NEW BRUNSWICK SMART ENERGY COMMUNITIES ACCELERATOR PROGRAM

Town of Florenceville-Bristol, New Brunswick

Energy Mapping Exercise Final Report
October 2021

QUEST

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Atlantic Canada Opportunities Agency
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QUEST

QUEST is a national non-government organization that works to accelerate the adoption of efficient and integrated community-scale energy systems in Canada by informing, inspiring, and connecting decision-makers. The organization commissions research, communicates best practices, convenes government, utility, and private-sector leaders, and works directly with local authorities to implement on-the-ground solutions. QUEST recognizes communities that have embraced these principles by referring to them as Smart Energy Communities. Visit us at questcanada.org.

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1.0 Executive Summary

1.1 What this report is about?

The Town of Florenceville-Bristol participated in an Energy Mapping Workshop facilitated by QUEST, as part of the NB Smart Energy Community Accelerator Program.

This report summarizes the results of the energy mapping exercise, including diverse stakeholder perspectives on the opportunities for energy efficiency, waste energy integration, renewable energy, land use, transportation, and more — with an eye to reduce energy costs and greenhouse gas (GHG) emissions in the community.

The workshop was attended by 11 participants representing diverse stakeholder groups, including municipal staff, utilities, tourism, property development, and food production. A presentation was made by the Town's Chief Administrative Officer (CAO), identifying actions taken to date, and elements of their Climate Change Action Plan. NB Power also made a presentation, which focused on available programs and services.

1.2 Who is it intended for?

This report is intended to inform municipal staff and councillors, as well as stakeholders and the broader public, about:

- Opportunities to improve energy efficiency, integrate clean energy, improve transport etc., as part of a Community Energy Plan
- Targeting measures and partnership facilitation

1.3 What are the next steps?

The report can be used to inform future planning decisions, build on the Climate Change Action Plan / Community Energy Plan, and help spur specific projects or initiatives that the municipality or local stakeholders may wish to undertake.

As part of the NB Smart Energy Community Accelerator Program, QUEST will facilitate a Community Energy Plan Implementation workshop with the Town of Florenceville-Bristol. The workshop will include an exercise to identify who should be assigned as the lead responsible for each potential action and which partners need to be involved. The exercise will also create an assignment timeline, a target (e.g. percentage of GHG reduction), and aid in identifying whether each action needs funding, a study, or supporting policies.

QUEST appreciates the opportunity to work with your municipality and local stakeholders to identify opportunities for integrated community-scale solutions to lower energy costs, reduce GHG emissions, and improve local resilience.

1.4 High level summary of key findings

Based on the results of the pre-survey and the exercise/workshop, the Town of Florenceville-Bristol has the following opportunities to advance community energy and emissions reduction initiatives.

Table 1: Description of areas for improvement / opportunities

Areas	Key Areas for Improvement / Opportunities:
Energy Efficiency	Energy retrofits for industrial facilities, schools, older neighborhoods, and apartment complex upgrades
Waste and Renewable Heat	Sources: Municipal waste treatment facilities, Northern Carleton Civic Centre (NCCC) hockey rink, McCain facility. End Uses: arena, new school builds, old schools, town hall, etc.
Renewable Power	Potential for Combined Heat and Power at Crabbe Lumber, wind farm development in Town limits, and 100% renewable electricity for McCain's facility by 2030 — onsite and offsite
Land Use	Densification of downtown core / main street, new mixed-use development, better links between Florenceville and Bristol
Transportation	EV charging stations located at major stops across town including McCain's, the Co-op, the hockey arena, etc.
Energy Networks	Municipal treatment plant paired with the elementary school in Florenceville, municipal treatment plant paired with school and housing development in Bristol, using waste energy from McCain in the downtown core
Other	Working with key local industries such as McCain Foods and Crabbe Lumber

2.0 Community Profile

Located in western New Brunswick, Canada, the Town of Florenceville-Bristol is located on the Saint John River and is part of Carleton County. With a population of 1,604 as of the 2016 census, Florenceville-Bristol is a rural community that hosts the corporate headquarters of McCain Foods, the largest producer of French fries in the world. Florenceville-Bristol has an average temperature of 11.5C and reaches record lows of -37.8C in the winter months, and record highs of 35.0C in the summer. Florenceville-Bristol receives approximately 1,100mm of precipitation per year, and experiences all four seasons. During the spring, flooding can occur along the Saint John River in low-lying areas.

In March 2020, the Town of Florenceville-Bristol published their Climate Action Plan which was developed as part of the Partners for Climate Protection program — Milestone 3. The plan outlines the Town's aim to reduce its corporate greenhouse gas emissions 25% by 2027 from 2017 levels, and its community greenhouse gas emission 10% by 2027 from 2017 levels. This will be done through a number of actions such as building retrofits, streetlight LED light bulb conversion, and water conservation.

3.0 Community Energy Map Exercise Results

Map Exercise Results

3.1 Goal

This exercise aims to provide participants with a virtual Energy Mapping experience to enable them to share knowledge, discuss local opportunities and apply basic techniques for identifying opportunities in a spatial context, including planning local efficiency, clean energy, transportation, and land use actions.

3.2 Overview

The Map Exercise engaged multiple stakeholders to identify opportunities for their Community Energy Plan and initiatives. The exercise enabled participants to denote these opportunities, and discuss various aspects / viewpoints. Below is a summary of the exercise:

3.3 Summary of Results

1. Energy Efficiency

Using green stars and circles, the participants identified potential buildings and neighborhoods for energy efficiency improvements. **These are listed here:**

a) Co-op on Main Street: retail energy efficiency upgrades
b) Retrofit Northern Carleton Civic Centre (NCCC) on McCain Street, to reduce cooling and lighting at the arena by improved insulation and improved LED lighting
c) community hall retrofit
d) Engage Home Hardware on Main Street to inform residents on home energy efficiency upgrades
e) Amsterdam Inn & Suites, Centerville Road has been constructed with energy saving in mind, and is looking at solar panels over the next two years
f) New K-8 school construction to potentially happen close to Carleton North High School on School Street (not sure of location - it will be a provincial decision)
g) Post office and CFIA building on Main Street Is due for energy efficiency upgrades
h) Florenceville Inn on Burnham Road could be updated/ retrofitted for net-zero
i) Future new apartment complex build (approximately three units) — just next to the DNR facility on Centerville Road could be built to high efficiency standards (e.g LEED)
j) Energy efficiency upgrades for older houses on Juniper Road
k) New housing development happening on Burbank Street and surrounding area

2. Waste and Renewable Heat

Using red stickers and stars, the participants identified potential waste and renewable heat opportunities. **These are listed here:**

a) Building clean heat conversion for Northern Carleton Civic Centre (NCCC) on McCain Street
b) McCain Foods on Main Street captures process heat and hot water and steam condensate; biogas used internally; excess could be used in the community (see Energy Networks, below)
c) Municipal waste treatment facilities located at the north and south end of the Town can produce and utilize or share waste heat with nearby schools
d) Building clean heat conversion for the new school being built on School Street
e) Clean heat conversion and capture waste heat sources from Crabbe Lumber on Lockhart Mill Road
f) Clean heat conversion for the Florenceville Elementary School on Main Street. It may not be a school in the future, but building can be repurposed to include waste and renewable heat measures
g) Building clean heat conversion for the four schools in the Town
h) Solid waste and organics go to Fredericton Region waste facility, where they capture methane, and can produce electricity

3. Renewable Power

Using Green stickers and stars, the participants identified opportunities to integrate renewable power. **These are listed here:**

a) Forested area east of Burbank Street to be a possible site for a wind farm development, as long as it is technically feasible and in a socially acceptable location
b) Potential combined heat and power (CHP) for Crabbe Lumber on Lockhart Mill Road
c) The McCain facility will be supplied by 100% renewable electricity by 2030, through onsite and offsite installations
d) Further explore renewable energy options (wind and solar), in conjunction with Town of Woodstock and Village of Perth-Andover, as part of the NB Smart Energy Community Accelerator Program

4. Land Use

Using various colors of shading, participants identified zones for densification, mixed use, and restricted development. **These are listed here:**

a) Mixed use to better link Florenceville to Bristol in the area just north of the Peel/Florenceville-Bristol border between Main Street and Tapley Road
b) Protect forest for stormwater reduction south-east of Bristol Heights
c) Densification in the downtown core between McCain Street and Maple Street
d) New mixed-use development between Juniper Road and Curtis Road
e) Potential mixed-use development east of Route 103 and north of Burnham Road

5. **Transportation**

Using yellow stickers, purple lines, and blue stars, participants identified opportunities for transit amenities, EV charging, trail connectivity / inter-modal hubs, etc. **These are listed here:**

a) EV charging infrastructure throughout the Town including, Shogomoc Site and Riverside Park, Potato World, Hunter Bro Farm Market, McCain Foods, NCCC and NCRC (Northern Carleton

Recreation Centre), Amsterdam Inn, the Co-op, and the Irving Oil gas station. Want L2 chargers in town, and L3 chargers for intercity travellers

b) Develop a multi-use pathway from both ends of town along the river. Working hard to get the bridge reopened. Once opened it is to have an active transit loop

c) Better car pooling with McCain food employees. Also, will be adding some EV chargers at location for employee and business use

6. Smart Energy Networks

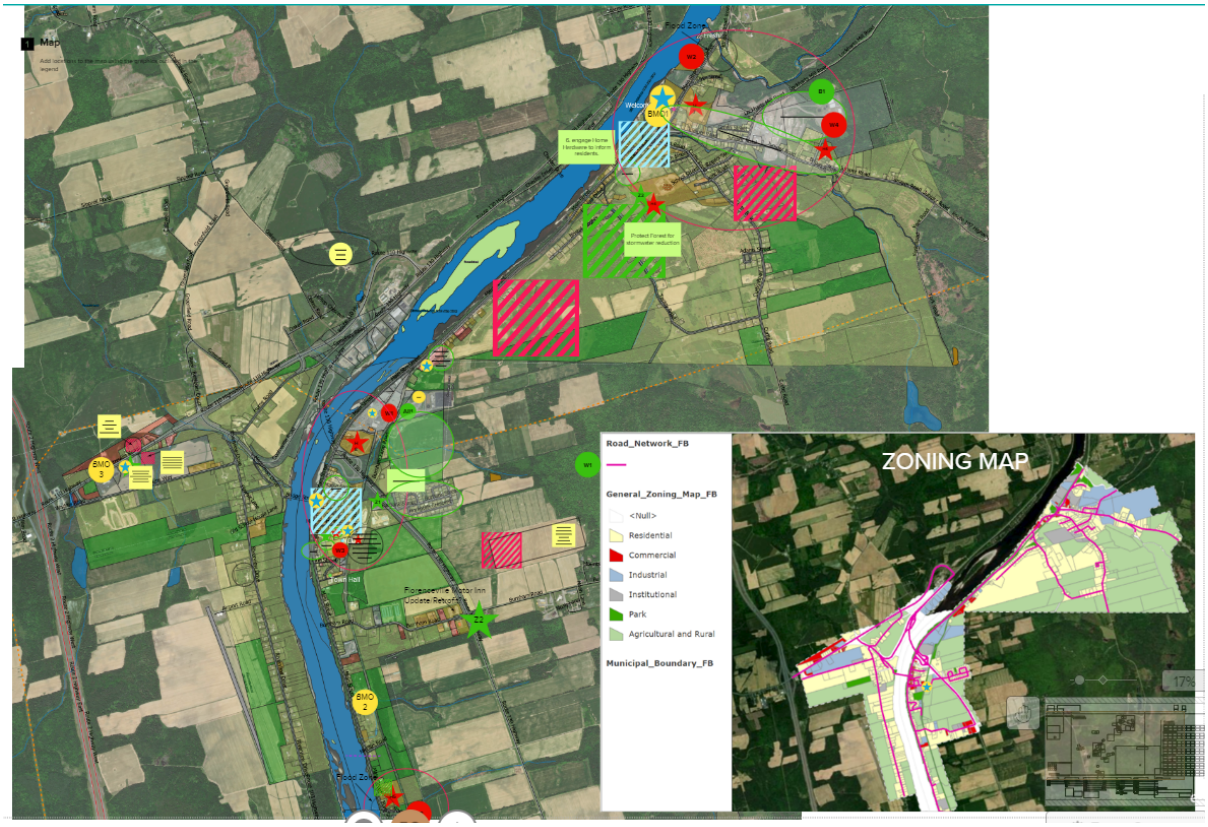
Using a red circle, participants identified potential opportunities for district energy / district heat, etc.

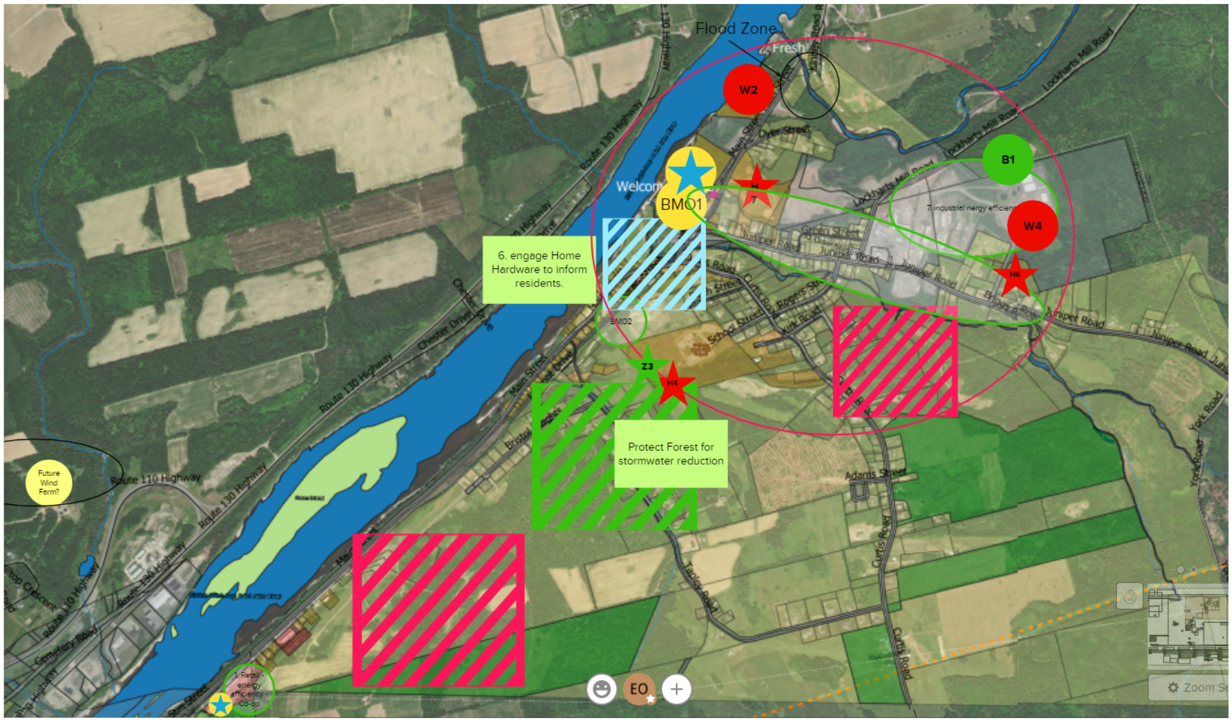
a) Downtown core from Town Hall to McCain Foods

b) North end of the Town to include Carleton North High School and Crabbe Lumber

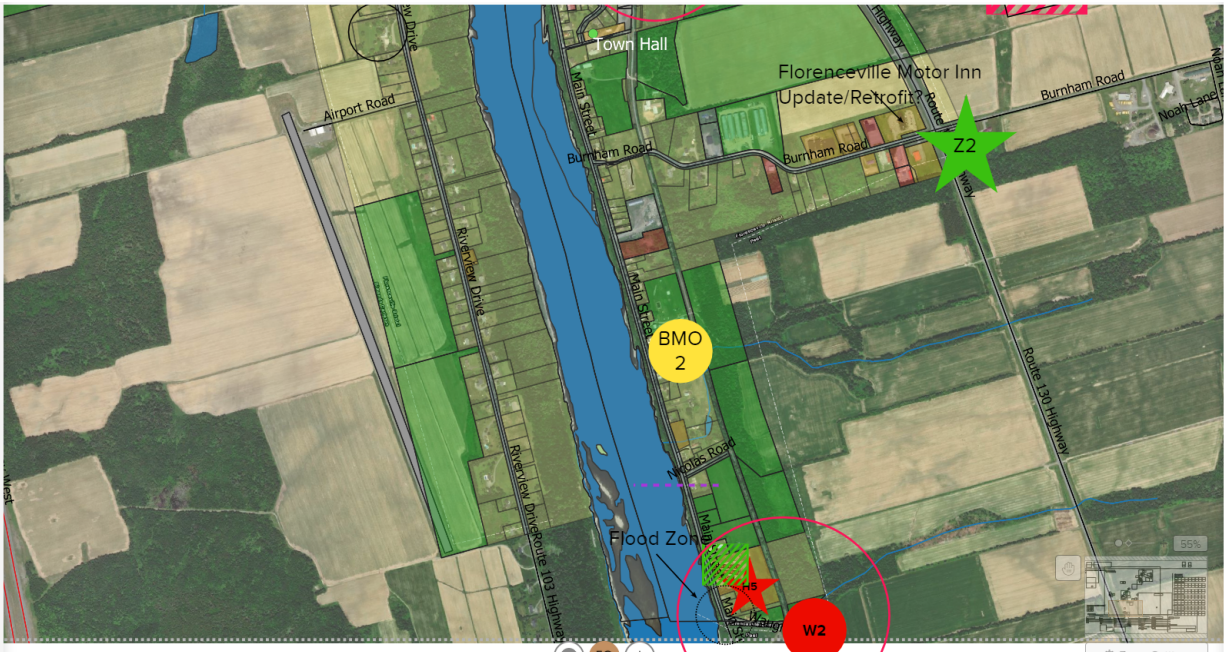
c) South end of the Town to include Florenceville Elementary School and one of the Town's waste treatment facilities

7. Map Images (photos of marked-up maps)




Flood Zone
W2
BMO1
B1
W4
6. engage Home Hardware to inform residents.
Z3
H4
Protect Forest for stormwater reduction
Future Wind Farm?
Route 110 Highway
Route 130 Highway
EO


1. Retail - energy efficiency - Co-op
W1
All1
future buttermilk creek development
9. Future new build - apartment complex (x3 building @ approx 8-10 units/ per?) - just next to DNR facility
BMO 3
P1
4. Hotel has been constructed with energy saving in mind looking at Solar Panels in 2 years
H 8
8. FB new Build
Z1
W3
Town Hall
Florenceville Motor Inn Update/Retrofit?
Believe this existing farm land is future planned residential development
Route 110 Highway
Route 130 Highway
EO



Disclaimer: Maps were produced with best available data at the time. Decisions based on map information should be taken into context — and QUEST will not take responsibility for any damages caused by decisions made based on these maps.

4.0 Action Planning Round-up

4.1 Goal

Provide participants with an opportunity to identify the most significant findings, and share their ideas for key areas for improvement, related needs, and potential actions.

4.2 Overview

Following the workshop, participants were asked a series of questions by email. The responses are summarized in the sections below.

4.3 Summary

1. **After today's exercise, what is your understanding of the community's greatest strengths?**
    - Florenceville-Bristol is poised to welcome economic opportunities to build a strong sustainable economy. We are committed to keeping and improving our natural environment and developing resilient infrastructure. These are not just words but can be seen through actions and specific projects and policies
    - I believe the Town of Florenceville-Bristol has both the interest and the means to make changes necessary to become a greener, more sustainable community

2. After today's exercise, what is your understanding of the greatest needs/opportunities?

- Needs:
    - Education
    - Staffing
    - Funding
- Opportunities:
    - Quest and the Smart Energy Community Accelerator Program
    - McCain Foods/Brian McCain Partnership
    - Other Partnerships — NB Power, World Wildlife Fund, Municipal Natural Asset Initiative
    - Greener housing: Reduced heating/cooling by improved home insulation and optimised new building positioning
    - Integration of local, renewable, and conventional energy sources to meet our energy needs
    - Capturing and using waste energy in the community
    - Increased use of solar options
    - Increased electrification of transportation, Increased options for non-motorized transportation, and the sharing of transportation (e.g. car share)
    - Education. Awareness — constant reminders of ways to save energy. eople seeing action toward savings will help
- The potential savings realized by reducing our energy consumption are significant; these funds could certainly be put to better use in other areas of the Town's budget
- For all kinds of reasons, Florenceville-Bristol is most fortunate to have McCain Foods headquartered here. McCain has just released a document outlining their plans for global sustainability. As McCain Foods' hometown, it only makes sense that the Town of Florenceville-Bristol does its part to become more sustainable

3. What should be done? What is the action? What will I do after this session?

- CAO — incorporate the outcomes of the workshop into the 2020 Florenceville-Bristol CEP
- CAO — continue building relationships with key partners/stakeholders
- CAO and Stakeholders — complete remaining components of the SECA program
- CAO and other staff plus partners — follow the energy decision making hierarchy to determine next actions
- CAO and other staff plus partners — follow the principles for SECA to prioritize actions
- CAO will start to follow the SECA platform such as:
    - Following the energy decision making hierarchy to determine next steps
    - Following the principles for SECA to prioritize actions
    - Trying to maximize the value of our infrastructure assets
    - Reviewing policies and ensuring/developing alignment to the energy plan (e.g. land-use, climate change, etc.)
- Every resident, business and the Town can play a role in reducing energy consumption. The Town can promote the programs outlined by NB Power and communicate on the subject of sustainability through its website, social media and newsletter
- The Town should further explore the actions that came to light during the mapping workshop, heat capture being a significant one

- The mapping workshop will be reviewed by Sarah Pacey (CAO) with all of Town council at our next general meeting
- I would like to see the Town create an awareness campaign about our intention to become a greener, more sustainable community
- We could establish a baseline as to our current energy consumption levels and track and communicate their changes. The more the community is involved and can share their energy-saving actions, the better

4. What is your vision of a Smart Energy Community?

- Town of Florenceville-Bristol has both the interest and the means to make changes necessary to become a greener, more sustainable community
- The Town has invested considerably in infrastructure, beautification, recreation, tourism and culture so as to be a better place to visit, work, and live. To be a greener, more sustainable community only enhances all the aforesaid
- A community where renewable generation and consumption of energy are matched as closely as possible.

5. Biggest take-away from Workshop

- There are many opportunities that we can consider for the future of our energy planning by engaging community stakeholders and partners to discuss opportunities for reducing energy and GHG emissions and increasing energy literacy.
- Many options exist to reduce energy consumption; we all need to act. Doing nothing is not sustainable and its cost is prohibitive.

5.0 Summary of Results

5.1 Summary

The Town of Florenceville-Bristol participated in a community energy mapping workshop facilitated by QUEST, as part of the Smart Energy Community Accelerator Program. The workshop engaged a total of 11 diverse stakeholders and staff through various exercises, including a map-based exercise where participants could identify local assets/strengths, as well as opportunities surrounding energy efficiency, clean energy, transportation, land use, and more. These opportunities were denoted on the map and discussed. The process ensured diverse viewpoints could be captured, and helped to establish a vision for a Smart Energy Community. The key findings can be used to inform a Community Energy Plan, and/or pursue specific community energy initiatives.

5.2 Opportunities identified

Through this workshop a number of opportunities and actions were identified. Here is a short summary:

- The mapping workshop (this report) will be reviewed by the CAO with all of Town Council at the next general meeting

- The Town should further explore the actions that came to light during the mapping workshop, heat capture being a significant one. The Town can incorporate the outcomes of the workshop into the 2020 Florenceville-Bristol CEP
- The Town and partners involved can follow the energy decision making hierarchy to determine next actions
- The Town can review policies and ensure/develop alignment to the energy plan (e.g. land-use, climate change, etc.)
- The Town will continue to participate in QUEST's Smart Energy Community Accelerator Program — specifically, the CEP Implementation workshop, the land-based renewable energy mapping assessment, and the CEP economic impact assessment, as well as webinars
- The Town may continue building relationships with key partners/stakeholders — for example: McCain Foods, NB Power, World Wildlife Fund, Municipal Natural Asset Initiative
- The Town may encourage Greener housing: Reduced heating/cooling by improved home insulation and optimised new building positioning. This can be done through education campaigns, permit requirements/incentives, or a community efficiency financing program
- The Town can encourage integration of local, renewable, and conventional energy sources to meet community energy needs. This can include capturing and using waste energy in the community, increased use of solar options, wind energy
- The Town may encourage electrification of transportation (e.g. charging stations), increase options for non-motorized transportation, and promote sharing of transportation (e.g. car share)
- The Town may consider land-use patterns that improve energy efficiency and reduce commuting, e.g. densification of downtown core, Main Street, and new mixed use development
- The Town may create an awareness campaign about their intention to become a greener, more sustainable community. Every resident, business, and the Town itself can play a role in reducing energy consumption. The Town can promote the programs outlined by NB Power and communicate on the subject of sustainability through its website, social media and newsletter. This can include constant reminders of ways to save energy —people seeing action toward savings will help
- The town can track energy consumption levels and communicate their changes. The more the community is involved and can share their energy-saving actions, the better

5.3 Next steps

The report can be used to inform future planning decisions, build on the Climate Change Action Plan / Community Energy Plan, and help spur specific projects/initiatives that the municipality or local stakeholders may wish to undertake.

As part of the NB Smart Energy Community Accelerator Program, QUEST will facilitate an Implementation workshop with the Town of Florenceville-Bristol. The workshop will include an exercise to identify and assign roles to the lead responsible for each potential action, identify which partners need to be involved, as well as assign a timeline, a target (e.g. percentage of GHG reductions), and identifying whether each action needs funding, a study, or supporting policies.

6.0 Conclusion

This report highlights the consolidated results of the energy mapping exercise, for the The Town of Florenceville-Bristol, including for energy efficiency, harnessing local energy opportunities, improving land use, transportation, and more. Key findings can help inform your next steps (e.g. building on your Climate Change Action Plan) and vision for a Smart Energy Community.

QUEST looks forward to continued collaboration with The Town of Florenceville-Bristol as part of the NB Smart Energy Community Accelerator Program. For any further information about this report or the Accelerator Program, please contact Eddie Oldfield, Senior Lead, Projects & Advisory Services, Phone: 506-440-3854 or Email: eoldfield@questcanada.org

7.0 Annex

7.1 Participant List

Name	Title	Organization
David Hunter	Resident	
Sarah Pacey	CAO	Florenceville-Bristol
Nancy Whyte-McCauley	Councillor and Deputy Mayor	Florenceville-Bristol
Tamara Brown	Account Specialist	Énergie NB Power
Aaron Willie	Hotel Manager	Amsterdam Inn and Suites
Bobbi O'Donnell	Tourism & Business Development Manager	Florenceville-Bristol
Peter Corbyn	Independent Consultant	Atlantic Garden Homes
Brian McCain	Director, Environment and Resource Efficient Operations	McCain Foods
Charles Walker	Recreation Manager	Florenceville-Bristol
Sara Mudge	Community Energy Specialist	Énergie NB Power
Richard Orser	President	Buttermilk Creek Development inc.

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