aim is to investigate, develop and implement a comprehensive digital integration platform strategy for the Centre's skilled trades coordination component. This digital integration platform would contain a set of functional components, for key aspects of the Centre (existing training assets, employment gaps and opportunities, types of technology to utilize), bringing it all together, connecting, communicating, collaborating and sharing in the Centre concept.

### 3. Building Design and Construction Plans

\$100,000 - Professional Services (architectural consultant)  
Representing 100% of actual costs.

The scope of this effort will include:

#### **Preliminary Building Program**

This establishes the framework for how the build program will be handled and managed on the Centre. This includes the building process, schedule, team and team member responsibilities, communication structures (including community engagement), capital campaign, and a general description of the design and build to be commissioned.

#### **Preliminary Design**

Information gathering on design ideas, budget, and a needs assessment in order to develop a detailed program, on our design goals. This will include concepts and rough sketches showing the size, general layout, and appearance of the building and how it fits into the building site. A couple of options will be presented, considered and voted on through community engagement.

#### **Design Development**

Turning some rough concepts into a real building design, with interior and exterior details. This will include some scale drawings, a basic structural plan, and basic specifications for the main components of the building.



### **Construction documents**

These are the detailed drawings (blueprints) and written specifications used to obtain building permits and for construction.

### **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 max)*

Bruce County has been working toward establishing readiness and building capacity to become the hub of both in-career skilled trades development and the advancement of research and development of emerging trends in energy. Under the Applied Research and Training Coordination Centers two pillars, there are partnerships and collaborations forming to advance the Centre model.

### **Bruce Power (Nuclear Power Plant)**

Together with Bruce County, Bruce Power is a lead partner responsible for the overall project development and delivery. Bruce Power and Bruce County are in dialogues on forming a Memorandum of Understanding to jointly advance the establishment of the Centre, with a formal announcement expected this spring. This second Memorandum of Understanding between Bruce Power, Bruce County follows the Economic Development and Innovation partnership formed in 2016, with the surrounding region, to establish the region as a nuclear energy economic hub.

### **MaRS (Non-profit organization)**

We are in the formative stages with MaRS, working to develop an Opportunity Assessment, which would have them lend and leverage their expertise to the Energy Innovation Hub; helping develop and deliver the program and provide the ongoing support structure.

### **Deloitte (Consultant)**

In partnership with Bruce County, Deloitte has recently developed an overall cluster development Innovation Strategy and Action Plan, entitled "Project Innovate".

### **Four County Labour Market Planning Board (not for profit)**



The Four County Labour Market Planning Board continues to support our collective efforts, offering in-kind contributions of unique databases and information (research and data on employment trends, workforce opportunities, labour market issues and skill development) and professional services (data creation, collection, research and analysis and report writing).

### **Ontario College of Trades (Professional Association/Regulatory College)**

The Ontario College of Trades (OCT) has expressed a keen interest in working with us to develop and deliver an apprenticeship pilot program, through the Energy Applied Research and Training Centre, specifically the Skilled Trades Secretariat.

Bruce County has engaged in dialogues with other key stakeholders, and all have expressed interest and support for this project, including:

- Canadian Union Of Skilled Workers (Labor union)
- Power Workers' Union (Labor union)
- Unifor (Labor union)
- Organization of Canadian Nuclear Industries (Non-profit organization)
- Bluewater District School Board (School Board)
- Bruce-Grey Catholic District School Board (School Board)
- Aecon (Construction Company)
- Bruce Community Futures Development Corporation (Consultant)
- SNC-Lavalin Group Inc. (Engineering Company)
- Hatch Ltd. (Engineering Company)
- BWX Technologies, Inc. (Technology Company)
- E.S. Fox Limited (Construction Company)

### **Municipalities**

Bruce County will continue to work with local municipalities design and delivery phase of the proposal. Through the pre-established Nuclear Industry Regional Advisory Committee, we will provide updates and seek input as we move forward. In addition, regular updates to local council's will continue as our key mechanism for engaging and informing the broader public.

We will continue to look for opportunities to collaborate, with a diversity of both known and unknown partners, strengthening existing relationships and building new ones. Our aim, through collaboration and "word of mouth" connections is to foster



Corporation of the County of Bruce  
Office of the CAO  
30 Park Street, P.O. Box 70, Walkerton, ON, N0G 2V0

[brucecounty.on.ca](http://brucecounty.on.ca)

numerous mutually beneficial partnership, with complimentary interests, contributions and capabilities to share.

### Postface

Thank you for your time and consideration of our proposal to the Smart Cities Challenge. We look forward to working with Infrastructure Canada staff in further developing and delivering the effort described above. Should you have any questions or comments, please contact:

Matt Meade  
Research Analyst, Office of the CAO  
Corporation of the County of Bruce  
30 Park St,  
Walkerton, ON N0G 2V0  
(519) 881-1291 x333  
[mmeade@brucecounty.on.ca](mailto:mmeade@brucecounty.on.ca)

### Appendix A - List of Attachments

1. Nuclear Industry Investment Strategy (including the summary of roundtable discussion)
2. Manufacturing & Construction Sector Partnership Labour Market Strategy
3. Bruce Power's Local Economic Impact
4. Deloitte: Driving Innovation in Bruce County
5. Nuclear Economic Development and Innovation Initiative
6. Our Story: 2017 Bruce Power Annual Report
7. Bruce County's Economic Development Strategic Plan "Find Yourself in Bruce County"
8. October 2017 Municipal Council Economic Development Updates
9. Bruce County Strategic Plan
10. Meet our Supplier Expansions Booklet
11. 2018 CNA Flyer
12. Bruce County Resolution
13. Letter of Support