Committee of the Whole

July 6, 2021
8:30 a.m.
Virtual – Via Zoom
Council Chambers, Town Hall
359 Main Street

Agenda

1. **Approval of Agenda**

2. **Approval of Minutes**
   a. Committee of the Whole In-Camera Minutes, May 4, 2021
   b. Committee of the Whole Minutes, June 1, 2021
   c. Committee of the Whole In-Camera Minutes, June 1, 2021

3. **Presentations**

4. **Public Input / Question Period**

   PLEASE NOTE:
   - Public Participation is limited to 30 minutes
   - Each Person is limited to 3 minutes and may return to speak once, for 1 minute, if time permits within the total 30-minute period
   - Questions or comments are to be directed to the Chair
   - Comments and questions that relate to personnel, current or potential litigation issues, or planning issues for which a public hearing has already occurred, but no decision has been made by Council, will not be answered.

5. **Councillor Conference Reports**
   a. NSFM

6. Committee Reports (Internal)

a. Accessibility Advisory Committee
b. Audit Committee
c. Environmental Sustainability
d. Planning Advisory Committee
e. RCMP Advisory Board

7. Staff Reports for Discussion

a. RFD 040-2021: Snow and Ice Clearing Policy
b. Info Report: Economic Development
c. Info Report: Climate Change Update
d. Info Report: Alcohol Strategy Engagement Process
e. Info Report: Accessibility Report Card
f. RFD 041-2021: Wickwire Well Generator
g. RFD 039-2021: Physician Navigator Funding Request

8. Request for Agenda Item

a. Saint-Anne-de-Bellevue

9. CAO Report

10. Committee Reports (External)

a. Valley Waste Resource Management (VWRM)
b. Kings Transit Authority (KTA)
c. Kings Point-to-Point (KPPT)
d. Valley Community Fibre Network (VCFN)
e. Annapolis Valley Trails Coalition (AVTC)
f. Wolfville Business Development Corporation (WBDC)
g. Diversity Kings (DK)

11. **Public Input / Question Period**

12. **Adjournment to In-Camera Meeting under *section 22(2)(c) Of the Municipal Government Act.***

13. **Adjournment of In-Camera Meeting**

14. **Regular Meeting Reconvened**

15. **Regular Meeting Adjourned**

APPROVAL OF AGENDA

Moved
Seconded
That the agenda be approved as circulated and/or amended.

APPROVAL OF MINUTES

a. Committee of the Whole In-Camera Meeting, May 4, 2021

Moved
Seconded
That the in-camera minutes of May 4, 2021 Committee of the Whole meeting be approved as circulated and/or amended.

b. Committee of the Whole Meeting, June 1, 2021

Moved
Seconded
That the minutes of June 1, 2021 Committee of the Whole meeting be approved as circulated and/or amended.

c. Committee of the Whole In-Camera Meeting, June 1, 2021

Moved
Seconded
That the in-camera minutes of June 1, 2021 Committee of the Whole meeting be approved as circulated and/or amended.

STAFF REPORTS FOR DISCUSSION

a. RFD 040-2021: Snow and Ice Clearing Policy

Moved
Seconded
That Committee of the Whole forward the following motion to Council for decision:

That Council approve the removal of Clause 1.2 in Policy 1223-50 — Snow and Ice Clearing, as presented in the July 6, 2021 Committee of the Whole agenda package.

b. RFD 041-2021: Wickwire Well Generator

Moved
Seconded
That Committee of the Whole forward the following motion to Council for decision:

That Council approve a $20,000 increase to the Water Utility Capital Budget for the Wickwire Ave. Generator Project, bringing the total approved spending up to $100,000.

c. RFD 039-2021: Physician Navigator Funding Request

Seconded

That Committee of the Whole forward the following motion to Council for decision:

That Council approve a $5,000 grant contribution to the AVCC Physician Navigator Position and that future year's contributions be considered during the budget processes for fiscal 2022/23 and 2023/24.

ADJOURNMENT TO IN-CAMERA

Moved

Seconded

That Council move to an in-camera meeting under section 22(2)(c) of *the Municipal Government Act.*

ADJOURNMENT

Moved

Seconded

That the regular Committee of the Whole meeting be adjourned.

ATTENDING

- Mayor Wendy Donovan
- Deputy Mayor Oonagh Proudfoot
- Councillor Isabel Madeira-Voss
- Councillor Jennifer Ingham
- Councillor Jodi MacKay
- Councillor Mike Butler
- Councillor Wendy Elliott
- Chief Administrative Officer Erin Beaudin, and
- Amanda Brown, Recording Secretary

ALSO ATTENDING

- Director of Finance, Mike MacLean
- Director of Planning and Development, Devin Lake
- Special Projects Coordinator, Barb Shaw

PRESENTATIONS:

- Judy Rafuse and
- Brianna Hall

CALL TO ORDER

Chair, Mayor Donovan, called the meeting to order at 8:31 a.m.

Agenda Item	Discussion and Decisions
1. Approval of Agenda	**01-06-21 IT WAS REGULARLY MOVED AND SECONDED THAT THE AGENDA BE APPROVED AS AMENDED:** • Mayor Donovan provided acknowledgment regarding the deaths of the 215 children in Kamloops. Council held a moment of silence in their memory. **CARRIED**
2. Approval of Minutes	**02-06-21 IT WAS REGULARLY MOVED AND SECONDED THAT THE MINUTES FROM THE COMMITTEE OF THE WHOLE MEETING, MAY 4, 2021 BE APPROVED AS CIRCULATED/AMENDED.** **CARRIED**
3. Presentation by Judy Rafuse and Brianna Hall – Physician Community Navigator	• Brianna Hall provided an overview of the presentation provided to Council surrounding initiatives provided to keep Dalhousie Doctors residents to remain in Nova Scotia. • It was noted Brianna was a part time employee and is putting in full time hours for this incentive without being paid.

Agenda Item	Discussion and Decisions
	• Requesting Funding Support of $5,000 for each of the next 3 years to assist in the program and provide payment for the hours being put into the project by Brianna. • There has been one resident that will be staying in the Wolfville area and 2 more out of the five in the program are considering remaining in Nova Scotia. • COVID has put a damper on site visits and events, but hopefully things will start to ramp back up with the ease of restrictions. • One of the residents from New Brunswick is spreading the word about how lovely Wolfville is to friends and they are now having others requesting to have a site visit. • It was noted by Brianna the numbers of Nova Scotia residents are going down with the recruitment of doctors coming to Nova Scotia from previous years. • Mayor Donovan advised as it is a financial request not in the budget it would be referred to Staff to bring back and RFD.
4. Public Input/Questions	• No Public Input.
5. Committee Reports	• There were no additions to the Committee reports as presented.
6. Staff Reports for Discussion	
a. RFD 034-2021: Street Naming West End Lands	• Director Lake provided an overview. There is an extension of streets being created and it is tasked to Council to name the two streets. • The process is to consult the Historic Society when naming the streets. There was a recommendation to name the cross street after former Mayor Bob Stead "Stead Way". Review of the other names submitted. • Mayor Donovan advised they should be done in two parts and asked if the cross street should be discussed first or if all names should be put together and two names picked from all. • It was suggested if the Town is naming streets, parks etc., after individuals. It would be great if there could be a plaque provided to explain who the individual is and what they contributed to the community. • Council agreed that "Stead Way" would be the name for the Crossroad and that Jessie Jagger for the second.

Agenda Item	Discussion and Decisions
	03-06-21 IT WAS REGULARLY MOVED AND SECONDED THAT THE COMMITTEE OF THE WHOLE FORWARD THE FOLLOWING MOTION TO COUNCIL FOR DECISION: **THAT COUNCIL APPROVE NAMING THE NEW STREETS IN THE WEST END DEVELOPMENT, IDENTIFIED IN THIS REPORT, AS RECOMMENDED BY THE HISTORICAL SOCIETY AND IN ACCORDANCE WITH STREET NAMING POLICY NO. 610-004 AS "STEAD WAY" AND JESSIE JAGGER. (TBD BY COUNCIL FROM OPTIONS PROVIDED).** **CARRIED**
b. RFD 033-2021: Indemnification and Legal Assistance Policy	• Special Projects Coordinator Barb Shaw provided some clarification surrounding the RFD. • There has been a change to the budget amount, and it would be set at $20,000.00. • Based on discussion and Town Councils requests, research was completed and Council even though they are not members of staff can be added to the EAP for $3.62 per month. This would provide additional support such as counselling and a bridge for support and a first point of contact. • It was noted there is no co-pay with any other program that Councillors may have, and the Town would cover the cost on behalf of the Councillors. • Councillor MacKay advised the policy should be principled and it needs to be a blanket amount. Council should not be determining in-camera if someone is being harassed and how much everyone is going to be provided from the amount. • It should not be a budget dependent amount; it should be if the amount is up to $20,000 then everyone is opened to receive up to that maximum amount. • The question was asked surrounding how does this protect people's privacy? • Mayor Donovan advised she would still like more clarification in the policy especially surrounding the definition of what harassment is. It would be nice to see examples such as cyber bullying, stocking, physical threats etc. It should also be clearer that the harassment must come to Council as something that was done as part of their job and their role. • The second part of the RFD is not precedent setting because the Council in Kentville and Bridgewater are both provided benefit packages as Council as it is a job.

Agenda Item	Discussion and Decisions
	• Director of Finance Mike MacLean advised it would be determined by the definition of harassment as set out in legislation and there would be input from the Town Solicitor and the CAO's office as guidance to Council when deciding. • CAO Beaudin advised it may be beneficial for Council to have a Standard Operating Procedure (SOP) drafted and provided for review based on the discussion. • Direction was provided to staff to complete the SOP and bring back to Council and no motion would be put forth until reviewed.
c. Info Report: AT and Mobility	• Director Lake provided an overview surrounding the status of the Active Transit and Mobility report**.** • Review of the active transportation map provided by GIS. Director Lake noted it is being worked on internally to highlight information for the public. A package will come forward that will include some of the micro transit feasibility study as funds have become available based on an email that was just received. • Deputy Mayor Proudfoot asked if the GIS system has the ability for a historical overlay to explain where the names etc., have resulted from? • Director Lake advised there is a link in the report to allow Councillors to check out the GIS system and if they have a chance to do so and provide any feedback it would be appreciated.
d. Info Report: Web Development Update	• Barb Shaw provided an update surrounding the development of the public website. • The contract was awarded to Blaze Studios in New Brunswick. There has been some internal engagement with them and staff. • Looking for input from Council regarding; what are the priority areas of how it will engage the public? What is the most important take away experience to be from someone landing on the new site? • Answering a question or inspiring people to get out and visit. By having someone who is not from town or connected do a review and use the website to see if the answers can be obtained from the website would be helpful. • It would be great to have a list and timeline on the website surrounding projects and where they currently are. It is great to watch the update on the splashpad and there are many projects taking place and this should be a way to provide the information.

Agenda Item	Discussion and Decisions
	• It would be helpful to have the site be user friendly as now it is very difficult to navigate. This is difficult for seniors. • Suggested that it may be nice to have a "Kid Zone" to allow youth to ask questions and receive answers. • It would be beneficial to have public art on the website and have a great search engine as well as having the contacts at the top instead of the bottom. • Accessibility must be at the forefront when doing the website. Having audio and simple language etc. • A "frequently asked question" section would be useful. The ability to be able to search within our documents on the website would be helpful and the links included in the documents. • It is not tourist friendly. There are no links to winery/restaurants etc., there needs to be a where to go, what to do etc., there needs to be some separation between the residents and the tourist to navigate. • There is very little regarding the history of Wolfville.
7. CAO Report	• CAO Beaudin advised there will be discussion with management will take place surrounding the re-opening plan tomorrow and more information will be provided. • There have been some staffing changes over the past few months so there have been some slowdowns surrounding projects. • There is work being completed surrounded location of the courts and discussions surrounding the old tennis courts at Acadia and putting them there. • The fire services review is now live. There has been some interest from the press surrounding the report.
8. Committee Reports (External)	• No further information outside of the reports.
9. Public Input/Question Period	• There were no questions from the public.

Agenda Item	Discussion and Decisions
10. Adjournment of Regular Meeting to In-Camera Meeting	**04-06-21 IT WAS REGULARLY MOVED AND SECONDED THAT THE REGULAR COMMITTEE OF THE WHOLE MEETING ADJOURN TO IN-CAMERA MEETING AT 10:35 A.M.** **CARRIED**
11. Adjournment of In-Camera and Regular Meeting	**05-06-21 IT WAS REGULARLY MOVED AND SECONDED THAT THE IN-CAMERA AND REGULAR COMMITTEE OF THE WHOLE MEETING ADJOURN AT 11:15 A.M.** **CARRIED**

Approved by Committee of the Whole Motion **-07-21, July 6, 2021
As recorded by Amanda Brown, Recording Secretary

NSFM REPORT

Title: NSFM Spring Conference Report
Date: May 6th / 7th, 2021
Department: Committee of the Whole

UPDATE

Day One:

- Keynote speaker, Bill Carr, spoke with great enthusiasm, humor and many serious elements about the need to bounce back/ ahead with how our jobs are being done during the pandemic.
- Bill's presentation put a lot of focus on how collective thinking, the meticulous use of time and teamwork can make the shifts in our communities stronger.
- Follow Bill at www.arcworks.ca, and he discussed his books and courses.
- So many wonderful points about communication, listening skills, reframing scenarios, checking in and out of situations, and how to change for the better- wonderful presentation!
- Other Presentations included: Neighbouring municipalities of Cumberland and Colchester county who recently collaborated on improved quality of life and methods to propel economic development in their areas. Mayors Christine Blair and Murray Scott spoke regarding their Rural Internet and Geopark projects.
- Next up was a Mentoring Plus Strategy presentation between Towns of Kentville, New Glasgow and Truro with focus on health care costs, reduced labor force, and the increasing number of retirees.
- Up next was Pictou County REMO presentation discussing the emergency management planning, Preparation, response, and recovery in Pictou County. This represents six municipal units, and it was discussed how they work together and how the strengthened during the global pandemic.
- Cape Breton Central MLA Kendra Coombs presented about Partnerships and Collaboration Moving Asset Management Forward in Nova Scotia. This was all about Asset Management, investments and resource allocations within the municipality. She reviewed IAMNS, Infrastructure Asset Management Working Group of Nova Scotia.

Day Two:

-The morning consisted of a lengthy presentation called Getting Regulation Right, regarding the Nova Scotia Office of Regulatory Affairs and Service Effectiveness, with the mandate to maintain a high functioning regulatory environment- reducing unnecessary regulatory burden- or RED TAPE- in Nova Scotia. Great presenters, with lots of information about regulatory environments for business, citizens, between governments and with other government, including municipalities- lots of discussion followed.

- Following that was the rural, town and regional caucus meetings.

-Town Caucus Meeting was held with presentations from Brenda Chisholm Beaton, and Lennie White with emphasis on roads, the municipal and provincial guide to roads, issues with road maintenance and upkeep. More discussion followed on the many differences between rural regions and towns.

Submitted,

Mike Butler, Wolfville Town Council

COMMITTEE UPDATE
Title: Accessibility Advisory Committee
Date: July 6,2021
Department: Committee of the Whole

Accessibility Advisory Committee met virtually on June 14, 2021; the next meeting is scheduled for September 13, 2021.

It was suggested by committee member Birgit, the committee begin by acknowledging that we are in Mi'kma'ki, the unceded territory of the Mi'kmaq people, moving forward to start each meeting.

James Sanford from Acadia gave an update on their Accessibility Audit. Three summer students were hired to concentrate on the academic buildings and focus on doorways and bathrooms. He discussed a learning program to support students with on-the-job training, and what accommodations employers can make for accessibility.

Staff reports for discussion, as noted by Director MacLean, no formal complaints submitted.

A discussion was had by the committee on the review process and the Built environment was agreed should be first and foremost, and this should lead to better address employment, and make the hiring processes easier with braille business cards and accessible parking. WBDC was discussed to be beneficial to reach out to in the future.

Discussion was had about the Rick Hansen Foundation Accessibility Certification (RHFAC). The difference between RHFAC certified and RHFAC gold standard was brought up. Director Thomason will provide the committee with more information on the differences moving forward so the committee can best review the town's buildings and what benchmarks can be used for building code requirements.

It was previously discussed; the committee will have a walkabout on July 12/21 to see which parks in town should be closely looked at to be more accessible. It was suggested we visit, Harvest Moon to Willow Park, Quiet Park, Rotary, Pond View Park and potentially Reservoir Park for 90 minutes.

Committee member Pamela suggested breaking into groups to cover more ground, with a common check list, from perhaps our GIS department.

Finally, we talked about working groups to discuss awareness and ideas for future events. Our communications person, Barb discussed how she could be involved, with the new software the town is adding specifically Bang the Table, having the community interact in a virtual space, sharing information and videos.

Respectively submitted by:

Councillor Jennifer Ingham

COMMITTEE UPDATE

Title: Audit Committee Update
Date: June25, 2021
Department: Audit for Committee of the Whole

UPDATE

ATTENDING from Grant Thornton

- Gloria Banks, CPA, CA, Principal
- Jessica Clahane, CPA, CA, Senior Manager

Director MacLean review key highlights from the RFD starting with reference to the provincial Financial Condition Indicator and staff's estimates of fiscal 2020/21 FCI data. Attention was drawn to a comparison of year end forecasts (presented in January) with actual results for the two non-consolidated operating funds (Town and Water).

A more detailed review of the audited Consolidated Financial Statements included key changes in the Statement of Financial Position, and the Notes to the Financial Statements. The Director and representatives from Grant Thornton provided clarification on a number of questions. Explanation of highlighted variances were referenced in the text of the Request for Decision report.

Item 3 c. on the Agenda was covered during review of Note 8 to the Consolidated Financials covering remuneration and expenses of Council and the CAO

Gloria Banks and Jessica Clahane walked the Committee through the Report to Audit Committee, covering reference to completion of the audit deliverables according to the audit plan presented to the Committee in April 2021.

Key areas of Audit Risks were reviewed, along with results/findings of audit procedures carried out. A key area this year was the COVID-19 pandemic and its impacts on local, national and international communities. The Town ended fiscal 2020/21 with no significant impact on it's ability to continue as a going concern. Appropriate note disclosure reflects the past year and the uncertainty of COVID-19 on a go forward basis. Director MacLean provided a copy of the proposed note related to COVID.

Jessica Clahane reviewed further details of the audit, including fraud risk. Explanation was provided as types of procedures taken to satisfy audit requirements around fraud risk, noting that no instances of fraud or suspected fraud were identified during their work.

This year's audit did not find any instances of adjustments required in the draft financial statements.

The content of the Independent Auditor's Report was reviewed with the Committee. This will form part of the final financial statement document.

Further to this some good discussion on:

segregation of duties and proper controls that are in place

investment the Town makes to its community in terms of grants to organizations

investment the Town makes in the form of salaries – and the work that goes into maintaining and growing the Town's infrastructure and sense of place

tender discussions and how this will be improved going forward (new staff in PW)

how we may need to take a pause to ensure proper costing and spending in some of our long term capital projects.

Attached is a spreadsheet that I thought was a great way to break out the numbers by Department.

Respectfully submitted,

Jodi MacKay

	General Government Services	Protective Services	Transportation Services	Environmental Health Services	Environmental Development Services	Recreation and Cultural Services	Water Utility Services	2021 Consolidated	2020 Consolidated
	$	$	$	$	$	$	$	$	$
Revenue									
Taxes	7,333,917	391,159	-	-	30,355	-	-	7,755,431	7,293,895
Grants in lieu of taxes	1,008,067	-	-	-	-	-	-	1,008,067	981,513
Sale of services	1,650	319,881	12,130	428,506	4,708	33,797		800,672	796,469
Other revenue from own sources	137,034	38,308	13,526			1,377	(17,537)	172,708	265,891
Unconditional transfers from other governments	71,063	-	-	-	-	-	-	71,063	71,037
Conditional transfers from governments and others	124,701	1,915	1,132,272	32,000	135,605	68,554	43,106	1,538,153	614,000
Metered sales	-	-	-	-	-	-	696,135	696,135	709,143
Sprinkler services	-	-	-	-	-	-	10,850	10,850	10,817
Other	-	-	-	-	-	-	27,432	27,432	40,603
Total Revenues	8,676,432	751,263	1,157,928	460,506	170,668	103,728	759,986	12,080,511	10,783,368
Expenses									
Salaries, wages, and benefits	702,921	180,844	462,505	95,887	450,997	621,516	347,162	2,861,832	2,949,229
Contracted Services	27,829	1,523,057	431,679	121,503	49,104	54,570	48,771	2,256,513	2,143,975
Purchases of goods & services from public sector	77,246	-	174,813	425,961	1,306	-	-	679,326	794,127
Materials, goods, supplies, and utilities	204,427	188,403	290,877	167,384	52,416	218,842	310,124	1,432,473	1,490,463
Grants and transfers to organizations	225,301	-	-	-	30,000	48,350	-	303,651	343,322
Other Expenses	512,687	71,101	12,643	575	21,728	12,624	21,743	653,101	516,892
Interest on Long term debt	-	3,592	131,408	25,941	50	7,324	19,723	188,038	195,541
Amortization	31,535	174,911	804,988	230,016	132,431	37,219	142,107	1,553,207	1,540,359
Total Expenditures	1,781,946	2,141,908	2,308,913	1,067,267	738,032	1,000,445	889,630	9,928,141	9,973,908
Annual Surplus (deficit)	6,894,486	(1,390,645)	(1,150,985)	(606,761)	(567,364)	(896,717)	(129,644)	2,152,370	809,460

COMMITTEE UPDATE

Title: Environmental Sustainability Committee
Date: June 3rd, 2021
Department: Committee of the Whole

UPDATE

- The environmental sustainability committee approved agenda and minutes from previous meeting, this June 3rd meeting was scheduled earlier than our usual meeting because of the breadth of projects being worked on by staff!
- There was no public input.
- Director Lake gave an update on the climate action plan draft including summary of a primer on climate planning and a rural communities guide to climate action.
- Director Lake also gave presentations on inspire Wolfville and Thinkwell shift final documents, with reports being prepared to present to counsel.
- there were also updates on the PACE program including recent government funding with much more in the works for the how and when clients can start applying for PACE funding.
- Director Lake mentioned projects like Earnscliffe and the Cherry Lane well heads.
- Director Lake also updated the environmental sustainability committee on the AT /Mobility Work update. Also, an update on the Engineering Tech - student work experience IE public works building and visitor Information Center updates
- Director Lake is extremely busy with many projects and lots of reports coming to both the planning advisory committee and the environmental sustainability committee and eventually to council with lots of climate development projects, housing development projects, and flood mitigation planning and development. It was discussed about more frequent ESC meeting as well as joint PAC and ESC meetings in the future.
- Climate change mitigation coordinator Lindsay Slade made a presentation about the regional climate work in Wolfville, including an overview of student summer projects. Lots of excited summer student run projects coming to light. (Surveys, Consultations, Bang the Table Initiative)
- A great roundtable discussion was had from participants on the committee. Bill Zimmerman brought up the subject of solar panel farms. there was discussion regarding Acadia's involvement in the PACE program as well as solar panel developments, with input from Acadia correspondent Jody Noiles.
- The next Environmental Sustainability Committee meeting is scheduled for Monday July 26th, 230-430

Respectfully Submitted,

Councillor Mike Butler

COMMITTEE UPDATE

Title: Planning Advisory Committee
Date: June 10, 2021
Department: Committee of the Whole – July 2021

- Regrets from Mayor Donovan and Alice Cohen
- The selection of Vice Chair will occur at the meeting in July as there were several members of the committee missing. The chair asked if there were any in attendance interested. Beverly Boyd indicated that she was interested. Others will be asked in the next meeting.
- Director Lake provided an overview of the "Big Picture" of the housing. This discussion will be ongoing and lengthy with a plethora of information available. It is hoped that the committee will bring a diversity of perspectives to the conversation so that we can make decisions that make sense to our community as a whole.
- There was some discussion about representatives of the discussion who are missing: i.e. students, cultural and racial backgrounds, socio-economic backgrounds, etc. The chair encouraged members of the committee to talk to community members and collect information and suggestions and bring it back to the committee.
- There was some discussion about having a lengthy workshop in the Fall where committee members could really role up their sleeves and develop some strategy. Community members will, of course, be invited to join the conversation and diversity of perspective.
- The housing discussion took about 1. 5 hours. It was decided that agenda items would be moved to the next meeting and that we would move on to the round table.
- Director Lake provided a brief update regarding the Climate Action.
- There were a few general questions and observations by the committee members.
- No members of the public were present.
- The next meeting is planned for July 8, 2021 – 4:00 p.m.

REQUEST FOR DECISION 040-2021

Title: Snow and Ice Clearing Policy
Date: 2021-07-06
Department: Engineering & Public Works

SUMMARY

Snow and Ice Clearing Policy

The Town has completed a review of winter maintenance activities provided for private lanes within the Town. It is important for the Town to be consistent and equitable in the level of service it provides for property owners living on private lanes. There are also liability concerns around providing maintenance services on privately owned properties. Out of the eight total private lanes within the Town, Toye Lane and a small lane north of Railtown are the only private lanes that benefit from winter maintenance services provided by the Town. Safety considerations around plowing Toye Lane with public equipment have required the Town to engage a private contractor in recent years, which is not consistent with the Town's winter maintenance policies and procedures.

Section 1 of the Town's Snow and Ice Clearing Policy states the following:

1.1 The Town shall provide snow and ice clearing services for all Municipal streets, sidewalks and Town owned or managed parking lots within the Town of Wolfville.

1.2 The Town shall provide limited snow and ice clearing service to the following areas not owned by the Town in deference to long standing past practice:

a) Toye Lane.
b) The extension of Harbouview Drive north from the railway tracks.

Based on the above considerations, staff recommend that Section 1.2 be removed from the Policy. Since this would represent a decrease in level of service for these two lanes from the past, staff recommend for the Town to continue providing maintenance services until the spring of 2022 to phase in the change and provide property owners with enough time to prepare for future arrangements. This would be communicated by letter to all the affected property owners.

DRAFT MOTION:

That Council approve the removal of Clause 1.2 in Policy 1223-50 — Snow and Ice Clearing, as presented in the July 6, 2021 Committee of the Whole agenda package.

1) CAO COMMENTS

The CAO supports the recommendations of staff.

2) LEGISLATIVE AUTHORITY

- Town of Wolfville Policy 1223-50 — Snow and Ice Clearing
- Section 312 (1) of the MGA — Street related powers

3) STAFF RECOMMENDATION

Staff recommend that Section 1.2 be removed from the Policy. Since this would represent a decrease in level of service for these two lanes from the past, staff recommend for the Town to continue providing maintenance services until the spring of 2022 to phase in the change and provide property owners with enough time to prepare for future arrangements. This would be communicated by letter to all the affected property owners.

4) REFERENCES AND ATTACHMENTS

1. Existing Policy: Town of Wolfville Policy 1223-50 — Snow and Ice Clearing (attached)
2. Proposed Policy: Town of Wolfville Policy 310-004 — Snow and Ice Clearing (attached)

5) DISCUSSION

Currently, Section 1 of the Town's Snow and Ice Clearing Policy states the following:

1.1 The Town shall provide snow and ice clearing services for all Municipal streets, sidewalks and Town owned or managed parking lots within the Town of Wolfville.

1.2 The Town shall provide limited snow and ice clearing service to the following areas not owned by the Town in deference to long standing past practice:

c) Toye Lane.
d) The extension of Harbouview Drive north from the railway tracks.

The Town has completed a review of winter maintenance activities provided for private lanes within the Town. It is important for the Town to be consistent and equitable in the level of service it provides for property owners living on private lanes. There are also liability concerns around providing maintenance services on privately owned properties. Out of the eight total private lanes within the Town, Toye Lane and a small lane north of Railtown are the only private lanes that benefit from winter maintenance services provided by the Town. Safety considerations around plowing Toye Lane with public equipment have required the Town to engage a private contractor in recent years, which is not consistent with the Town's winter maintenance policies and procedures.

The locations of Toye Lane and Harbourview Drive Extension are shown in Figures 5-1 and 5-2. Both of these private lanes are surfaced with gravel. Toye Lane measures approximately 70m in length with steep vertical and horizontal grades. The Town began plowing the Harbourview Drive Extension before the development of Railtown and the Waterfront Parking Lot, which is why Policy 1223-50 refers to the area

north of the Railway Tracks. Now that Railtown is plowed by a private contractor, the remaining section plowed by the Town is approximately 20m in length.

Winter maintenance for these two private lanes likely began as informal verbal arrangements between Town staff and property owners. When Policy 1223-50 was created, these private lanes were added in deference to long standing past practice. It does not appear that an overall review of services provided by the Town for private lanes was completed at that time.

In addition to the proposed policy change, the existing policy has also been incorporated into the Town's current policy template with a few minor updates, as attached herein.

Figure 5-1. Toye Lane

Figure 5-2. Harbourview Drive Extension

6) FINANCIAL IMPLICATIONS

This decision would lead to savings of approximately $5,000 per year on contracted services for Toye Lane, as well as in-house cost savings for the time and materials required to provide winter maintenance services to the private lane north of Railtown.

7) REFERENCES TO COUNCIL STRATEGIC PLAN AND TOWN REPORTS

In addition to operational considerations, the recommendation also touches on the Economic Prosperity and Social Equity priorities of Council in the 2021-2025 Strategic Plan.

8) COMMUNICATION REQUIREMENTS

Changes to the Policy approved by Council will be communicated by letter to all the affected property owners.

9) ALTERNATIVES

Do not change Policy 1223-50 and continue providing winter maintenance services at the cost of the Town to the two private lanes included in the Policy.

REQUEST FOR DECISION 040-2021

Title: Snow and Ice Clearing Policy
Date: 2021-07-06
Department: Engineering & Public Works

Existing Policy:

Town of Wolfville Policy 1223-50 — Snow and Ice Clearing

REQUEST FOR DECISION 040-2021

Title: Snow and Ice Clearing Policy
Date: 2021-07-06
Department: Engineering & Public Works

Proposed Policy:

Town of Wolfville Policy 310-004 — Snow and Ice Clearing

TOWN OF WOLFVILLE
POLICY

Title: Snow and Ice Clearing	
Policy No.: 1223-50	Supersedes:
Effective Date: December 1, 2003	Approval By Council Resolution No.: 08-11-03

Purpose:

The Municipal Government Act provides in section s.312(3): "The Council may expend funds for the purpose of clearing snow and ice....."
The purpose of this Policy is to define the responsibilities and objectives of the Town of Wolfville in the clearing of snow and ice in the Town of Wolfville.

Definitions:

Town means the Town of Wolfville.
Council means the Council of the Town of Wolfville
Director means the Director of Operational Services for the Town of Wolfville.
Public Works Department means the Public Works Department of the Town of Wolfville
Chief Administrative Officer means the Chief Administrative Officer of the Town of Wolfville

Policy Statement:

1 **General**

1.1. The Town shall provide snow and ice clearing services for all Municipal streets, sidewalks and Town owned or managed parking lots within the Town of Wolfville.

1.2. The Town shall provide limited snow and ice clearing service to the following areas not owned by the Town in deference to long standing past practice:

a) Toye Lane.

b) The extension of Harbourview Drive north from the railway tracks.

1.3. The Town may contract its own forces to provide snow and ice clearing services for other Municipal units at the discretion of the Director and with the approval of the Chief Administrative Officer.

1.4. The Public Works Department shall be responsible for performing snow and ice clearing services of the Town and may do so with its own forces and/or with the forces of private contractors.

1.5. Snow and ice clearing operations are subject to many variables that affect the practical application of any Policies related to them. The variables include; rate and accumulation of snowfall, temperature, wind velocity, time of day, and previous overtime by crew members. Considering these variables there will be times when the priorities or standards set through any Operational Procedures of the Public Works Department related to this Policy, will have to be adjusted by Management personnel of the Department of Public Works.

2 Priorities

2.1. The Town shall, through Operational Procedures approved by the Public Works Department, set priorities for the resources of the Public Works Department in the clearing of snow and ice.

2.2. The Public Works Department shall consider the following in setting priorities:

a) Resources shall be allocated to give first priority to matters that affect the safety and security of the public and operational staff of the Public Works Department.

b) Resources shall be allocated to provide priority to areas of high use over those of lower use.

2.3. The Town shall, through Operational Procedures approved by the Public Works Department, assign a priority level for all Town streets for snow and ice clearing. In assigning these priority levels the Public Works Department shall assign higher priority to streets that:

a) have high use,

b) provide access and egress for emergency services,

c) are potentially dangerous due to steep slope,

d) provide access to critical institutional uses.

3 Standards

3.1. The Town shall, through Operational Procedures approved by the Public Works Department, set standards for the provision of snow and ice clearing.

3.2. The Public Works Department shall consider the following in setting standards:

a) That the standards provide for reasonable safety and security of the public.

b) The budget and resource allocations provided by Council for snow and ice clearing.

4 Salt and Sand use

4.1. Generally the Town will use salt to clear snow and ice from Town Streets and parking lots.

4.2. The Town Public Works staff shall use best practices to limit the amount of salt use while maintaining safe conditions.

4.3. Salt shall be used for snow and ice clearing on sidewalks in the Downtown area.

4.4. Sand shall be used for snow and ice clearing on all other sidewalks in the Town, accepting that salt may be used occasionally to respond to severe conditions and matters of public safety.

5 Expenditures

5.1. Expenditures for snow and ice clearing are under the authority of the Director. He or she shall endeavour to ensure expenditures are within approved budgets.

5.2. In extreme conditions and when the safety of the public and operational staff requires it, the Director may make expenditures that will exceed the approved budgets. The Director shall notify the Chief Administrative Officer immediately of any such expenditures.

Mayor

November 27/03
Date

Chief Administrative Officer

Dec 01, 2003
Date

POLICY

Snow and Ice Removal	
Policy Number: 310-004	**Supersedes Policy Number:** 1223-50
Effective Date:	**Approved by Council Motion Number:**

1.0 Purpose

The Municipal Government Act provides in Section 312 (3): "The Council may expend funds for the purpose of clearing snow and ice from the streets, sidewalks and public places in all, or part, of the municipality." The purpose of this Policy is to define the responsibilities and objectives of the Town of Wolfville in the clearing of snow and ice in the Town of Wolfville.

2.0 Scope

This Policy covers snow and ice removal for the Town of Wolfville.

3.0 References

3.1 Snow and Ice Clearing SOP_310-801

4.0 Definitions

4.1 **Policy** means a course or principle of action adopted or proposed by a government, party, business or individual.

4.2 **Town** means the Town of Wolfville.

4.3 **Council** means the Council of the Town of Wolfville

4.4 **Director** means the Director of Engineering and Public Works for the Town of Wolfville.

4.5 **Public Works Department** means the Public Works Department of the Town of Wolfville.

4.6 **Chief Administrative Officer** means the Chief Administrative Officer of the Town of Wolfville

POLICY

5.0 Policy

5.1 General

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~~a) Toye Lane.~~
~~b) The extension of Harbouview Drive north from the railway tracks.~~

5.1.3 The Town may contract its own forces to provide snow and ice clearing services for other Municipal units at the discretion of the Director and with the approval of the Chief Administrative Officer.

5.1.4 The Public Works Department shall be responsible for performing snow and ice clearing services of the Town and may do so with its own forces and/or with the forces of private contractors.

5.1.5 Snow and ice clearing operations are subject to many variables that affect the practical application of any Policies related to them. The variables include; rate and accumulation of snowfall, temperature, wind velocity, time of day, and previous overtime by crew members. Considering these variables there will be times when the priorities or standards set through any Operational Procedures of the Public Works Department related to this Policy, will have to be adjusted by Management personnel of the Department of Public Works.

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5.2.1 The Town shall, through Operational Procedures approved by the Public Works Department, set priorities for the resources of the Public Works Department in the clearing of snow and ice.

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a) Resources shall be allocated to give first priority to matters that affect the safety and security of the public and operational staff of the Public Works Department.

b) Resources shall be allocated to provide priority to areas of high use over those of lower use.

5.2.3 The Town shall, through Operational Procedures approved by the Public Works Department, assign a priority level for all Town streets for snow and ice clearing. In assigning these priority levels the Public Works Department shall assign higher priority to streets that:

a) have high use,
b) provide access and egress for emergency services,
c) are potentially dangerous due to steep slope,
d) provide access to critical institutional uses.

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5.3.2 The Public Works Department shall consider the following in setting standards:

a) That the standards provide for reasonable safety and security of the public.

b) The budget and resource allocations provided by Council for snow and ice clearing.

5.4 Sand and Salt Use

5.4.1 Generally, the Town will use salt to clear snow and ice from Town Streets and parking lots.

5.4.2 The Town Public Works staff shall use best practices to limit the amount of salt use while maintaining safe conditions.

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5.5.2 In extreme conditions and when the safety of the public and operational staff requires it, the Director may make expenditures that will exceed the approved budgets. The Director shall notify the Chief Administrative Officer immediately of any such expenditures.

CAO or Town Clerk

Date

ECONOMIC PROSPERITY

ROADMAP

July 6, 2021 – Committee of the Whole

Economic Prosperity

This Roadmap builds on the May 2021 Information Report.

Today, we're serving up a MENU.

At our upcoming workshop you focus your ORDER.

In September, it is DELIVERED and SHARED.

Working toward clear directions and shared understanding.

Economic Prosperity

As you go through this, ask yourself:

Are these the 4 pillars we should focus on?

What actions are missing?

What will be our biggest win?

Biggest potential drawback?

How do we maintain our competitive advantage? (and build on it!)

Policy – Implementing our MPS

CORE CONCEPTS EP

Strategic/Managed Growth

Using municipal assets such as land, infrastructure and water resources efficiently, building more compact, walkable communities with adequate infrastructure, and planning neighbourhoods near amenities such as schools, jobs and recreation to encourage sustainable community development.

Fiscal Sustainability

To achieve a fiscal stance that allows the Town to service public debt, without the need to undertake policy adjustments that are implausible from an economic or political standpoint, given financing costs and conditions we face.

The Core Area

The core area refers to the Downtown boundaries that include commercial and neighbourhood designations that create a unique sense of place with concentration of mixed uses, pedestrian scale, distribution of buildings, open space and parking.

CittaSlow

The Town of Wolfville was officially designated as a Cittaslow community in April 2016. To be designated, a community must fulfill over 50 criteria addressing environmental protection and healthy lifestyles, support for local products, agriculture and artisans, community engagement, social justice, celebration of and respect for local culture, heritage and traditions, and the thoughtful development and use of technology for sustainability and community well-being.

Policy – Implementing our MPS

Community Priorities

EP **Economic Prosperity**

SE **Social Equity**

CA **Climate Action**

LU **Land Use and Design**

The policies of this plan action our Community Priorities and move us toward Our Shared Future.

2.3.2 ECONOMIC PROSPERITY

The long-term economic prosperity of the Town is linked to the commercial and employment opportunities available to existing and future residents. The Town is focused on enhancing its position as an educational and cultural hub, a destination for tourism, niche/boutique retail, and professional services while further developing offerings around food, libations (wine, cider, beer, etc) to leverage the Town's CittaSlow designation and brand proposition. A key thrust of this plan is the creation of additional commercial development opportunities — beyond our traditional downtown core. The Economic Prosperity objectives guide policies of this Municipal Planning Strategy and are identified with a symbol. EP

Policy – Implementing our MPS

EP Economic Prosperity

OBJECTIVE EP	OBJECTIVE EP	OBJECTIVE EP	OBJECTIVE EP	OBJECTIVE EP
To encourage growth and manage land use with a goal of balanced economic and environmental sustainability.	To ensure a vibrant local economy by supporting economic development, creative entrepreneurship, and home based business endeavours that further the Town's position as a regional cultural, tourism, and educational centre.	To enhance and strengthen the Core Area as the focal point of commercial and community activity.	To encourage a range of local and regional partnerships that enhance economic development within the Town.	To support what works and encourage new opportunities and investments.
ANTICIPATED RESULTS • Expand neighbourhood commercial opportunities. • Focus on infill development and gentle density.	**ANTICIPATED RESULTS** • Strive for top quality facilities and services, including an enhanced public library. • Further our brand as a hub of tourism, food and libations through additional opportunities along Main Street and in the Core Area.	**ANTICIPATED RESULTS** • Design Guidelines and visioning specific to the Core Area. • Focus on infill and walkability.	**ANTICIPATED RESULTS** • Strengthen partnerships with Acadia, the County of Kings, other Towns/ Municipalities, the Wolfville Business Development Corporation, Devour, Deep Roots and other partners and events.	**ANTICIPATED RESULTS** • Better development approvals process (e.g. fewer development agreements, more site plan approvals). • Focus on walkability and the Core Area.

Council Strategic Plan / Ops Plan

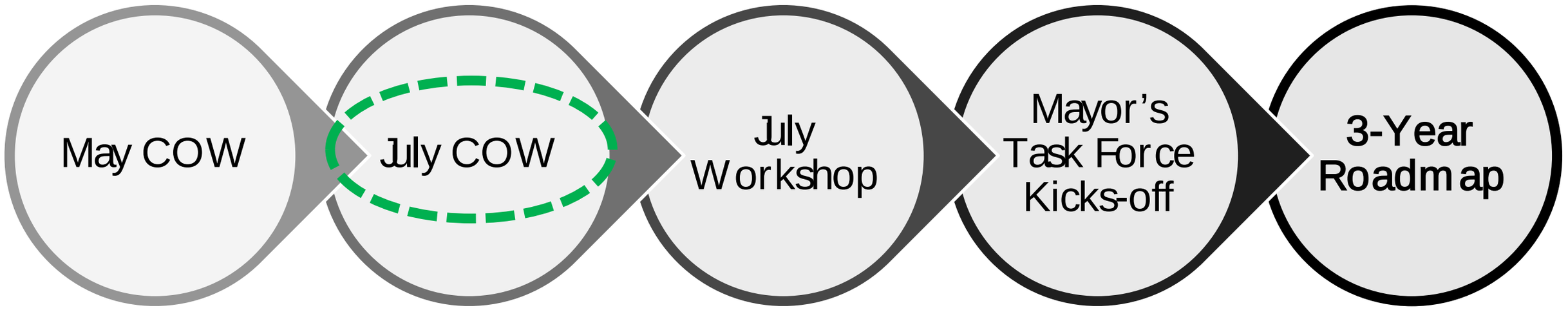
Council Strategic Plan / Town Capital and Operations Plan

(priority area 3 included here – see full documents for details)

Council Priority Area 3 (2021-2024): Economic Sector growth and support for commercial, business and entrepreneurial opportunities including retention and attraction of new economic opportunities.

Process and Timing

Economic Development Roadmap



- Council considered a report broadly outlining Economic Development.
- Council considers a draft "Roadmap" outlining actions and what can inform budget discussions and resourcing for the remainder of the Council term.
- Further discussion on directions and a deep dive into some areas if warranted.
- Mayor and Council begin a process to build relationships and discover gaps and needs.
- Council adopts a roadmap that informs their decision making for their remaining Council term.

What does it mean to you?

Economic Prosperity is…

Improving our Housing choices.

Taking bold Climate Action.

Creating Mobility Options.

Focusing on our Core Area and thriving business community.

Ensuring healthy relationships with our Partners.

Committing to equitable and inclusive decision making.

Fostering community wellness and recreation.

….and more!

Who does the work?

We all do!

A framework to move forward

Our focus is on 4 Strategic Areas over the next 3 years:

What are we working toward?

The 4 Strategic Areas will develop and evolve concurrently over time.

We will set priorities and decide what we will do when. How much capacity do we have? How much will these initiatives cost? How do we best leverage our relationship with our partners? (and other questions!)

We will capture the final decisions in an easy-to-read document that we can share.

It's our Roadmap. It might change as we move forward – but that's ok! This exercise will point us in the right direction.

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WORKING WITH OUR PARTNERS

ONGOING WITH OUR PARTNERS

WBDC

- Website, communications
- Office – Town role and presence
- Welcome package
- Inventory/Database of business and directory (website)
- Wayfinding
- Events and placemaking
- Business Licensing By-law

Acadia University

- Keeping students here. ASU.
- Community Harmony.
- MOU – Destination Acadia, Entrepreneurship, Business School, etc
- Housing
- Climate Change, Sustainability and Active Transportation

ONGOING WITH OUR PARTNERS

King's County

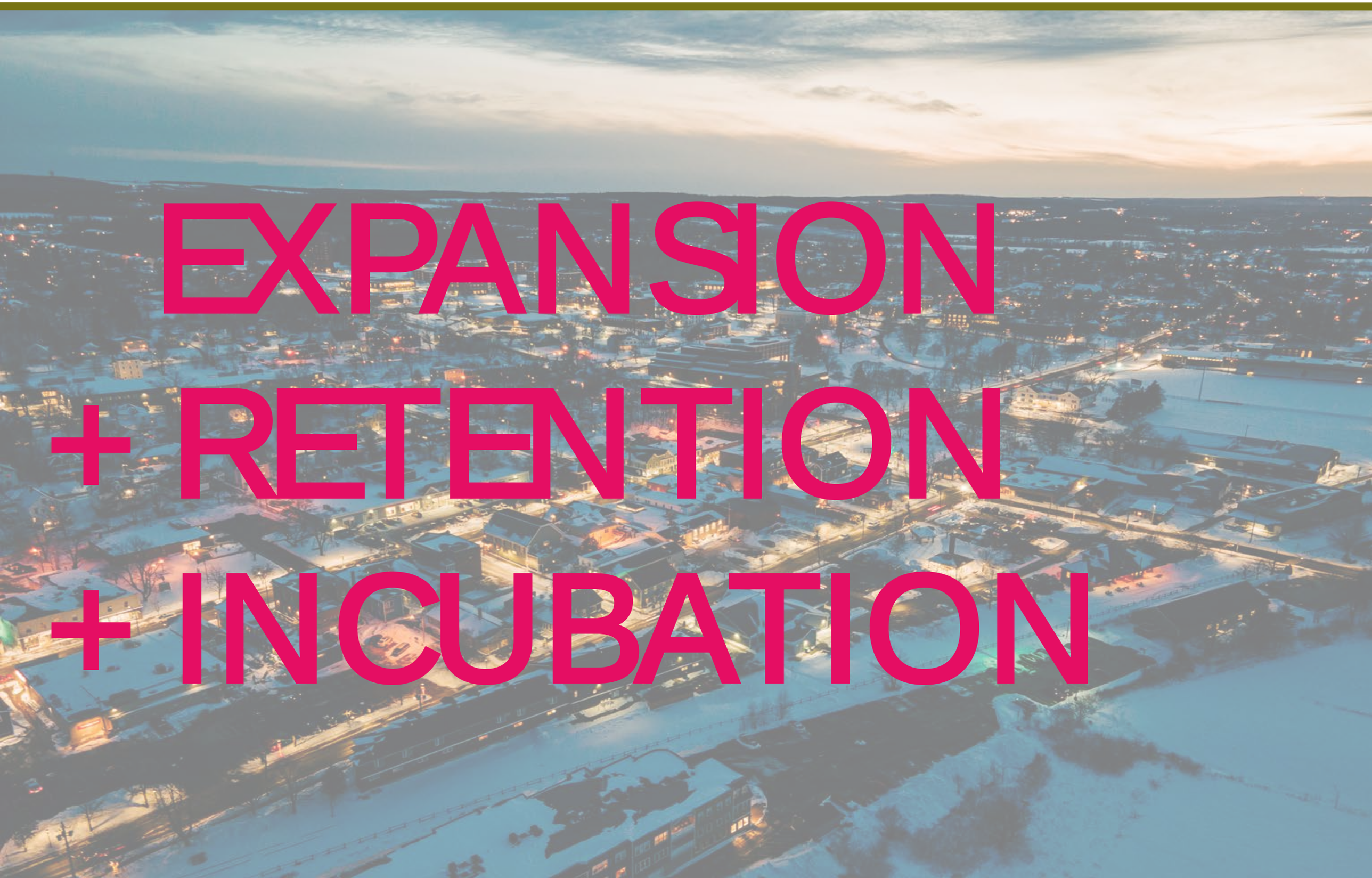
- Regional Rec Centre
- Library Expansion
- IMSA review and improved services
- Regional Climate work and low carbon opportunity

Non-Profit and Private Developers

- Devour
- Wolfville Farmers Market
- East End CDDs
- Infill Development
- New Businesses in C-1 and C-2

Other Regional Partners

- NSCC, REN, AVCC, COGS, other Municipal units, etc

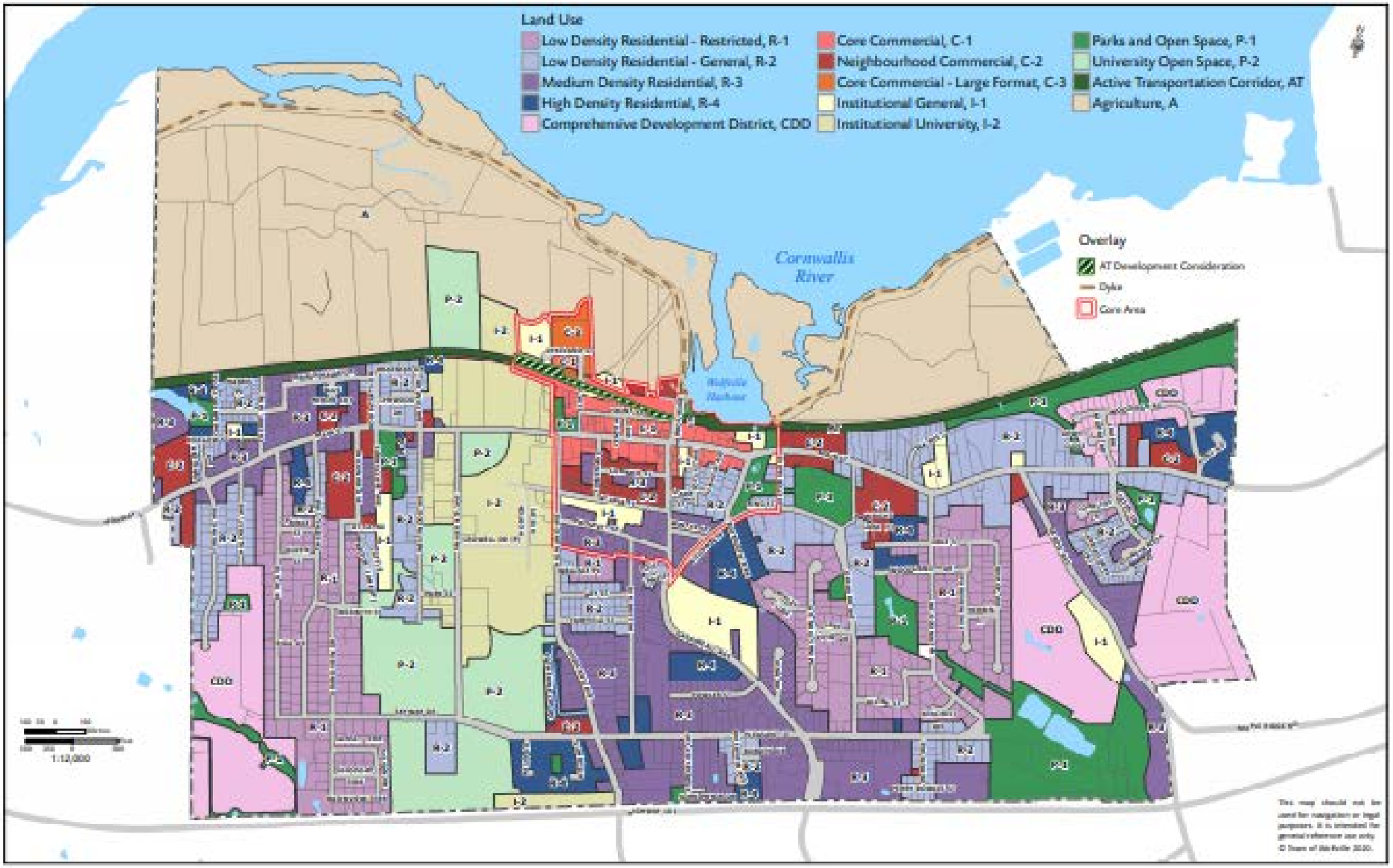

EXPANSION
+ RETENTION
+ INCUBATION

YEAR 1 - Expansion

- Bill 177 – C-2 Development Incentives.
  By-law development and process to approval.
  Analysis and Promotion of C-2 Zone.

- Working closely with WBDC on welcome package, office presence and other initiatives

YEAR 1 – Expansion (C-2)



YEAR 1 - Incubation

Begin incubation space(s) feasibility work with WBDC and/or other Partners

YEAR 1 - Retention

Mayor's Engagement on Economic Prosperity (Phase 1)

- Mayor and Council – bring people along with broader efforts. Listen.
- Supports building a business registry.
- Working toward a "what we heard" report
    - Bang the Table + Call to Action 1v1s (landlords, HBBs)
    - Separate section for entrepreneurs to-be (with business school)
- Provide Structure to engage, collect data
    - Master list and web based system to capture in a form that goes into our GIS
    - Questions that link back to the 4 focus areas, e.g.:
        - REN question / Regional coordination
        - Acadia access and opportunities
        - Tourism
        - How can the Town help you?
        - Home based business questions, Landlord questions, traditional businesses – will need custom approach

Working closely with WBDC on database and business licensing by-law and other initiatives

YEAR 1 - Retention

Traditional Business (C-1)

Landlords

Mayor and Council Engagement

Home based businesses

Live-work (C-2)

Accommodation

Partners

YEARS 2-4 MENU

- Mayor's Task Force Phase 2

  To be evaluated based on Business Outreach. Additional Partners engaged.

Expansion

- Advance Incubation Spaces from feasibility to Investment Package and Pilot Project

Retention

- Continue Working with our Partners

Incubation

- + + +

wolfville

TOURISM

Tourism Overview

As a Town, we are grappling with ‘our role’ within the tourism industry.

What are we beyond the Visitors Information Centre?

We must consider how we ‘set the stage’ for tourism.

Improving Economic Prosperity

The communities surrounding Wolfville have ‘bloomed’ in various industries; craft beverage, agritourism, outdoor/AT opportunities etc. The influx of attraction has drawn visitors into Wolfville’s Downtown Core. The Economic Prosperity Roadmap offers us an opportunity to check in, is our stage appropriately set?

Our Stage:

- Brand
- Website
- Parks and trails
- Streets and parking
- Washrooms
- Working towards Accessibility
- Working towards Equitable access to opportunities
- Policies (Policies have impact)
- Staff (interconnected department approach)

Setting the Stage

The Actors:

- Tidal Bay Appellation
- Naturally growing tourism industry (is it SMART Growth?)
- Natural Capital – vistas, The Bay of Fundy, The Annapolis Valley
- Acadia University
- The WBDC
- REN and STARR
- The Magic Wine Bus

Understudies (Underused talent/potential)

- Natural Capital – Tides/The Bay of Fundy, Hiking Trails, agriculture
- Active Transportation Tourism
- Cittaslow tourism
- Fair Trade tourism
- Destination Acadia
- REN and STARR
- Sustainable/regenerative tourism

Call Backs (items to revisit):

- Space for new tourism opportunities
- Lack of vacancy in accommodations and housing
- Balancing community member and visitor experience

Tourism Menu

What is on the Menu for Tourism?

While setting our stage and considering next steps, we must hold true to our intentions. In 2020, Council set the following Strategic Directions, **Social Equity, Climate Action, Economic Prosperity and Community Wellness**, all of which must be considered when navigating our role in the tourism industry. In the next three years, on the menu for tourism can be any or a selection of the following:

What has been committed to in the Operational Plan 2021 - 2025:

- Work with Acadia to amplify and define the Town's role in Destination Acadia
- Renovating the Visitor Information Centre – transition to Welcome Centre
- Grant Programs - Strategic Partnership Program, Community Partnership Program, One time Capital Requests, and One-time Operating Requests
- Town Lead Events – Mud Creek Days, Heritage Day 2022, Light of Lights/Wolfville Glows, Acadianew Year's Levee

Tourism Menu

What might be added to the Menu:

- Working with the REN and joining the STARR program
- Tourism Policy Development – what is required for new tourism industries? Connected to the business registry?
- Work with Acadia to amplify Destination Acadia
- Utilize Bang the Table to capture community needs and perspectives on local tourism
- Work with Acadia to Secure AFT parking during the summer months indefinitely.
- Utilize the new Website to offer new digitalized Trail, Downtown and Wolfville & Acadia maps
- Halifax Salt Yard equivalent in Wolfville(?)

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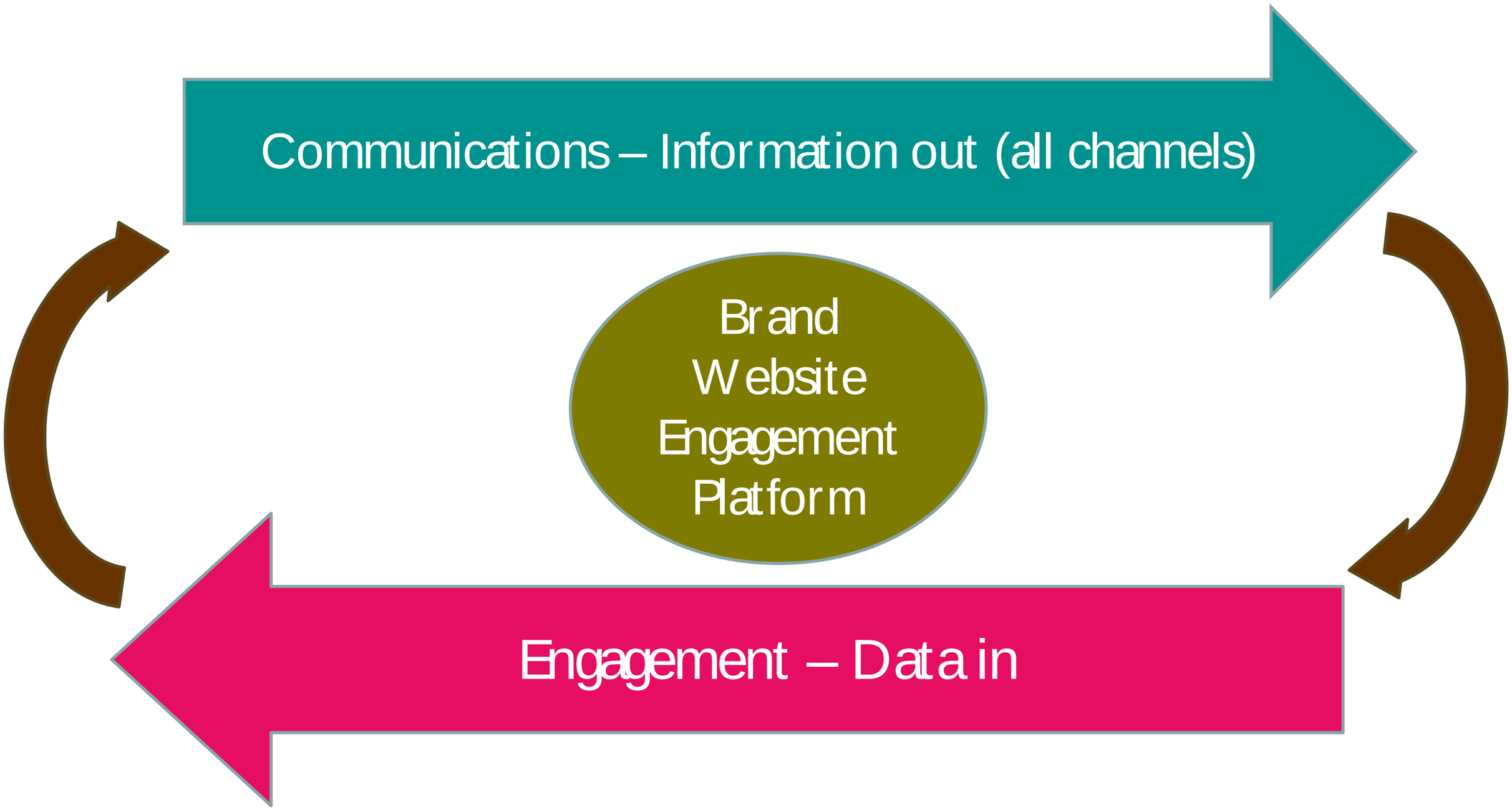
BRANDING + COMMUNICATIONS

Branding + Communications

Core Concept: The Communications Cycle



Core Concept: The Spectrum of Engagement

IAP2's Public Participation Spectrum

Increasing Level of Public Impact

	Inform	Consult	Involve	Collaborate	Empower
Public participation goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example techniques	■ Fact sheets ■ Web sites ■ Open houses	■ Public comment ■ Focus groups ■ Surveys ■ Public meetings	■ Workshops ■ Deliberative polling	■ Citizen advisory Committees ■ Consensus-building ■ Participatory decision-making	■ Citizen juries ■ Ballots ■ Delegated decision

Branding + Communications

YEAR 1 (this year)

- Website is our focus:
  - Great for existing business profile and attraction – first point of contact
  - Connect the people to all the things.
  - Connection with the WBDC
  - Our website is a HUB! A point of connection.
  - Marketing and getting more people and experiences in front of more people
  - Increase capacity in our community and better engage

- Bang the Table!
  - Climate Action Pilot

- New Communications person and getting in the groove.
  - Wolfville Brand utilization

Branding + Communications

Future Initiatives

- Continuing to use the website to connect more people to more things.

- Our brand will remain as the representation of all the great things that attract folks to Wolfville and online, to Wolfville.ca.

- Once folks connect with us, we will connect them with the experiences, services, and information that they need.

- With on-going engagement and feedback cycles, messaging, and prominence of tools on our website will evolve and change.

Economic Prosperity

As you go through this, ask yourself:

Are these the 4 pillars we should focus on?

What actions are missing?

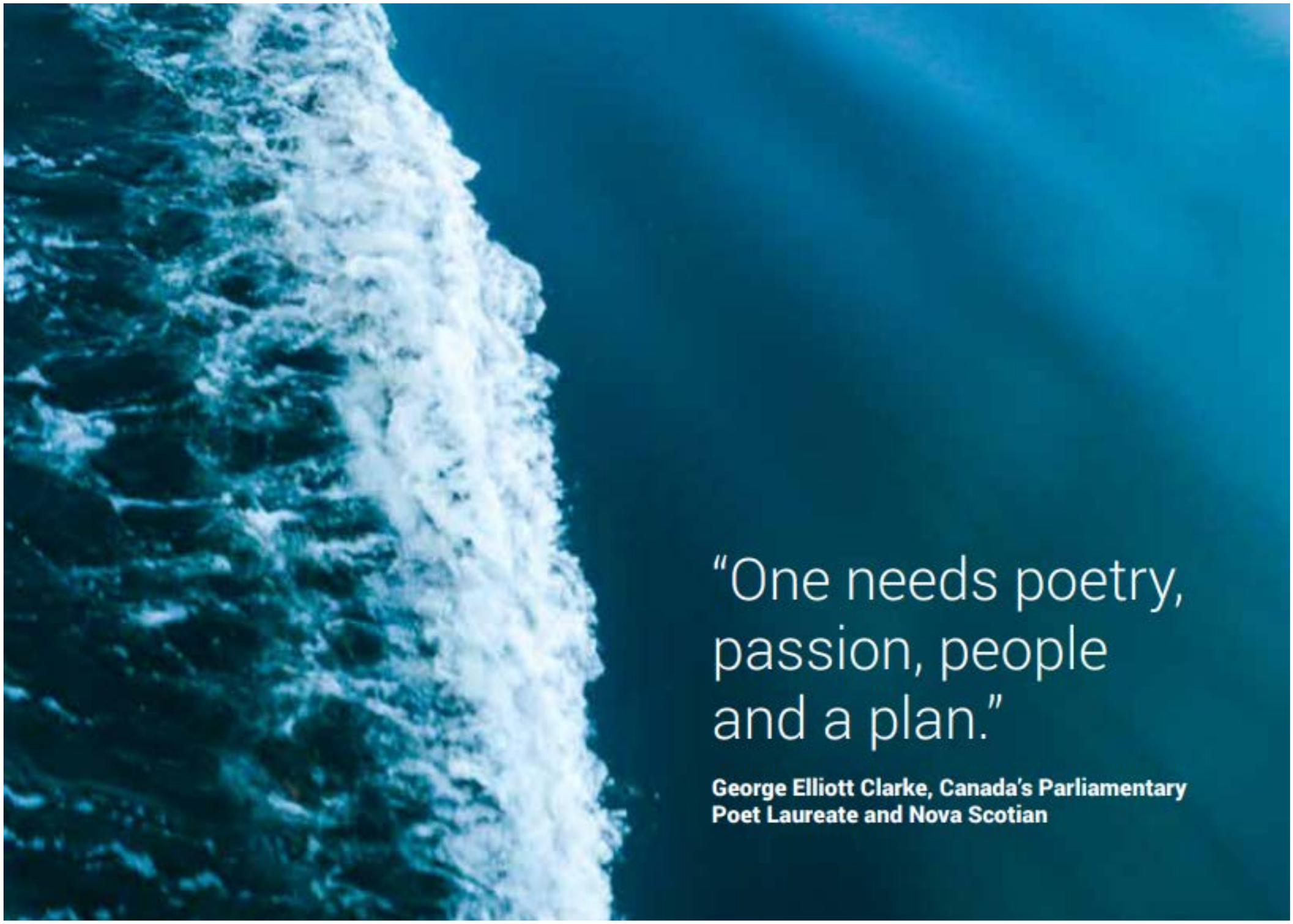
What will be our biggest win?

Biggest potential drawback?

How do we maintain our competitive advantage? (and build on it!)

How do we measure success and know we are moving the needle?

Conclusion


"One needs poetry, passion, people and a plan."
George Elliott Clarke, Canada's Parliamentary Poet Laureate and Nova Scotian

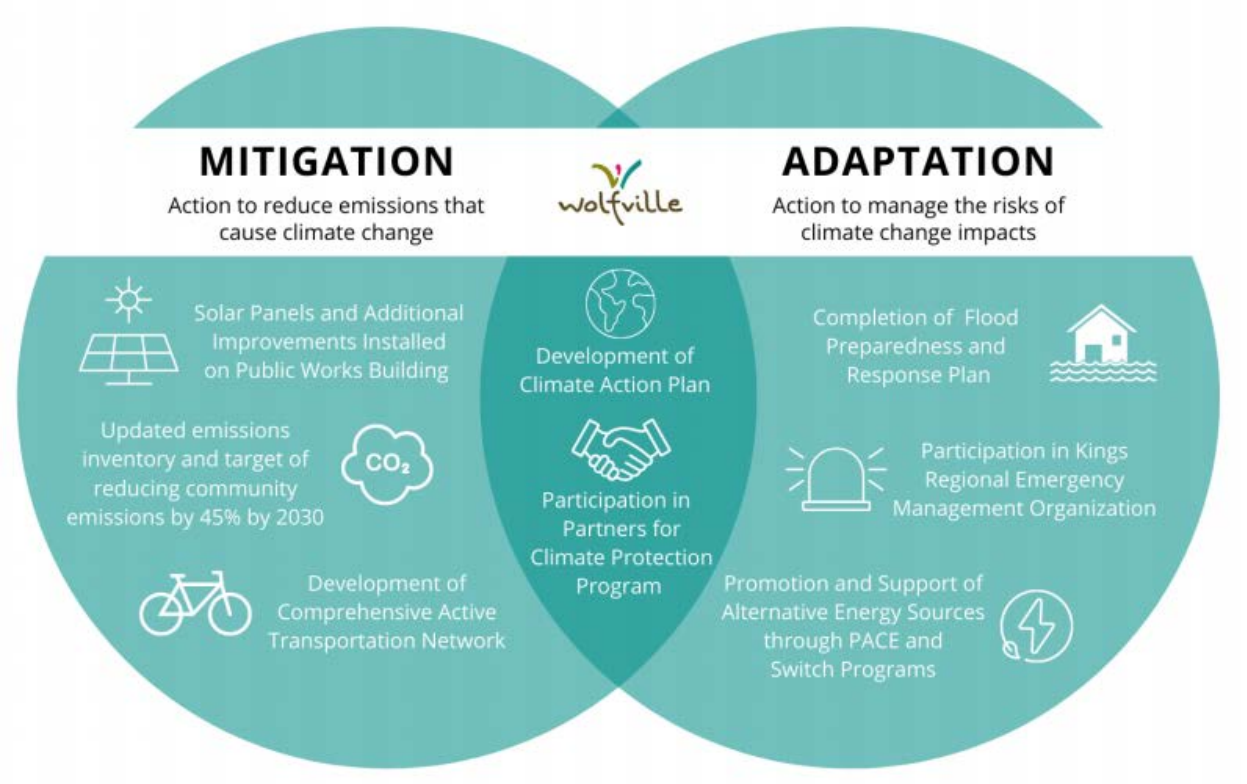
SUMMARY

CLIMATE ACTION UPDATE + DISCUSSION

This report is meant to provide Council information/education and an opportunity for discussion around the next 3-6 months of Climate Action work in the Town. It is important that Staff, Council and the Community (Business and Residents) are aligned in these efforts as we move forward to adopting a Climate Action Plan that stretches to meet our targets.

This work has progressed over the last 2-3 years and is now at an exciting juncture where we can engage our community, understand the overall emissions profile for our region, and work together to do our part.

Figure 1: Climate Action Venn Diagram Summary



This report will be accompanied by a Staff presentation to help facilitate a discussion on key ideas and themes. Staff will also introduce our summer Climate Action Team – Lia Lancaster and Max Abu-Laban.

1) CAO COMMENTS

For information purposes only.

2) REFERENCES AND ATTACHMENTS

1. SSG Transition 2050 Low Carbon Path Report (attached)
2. Latest Environmental Sustainability Committee Agenda package

3) DISCUSSION

Overview

This work has been ongoing for the last 2-3 years, including our Staff position funded through the Federation of Canadian Municipalities, work completed through the Transition 2050 program, and also the work funded through the Provincial Low Carbon Communities Fund (Inspire Wolfville).

This work is all coming together to inform a Climate Action Plan that will be presented for Council's consideration in the fall of 2021.

It is important to think of the impact the Town of Wolfville (and other municipalities in our region) can have on the situation we find ourselves in. Thinking about our different roles in the energy and emissions cycle is key. The biggest impacts are where we have indirect control, underscoring where a community effort is required.

Figure 2: Local Government Roles in Climate Action

Local government as...	Authority	Sample actions	Community energy and emissions planning techniques	Potential impact on GHG emissions reductions
Energy consumers.	Direct control.	Retrofits of municipal buildings, construction of high performance municipal buildings, purchase of zero emissions vehicles, development of renewable natural gas from organic materials.	Corporate GHG inventory and plan.	Low.
Investors.	Indirect control.	Renewable natural gas from a landfill, zero emissions transit system, cycling infrastructure, electric vehicle charging stations, recycling programs, public/ private partnerships.	Situational analysis [review of capital budgets].	Medium-High.
Influencers.	Indirect control.	Official Plan policies, Property Assessed Clean Energy (PACE) programs.	Modelling and scenario-planning.	High.

The 2050 Low Carbon Roadmap report (attached), prepared by Sustainability Solutions Group as part of FCM's Transition 2050 program, outlines the scope and scale of change required if communities are going to achieve net zero targets by 2050.

What's happening between now and the fall of 2021?

The Town has set targets under the Partners for Climate Protection framework. To move to the next milestone, and to provide a roadmap to move forward with our Climate work, a Climate Action Plan needs to be developed and approved by Council. Sustainability Solutions Group, who recently competed a greenhouse gas inventory for the Town, have also produced a Community Energy and Emissions Roadmap – how we could move toward 2050 and meet our targets. This 2050 Low Carbon Roadmap provides 21 actions in 5 action areas to reduce emissions and hit the emissions reduction targets approved by Council by 2030 and 2050. This roadmap will inform the upcoming Climate Action Plan to be considered by Council.

The timeline moving forward is proposed to be:

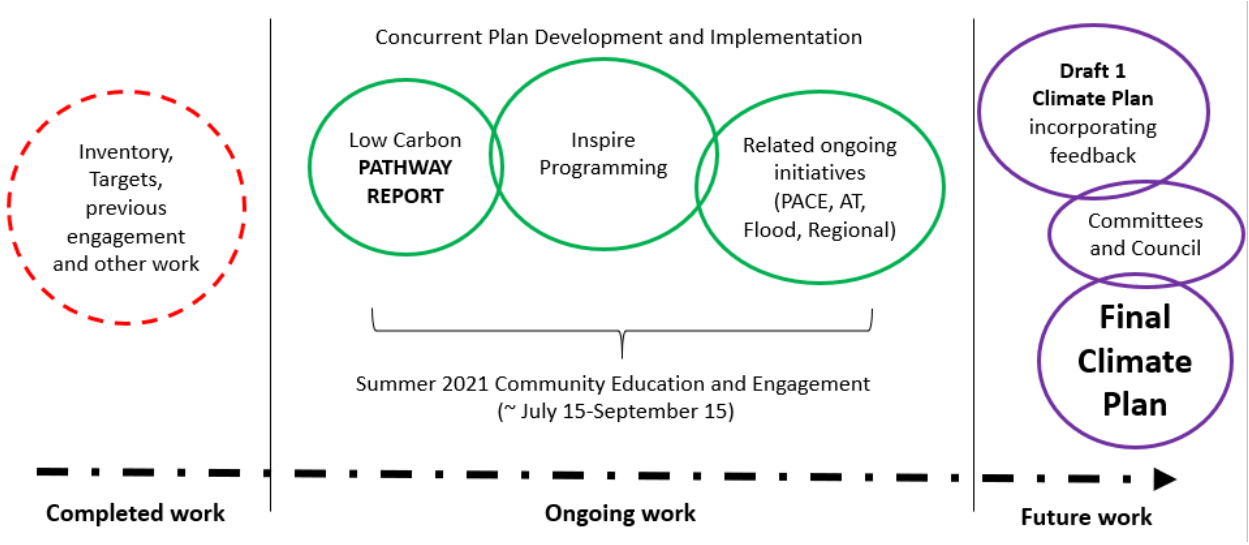
- A graphical summary and 2050 Low Carbon Roadmap will be available on www.wolfville.ca for feedback from mid July to mid September using the Bang the Table engagement platform. During this time we will welcome feedback, ideas and discussion regarding the Low Carbon Roadmap from all community members, businesses and Council which will be supplemented by the Inspire program and students to enhance our engagement efforts. The Regional Climate work and consultation on this will be complementary to our Low Carbon Roadmap work as well.

- Staff will update Committees and Council in early fall, highlighting feedback and will be working toward an updated draft and eventual final document to be presented to Council.

    - The timing of this should be aligned with the regional climate work, expected in October, so we can use that to inform what is taken to Council for adoption.

    - The final draft will also include key items not included in the Roadmap prepared by SSG – primarily work around Climate Adaptation and Flood Risk.

Figure 3: Graphical summary of work-to-date, ongoing efforts and future work



Regional Climate Work

Staff have secured funding and been involved in ongoing Regional climate work with staff from Kings County, Kentville and Berwick. Current work includes a regional greenhouse gas inventory and emissions reduction opportunity catalogue being developed by consultants, AET Group Inc. This work acknowledges that climate change is a regional issue and that Wolfville's actions are more impactful when paired with others in the region. The final report and emissions reductions opportunity catalogue is expected to be complete in October 2021 and will inform the Town's Climate Plan.

The timeline moving forward is proposed to be:

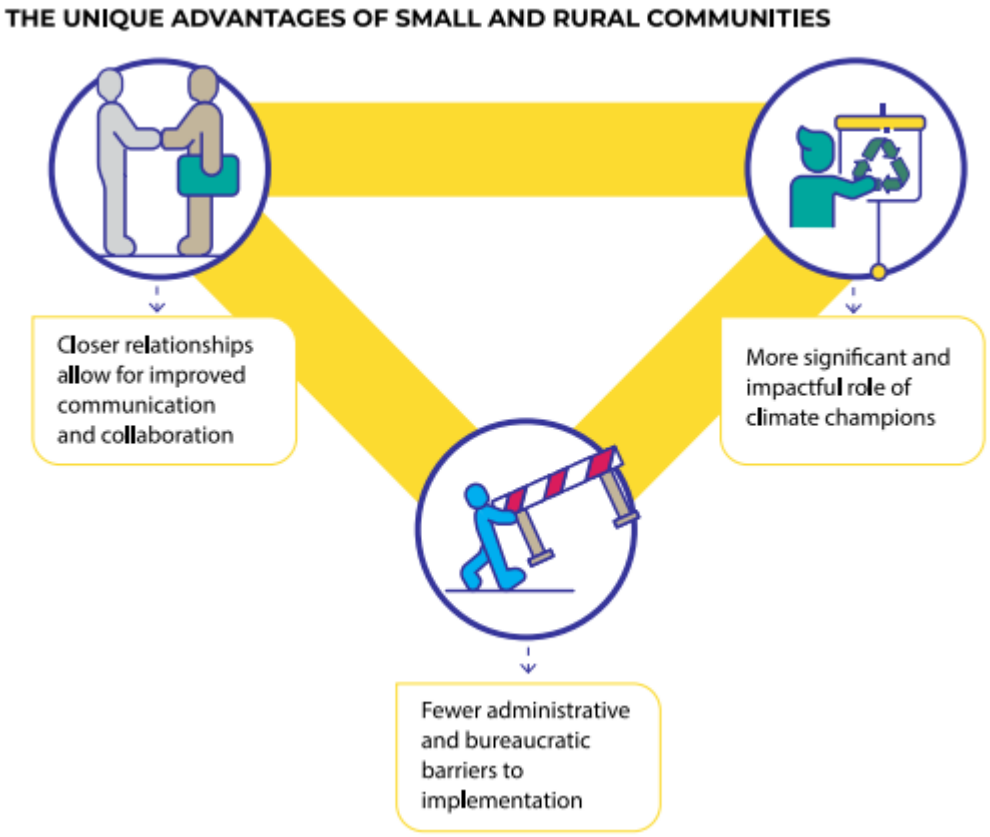
- Final GHG inventory report complete August 20, 2021
- Consultant lead stakeholder interviews complete September 3, 2021
- Draft regional GHG reduction opportunity study complete October 6, 2021
- Final regional GHG reduction opportunity study complete October 15, 2021

The Regional Climate Working Group (Staff from the units involved) is also working on other initiatives together – looking to build relationships and lay the groundwork for the findings of our regional study and a focus on Regional Climate Action that can move the needle beyond our individual efforts.

Inspire Wolfville Program

Through the NS Low Carbon Communities fund, a robust behaviour change program has been developed and will complement the Climate Action work – both on going and work to come. This is the most important and difficult area of this work – how does everyone row in the same direction? The work completed by ThinkWell Shift lays a solid foundation for us to move forward. This work is all included here in the latest Environmental Sustainability Committee Package (item 4a).

Figure 4: Unique Advantages of Rural Communities in taking Climate Action



Climate Action Video:

Staff are working towards the completion of a video with Wolfville-based filmmakers at Canopy Creative. This video will direct community members and businesses to the Wolfville website to participate in the Bang the Table engagement platform for our Low Carbon Roadmap. The video will also situate the Town as a leader in climate action by highlighting some actions we have taken/are taking

such as the solar panel installation on the public works building, as well as our flood risk study, among other actions. The video is expected to be complete by mid-late July.

Climate Walking Tour:

Staff are working with the summer students to produce a pilot climate walking tour for the town as part of the Inspire program. This project includes 8-10 large signs that will be posted throughout the Town and will highlight areas of action as they pertain to the draft Low Carbon Roadmap, demonstrate what mitigation and adaptation steps the Town is taking regarding climate change, indicate actions others in the community can take and include activities for children. Some of the sites and topics include:

- Willow Park: overview of climate change/walking tour
- Waterfront Park: Flood risk/high tides
- Central Ave: Building energy
- Harvest Moon Trail: Active transportation
- Wolfville Farmer's Market: local food/agriculture
- Clock Park: "dear tomorrow" letter writing station
- Acadia University: highlight Acadia's climate actions/visions
- Wolfville Elementary School: highlight student's work, curriculum
- Main Street: Low Carbon Economic Development opportunities

The signage used along the route will be semi-permanent, similar to the signs put up during spring 2020 for COVID-19 -but larger. If successful, more signs can be added to the route, and signs may become permanent the following year.

Figure 5: Climate Walking Tour Map

Other Engagement:

It will depend on public health measures but additional pop-up and door-to-door may form part of the summer. More traditional in-person engagement is envisioned in the fall once we have a better handle on gatherings and Council begins to consider the plan in a comprehensive manner.

Committee Reviews:

This work has been guided and reviewed by the Environmental Sustainability Committee and the Planning Advisory Committee.

Provincial Sustainable Goals Development Act consultation:

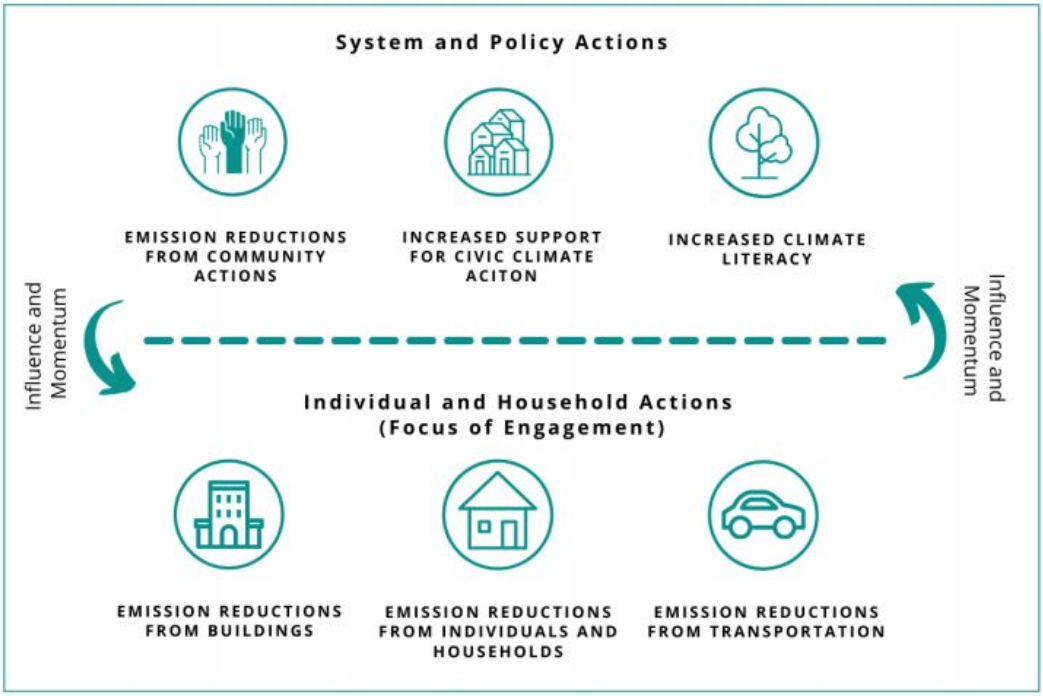
The Province is also consulting on how to meet these aggressive climate targets. Outcomes of their work should help inform our climate plan as well. See www.CleanFuture.ca to engage with the background and content the Province is consulting on. An important excerpt from one of the Provincial Background papers for us to keep in mind as we move forward:

> We also know that many Nova Scotians, such as African Nova Scotians, people with low-income, and other groups, continue to face additional challenges due to racism and ongoing inequity. Climate change may impact those groups more than others. Our climate change plan will be written with that in mind, as we work together to build a fairer society.

Conclusion

There is no 'off-the-shelf' solution to this work. From the beginning we have taken a concurrent plan implementation-plan development approach (doing obvious things while also planning for future actions). Wolfville is seen as a leader in the province. Let's set the bar high. The final figures below, from our Engagement Guide prepared by ThinkWell shift, outlines how both individual and system-level actions are needed, and that this is an iterative cycle as we move ahead together toward a low carbon future.

Figures 5 and 6: Inspire Wolfville Concept Diagram and Individual-Collection Action Diagram



4) REFERENCES TO COUNCIL STRATEGIC PLAN AND TOWN REPORTS

Climate Action directions have been established in the Town's:

- Municipal Planning Strategy - Excerpt included here from Community Priorities (Part 2)– see full document for details and other policy direction.

CA **Climate Action**

OBJECTIVE CA	OBJECTIVE CA	OBJECTIVE CA	OBJECTIVE CA
To control land use in a way that preserves, enhances and protects the natural environment to ensure open space opportunities for all residents.	To promote clean energy and reduce greenhouse gases (Climate Mitigation) by maximizing energy efficiency through conservation, local renewable energy opportunities, partnerships, and the use of sustainable infrastructure and green building design.	To undertake climate adaptation and mitigation measures to create a community resilient to disruptors.	To create a leading sustainable transportation network that supports non-vehicular transportation modes and improves connectivity.
ANTICIPATED RESULTS • Enhance environmental constraints • Preservation of ecosystem services, including Agricultural land. • Ensure source water protection and reduce water consumption.	**ANTICIPATED RESULTS** • Work toward advancing our position in the Partners for Climate Protection Program through GHG emissions reduction and energy planning work.	**ANTICIPATED RESULTS** • Work with partners to preserve and enhance resilience to sea level rise. • New requirements for buildings in flood prone areas. • Educate the community about climate change implications and initiatives.	**ANTICIPATED RESULTS** • Better leverage our partnership with Regional Transit Authorities. • Prioritize the creation of walkable and bikeable infrastructure. • Explore community/micro transit options.

- Council Strategic Plan / Town Capital and Operations Plan (priority area 4 included here – see full documents for details)

4. Priority Area 4 (PA4) - Climate management related initiatives to reduce carbon emissions, support local transportation, local food security and environmental protection.

5) COMMUNICATIONS

There has been a large focus on communications with Barb Shaw – the Town's Communication's lead – sitting on the Climate action internal working group.

Town of Wolfville

Draft 2050 Low Carbon Roadmap

Prepared by

SSG SUSTAINABILITY SOLUTIONS GROUP

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Preface

In 2019, Wolfville Town Council declared a Climate Emergency. Since then, Council has set ambitious yet practical greenhouse gas emissions reduction targets: reduce 2016 greenhouse gas emissions 45% by 2030 and reach net zero by 2050. To achieve net zero, Wolfville has joined the Federation of Canadian Municipalities Transition 2050 program and has completed a baseline greenhouse gas emissions inventory to allow us to monitor our efforts over time. To enhance these efforts, Wolfville has also formed a regional climate working group with the Municipality of the County of Kings, the Town of Kentville and the Town of Berwick to ensure that our efforts are wide reaching.

While Wolfville is well equipped to take on this challenge as a community, we recognize that climate change is only one challenge our community is facing. The impacts of the COVID-19 pandemic have resulted in many issues for all sectors of the community including job loss, financial strain, stress, and isolation, among others. We acknowledge that many individuals in the community such as Indigenous and Black Nova Scotians, low-income households and other groups are faced with additional challenges due to racism and inequity. The Town acknowledges that some groups may experience the impacts of climate change more greatly than others, and therefore this roadmap will be written with that in mind.

In order to identify the most appropriate actions for our Town's residents, staff have worked closely with behaviour change specialists, Thinkwell Shift, to better understand our community's needs and abilities to act on climate change. Through an electronic community survey that received more than 500 responses, we were able to learn about individual and household information such as age, dwelling type, education and income, what information sources are most trusted for climate change and sustainability, what level of climate literacy and concern individuals have, and what sustainability actions residents are currently taking and barriers to taking further action. This information helps the Town to identify climate actions that are financially and physically appropriate for residents, as well as identify gaps in climate literacy and sustainability actions and work towards supporting and inspiring our residents to take action on climate change.

A Note on the Impact of Coronavirus (COVID-19)

The analysis in this document was completed during the COVID-19 pandemic in Canada. The longevity of the socio-economic changes the pandemic created is difficult to predict. Some changes may be here to stay, while others may revert once conditions are safe again, while still others may become a hybrid of old and new conditions. The uncertainty presents a challenge for long-term modelling assumptions. Even so, the relevance of this document's analysis persists not only because the climate crisis persists, but also because this presentation provides solutions that can stimulate the economy during the pandemic-induced recession. The solutions recommended—ranging from energy efficiency housing retrofits to investing in renewable energy—are designed to decrease emissions and increase energy efficiency while creating jobs and bolstering local economies.

Here are some key points to consider in the context of COVID-19:

- A global health crisis: The pandemic has radically transformed societies and economies, resulting in tragedy and disrupting work and home life everywhere.[1]
- The impacts of coronavirus are unclear: The negative impact of COVID-19 on people, workplaces, and the economy, as well as the duration of those impacts, presents many uncertainties. The recovery will be affected by a combination of factors such as public health guidance for opening up society, the evolution of the pandemic, the design of public policy responses and the continuing response by global institutions.
- The climate emergency remains: A decline in activity has resulted in a short-term reduction in GHG emissions but concentrations of GHG emissions in the atmosphere continue to climb and global temperatures continue to increase.[2] The pandemic has also disrupted international efforts to address climate change.
- There are challenges and opportunities: In the short term, the impacts of COVID-19 both challenge and reinforce actions outlined in this document.
- Substantively addressing climate change is more relevant than ever: Investments made now lock in the emissions effects of those investments for decades. This brief identifies investments that stimulate the economy and decarbonize over the next 30 years.
- Alignment with green stimulus: As Canada initiates efforts to recover from the impact of the coronavirus, there is an opportunity to stimulate the economy with investments that

[1] World Health Organization (2020). World health statistics 2020: monitoring health for the SDGs, sustainable development goals. Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/332070/9789240005105-eng.pdf

[2] World Meteorological Organization (2020). The Global Climate in 2015-2019. Retrieved from: https://library.wmo.int/doc_num.php?explnum_id=10251

simultaneously address the climate crisis. This document describes investment opportunities that will generate jobs, stimulate businesses, reduce GHG emissions, and provide local benefits.

Disclaimer and Liability

Reasonable skill, care and diligence has been exercised to assess the information acquired during the preparation of this analysis, but no guarantees or warranties are made regarding the accuracy or completeness of this information. This document, the information it contains, the information and basis on which it relies, and the associated factors are subject to changes that are beyond the control of the author. The information provided by others is believed to be accurate but has not necessarily been verified.

This analysis includes strategic-level estimates of the Town of Wolfville that should not be relied upon for design or other purposes without verification. The authors do not accept responsibility for the use of this analysis for any purpose other than that stated above, and do not accept responsibility to any third party for the use, in whole or in part, of the contents of this document. This analysis applies to the Town of Wolfville and cannot be applied to other jurisdictions without analysis. Any use by the Town of Wolfville, its sub-consultants or any third party, or any reliance on or decisions based on this document, are the responsibility of the user or third party.

Contents

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Part 1

Introduction

The Community Energy and Emissions Mitigation Study investigates Wolfville's options for decarbonization across the community. Following on recent positive trends in energy efficiency and switching from fossil fuels to clean, renewable energy sources, the plan identifies a low-carbon actions pathway that minimizes greenhouse gas (GHG) emissions while providing local health and economic benefits. Under this plan, Wolfville will have cleaner air, more active transportation opportunities, and a more comfortable built environments.

Wolfville will also be taking responsibility for its part in addressing local and global climate change by taking emissions reduction actions across the community. Decarbonization has been identified by international agencies and our federal and provincial governments as critical to avoiding changes in our climate that are highly likely to result in catastrophic natural and socio-economic events. The Town recognizes that to wait on taking decarbonization action is to jeopardize the quality of life so many residents and students enjoy here.

Decarbonization requires action by the Town of Wolfville and its residents, businesses, and institutions. This plan explores actions across the whole community and presents recommendations that will achieve 45% emissions reductions by 2030 and net-zero emissions by 2050 targets.

Wolfville is participating in the Partners for Climate Protection (PCP) program delivered by the Federation of Canadian Municipalities (FCM) and ICLEI—Local Governments for Sustainability Canada.[3] The PCP program has five-steps to guide municipalities on developing data-driven plans to reduce GHG emissions. The energy and emissions inventory and projections, emissions reduction target, action plan, and financial analysis of the low-carbon scenario modelling fulfill Milestones 1-3 of the program. This project is coordinated by Clean Foundation and 5 municipalities and counties are participating: Town of Mahone Bay, Town of Chester, Town of Wolfville, Inverness County, and Cumberland County. Partial funding for the project was provided by FCM through the Transition2050 program.

[3] Federation of Canadian Municipalities, 2021. Partners for Climate Protection. https://fcm.ca/en/programs/partners-climate-protection Accessed Feb 2021.

Study Scope

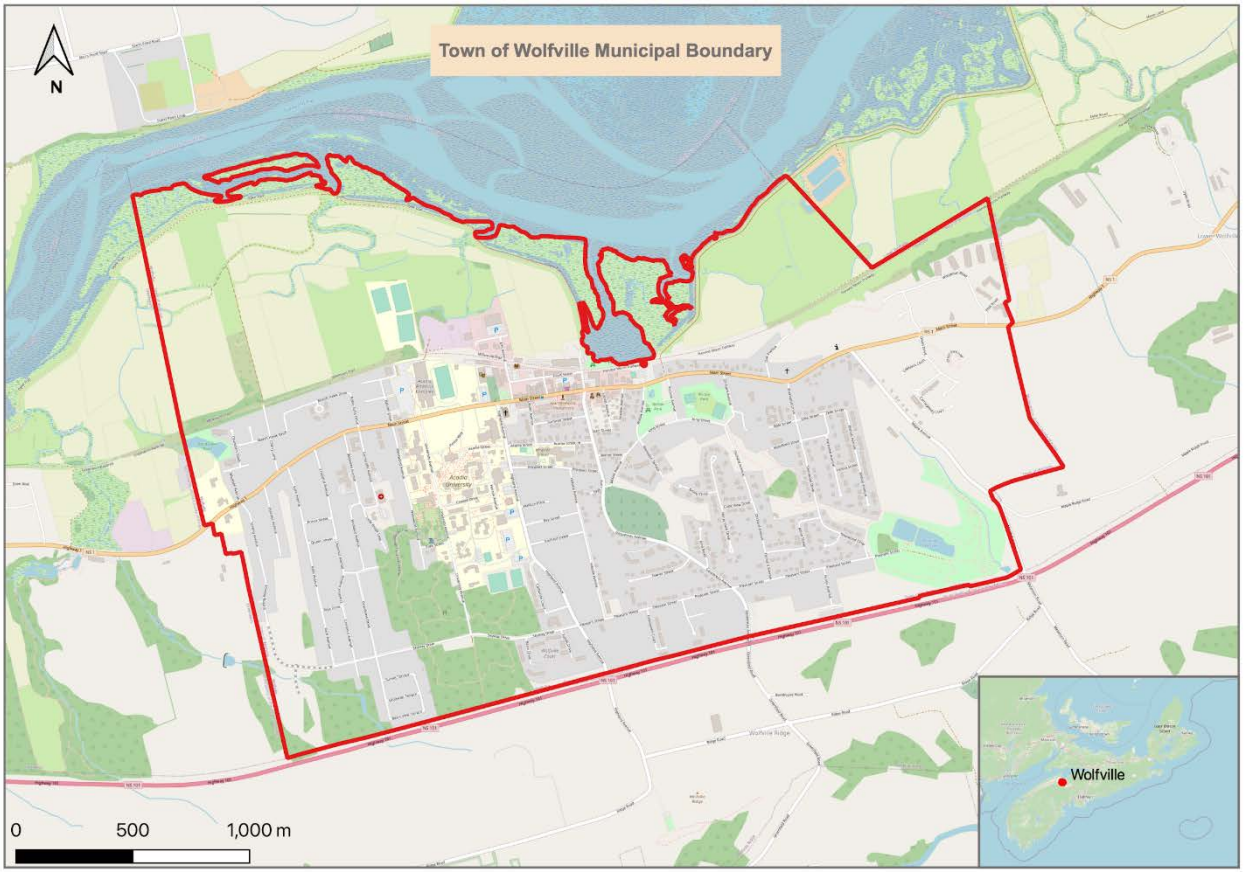


Figure 1: Town of Wolfville Municipal Boundary.

The municipal boundary, shown in figure 1, is an important consideration in energy and emissions accounting. As shown in Figure 2, there are a variety of activities associated with the municipality that use energy and produce emissions within and outside the boundary, only some of which can be reasonably addressed within the scope of this project.

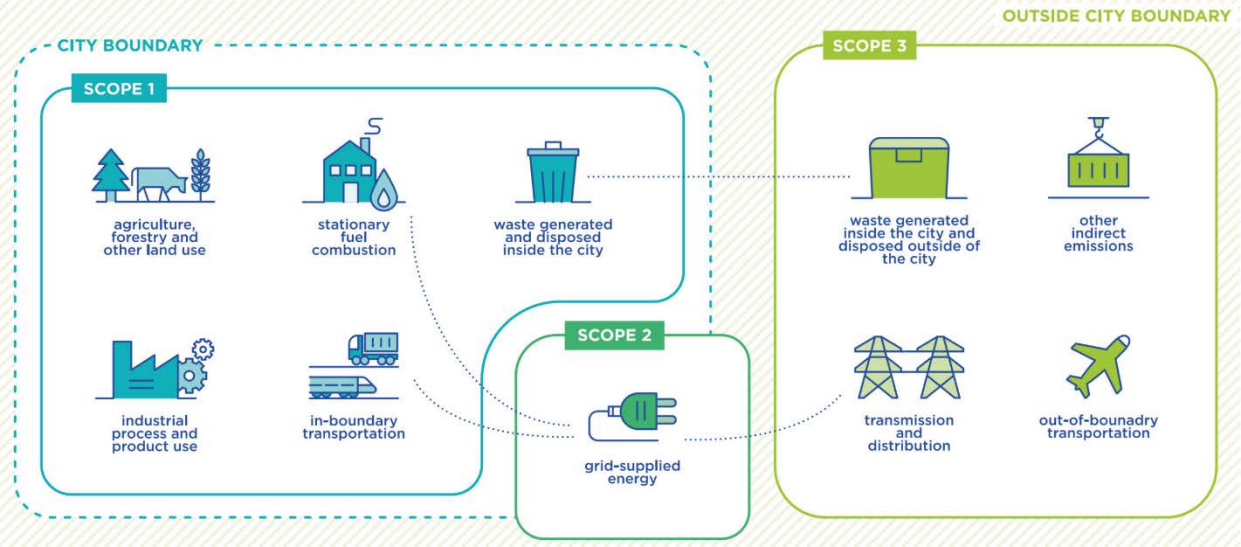


Figure 2. Emissions scopes classification.

This study addresses emissions in Scope 1 and Scope 2, as well as transmission and distribution emissions under Scope 3.

Local Context

Population, housing, and employment growth are important considerations in energy and emissions planning. As these elements change, so too do energy use and emissions production. There are also the changing climate to take into account to accurately estimate the future of GHG emissions in Wolfville.

Population Outlook

In the heart of Nova Scotia's Annapolis Valley, Wolfville has a population of 4,195 based on 2016 census data. Wolfville sees an average annual population growth of 1.7%, or 74 people, resulting in an additional 1,340 residents by 2036, bringing Wolfville's projected population for that time to 5,535. Population growth is generally accompanied by growth in employment, number of households, and vehicle ownership (Figure 3). These are important drivers of energy use and emissions production.

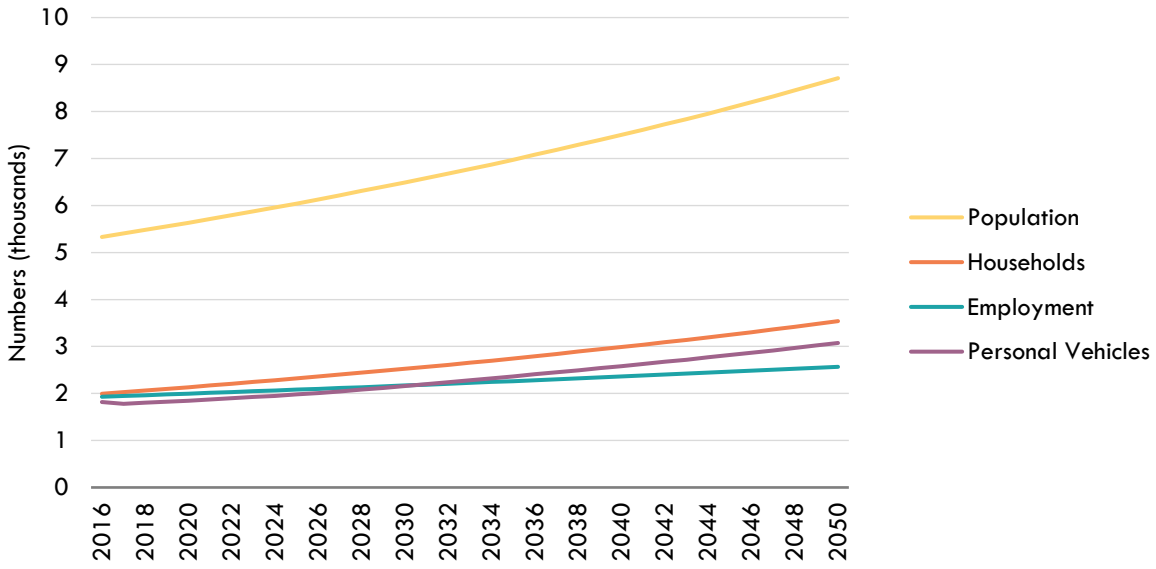


Figure 3. Anticipated growth in population, personal vehicles, households, and employment, 2016-2050.

Climate and Weather Outlook

As the climate changes, the region is expected to experience an increase in annual average temperature, with wetter springs and winters and much warmer summers. Accompanying these changes will be more extreme weather, including more intense rain and snowfall events; flash floods; high winds; and stronger hurricanes. Sea level rise will threaten low-lying coastal areas, and storm surges will accompany storm events, increasing flooding, coastal erosion, and saltwater ingress.[4]

An important effect of warmer average temperatures is a decrease in heating degree days (HDD). Annual HDD is an indicator of heating energy demand in buildings. Conversely, cooling degree days (CDD), an indicator for the demand for energy to cool buildings, are projected to rise over the next 30 years, resulting in greater air conditioning demand.

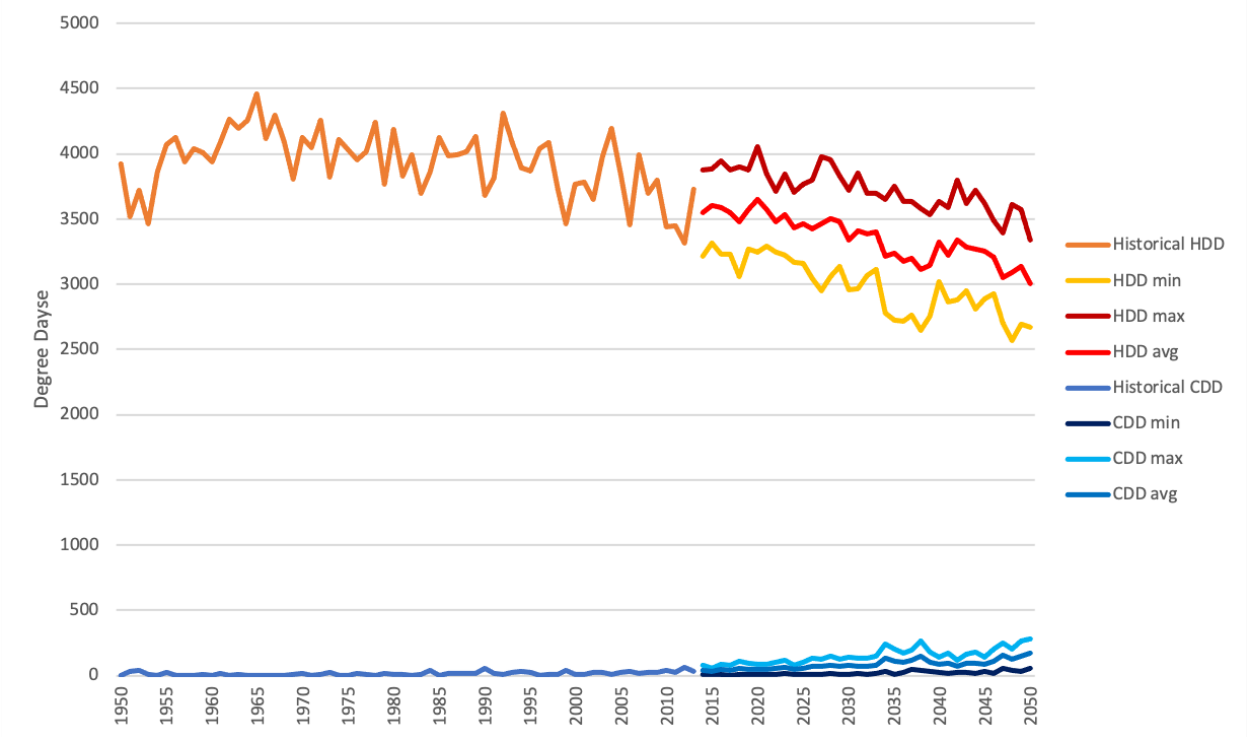


Figure 4. Heating degree days and cooling degree days in Nova Scotia, projected to 2050.[5]

While population growth, more homes, increased employment, and more vehicle ownership will result in more energy use and likely more GHG emissions production, decreased heating demand in buildings will result in less energy consumption for thermal energy.

[4] Climate Atlas of Canada, 2019. Halifax, Nova Scotia. Climate Change and Canada's Cities Version 2.0. Accessed January 2021: https://climateatlas.ca/sites/default/files/cityreports/Halifax-EN.pdf

[5] Climate Atlas of Canada. Heating Degree Days and Cooling Degree Days. Retrieved from https://climateatlas.ca/data/city/269/cooldd_2030_85/line

Project Methodology

In order to explore decarbonization opportunities, an inventory of the current community emissions and an estimate of future emissions is needed. A 2016 energy and emissions baseline inventory was created with data collected for Wolfville's buildings, transportation, waste and wastewater, industrial, and energy sectors. Data sources include federal census data, municipal records, energy utility information, and provincial property records.

Using this baseline data, three scenarios were developed and analyzed in CityInSight, an energy and emissions scenario development and assessment modelling tool for municipalities. The business as usual (BAU) scenario depicts the expected energy use and emissions produced over the next 30 years under normal conditions, continuing with current plans and market trends. The low-carbon scenario (LCS) depicts an energy and emissions path that could enable Wolfville to reach its emissions reduction targets with proactive interventions in the buildings, transportation, energy, and waste sectors. The carbon budget scenario explores the emissions reduction trajectory necessary to achieve net-zero GHG emissions if Wolfville were to reduce its emissions equitably, as determined by its historical emissions production and capability to act in the global, and the reductions required to limit global heating to 1.5°C by 2050.

By comparing the BAU and LCS scenarios, it is possible to determine the effectiveness of potential actions, strategies, and measures that could be taken to increase energy efficiency (i.e. reducing energy demand and use) and reduce emissions. From this comparison, action plans can be developed aimed at reducing emissions that cause climate change.

The model developed in the CityInSight tool and used for the analysis is integrated across municipal sectors and considers all fuels used in all energy-using activities. The model uses bottom-up accounting (i.e. local data) for energy supply and demand, including renewable resources, conventional fuels, energy-consuming technology stocks (vehicles, appliances, dwellings, buildings, industry), and all intermediate energy flows (e.g. energy distribution). See Appendix B for more information on the modelling process.

Part 2

Wolfville's Energy and Emissions Future

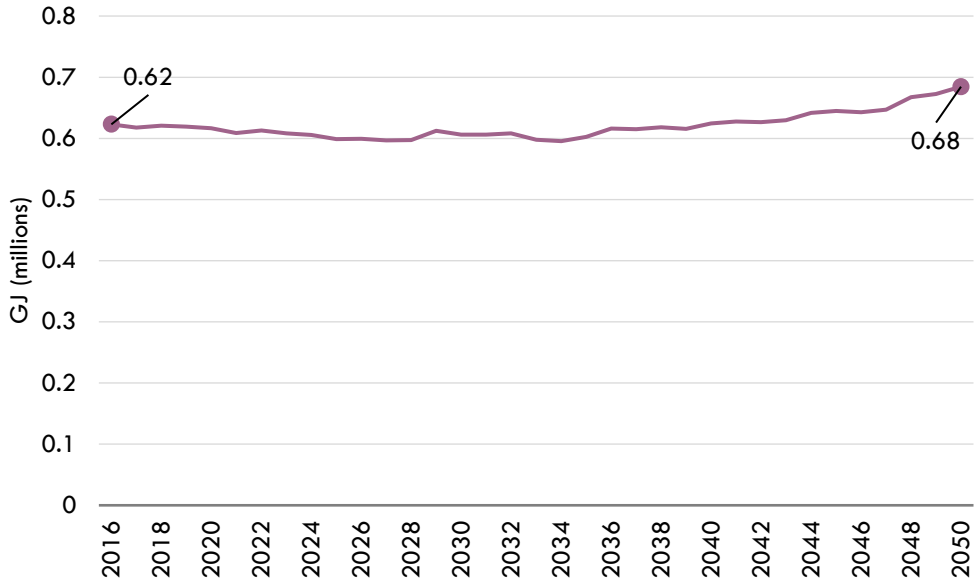
Present and Projected Total Energy Use

From local, provincial, and national data, a base year energy and emissions inventory was developed for 2016, a year with high quality census data. The BAU scenario was modelled using this as a starting point, taking market and socio-economic trends into account. The modelling demonstrates the expected energy use and emissions production trajectory for Wolfville over the next 30 years.

Total Energy Demand

Total community energy use includes all energy used by buildings, transportation, and infrastructure. Under the BAU scenario (in which no major energy and emissions interventions are made), energy use is expected to increase by 10% by 2050. Although a large increase in population is expected, the overall energy demand increase is tempered by a combination of improved vehicle fuel efficiency and reduced building heating demand due to a decline in heating degree days. Figure 5 shows the total energy use of all electricity and fuels used in the community. Energy use is measured in gigajoules (GJ).

Figure 5. Forecasted total community energy use, 2016-2050.



The Figure 6 and 7 Sankey diagrams illustrate the flow of all energy in Wolfville in 2016, and in 2050 under the BAU scenario. Energy sources are on the left, sectors using the energy in the middle, and a translation of used energy to useful vs lost on the right. While the ratio of useful energy to conversion losses is higher in 2050 than in 2016 (i.e. more energy is used as intended instead of wasted by its byproducts like heat and noise), the continued reliance on natural gas for the district energy system and inefficient combustion engines for transportation in 2050 leaves much room for improvement.

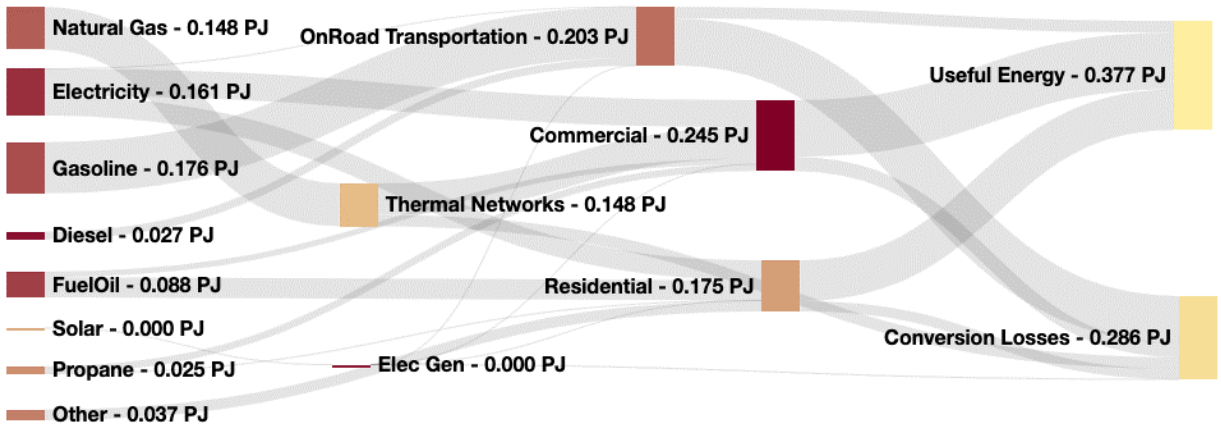


Figure 6. Sankey diagram of 2016 energy flow.

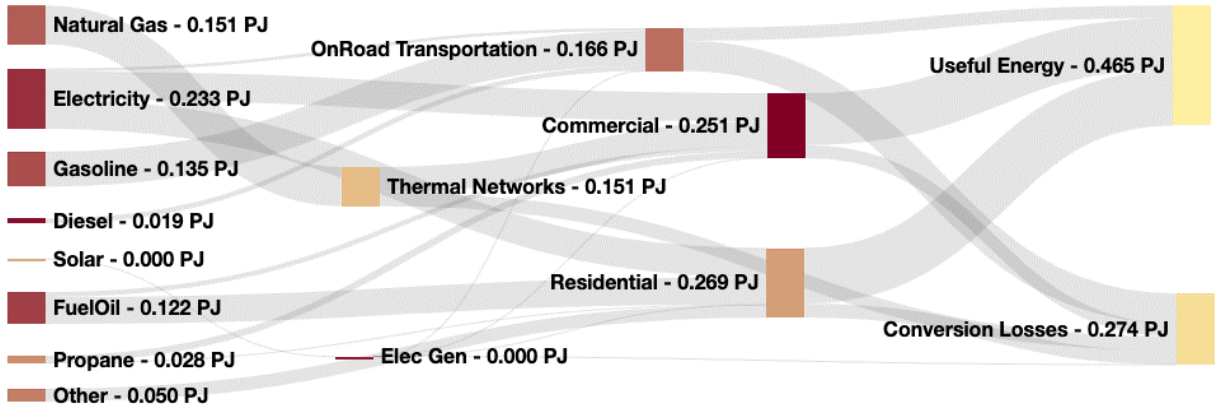


Figure 7. Sankey diagram of 2050 BAU scenario energy flow.

Where Energy Comes From

Grid electricity, gasoline, and diesel provide the majority of the community's energy. Gasoline and diesel use declines in the BAU scenario as vehicles become more efficient and electrify, and fuel emissions standards improve. Fuel oil use diminishes slightly as the demand for building heating declines with the warming climate. Electricity use increases due to some vehicle electrification, increased plug loads (e.g., charging electronic devices), and increased demand for space cooling.

There is a small amount of solar electricity generation in the community. Additionally, a natural gas-powered district energy system provides space heating for buildings on the Acadia University campus. Figure 8 shows the energy sources that make up the total energy use shown in Figure 5.

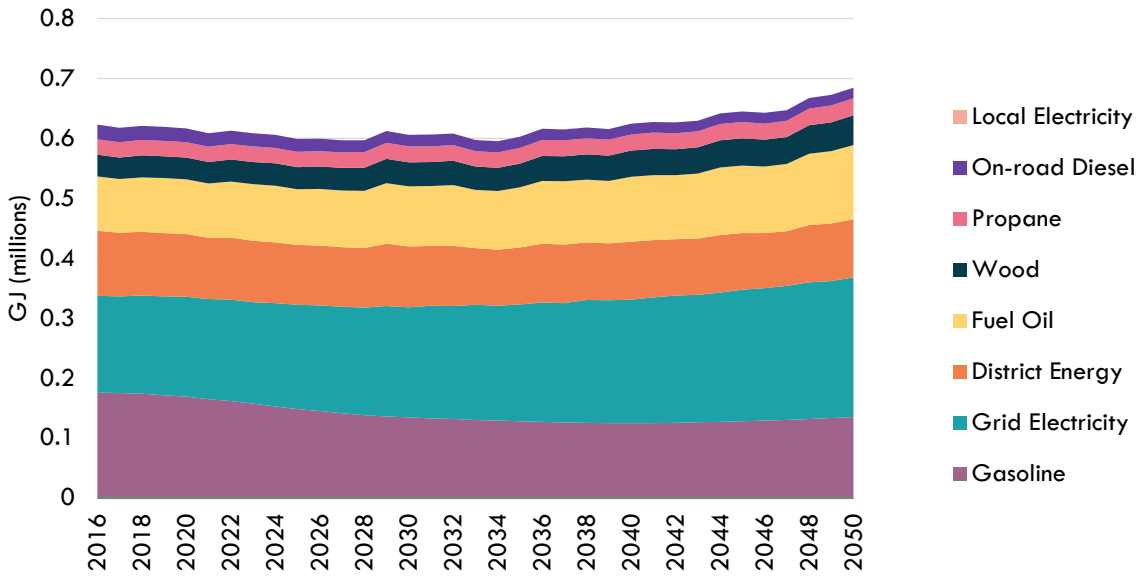


Figure 8. Forecasted total community energy use by energy source, 2016-2050.

Where Energy is Used

Transportation accounts for nearly one third of the energy consumed in 2016, with Acadia University and residential energy demands accounting for approximately one quarter of the energy consumed, in about equal measures. By 2050, transportation energy needs decline, based on improved vehicle fuel efficiency and a small amount of electrification of personal use vehicles. With increased population and employment, slight energy use increases are expected in the residential and commercial sectors over the next 30 years. Figure 9 shows how energy use across sectors makes up the total energy use in Figure 5.

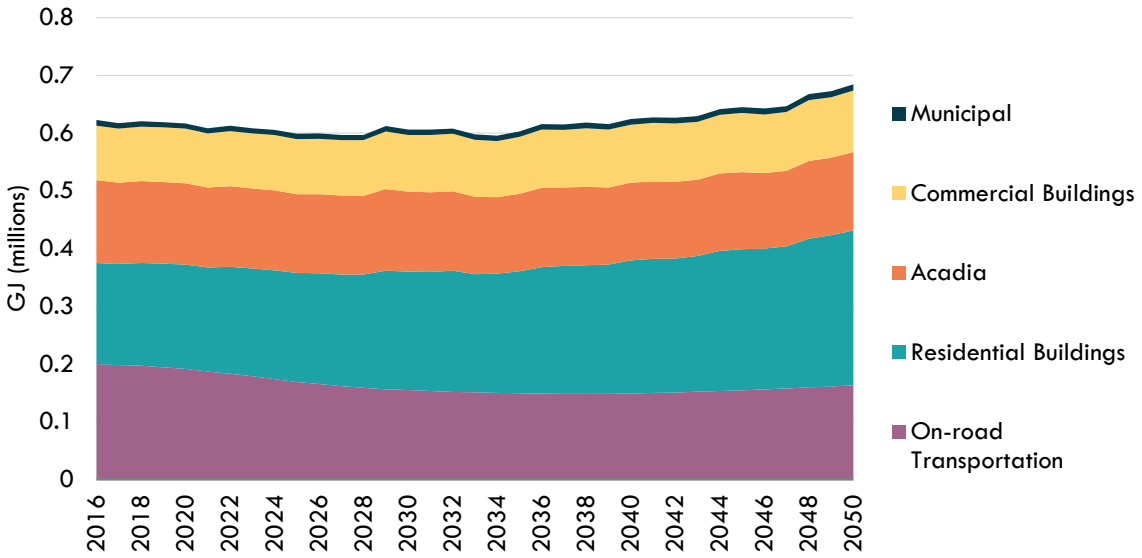


Figure 9. Forecasted total community energy use by sector, 2016-2050.

How Energy is Used

Space heating is the dominant energy end use from 2016 to 2050, accounting for 42% of the energy consumed in 2016, increasing by 14% with population growth by 2050. Transportation energy accounts for one third of total energy consumption in 2016, declining 19% by 2050. All other end uses show an increase from 2016 to 2050, with an increased demand for space cooling as the climate warms, as well as an increase in the total energy needed for major appliances, water heating, and lighting as the population grows. Per capita energy use declines by 34% from 2016 to 2050, from 144 GJ/person annually to 96 GJ/person in 2050. Figure 10 demonstrates how energy use across end uses make up the total energy depicted in Figure 5.

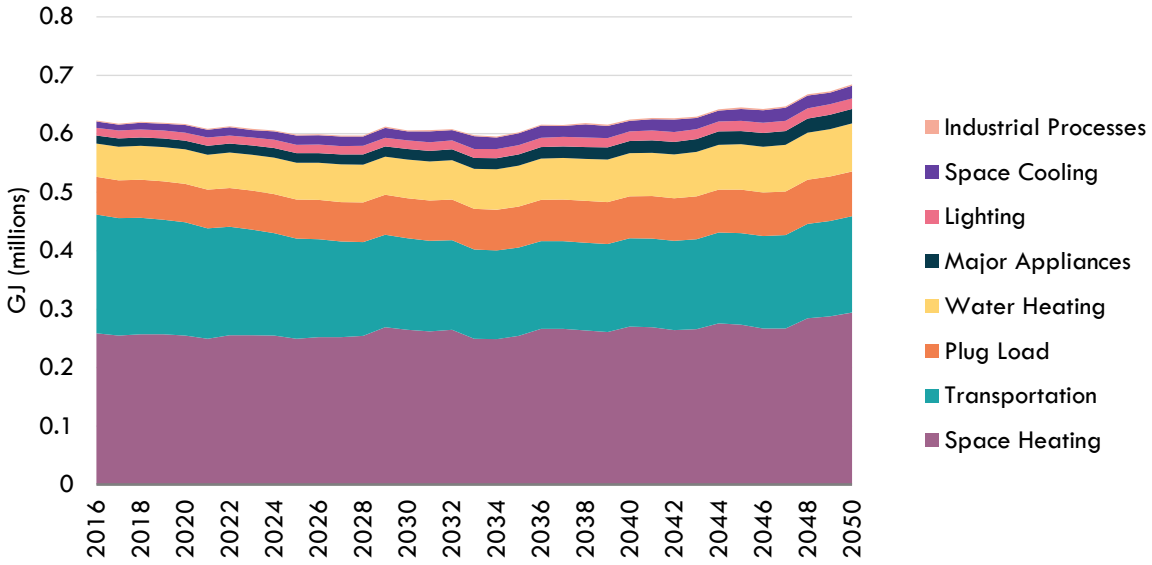


Figure 10. Forecasted total community energy use by end use, 2016-2050.

Energy Use Summary

Wolfville's energy use inventory and business as usual projection reveal where emissions are generated and where energy efficiency measures are most needed. Space and water heating in buildings using grid electricity fuel oil, and, in the case of Acadia campus buildings, the natural gas district energy system are the primary target for energy use reductions. As the population increases, new homes can be made increasingly energy efficient and without fossil fuel requirements for their energy needs. Although slight efficiency gains are modelled in the BAU scenario, much more could be achieved with concerted efforts. Commercial building construction activity is very low and most energy efficiency gains in this sector will come from existing buildings retrofits. Transportation is also energy intensive, with most trips being made by motor vehicle and internal combustion engines wasting the majority of fuel consumed as heat and noise. Some electric vehicle uptake is included in the BAU scenario, but without education and action, gas powered vehicles will continue to be purchased well into the next decade.

Present and Projected Total GHG Emissions

Total GHG Emissions

In 2016, community energy consumption and waste production resulted in 65.2 thousand tons of carbon dioxide equivalent (ktCO2e) emissions. In the BAU scenario, emissions reduce to 53.9 ktCO2e by 2050. This 17% decline is driven by changes to the fuel sources used to produce grid electricity; less space heating demand; and some efficiency improvements in vehicles, appliances, and new buildings.

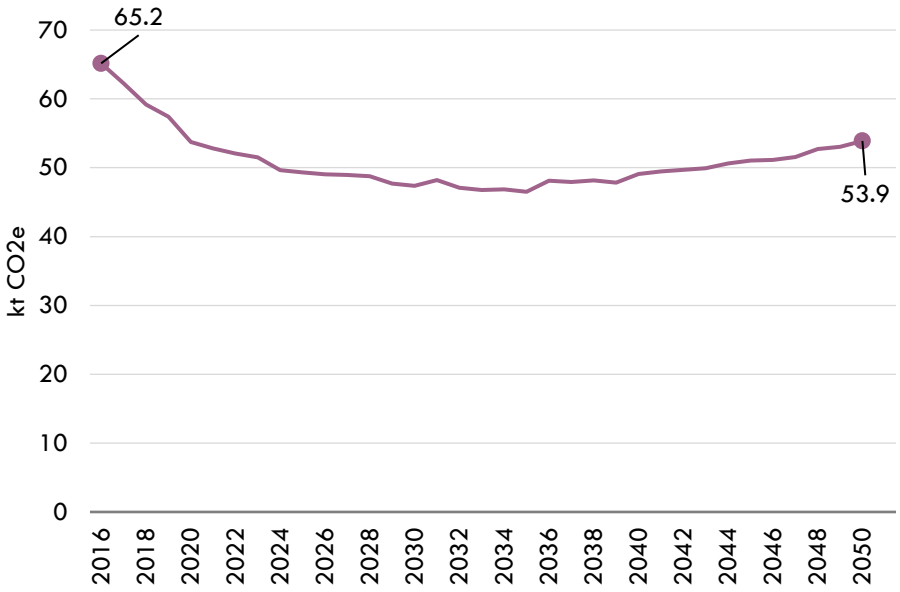


Figure 11. Forecasted total community emissions, 2016-2050.

Emissions Sources

The use of grid electricity is the largest source of GHG emissions of all energy sources, representing over half of total emissions in 2016 and over 40% in 2050. Fuel oil for space heating, the district energy system at Acadia University (run on natural gas imported by truck), and gasoline and diesel for transportation produce the bulk of remaining emissions from 2016 to 2050. By 2050, the grid is expected to be cleaner, with at least partial coal phase-out, causing emissions to decline from current levels. Wolfville's total emissions from grid electricity start to climb again after 2035 as continued population growth increases electricity use.

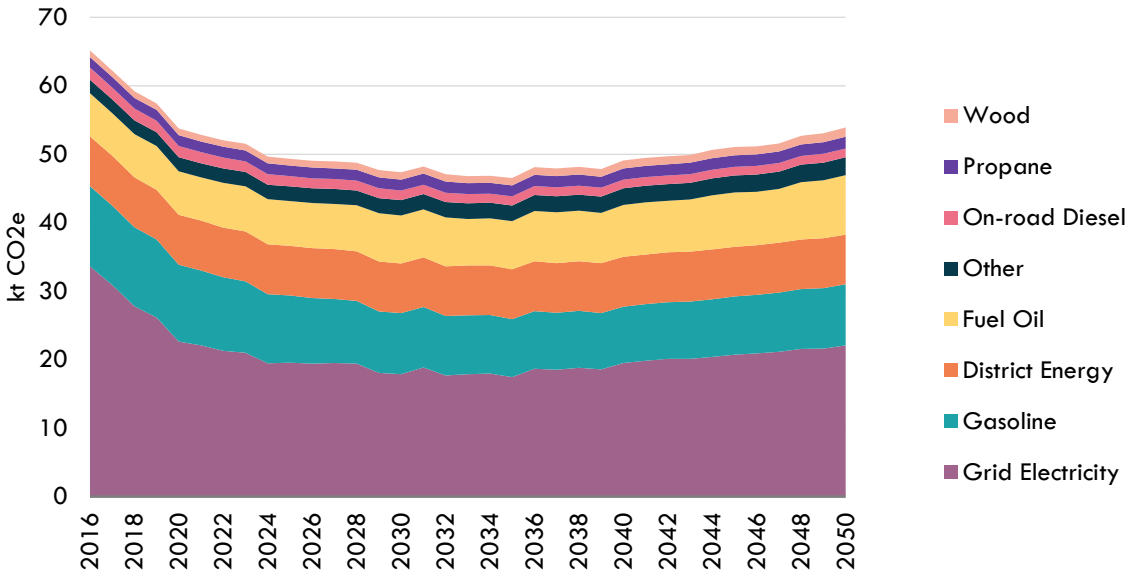


Figure 12. Forecasted total community emissions by energy source, 2016-2050.

Where Emissions are Produced

In 2016, almost one third of total emissions are produced from residential activities, primarily from grid electricity use and fossil fuel use for space heating. Emissions from Acadia University, transportation, and commercial buildings are roughly equal, accounting for ~20% of the total emissions each. By 2050, the decline in the total emissions is driven primarily by changes to the fuel source for grid electricity, as well as decreased space heating needs in the warming climate.

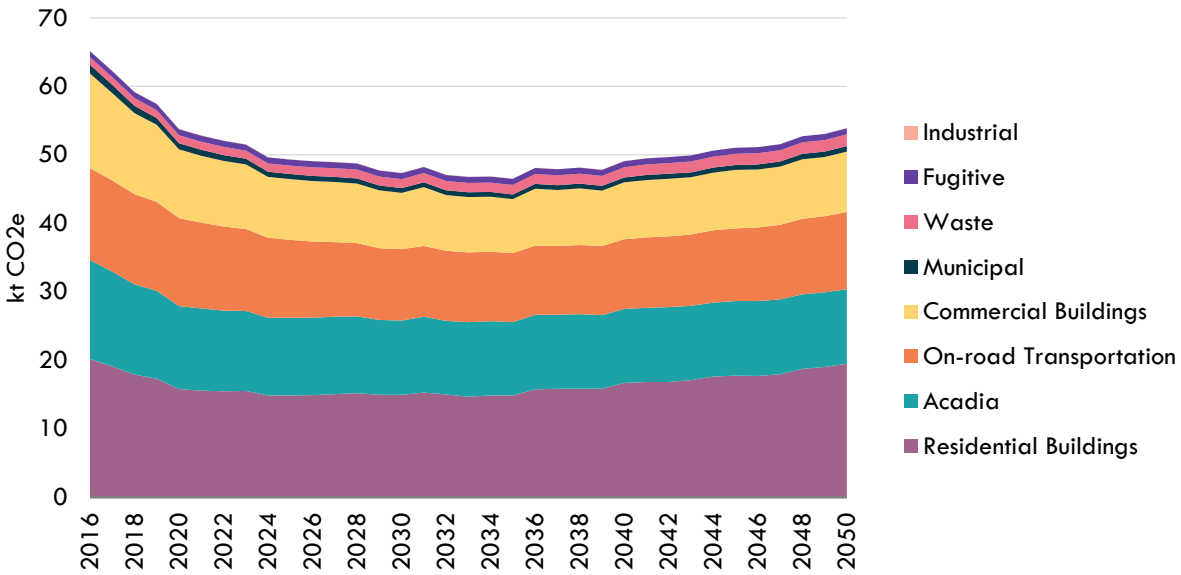


Figure 13. Forecasted total community emissions by sector, 2016-2050.

Transportation Fuel Emissions

Transportation emissions in 2016 are dominated by cars (48%), and light trucks (including SUVs) (39%). Heavy trucks make up the remaining 13% of transportation emissions, with a negligible amount from urban buses. The BAU scenario includes a small amount of electrification of personal vehicles and projected efficiency improvements to internal combustion engines and the carbon content of fuels (federal regulation). These changes result in a 16% reduction in emissions from transportation by 2050.

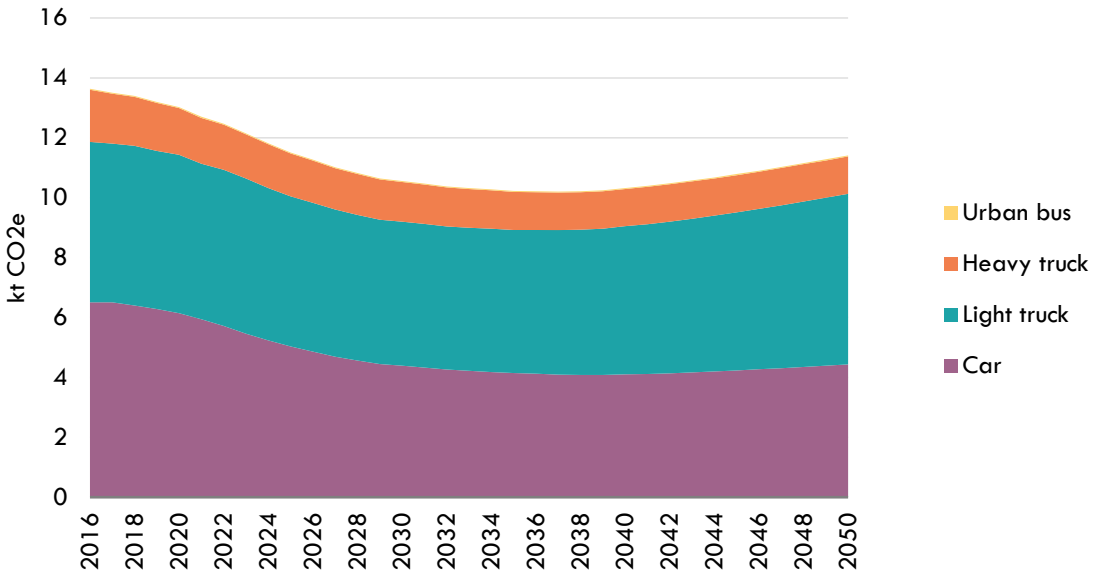


Figure 14. Forecasted transportation emissions by vehicle type, 2016-2050.

Buildings Emissions Sources

Energy use, and thereby emissions, from buildings fluctuate more than from other end uses because of the dominance of space heating demands in buildings. Space heating needs decline with the projected changes in heating degree days. Grid electricity and fuel oil are the dominant fuel used for space heating and are emissions heavy. As space heating demand decreases, so do its emissions. Space cooling emissions show a slight increase from 2016 to 2050 because of the increase in cooling degree days. Emissions from all other building energy uses decline over the next 30 years, primarily due to the expected decarbonization of the electricity grid, and reduced heating needs.

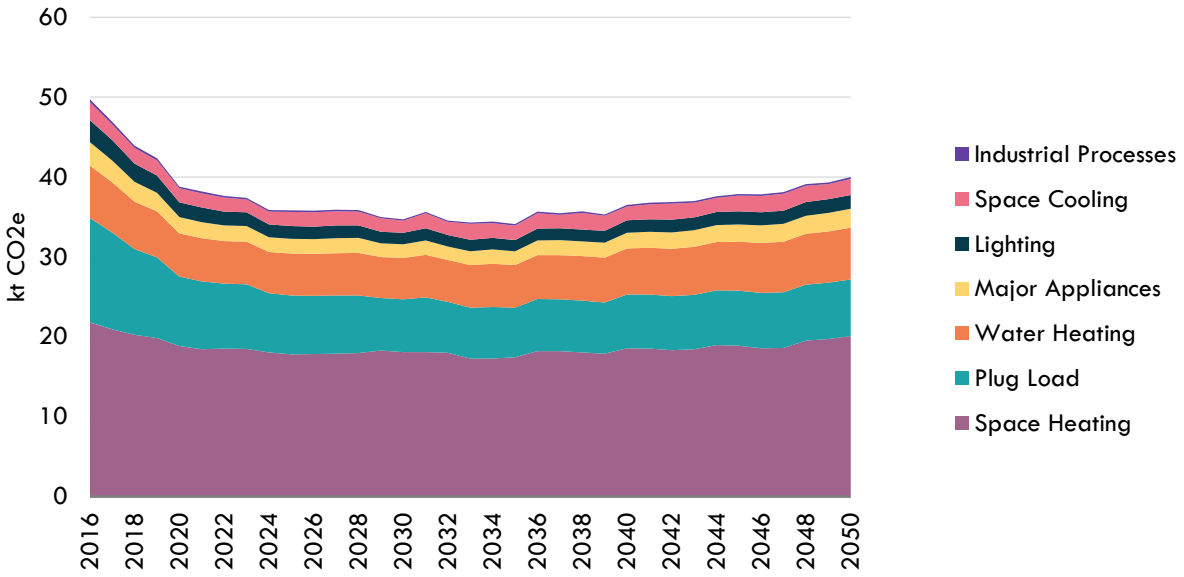


Figure 15. Forecasted building emissions by end use, 2016-2050.

Waste Emissions Sources

Emissions from landfills increase 57% from 2016 to 2050 as a result of population growth. Emissions from wastewater sources increase over the same time in parallel with the growth in population.

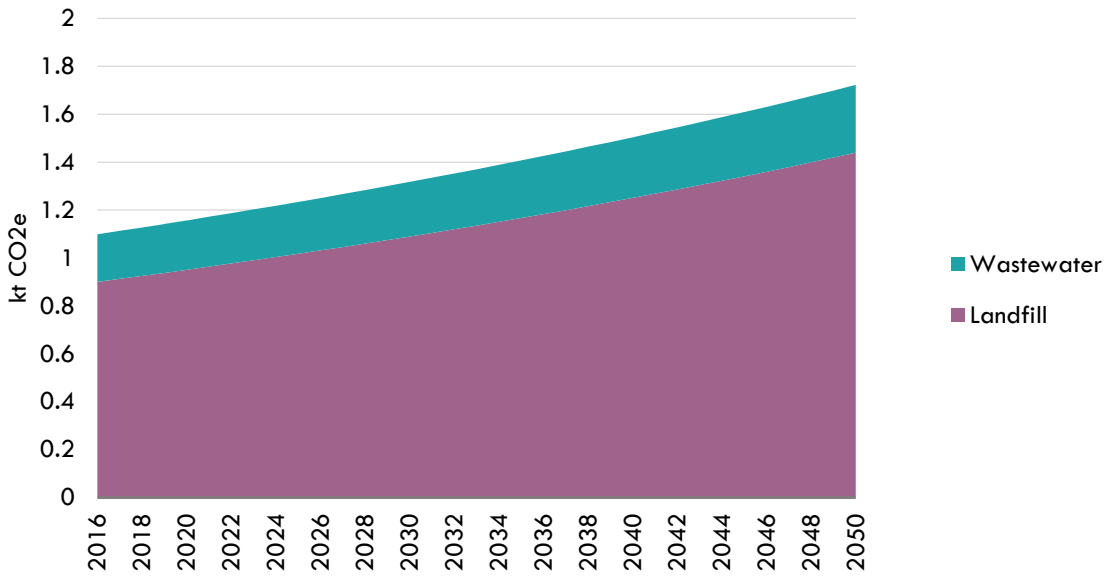


Figure 16. Forecasted waste sector emissions by type, 2016-2050.

Business as Usual Emissions Summary

Despite a growing population, more homes, and additional vehicles, Wolfville's GHG emissions are projected to decline slightly in the coming years as the electricity grid decarbonizes and building heating demand declines as average outdoor temperatures rise.

Part 3

A Low-carbon Future

Achieving a low-carbon future will require conscious and persistent effort, including investment and socio-economic paradigm shifts. Wolfville's path to a low-carbon future includes several big moves and many small ones.

The Reduce-Improve-Switch Paradigm

Low-carbon community planning considers a wide variety of actions in the transportation, buildings, industrial activity, energy use and generation, waste, and land-use sectors. The actions can be classified under one or more categories of Reduce, Improve, and Switch: reducing energy consumption, improving the efficiency of the energy system (supply and demand), and fuel switching to low-carbon renewable energy sources.

The most effective approach in transitioning to a low-carbon community is to first reduce the amount of energy needed as much as possible through energy efficiency and conservation, and then to switch to low-carbon fuel sources to supply the remaining demand. The sequence of the approach is important: by avoiding energy consumption (Reduce), retrofit requirements (Improve), and the need to generate renewable energy (Switch) are both reduced. One benefit of following this sequence is that by reducing energy demand from the grid through building energy efficiency measures, electricity is made available for fossil fuel systems transitioning to electricity (e.g. home heating from fuel oil furnaces to heat pumps, gas vehicles to EVs). This prevents overburdening the electric grid.

Table 1. Sample Reduce-Improve-Switch actions.

	BUILDINGS	TRANSPORTATION	WASTE
REDUCE Reduce energy consumption and optimize energy demand	Build efficient and low-carbon new buildings.	Build compact, complete communities and transit-oriented development.	Implement strategies to prevent the creation of waste.
IMPROVE Increase energy use efficiency	Upgrade to energy-efficiency lighting systems. Perform energy retrofits for existing buildings.	Improve vehicle fuel efficiency.	Improve the efficiency of waste collection practices.
SWITCH Shift to low-carbon energy sources	Source energy from renewable sources.	Switch to electric vehicles that use renewable energy sources.	Collect landfill fugitive emissions to use as renewable natural gas.

Community Energy Planning Prioritization

The actions can also be categorized broadly as applying to new infrastructure or existing infrastructure. Infrastructure is the first priority in community energy planning as it locks communities into patterns of energy use for decades. The second planning priority is to address major industry energy use, transportation energy use (personal and commercial vehicles), and building energy design (for new and existing buildings). The final priority is

making energy-using equipment efficient (e.g. appliances, heating systems). This prioritization hierarchy concentrates early action where the options to intervene in the future will be fewest.

Infrastructure, Mechanical, and Energy Systems Turnover

There are cyclical opportunities to address existing infrastructure, such as the natural transition at the end of serviceable life, between now and 2050. Different types of infrastructure have different degrees of longevity, for example building HVAC systems (moderate longevity) versus their envelopes (high longevity). Increased energy efficiency can be realized by investing in appropriate upgrades during cycles of infrastructure maintenance and renewal.

Low-carbon Action Themes

New Buildings

Buildings represent a large consumer of energy, and as a result, emitter of GHG emissions. By improving the efficiency of new buildings, deep reductions in both the energy required to heat and operate a building, as well as the emissions associated with energy consumption in a building can be achieved. Energy efficiency improvements in new buildings can include decreasing the size of the average dwelling, opting for multi-unit building types over single unit homes, adopting a net-zero building standard, and switching from emissions-heavy fuels to clean energy sources.

Existing Buildings

Existing buildings represent a far larger number of residences, businesses, institutions, and industrial buildings than the projected new building stock over the next 30 years. Deep energy retrofits to all types of buildings can reduce the energy demand for space heating and cooling. By switching from fossil fuels to electricity, and also by switching to heat pumps for space heating and cooling, the emissions associated with energy consumption in buildings can be dramatically reduced.

Transportation and Active Transportation

Transportation is responsible for nearly a third of the total energy consumption in 2016, and 21% of total GHG emissions. The internal combustion engine has shown marginal improvements over the last century, resulting in slight improvements in efficiency as well as the emissions associated with gasoline and diesel. The switch to electric vehicles is a leap forward in efficiency for all types of vehicles, while also allowing for dramatic reductions in emissions associated with transportation. Electric vehicle prices are decreasing, and manufacturers are continually expanding the options available for private, commercial, and heavy transportation needs.

The switch to electric vehicles will be accompanied by a need to change how vehicles are fueled, with increased demand for charging stations, and decreased reliance on centralized fuel providers.

Improvements to active transportation infrastructure will result in a reduction in the number of trips made by car over shorter distances. By encouraging people to use safe, accessible and well-maintained walking and cycling paths and lanes, trips shorter than 5 km will more frequently be completed using a zero-carbon method of transportation. As demonstrated in various municipalities around the world, balancing the provision of infrastructure, application of appropriate land-use policy, and use of market forces is the most effective way to achieve transportation mode shift away from personal vehicles to transit, walking, and biking. Focusing on one of these elements without attention to the others results in poor services, low uptake, and negative stigmatization of the so-called alternative modes of transportation.

Solid Waste and Wastewater

A holistic waste management strategy focuses on a waste hierarchy that prioritizes waste reduction, then its reuse and recycling/composting and energy recovery, followed by final disposal as a last option. Numerous cities are striving for zero waste goals (i.e. 100% diversion rates). Opportunities include outreach programs, strict separation policies, incentives/disincentives to promote recycling/organic composting, and bans on certain waste streams.

Local Clean Energy Generation

Electrification is at the core of a low-carbon energy and emissions strategy, and with that comes the requirement to reduce the GHG emissions associated with the generation of electricity. The provincial electrical grid, while improving, is still projected to continue the use of high-emissions fossil fuels at its generation facilities. By producing clean electricity locally, through wind and solar installations, municipalities can encourage the switch to electricity while also reducing the emissions associated with electricity production.

Renewable energy can be stored for use when needed, in battery electric storage or pumped hydro storage, for example. Stored renewable energy can be deployed when needed, bridging the temporal gap between when energy is produced and when it is needed, for example at night and during peak demand periods. Releasing stored energy decreases reliance on fossil fuel-based peaking plants that operate during peak demand hours (e.g. mornings and evenings). The current cost of battery electric storage is high, but prices are decreasing quickly as battery technologies become increasingly inexpensive to produce.

The district energy system at Acadia University currently uses trucked-in compressed natural gas to provide space heating for buildings on the campus. By expanding this system to include buildings in the downtown area, as well as converting it to use renewable energy, the efficiencies of a centralized heating system could be increased, while the GHG emissions associated with the system are decreased.

Wolfville's Low-carbon Pathway

Actions that would achieve net-zero GHG emissions by 2050 were explored using energy and emissions modelling. Assumptions were developed for each action and they were modelled as a low-carbon scenario to demonstrate their emissions reductions potentials compared to current emissions and those projected under the BAU scenario. The collection of actions that will reach the target are summarized here; full descriptions are in Appendix A.

Existing Buildings

- 100% of homes have replaced fossil fuel heating with heat pumps by 2040;
- 100% of water heaters are replaced with electric models or heat pump models by 2040;
- Residential building energy efficiency retrofits reduce 50% of thermal energy demand and 50% of electrical demand in homes using electric resistance heating in 100% of homes by 2040;
- Industrial, commercial, and institutional building energy efficiency retrofits reduce 50% of thermal energy demand and 50% of electrical demand in 100% of homes by 2040;
- Industrial processes and motors increase efficiency by 50% by 2050; and
- All municipal buildings are retrofit to net-zero emissions by 2030.

New Buildings

- New homes and industrial, commercial, and institutional (ICI) buildings are net-zero emissions and use no fossil fuels by 2030;
- New buildings increasingly have solar PV installed, supplying at least 10% of the buildings' electrical load. By 2050, 90% of new homes in that year have solar PV systems installed;
- Due to more multi-unit home development, new home sizes are smaller (and thus typically more energy efficient); and
- New developments are denser and preferred in infill areas with existing services to promote travel efficiency and non-vehicular travel.

Transportation and Transit

- 30% of new personal vehicles are electric by 2030, 60% by 2035, and 100% by 2040;
- 30% of new commercial vehicles are electric by 2030, 50% by 2035, and 80% by 2040;
- Transit fleet is 100% electric and right sized by 2035;
- Municipal vehicle fleet is 100% electric by 2030;
- Increase transit frequency;
- Transit use increases to 25% by 2030; and
- 40% of shorter trips are made by walking or biking by 2030, 50% by 2050.

Waste and Wastewater

- Waste generation is decreased by 30% by 2050;
- 100% of solid waste is diverted from landfill by 2050;
- 100% of organics go to anaerobic digestion by 2050;
- Anaerobic digestion facilities are installed for wastewater treatment, and biogas capture for use in the district energy system;
- High-efficiency water pumps are installed by 2035, reducing energy use by 50%; and
- Residential and commercial water use is reduced.

Renewable Energy

- 10 MW of ground mount solar PV capacity installed from 2030-2045;
- Electricity storage is added with new renewable energy installations, able to store 20% of new generation capacity for release during peak electricity demand times;
- 100% of the natural gas required by the Acadia district energy system after efficiency measures is replaced with renewable natural gas or a ground or air source heat pump system by 2035; and
- Renewable energy is procured from outside of the municipal boundary to replace remaining grid-supplied electricity by 2050.

Implementing these actions over the next 3 decades will steadily decrease total energy use and emissions production across the community. To achieve the 2030, 2035, 2040, and 2050 targets of the low-carbon actions, implementation must begin in the near term. The low-carbon community energy use and emissions reductions that will result are described in the following sections.

Low-carbon Pathway Energy

Wolfville's total energy demand decreases from 623,000 GJ in 2016 to 249,000 GJ in 2050 in the low-carbon scenario, representing a 60% reduction. This is substantial, especially considering that population, employment, and housing are all expected to grow over the next 30 years.

Figure 17. Comparison of energy use in business-as-usual (purple) and low-carbon scenarios (blue).

Energy flow in the 2050 low carbon scenario is shown in Figure 18 below. When compared with the 2016 Sankey diagram, as well as the 2050 BAU diagram, it is clear that the move toward electrification of vehicles and space heating dramatically decreases the conversion losses associated with the energy system of Wolfville.

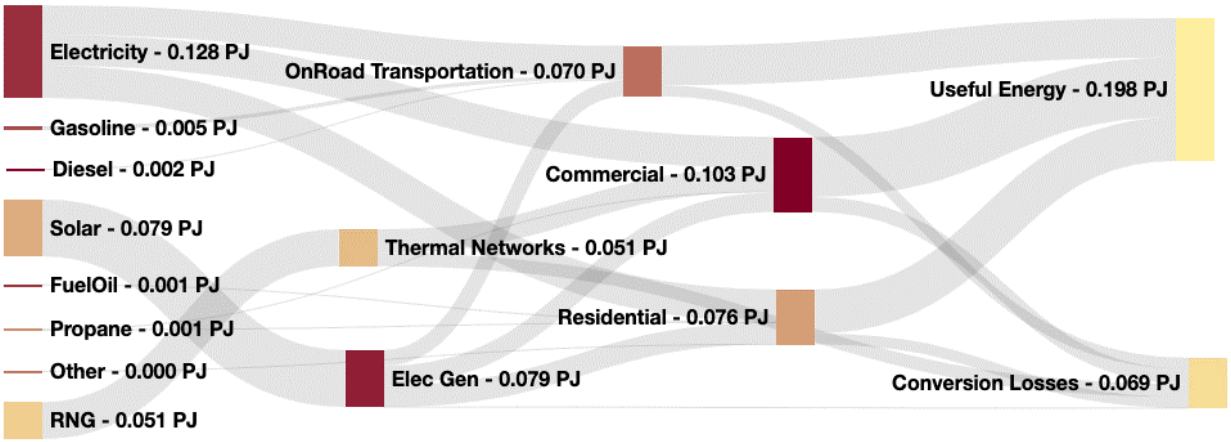


Figure 18. Sankey diagram showing energy flow in 2050 under the low-carbon scenario.

Where Energy Will Come From

The decrease in total energy consumed is paired with a shift away from fossil fuels and carbon-intensive fuels, replacing them with local renewable electricity, renewable natural gas/heat pumps, and renewable electricity generated outside of the municipal boundary ("procured"). In the low-carbon scenario, grid electricity is replaced entirely with renewable electricity. The use of gasoline, diesel, fuel oil, and propane are greatly reduced - replaced with green electricity. Some green electricity is procured from outside the municipality starting in 2030, increasing to 2050 to replace grid electricity still reliant on fossil fuels.

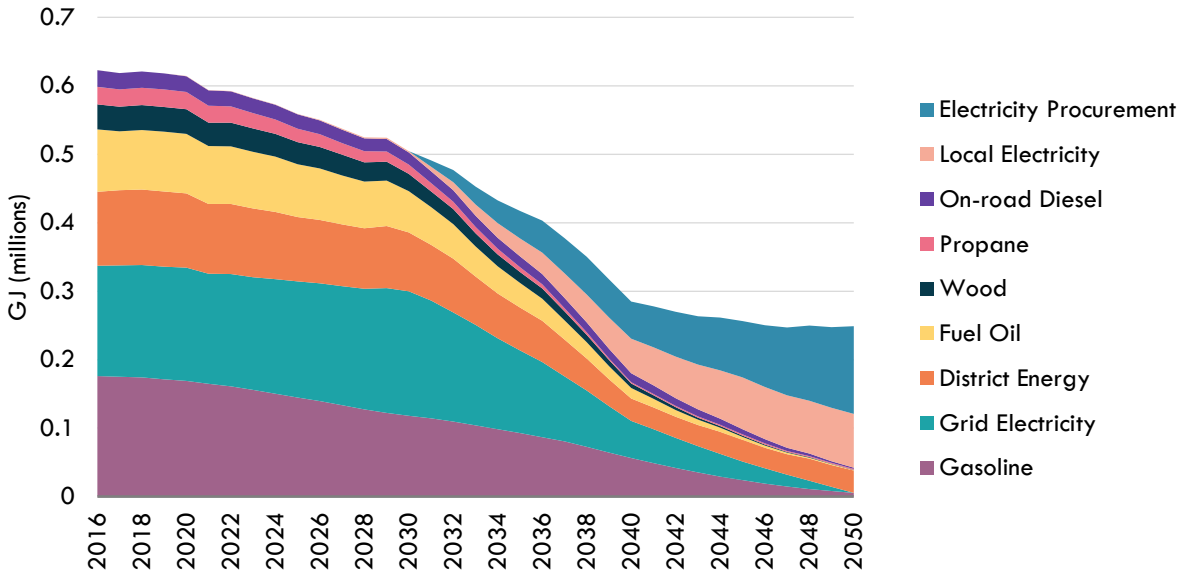


Figure 19. Low-carbon scenario energy use by energy source.

Where Energy Will be Used

Energy use in the transportation sector decreases 28% by 2050, driven by a switch from internal combustion engine vehicles to electric vehicles, as well as increased use of transit, and active transportation encouraged by improved transit service and walking and biking infrastructure. Residential energy use decreases by 30% because of wide-spread building retrofits and the switch to heat pumps for space heating and cooling. Building retrofits at Acadia achieve a 23% reduction in energy consumption, and commercial energy demand decreases 17% from switching to more efficient heating and cooling systems, as well as retrofits for energy efficiency.

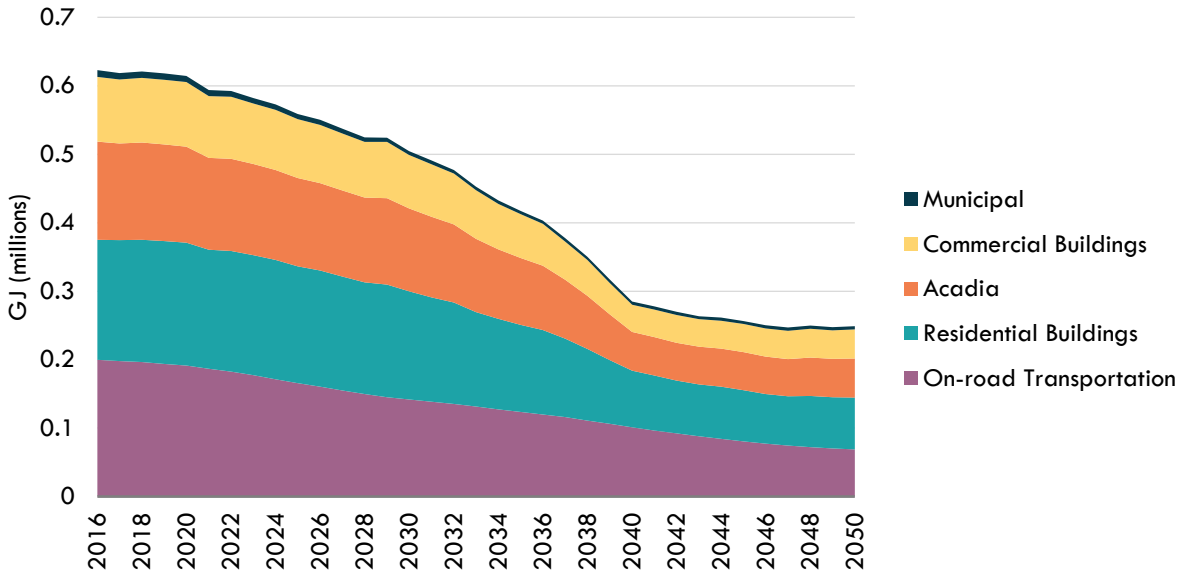


Figure 20. Low-carbon scenario energy by sector.

How Energy Will be Used

Energy used for space heating and transportation still dominates in the low-carbon scenario throughout the next 30 years, but it is substantially reduced by 2050. Space heating energy demand decreases 40% thanks to energy efficiency building retrofits and converting fuel furnaces to heat pumps, which are typically at least 300% more electrically efficient than baseboard heaters. Space cooling demand increases by 5% between 2016 and 2050 but represents only a small fraction of total energy demand in the community. Transportation energy decreases by 28%, because of a switch to efficient electric vehicles, and improvements to the transit system and active transportation infrastructure.

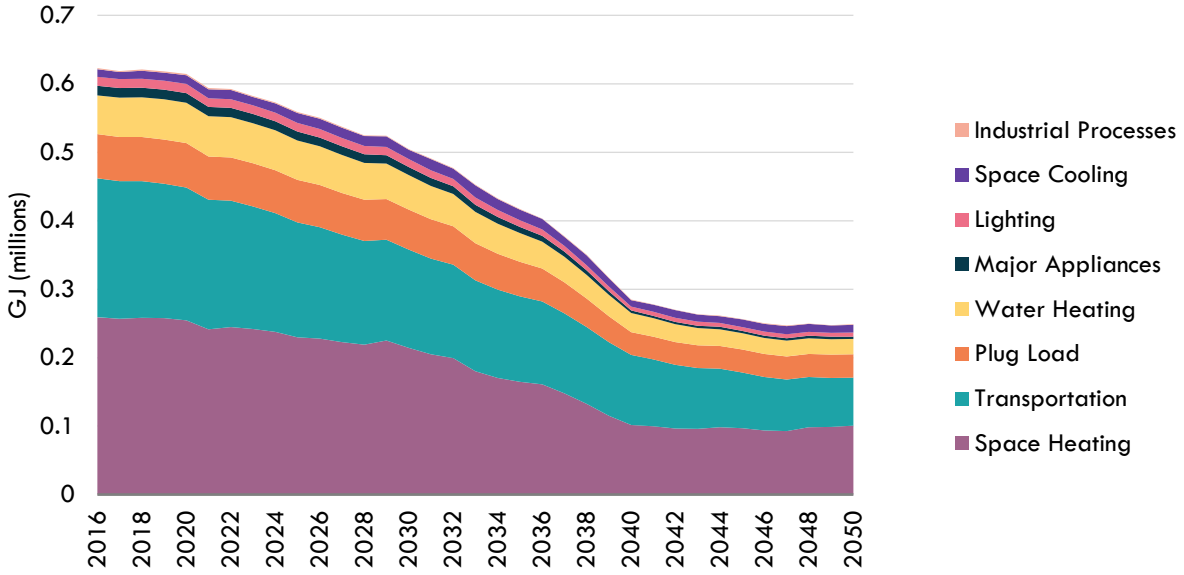


Figure 21. Low-carbon scenario energy by end use.

Low-carbon Pathway Emissions

The low-carbon actions achieve a 98% decrease in community emissions by 2050. Total emissions decline from 65.2 ktCO2e in 2016 to 1.2 kt CO2e in 2050. Emissions under the low-carbon scenario in 2050 represent an 97% reduction from those in the BAU scenario (53.9 ktCO2e).

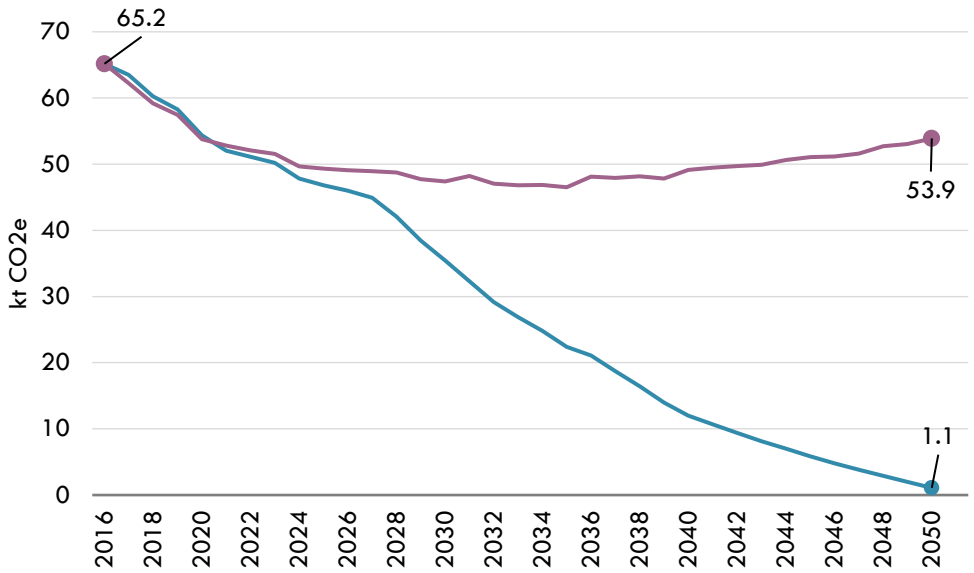


Figure 22. Total community emissions, business-as-usual (purple) and low-carbon scenarios (blue), 2016-2050.

Emissions from Energy Sources

Emissions from all fuel sources decrease between 2016 and 2050 in the low-carbon scenario. Emissions from grid electricity and district energy are entirely removed by 2050, and fuel oil, gasoline, diesel, propane, and wood burning emissions are all but removed. The remaining emissions from gasoline and diesel are from older personal gas vehicles remaining on the road nearing replacement, and from a small number of remaining internal combustion commercial vehicles.

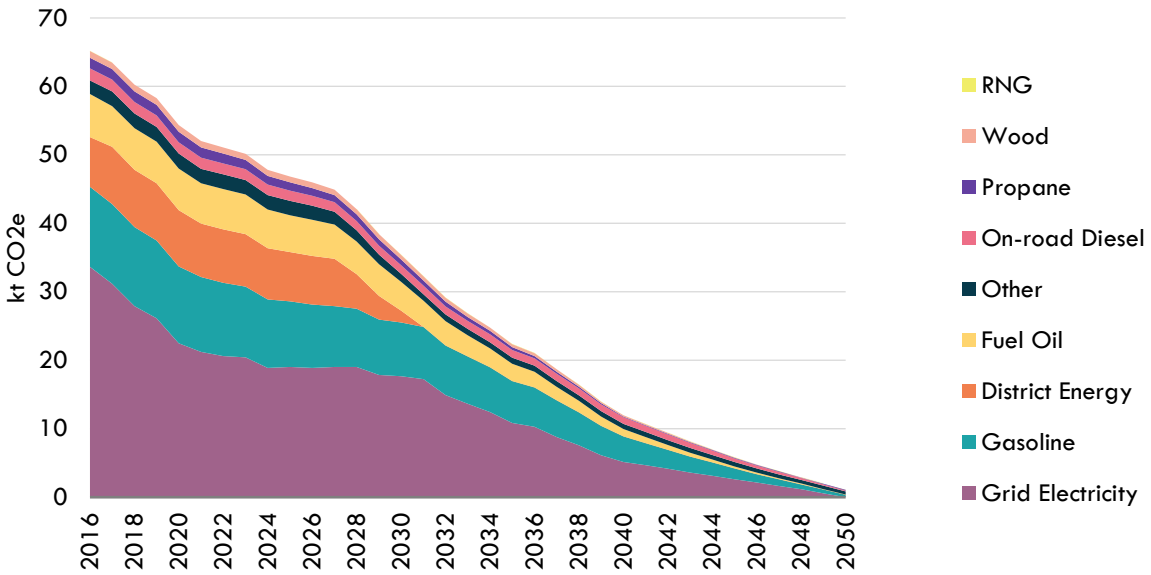


Figure 23. Low-carbon scenario emissions by energy source, 2016-2050.

Where Emissions are Produced

Emissions in the commercial sector decrease by 98% from 2016 to 2050 as a result of switching from fossil fuels for space heating, moving to renewable natural gas or heat pumps for district energy, and switching from grid electricity to clean renewable electricity produced both locally and outside of the municipality. Transportation emissions show a 96% decrease, with most personal use and commercial vehicles being replaced by electric vehicles by 2050, and slight efficiency improvements to internal combustion engines. Residential emissions are completely eliminated through electrification of thermal systems and switching to local and imported renewable electricity for most uses within homes. Emissions from Acadia University are removed almost entirely by converting to renewable natural gas or heat pumps, and through the use of renewable electricity.

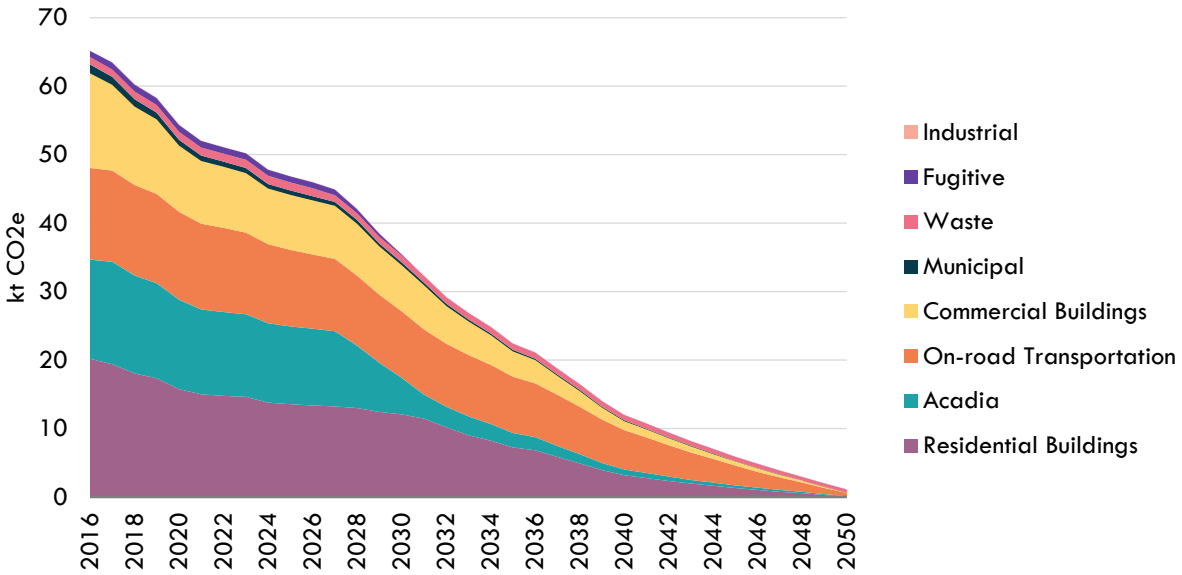


Figure 24. Low-carbon scenario emissions by sector, 2016-2050.

How Emissions are Reduced

The breakdown of how specific actions shape the future of Wolfville's emissions is shown in Figure 25. Electrification and zero-emissions electricity are the critical actions – producing it locally through added ground-mount solar and roof-top solar PV installations, and procuring it from outside current grid sources.

Expansion of the district energy system, and conversion of that system to renewable natural gas or heat pumps also provide important emissions reductions. The emissions reductions from this action are large when the switch first occurs and lessens as the energy demand from the system is gradually reduced due to Acadia campus and downtown commercial building energy efficiency retrofits. This trajectory is reflective of the rate of retrofits – if retrofits of these commercial buildings are prioritized in the next 10 years instead of gradually implemented over the next 3 decades, the energy requirement of the district energy system will be diminished sooner. This would result in requiring a smaller capacity district energy system sooner.

Energy efficiency retrofits, heat pumps for air and water heating installations in homes and commercial buildings constitute more big moves. Encouraging accelerated EV uptake rounds out the 10 actions with the greatest emissions reductions.

Fifteen other actions – including energy efficient new homes and ICI buildings, waste reduction, and increased transit use and active transportation - achieve the remaining emissions reductions. Although they collectively account for less emissions reductions than the residential retrofits action (for example), they still constitute important components of the community's low-carbon transition and will allow the achievement of the net-zero emissions by 2050 target while achieving a host of other community benefits like increased mobility and accessibility, increased equity, decreased energy costs, and improved health.

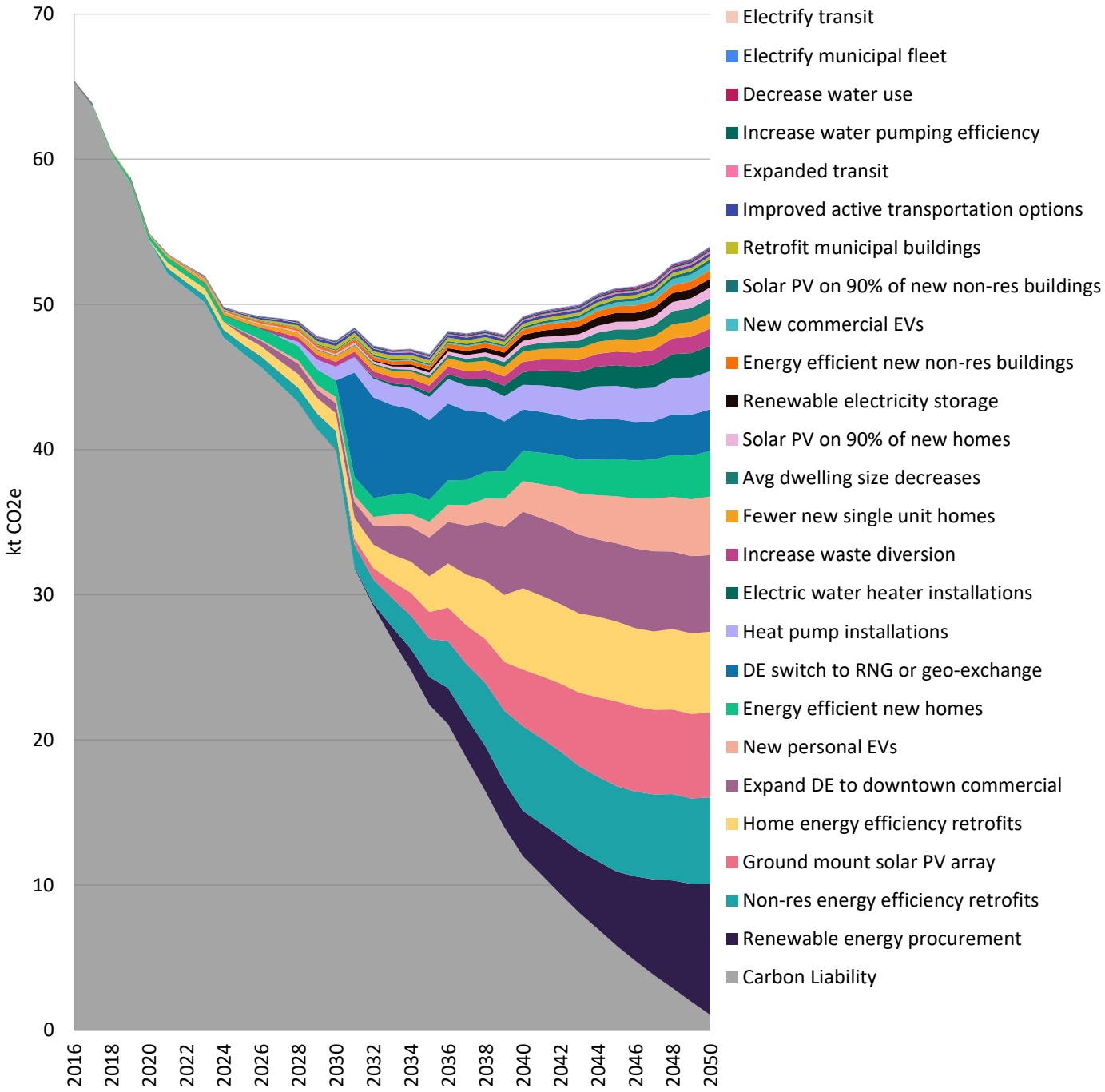


Figure 25. Wedge diagram showing the relative emissions reductions of each action explored in the low-carbon scenario, 2016-2050. The top line of the graph represents total BAU scenario emissions.

The Climate Equity Approach to Emissions Reductions Planning

The low-carbon scenario shows what emissions reduction trajectory is required to achieve net-zero emissions by 2050, in line with the IPCC's call to action in avoiding average global temperature rise above 1.5°C by 2050. This is one way to plan for emissions reductions; another is the climate equity method which determines a pathway to net-zero emissions that addresses global emissions inequities, namely that industrialized nations have emitted more than other nations.

National carbon equity calculations have been made by the Stockholm Environmental Institute in its Climate Equity Reference Calculator.[6] The remaining global carbon budget associated with limiting global heating to 1.5°C by 2050 (i.e. maximum allowable emissions ever) is allocated to each country by 'fair share' in the calculator. The allocation is based on historical contributions to GHG emissions, development projections, levels of poverty, and other variables. The calculator also determines by what year the allocated emissions need to be reduced to zero based on factors such as the country's capacity to act, average income of residents, and historical responsibility period.

The country allocation can be sub-allocated to municipalities by taking the ratio of a municipality's emissions to that of Canada's in a given year. Determined this way, Wolfville's annual emissions represent an average of 0.012% of Canada's total annual emissions. If Wolfville were to follow Canada's fair share required emissions reduction trajectory - being responsible for 0.012% of Canada's required annual emissions reductions - the town (and the rest of Canada) would have to reach net-zero emissions by 2027 – 23 years ahead of what is targeted under the low-carbon scenario (Figure 26).

[6] Kemp-Benedict, Eric, Christian Holz, Paul Baer, Tom Athanaisou, and Sivan Kartha (2019) The Climate Equity Reference Calculator. Berkeley and Somerville: Climate Equity Reference Project (EcoEquity and Stockholm Environment Institute), [Online]. Available: https://calculator.climateequityreference.org

Figure 26. Comparison of climate equity emissions reduction trajectory versus BAU and LCS trajectories, 2016-2050.

This is Wolfville's globally equitable emissions reduction trajectory. It is quite drastic compared to the net-zero by 2050 low-carbon scenario trajectory, demonstrating that although climate action to reduce all emissions by 2050 seems ambitious, it is not nearly as ambitious as it should be under a globally equitable scenario. Achieving the emissions reductions in the climate equity scenario would entail rapid energy efficiency transformation of Wolfville's existing building stock, installations of renewable energy generation infrastructure, switching Acadia's district energy plant to zero emissions operations, and decarbonization of transportation in less than a decade.

Part 4

Recommended Actions

The BAU scenario demonstrates Wolfville's expected emissions over the next 3 decades, the low-carbon scenario details the type, scope, and timing of the actions required to achieve net-zero emissions by 2050, and the climate equity scenario shows the globally equitable path to net-zero emissions. Whether implementing actions to follow the low-carbon scenario pathway or exceeding this trajectory, actions need to begin immediately in earnest to start Wolfville on its low-carbon pathway.

Compact, Complete Communities Actions

Goals

- New home sizes are slightly smaller than the current average (and thus typically more energy efficient); and
- New developments are denser and preferred in infill areas with existing services to promote travel efficiency and non-vehicular travel.

Rationale

Land-use decisions can be cost-effective emissions reduction actions. As Wolfville's population grows, housing development is an area of careful consideration. Coordinating new housing developments and increasing housing density through housing replacement can ensure Wolfville's urban fabric is walkable and bikeable, complete with mixes of housing and amenities, and offers a variety of housing options to provide affordability. Denser, smaller homes use less energy while compact, complete neighbourhoods produce fewer transportation emissions.

Action 1: Develop compact, complete communities.

Coordinate land-use, transportation, infrastructure, and development planning efforts, with a focus on:

- Infill development and replacing end-of-life single unit homes with multi-unit homes;
- Increasing minimum housing densities;
- Transportation oriented development approaches to coordinate transit and active transportation options with development densities;
- A focus on mixed-use and multi-family buildings to increase building energy efficiency and provide population density to support neighbourhood services and amenities;
- Green space and urban forestry requirements for community spaces that have carbon sequestration capacity.

Existing Buildings Actions

Goals

- 100% of homes have replaced fossil fuel heating with heat pumps by 2040;
- 100% of water heaters are replaced with electric models or heat pump models by 2040;
- Residential building energy efficiency retrofits reduce 50% of thermal energy demand and 50% of electrical demand in homes using electric resistance heating in 100% of homes by 2040;
- Industrial, commercial, and institutional building energy efficiency retrofits reduce 50% of thermal energy demand and 50% of electrical demand in 100% of homes by 2040;
- Industrial processes and motors increase efficiency by 50% by 2050; and
- All municipal buildings are retrofit to net-zero emissions by 2030.

Rationale

Retrofits reduce the energy use intensity of building operations and the GHG emissions intensity of fuels used in a building. Through wall and roof insulation improvements, and window and door upgrades, building envelope retrofits minimize thermal energy loss through the walls, windows and roof of a building, requiring less energy to maintain the same levels of comfort. Switching building space and water heating systems to use energy efficient electric heat pumps eliminates fuel oil, wood, and propane heating requirements. Retrofits are essential to a broader decarbonization effort for the following reasons:

- Their financial savings provide a cash flow for fuel switching to higher cost but lower carbon energy sources (i.e. from natural gas to electricity).
- Reduced electricity demand frees up electricity grid capacity to supply new demand from electric vehicle charging and electric heating, avoiding what would otherwise be major required investments in new generating and transmission capacity.

Retrofits also support a wide range of co-benefits such as reducing energy poverty. Building retrofits can improve ventilation in existing buildings, which can support improved health for its employees, and can actually contribute to improved work performance.[7] To meet ambitious building retrofit targets, a bolstered industry of local workers, materials, and expertise is needed.

[7] MacNaughton, P., Satish, U., Laurent, J. G. C., Flanigan, S., Vallarino, J., Coull, B., … Allen, J. G. (2017). The impact of working in a green certified building on cognitive function and health. Building and Environment, 114, 178–186. https://doi.org/10.1016/j.buildenv.2016.11.041

Action 2: Develop and implement a mass residential building retrofitting program.

Wolfville has over 2000 homes to retrofit to higher energy efficiency standards. The pace of retrofits under low-carbon scenario implementation is fast: 100 homes every year for the next 20 years. Wolfville's retrofit program could be hosted by the Town and coordinate provincial, federal, and energy utility support and subsidy programs for homeowners. The municipality can vigorously promote the program and could coordinate local contractors in retrofit service provision. The federal government's EnerGuide program can also help match homeowners with home energy auditors and retrofit specialists. Wolfville's new PACE program will be the financial cornerstone that enables homeowners to perform the upgrades. Home retrofits should include:

- Wall and roof insulation upgrades;
- Roof replacement;
- Window and door upgrades;
- Switching fuel oil, propane, and electric baseboard space heating systems to more efficient heat pump systems; and
- Switching fuel oil, propane, and electric resistance water heating systems to more efficient heat pump systems.

Action 3: Develop and implement a mass commercial and institutional building retrofitting program.

There are dozens of commercial buildings and Acadia buildings to upgrade. Retrofit considerations for these buildings are often different from those for homes as energy systems tend to be larger and buildings' features more variable. Wolfville could host a commercial and institutional buildings retrofit program in parallel to its residential buildings program, with similar considerations.

Action 4: Develop and implement a municipal building retrofit program.

In concert with the residential and commercial/institutional buildings retrofit programs, the Town should perform an asset management exercise that prioritizes its buildings for energy efficiency and heating systems retrofits. By leading by example, the Town can model the way for buildings retrofits across the community.

New Buildings Actions

Goals

- New homes and ICI buildings are net-zero emissions and use no fossil fuels by 2030 at the latest; and
- New buildings increasingly have solar PV installed, supplying at least 10% of the buildings' electrical load. By 2050, 90% of new homes in that year have solar PV systems installed

Rationale

Minimizing the energy use of future buildings is a low cost approach to keeping new building emissions low. New buildings are typically more efficient than existing buildings due to modern building codes, but there is still much room for improvement. New building requirements should include provisions such as:

- Fossil fuel free heating, cooling, and appliance systems;
- Electric heat pump space and water heating systems;
- Energy use intensity (EUI) maximums of 120 kWh/m^2 and thermal energy demand intensity (TEDI) maximums of 15 kWh/m^2 (Passive House standard values);
- Orientation and provision for rooftop solar PV panels supplying a minimum of 10% of the building's electricity demand; and
- All residential buildings accommodate EV charging in 100% of parking stalls.

Mandating these elements for new developments may require the creation of a local green building standard and/or amending rezoning bylaws to include these measures for any development that requires rezoning. At the very least, these elements can be encouraged by offering expedited development processing and tax relief to developers and owners if they are included in development and building plans.

Action 5: Review and revise Town building and planning policies to include energy efficiency, renewable energy generation, and zero fossil fuel provisions for new buildings.

Clean Transportation Actions

Goals

- 30% of new personal vehicles are electric by 2030, 60% by 2035, and 100% by 2040;
- 30% of new commercial vehicles are electric by 2030, 50% by 2035, and 80% by 2040;
- Transit fleet is 100% electric and right-sized by 2035;
- Municipal vehicle fleet is 100% electric by 2030;
- Increase transit frequency;
- Transit use increases to 25% by 2030; and
- 40% of shorter trips are made by walking or biking by 2030, 50% by 2050.

Rationale: Transit

Transportation emissions are eliminated by switching to electric vehicles that use renewable electricity and increasing trips made by transit, walking, biking, and rolling instead of driving. The municipality has a lead role to play in provision of active transportation infrastructure and in converting its fleet to zero emissions vehicles. The Town can work with Kings Transit Authority to electrify the bus fleet and improve service. The Town and the university can lead coordinated education programs with citizens and students to encourage bus use, including revisiting the UPass program. The Town can also partner with Kings Transit Authority, the university, and local businesses to implement an employer and institution transit program - similar to a UPass program or as an incentive program - to encourage transit use.

Action 6: Continue to coordinate with Kings Transit Authority to increase service to achieve 25% of mode share by 2030 and electrify the bus fleet.

Action 7: Partner with local businesses, Acadia University, and Kings Transit Authority in establishing an employer and institutional transit use incentive program.

Action 8: Allocate capital budget to continued improvement of active transportation infrastructure (e.g. sidewalks, trails, bike lanes, bike parking, etc.) to achieve 40% mode share by 2040 and 50% by 2050.

Rationale: Electric Vehicles

Although Wolfville is a very walkable town, vehicle transportation originating in and outside the municipal boundary is the most common way of getting around. Addressing emissions resultant from these trips is challenging and is largely dependent on vehicle electrification.

The Town could establish an electric vehicle joint venture with car dealerships, community groups, and the university as partners to significantly increase the uptake of personal and commercial electric vehicles. The joint venture would have a mandate to develop and implement a community-wide EV strategy (five-year action plan/roadmap) that plans for and catalyzes electric vehicle adoption, including:

- Planning for EV charging infrastructure throughout Wolfville to support the full electrification of the transportation sector;

- Coordinating infrastructure investments (including opportunities to combine EV charging infrastructure with renewable energy generation projects);
- Providing an EV carshare service;
- Coordinating educational and marketing activities; and
- Developing and coordinating subsidies and incentives for drivers (e.g. with federal incentives and Nova Scotia's new EV Assist program).

The Town can also prepare for and catalyze EV uptake through planning and policy, including:

- Requiring EV charging infrastructure in all new construction;
- Providing funding through incentives, loans, or rebates to install EV chargers in residential and non-residential buildings;
- Establishing an ongoing/updated town-wide database of buildings that have installed EV charging equipment or are EV charger ready;
- Updating relevant bylaws and planning documents to include special provisions for EV charging infrastructure, fees, and assigned/preferred parking spaces (e.g. parking, taxi, vehicles for hire); and
- Including EV charging considerations and/or requirements in secondary and master planning.

Electric bicycles and scooters are a related consideration. Many of Wolfville's trips are short and can easily be made via active transportation or e-bikes/scooters. Cost effective and low-emissions, e-bikes and scooter uptake will be most successful if appropriate infrastructure is in place, such as parking and charging facilities, and dedicated or marked travel lanes. Other considerations are similar to those for EVs. E-bikes are eligible for rebates under the EV Assist program.

Action 9: Partner with Acadia University, community groups, local businesses, and car dealerships in the development of an education and promotion program for electric vehicles that also helps car owners access provincial and federal subsidy programs.

Action 10: Develop a comprehensive EV Strategy detailing the actions and their implementation timeline to electrify the transportation sector.

Action 11: Update bylaws and planning documents to include provisions for EV charging infrastructure in new and existing buildings.

Action 12: Develop and implement a municipal fleet transition strategy to replace all current vehicles with electric models by 2030. Ensure all vehicles purchased from today onward are electric models.

Local Energy Actions

Goals

- At least 20% of energy used in Wolfville is from renewable sources by 2030.
- At least 95% of energy used in Wolfville is from renewable sources by 2050.

Rationale

The timeline for the greening of Nova Scotia's electrical grid is unknown. Nova Scotia Power (NSP) currently has an exemption from the 2030 federal coal phase out that applies to the rest of the country. Although NSP has explored dozens of integrated resource planning (IRP) scenarios, the company has not committed to any of those that phase out coal-fired electricity generation. As long as this remains the case, Wolfville's reliance on grid electricity means the town will not be able to meet its emissions reduction targets.

A mixture of renewable energy approaches is likely needed, included fuel switching to renewable electricity and renewable natural gas (the latter if necessary), providing renewable electricity energy storage for use during peak demand hours, and renewable energy procurement (e.g. renewable energy credits).

Achieving these goals could be expedited through a local community renewable energy co-operative or energy coalition entity that coordinates and advances the development of utility scale renewable energy generation. In addition to the renewable energy mandate, the entity would:

- Have a mandate to develop local expertise, stimulate the local economy and provide energy security and resilience;
- Advocate for, develop, commission and finance projects, depending on which strategy is appropriate to a particular context, with greater flexibility than existing utilities;
- Be technology comprehensive, working on solar, wind, energy storage, and other renewable energies; and
- Coordinate and establish funding/financing, including incentives from other levels of government and utilities, investment raised through a combination of community bonds and green bonds, a revolving fund, and/or private funding.

Action 13: Install 10 MW of ground mount solar PV capacity installed from 2030-2045.

Action 14: Add renewable electricity storage alongside new renewable energy installations, able to store 20% of new generation capacity for release during peak electricity demand times.

Action 15: 100% of the natural gas required by the Acadia district energy system after efficiency measures is replaced with renewable natural gas or a ground or air source heat pump system (preferred) by 2035.

Action 16: Starting in 2030, renewable energy is increasingly procured from outside of the municipal boundary, replacing 100% of remaining grid-supplied electricity by 2050.

Waste and Wastewater Actions

Goals

- Waste generation is decreased by 30% by 2050;
- 100% of solid waste is diverted from landfill by 2050;
- 100% of organic waste and wastewater are treated by anaerobic digestion by 2050. RNG is captured from this process;
- Energy use in the potable water and wastewater treatment systems is reduced by 50%; and
- Residential and commercial water use is reduced.

Rationale

Solid waste collection and treatment is a multi-faceted sector with overlapping governmental jurisdictions and service considerations. Direction from the Province governs some of what can be achieved with solid waste diversion. The Town can choose to exceed direction from the Province for certain elements of its solid waste programming to increase solid waste diversion. Education and awareness programs employing demonstration projects and social media have proven effective in other jurisdictions for waste and water use reduction; similar programs could be employed in Wolfville. These actions can be implemented in the near-term and will endure over the long-term.

Anaerobic digester facility technology is developing rapidly and costs will continue to decrease. Anaerobic digesters could be installed at Wolfville's wastewater treatment plant where organic waste delivery could be mixed with biosolids for treatment. The gas captured from the facility could be used as RNG in Acadia's district energy system.

There is energy, money, and water to be saved through water conservation programming. Through education, policies, and rebate offers water use can be decreased in residential, commercial, and institutional buildings. On the municipal side, upgrading end-of-life pumps in the potable and wastewater distribution and conveyance systems with more efficient models will save energy.

Action 17: Implement a town-wide single use items ban. Work with businesses to reduce packaging waste.

Action 18: Decrease the maximum allowable number of per household garbage bags disposed of each collection period to 1.

Action 19: Develop rigorous waste sorting and diversion programs and facilities in multi-unit residential, institutional, and commercial buildings.

Action 20: Develop a water conservation, education, and rebate program that provides:

- Water conservation education materials;
- Rebates for low flow toilets and faucets; and
- Restrictions on private property irrigation.

Action 21: Install an anaerobic digestion facility at the wastewater treatment plant for RNG production for use in the district energy system.

Action Implementation Timing

Setting emissions reduction targets is a critical component of municipal climate action, but the action implementation timing of achieving the target is crucial to minimizing cumulative emissions. The following figure illustrates the cumulative emissions differences between acting promptly and delaying; the difference in cumulative emissions released over the next thirty years is significant. Delaying action not only results in more emissions released over the period, but also requires a transition so rapid as the target year approaches that reductions actions may incur major social impacts. Setting interim targets helps ensure that municipalities stay on track with their emissions reduction commitments, resembling the left or middle trajectories depicted in the figure below.

Figure 27. Emissions reductions associated with timing of actions and setting interim targets.

An emerging best practice in setting emissions reductions targets takes this idea further, by developing a carbon budget based on the sum of allowable emissions for each year leading up to the target year. The figure below shows how the total carbon budget is summed (left), and subsequently adjusted year-over-year to ensure that the budget is met. Carbon budgets act like financial budgets – there are maximum emissions volumes the municipality can 'spend' each year. A carbon budget is an important tool for keeping the municipality on track to achieving its emissions reduction target.

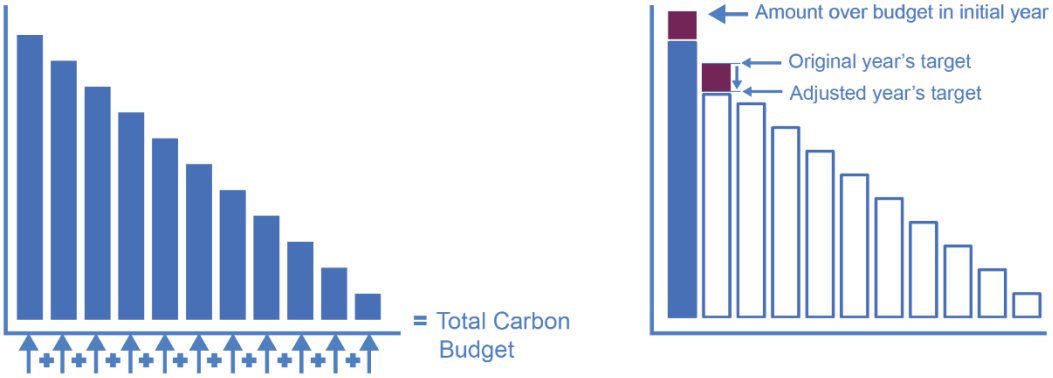


Figure 28. Determining (left) and adhering to (right) carbon budgets.

Appropriate implementation timing and carbon budgeting provide two maxims: act swiftly and responsibly.

In Closing

The global net-zero by 2050 target is very purposeful. It has been urged by the Intergovernmental Panel on Climate Change (IPCC) and is part of the legally binding 2015 Paris Agreement in which national governments, including Canada, committed to this target. The target—and the interim target of 45% emissions reduction by 2030 compared to pre-industrial emissions levels—are based on the findings of rigorous climate change modelling. The modelling indicates that catastrophic global climate change is highly likely to occur if the Earth warms by +1.5°C compared to pre-industrial average temperatures. This temperature increase is highly likely to occur if human-caused GHG emissions are not reduced to net-zero by 2050.

Adopting a net-zero by 2050 emissions reduction target, and the interim 45% reduction by 2030, is the responsible approach for all communities. The low-carbon pathway in this report demonstrates that this target is achievable. The remaining emissions in 2050 can be eliminated with slightly more aggressive actions in the transportation, building, energy, and waste diversion sectors. Achieving the target could also be aided with carbon offset and sequestration (e.g. afforestation) strategies. The target is ambitious, but by no means impossible. Adopting this target and setting out on low-carbon pathway implementation will align the municipality's efforts with other towns, regions, and nations the world over.

With conscious and concerted efforts to reduce energy consumption, improve energy efficiency, and switch from fossil fuels to renewable energy, Wolfville can transition to a low-carbon community while delivering major benefits across the community. The pathway described here presents the next steps Wolfville can take in increasing energy efficiency and reducing emissions. By following it, the town will continue to show leadership in small town sustainability. Community-wide investments are required, but the returns demonstrated by studies in other jurisdictions easily justify them. The sooner the investments are made, the sooner the returns will be realized. The transition to energy efficient homes, electric vehicles and active transportation will save citizens considerable money on energy costs. By acting swiftly and confidently, Wolfville will inspire and prosper in its low-carbon future.

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Appendix A: Modelling Assumptions

		Business-as-Usual Scenario Assumptions	Low-Carbon Scenario Assumptions
DEMOGRAPHICS			
1	**Population (adjusted)**	2016: 1062 | 2050: 1400	Same as BAU
2	**Employment**	2016: 360 | 2050: 464	Same as BAU
3	**Households**	2016: 612 | 2050: 806	Same as BAU
4	**Vehicles**	2016: 709 | 2050: 850	Same as BAU
LAND-USE			
5	**Spatial distribution**	Continue current development trajectories.	Continue current development trajectories.
6	**Dwelling size**	Baseline dwelling sizes maintained.	Decrease the average dwelling size 36% by 2050.
7	**Building type mix**	New buildings type mix ratios reflect baseline building mixes.	Decrease the share of new buildings that are single family homes to 10% by 2030.
BUILDINGS			
New buildings - buildings codes & standards			
8	**New homes**	Follow National Building Code.	New buildings are net-zero by 2030.
9	**New ICI buildings**	Follow National Building Code.	New buildings are net-zero by 2030.
Existing buildings - retrofitting			
10	**Home energy efficiency retrofits**	No substantial retrofits.	50% thermal savings and 50% electrical savings in 100% of homes by 2040 and 100% by 2040.
11	**ICI energy efficiency retrofits**	No substantial retrofits.	Achieve 50% thermal savings and 50% electrical savings in 100% of all existing commercial buildings by 2040.
12	**Industrial (process motors/efficiency)**	No change to current efficiencies.	Increase efficiency by 50% by 2050.
13	**Municipal buildings retrofits**	Current efficiencies held constant.	100% of existing municipal buildings are retrofit to net zero emissions by 2030.
Renewable energy generation (on-site, building scale)			
14	**Heat pump installations**	Current instances of heat pump use are extrapolated.	100% of buildings' space heating and cooling needs are met by electric systems by 2040.
14a	**Electric water heaters**	Current instances of water heater technology use is extrapolated.	100% of buildings' water heating needs are met by electric systems by 2040.
15	**Solar PV - net metering**	Current instances of solar PV use held constant.	90% of new buildings have solar PV installed by 2050, supplying 50% of the buildings' electric load.
ENERGY GENERATION			
Low or zero carbon energy generation (community scale)			
16	**Solar PV - ground mount**	None	10MW installed capacity from 2030 to 2045

17	**District energy**	Current instances of DE held constant.	Expand DE system to provide thermal energy to commercial buildings in the downtown core modelling zone by 2030
18	**Wind**	None	None
19	**Renewable electricity storage**	None	20% storage with new renewables capacity.
20	**Renewable natural gas**	None	100% of post-efficiency measures natural gas demand is replaced with RNG by 2035. Only NG current used is in the DE plant.
TRANSPORTATION			
Transit and City fleet			
21	**Expand transit**	Follows Kings Transit plans, and held constant	By 2050: 15 minute frequency on routes, 7 days/week service by 2030. Transit mode share increases to 25% by 2030
22	**Electrify transit**	None	100% of vehicles electric and right-sized fleet by 2035.
23	**Electrify municipal fleets**	None	100% electric by 2030.
Active			
24	**Increase/improve cycling & walking infrastructure**	Current mode shares held current.	40% of trips are walking and cycling (including ebikes) by 2030, 50% by 2050, targeting trips of <2km for walking and <5km for cycling.
Private/personal use			
25	**Electrify personal vehicles**	15.5% of market share 2040.	30% of market share by 2030, 60% by 2035, 100% by 2040.
26	**Electrify commercial vehicles**	15.5% of market share 2040.	30% of market share by 2030, 60% by 2035, 100% by 2040.
WATER AND WASTE			
Water and wastewater			
27	**Increase pumping efficiency**	Current intensity held constant.	Upgrade to high efficiency pumps by 2035 (-50% energy use).
28	**Increase water efficiency**	Current intensity held constant.	Decrease water volume use by 1%/year to 2050.
Waste			
29	**Waste Diversion**	Baseline generation and diversion rates extrapolated based on population growth, per capita rates.	100% diversion by 2050, reduce generation 30% by 2050 100% organics to anaerobic digestion Installation of anaerobic digestion facilities for waste water treatment and biogas capture for use as renewable natural gas.
Energy Procurement			
30	RNG Procurement	None	Replace 100% of post-efficiency measures natural gas

			with RNG/hydrogen by 2050.
31	Renewable Electricity Procurement	No additional beyond what is already grid-supplied.	Replace 100% of the remaining grid electricity with green electricity by 2050.
Industry and Agriculture			
32	Major industry energy use	N/A	N/A
33	Agricultural practices	No change from current practices.	No change from current practices.
34	Carbon capture and storage	No change from current practices	No net tree loss.

Appendix B: Data, Methods, and Assumptions

Summary

This Data, Methods and Assumptions (DMA) manual details the modelling approach used to provide community energy and emissions benchmarks and projections and provides a summary of the data and assumptions used in scenario modelling. The DMA makes the modelling elements fully transparent and illustrates the scope of data required for future modelling efforts.

Accounting and Reporting Principles

The municipal greenhouse gas (GHG) inventory baseline development and scenario modelling approach correlate with the Global Protocol for Community-Scale GHG Emissions Inventories (GPC).[8] The GPC provides a fair and true account of emissions via its principles:

Relevance: The reported GHG emissions shall appropriately reflect emissions occurring as a result of activities and consumption within the municipal boundary. The inventory will also serve the decision-making needs of the municipality, taking into consideration relevant local, subnational, and national regulations. Relevance applies when selecting data sources and determining and prioritizing data collection improvements.

Completeness: All emissions sources within the inventory boundary shall be accounted for. Any exclusions of sources shall be justified and explained.

Consistency: Emissions calculations shall be consistent in approach, boundary, and methodology.

Transparency: Activity data, emissions sources, emissions factors and accounting methodologies require adequate documentation and disclosure to enable verification.

Accuracy: The calculation of GHG emissions should not systematically overstate or understate actual GHG emissions. Accuracy should be enough to give decision makers and the public reasonable assurance of the integrity of the reported information. Uncertainties in the quantification process should be reduced to the extent possible and practical.

[8] https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities

Time Frame of Assessment

The modelling time frame will be from 2016-2050, with 2016 as a baseline year. The census of 2016 is a key data source used to establish the baseline year. Model calibration for the baseline year uses as much locally observed data as possible. A previous energy and emissions inventory performed in 2006 will also be considered.

Energy and Emissions Structure

The total energy for a community is defined as the sum of the energy from each of the aspects:

$$Energy_{city} = Energy_{transport} + Energy_{buildings} + Energy_{waste\&wastewatergen}$$

Where:

$Energy_{transport}$ is the movement of goods and people.

$Energy_{buildings}$ is the generation of heating, cooling and electricity.

$Energy_{wastegen}$ is energy generated from waste.

The total GHG for a community is defined as the sum of the GHG from each of the aspects:

$$GHG_{landuse} = GHG_{transport} + GHG_{energygen} + GHG_{waste\&wastewater} + GHG_{agriculture} + GHG_{forest} + GHG_{landconvert}$$

Where:

$GHG_{transport}$ is emissions generated by the movement of goods and people.

$GHG_{energygen}$ is emissions generated by the generation of heat and electricity.

$GHG_{waste\&wastewater}$ is emissions generated by solid and liquid waste produced.

$GHG_{agriculture}$ is emissions generated by food production.

GHG_{forest} is emissions generated by forested land.

$GHG_{landconvert}$ is emissions generated by the lands converted from natural to modified conditions.

The Model

CityInSight is an energy, emissions, and finance model developed by Sustainability Solutions Group and whatIf? Technologies. The model integrates fuels, sectors, and land-uses and is partially disaggregated. It enables bottom-up accounting for energy supply and demand, including renewable resources, conventional fuels, energy consuming technology stocks (e.g. vehicles, appliances, dwellings, buildings), and all intermediate energy flows (e.g. electricity and heat). Energy and GHG emissions values are derived from a series of connected stock and flow models, evolving based on current and future geographic and technology decisions/assumptions (e.g. EV uptake rates). The model accounts for physical flows (e.g. energy use, new vehicles by technology, VKT) as determined by stocks (buildings, vehicles, heating equipment, etc.).

Table 2. CityInSight characteristics.

Characteristic	Rationale
Integrated	CityInSight models and accounts for all city-scale energy and emissions related sectors and captures relationships between sectors. The demand for energy services is modelled independently of the fuels and technologies that provide the energy services. This decoupling enables exploration of fuel switching scenarios. Physically feasible scenarios are established when energy demand and supply are balanced.
Scenario-based	Once calibrated with historical data, CityInSight enables the creation of dozens of scenarios to explore different possible futures. Each scenario can consist of either one or a combination of policies, actions and strategies. Historical calibration ensures that scenario projections are rooted in observed data.
Spatial	Built environment configuration determines walkability and cyclability, accessibility to transit, feasibility of district energy, and other aspects. CityInSight therefore includes spatial dimensions that can include as many zones (the smallest areas of geographic analysis) as deemed appropriate. The spatial components can be integrated with GIS systems, land-use projections, and transportation modelling.
Economic impacts	CityInSight incorporates a high-level financial analysis of costs related to energy (expenditures on energy) and emissions (carbon pricing, social cost of carbon), as well as operating and capital costs for policies, strategies, and actions. This allows for the generation of marginal abatement costs.

CityInSight incorporates and adapts concepts from the system dynamics approach to complex systems analysis. For any given year, CityInSight traces the flows and transformations of energy from sources through energy currencies (e.g. gasoline, electricity, hydrogen) to end uses (e.g. personal vehicle use, space heating) to energy costs and to GHG emissions. An energy balance is achieved by accounting for efficiencies, conservation rates, and trade and losses at each stage in the journey from source to end use.

Model Structure

The major components of the model and the first level of their modelled relationships (influences) are represented by the blue arrows in Figure A. Additional relationships may be modelled by modifying inputs and assumptions - specified directly by users, or in an automated fashion by code or scripts running "on top of" the base model structure. Feedback relationships are also possible, such as increasing the adoption rate of non-emitting vehicles in order to meet a GHG emissions constraint.

The model is spatially explicit. All buildings, transportation, and land use data are tracked within the model through a GIS platform, and by varying degrees of spatial resolution. A zone type system is applied to divide the municipality into smaller configurations, based on the municipality's existing traffic zones (or another agreeable zone system). This enables consideration of the impact of land-use patterns and urban form on energy use and emissions production from a baseline year to future dates using GIS-based platforms. CityInSight's GIS outputs can be integrated with the municipality's mapping systems.

For any given year various factors shape the picture of energy and emissions flows, including: the population and the energy services it requires; commercial floorspace; energy production and trade; the deployed technologies which deliver energy services (service technologies); and the deployed technologies which transform energy sources to currencies (harvesting technologies). The model makes an explicit mathematical relationship between these factors - some contextual and some part of the energy consuming or producing infrastructure - and the energy flow picture.

Some factors are modelled as stocks - counts of similar things, classified by various properties. For example, population is modelled as a stock of people classified by age and gender. Population change over time is projected by accounting for: the natural aging process, inflows (births, immigration), and outflows (deaths, emigration). The fleet of personal use vehicles, an example of a service technology, is modelled as a stock of vehicles classified by size, engine type and model year, with a similarly classified fuel consumption intensity. As with population, projecting change in the vehicle stock involves aging vehicles and accounting for major inflows (new vehicle sales) and major outflows (vehicle discards). This stock-turnover approach is applied to other service technologies (e.g. furnaces, water heaters) and harvesting technologies (e.g. electricity generating capacity).

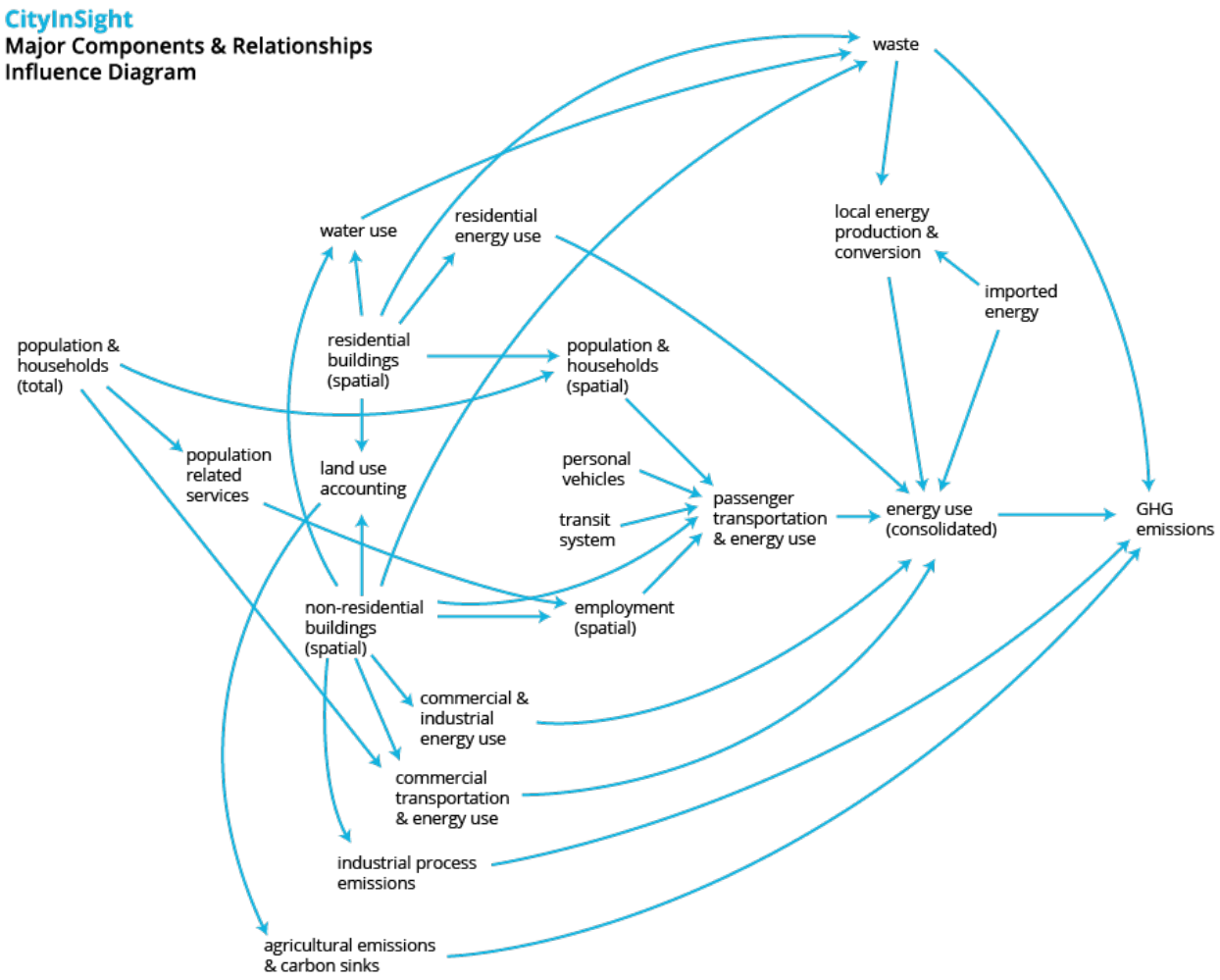

Figure A. Representation of CityInSight's structure.

Sub-models

Population and demographics

Population is modelled using the standard population cohort-survival method, disaggregated by single year of age and gender. It accounts for various components of change: births, deaths, immigration, and emigration. The age structured population is important for analysis of demographic trends, generational differences and implications for shifting energy use patterns. These numbers are calibrated against existing projections. The modelled population includes a small generic census undercount correction. It also includes estimations of transitional populations – those who live outside the municipality and travel to it frequently to use its services (and thus use energy and produce emissions there). Student populations are part of this transitional population. Fractions of student populations living outside the municipality and using educational institutions inside the municipality are included in the population figures.

Residential buildings

Residential buildings are spatially located and classified using a detailed set of 30+ building archetypes capturing footprint, height and type (single, double, row, apt. high, apt. low), in addition to year of construction. This enables a “box” model of buildings and the estimation of surface area. Coupled with thermal envelope performance and degree-days, the model calculates space conditioning energy demand independent of any space heating or cooling technology and fuel. Energy service demand then drives stock levels of key service technologies (heating systems, air conditioners, water heaters). These stocks are modelled with a stock-turnover approach capturing equipment age, retirements, and additions - exposing opportunities for efficiency gains and fuel switching and showing the rate limits to new technology adoption and the effects of lock-in (obligation to use equipment/infrastructure/fuel type due to longevity of system implemented). Residential building archetypes are also characterized by number of contained dwelling units, allowing the model to capture the energy effects of shared walls as well as the urban form and transportation implications of population density.

Non-residential buildings

These are spatially located and classified by a detailed use/purpose-based set of 50+ archetypes. Archetype floorspace can vary by location. Non-residential floorspace produces waste and demand for energy and water, and provides an anchor point for locating various employment types.

Spatial population and employment

City-wide population is made spatial through allocation to dwellings, using assumptions about persons-per-unit by dwelling type. Spatial employment is projected via two separate mechanisms: population-related services and employment - which is allocated to corresponding building floorspace (e.g. teachers to school floorspace) - and floorspace-driven employment (e.g. retail employees per square metre).

Passenger Transportation

The model includes a spatially explicit passenger transportation sub-model that responds to changes in land-use, transit infrastructure, vehicle technology, travel behaviour change, and other factors. Trips are divided into four types (home-work, home-school, home-other, and non-home-based), each produced and attracted by different combinations of spatial drivers (population, employment, classrooms, non-residential floorspace). Trips are distributed - trip volumes are specified for each zone of origin and zone of destination pair. For each origin-destination pair, trips are shared over walk/bike (for trips within the walkable distance threshold), public transit (for trips whose origin and destination are serviced by transit), and automobile. A projection of total personal

vehicles kilometres travelled (VKT) and a network distance matrix are produced following the mode share calculation. The energy use and emissions associated with personal vehicles is calculated by assigning VKT to a stock-turnover personal vehicle model. The induced approach is used to track emissions. All internal trips (trips within the boundary) are accounted for, as well as half of the trips that terminate or originate within the municipal boundary.

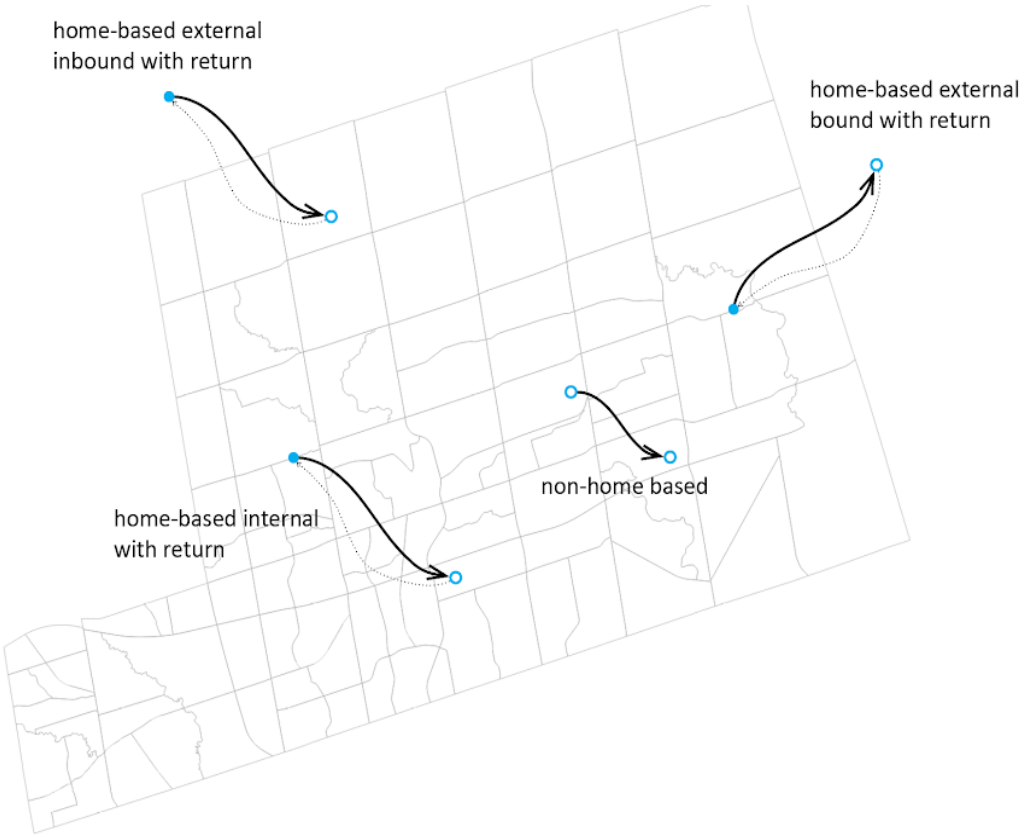

Figure B. Conceptual diagram of trip categories.

Waste & Wastewater

Households and non-residential buildings generate solid waste and wastewater. The model traces various pathways to disposal, compost and sludge including those which capture energy from incineration and recovered gas. Emissions accounting is performed throughout the waste sub-model.

Energy flow and local energy production

Energy produced from primary sources (e.g. solar, wind) is modelled alongside energy converted from imported fuels (e.g. electricity generation, district energy, CHP). As with the transportation sub-model, the district energy supply model has an explicit spatial dimension and can represent areas served by district energy networks.

Finance and employment

Energy related financial flows and employment impacts are captured through an additional layer of model logic (not shown explicitly in Figure A). Calculated financial flows include the capital, operating, and maintenance cost of energy consuming stocks and energy producing stocks, including fuel costs. Employment related to the construction of new buildings, retrofit activities and energy infrastructure is modelled. The financial impact on businesses and households of the strategies is assessed. Local economic multipliers are also applied to investments.

Model Calibration for Local Context

Data request & collection

Local data was supplied by the municipality and assumptions were identified to supplement any gaps in observed data. The data and assumptions were applied in modelling per the process described below.

Model zone system

CityInSight is spatially explicit; population, employment, residential, and non-residential floorspace are allocated and tracked spatially within the model's zone system. These elements drive stationary energy demand. The passenger transportation sub-model, which drives transportation energy demand, also operates within the same zone system.

Buildings

Buildings data, including building type, building footprint area, number of storeys, total floorspace area, number of units, and year built was sourced from provincial property assessment data. Buildings were allocated to specific zones using their spatial attributes, based on the zone system.
Buildings are classified using a detailed set of buildings archetypes (see Appendix 2). These archetypes capture footprint, height and type (e.g. single-family home, semi-attached home, etc.), enabling the creation of a "box" model of buildings, and an estimation of surface area for all buildings.

Residential buildings

The model multiplies the residential building surface area by an estimated thermal conductance (heat flow per unit surface area per degree day) and the number of degree days (heating and cooling) to derive the energy transferred out of the building during winter months and into the building during summer months. The energy transferred through the building envelope, the solar gain through the building windows, and the heat gains from equipment inside the building constitute the space conditioning load to be provided by the heat systems and the air conditioning. The initial thermal conductance estimate is a provincial average by dwelling type from the Canadian Energy System Simulator (CanESS). This initial estimate is adjusted through the calibration process as the modelled energy consumption in the residential sector is forced to track on observed residential fuel consumption in the baseline year.

Non-residential buildings

The model calculates the space conditioning load as it does for residential buildings with one distinction: the thermal conductance parameter for non-residential buildings is based on floor space area instead of surface area. CanESS provides the initial estimate of the non-residential thermal conductance by building sector.

Starting values for output energy intensities and equipment efficiencies for other residential and non-residential end uses are also provincial averages from CanESS. All parameter estimates are further adjusted during the calibration process. The calibration target for non-residential building energy use is the observed commercial and industrial fuel consumption in the baseline year.
Using assumptions for thermal envelope performance for each building type, the model calculates total energy demand for all buildings, independent of any space heating or cooling technology and fuel.

Population and employment

Federal census population and employment data was spatially allocated to residential (population) and non-residential (employment) buildings. This enables indicators to be derived from the model (such as emissions per household) and drives the BAP energy and emissions projections (buildings, transportation, waste).

Population for 2016 was spatially allocated to residential buildings using initial assumptions about persons-per-unit (PPU) by dwelling type. These initial PPUs are then adjusted so that the total population in the model (which is driven by the number of residential units by type multiplied by PPU by type) matches the total population from census/regional data.

Employment for 2016 was spatially allocated to non-residential buildings using initial assumptions for two main categories: population-related services and employment, allocated to corresponding building floorspace (e.g. teachers to school floorspace); and floorspace-driven employment (e.g. retail employees per square metre). Like population, these initial ratios are adjusted within the model so that the total employment derived by the model matches total employment from census/regional data.

Transportation

The model includes a spatially explicit passenger transportation sub-model that responds to changes in land-use, transit infrastructure, vehicle technology, travel behaviour change, and other factors. Trips are divided into four types (home-work, home-school, home-other, and non-home-based), each produced and attracted by different combination of spatial drivers (population, employment, classrooms, non-residential floorspace). Trip volumes are distributed as pairs for each zone of origin and zone of destination (Figure B). For each origin-destination pair, trips are shared over walk/bike (for trips within the walkable distance threshold), public transit (for trips whose origin and destination are serviced by transit), and automobile. Total personal VKT is produced when modelling mode shares and distances. The energy use and emissions associated with personal vehicles is calculated by assigning VKT to model of personal vehicle ownership.

Passenger transportation model was anchored with the travel demand forecasting models found in the Travel Demand Forecasting: Parameters and Techniques paper informing the spatial travel demand model and the results compared for reasonableness against indicators such as average annual VKT per vehicle. For medium-heavy duty commercial vehicle transportation, the ratio of local retail diesel fuel sales to provincial retail diesel fuel sales was applied to estimate non-retail diesel use.

The modelled stock of personal vehicles (by size, fuel type, efficiency, vintage) was informed by provincial vehicle registration obtained from Statistics Canada. The total number of personal use and corporate vehicles is proportional to the projected number of households in the BAP.
The GPC induced activity approach is used to account for emissions. All internal trips (within boundary) as well as half of the trips that terminate or originate within the municipal boundary are accounted for. This approach allows the municipality to understand its transportation impacts on its peripheries and the region.

Waste

Solid waste stream composition and routing data (landfill, composting, recycling) was sourced from local data sources. The base carbon content in the landfill was estimated based on historical waste production data. Total methane emissions were estimated for landfills using the first order decay model, with the methane generation

constant and methane correction factor set to default, as recommended by and based on values from IPCC Guidelines for landfill emissions.

Data and Assumptions

Refer to Appendix A for a detailed list of data sources and assumptions used for CityInSight modelling.

Scenario Development

CityInSight supports the use of scenarios as a mechanism to evaluate potential futures for communities. A scenario is an internally consistent view of what the future might turn out to be—not a forecast, but one possible future outcome. Scenarios must represent serious considerations defined by planning staff and community members. They are generated by identifying population projections into the future, identifying how many additional households are required, and then applying those additional households according to existing land-use plans and/or alternative scenarios. A simplified transportation model evaluates the impact of the new development on transportation behaviour, building types, agricultural and forest land, and other variables.

Business-As-Planned Scenario

The Business-As-Planned (BAP) scenario estimates energy use and emissions volumes from the baseline year (2016) to the target year (2050). It assumes an absence of substantially different policy measures from those currently in place.

Methodology

1. Calibrate model and develop 2016 baseline using observed data and filling in gaps with assumptions where necessary.
2. Input existing projected quantitative data to 2050 where available:
   - Population, employment and housing projections by transport zone
   - Build out (buildings) projections by transport zone
   - Transportation modelling from the municipality
3. Where quantitative projections are not carried through to 2050, extrapolate the projected trend to 2050.
4. Where specific quantitative projections are not available, develop projections through:
   - Analyzing current on the ground action (reviewing action plans, engagement with staff, etc.), and where possible, quantifying the action.
   - Analyzing existing policy that has potential impact and, where possible, quantifying the potential impact.

Low Carbon Scenarios

CityInSight projects how energy flow and emissions profiles will change in the long term by modelling potential changes in the context (e.g. population, development patterns), projecting energy services demand intensities, and projecting the composition of energy system infrastructure.

Policies, actions and strategies

Alternative behaviours of various energy system actors (e.g. households, various levels of government, industry, etc.) can be mimicked in the model by changing the values of CityInSight's user input variables. Varying their values creates "what if" type scenarios, enabling a flexible mix-and-match approach to behavioral models which connect to the physical model. CityInSight can explore a wide variety of policies, actions and strategies via these variables. The resolution of CityInSight enables the user to apply scenarios to specific neighbourhoods, technologies, building or vehicle types or eras, and configurations of the built environment.

Methodology

1. Develop a list of potential actions and strategies;
2. Identify the technological potential of each action (or group of actions) to reduce energy and emissions by quantifying actions:
    a. If the action or strategy specifically incorporates a projection or target; or,
    b. If there is a stated intention or goal, review best practices and literature to quantify that goal; and
    c. Identify any actions that are overlapping and/or include dependencies on other actions.
3. Translate the actions into quantified assumptions over time;
4. Apply the assumptions to relevant sectors in the model to develop a low-carbon scenario (i.e. apply the technological potential of the actions to the model);
5. Analyze results of the low-carbon scenario against the overall target;
6. If the target is not achieved, identify variables to scale up and provide a rationale for doing so;
7. Iteratively adjust variables to identify a pathway to the target;
8. Develop marginal abatement cost curve for low carbon scenario;
9. Define criteria to evaluate low carbon scenario (i.e. identify criteria for multi-criteria analysis);
10. Prioritize actions of low carbon scenario;
11. Reflect prioritization in final low-carbon scenario, removing and scaling the level of ambition of actions according to the evaluation results.

Addressing Uncertainty

There is extensive discussion of the uncertainty in models and modelling results. The assumptions underlying a model can be from other locations or large data sets and do not reflect local conditions or behaviours, and even if they did accurately reflect local conditions, it is exceptionally difficult to predict how those conditions and behaviours will respond to broader societal changes and what those broader societal changes will be.

The modelling approach uses four strategies for managing uncertainty applicable to community energy and emissions modelling:

1. Sensitivity analysis: One of the most basic ways of studying complex models is sensitivity analysis - quantifying uncertainty in a model's output. To perform this assessment, each of the model's input parameters is drawn from a statistical distribution in order to capture the uncertainty in the parameter's true value (Keirstead, Jennings, & Sivakumar, 2012).

Approach: Each input variable is modified by ±10-20% to illustrate the impact that an error of that magnitude has on the overall total.

2. Calibration: One way to challenge untested assumptions is the use of 'back-casting' to ensure the model can 'forecast the past' accurately. The model can then be calibrated to generate historical outcomes, calibrating the model to better replicate observed data.

Approach: Variables are calibrated in the model using two independent sources of data. E.g. the model calibrates building energy use (derived from buildings data) against actual electricity data from the electricity distributor.

3. Scenario analysis: Scenarios are used to demonstrate that a range of future outcomes are possible given the current conditions and that no one scenario is more likely than another.

Approach: The model will develop a reference scenario.

4. Transparency: The provision of detailed sources for all assumptions is critical to enabling policy-makers to understand the uncertainty intrinsic in a model.

Approach: Modelling assumptions and inputs are presented in this document.

Appendix C: GPC Report

This table provides the 2016 base year emissions data, categorized according to the Global Protocol for Community-scale Greenhouse Gas Emission Inventories.[9] Using this categorization to update the municipal inventory periodically ensures consistency across inventory years and comparability between global municipal jurisdictions.

Reason for exclusion key

N/A	Not applicable; Not included in scope
ID	Insufficient data
NR	No relevant or limited activities identified
Other	Reason provided under Comments

GPC Ref No	Scope	GHG Emissions Source	Inclusion	Reason for exclusion	CO2	CH4	N2O	Total CO2e
I		STATIONARY ENERGY SOURCES						
I.1		**Residential buildings**						
I.1.1	1	Emissions from fuel combustion within the city boundary	**Yes**		4,993	897	81	5,972
I.1.2	2	Emissions from grid-supplied energy consumed within the city boundary	**Yes**		13,163	19	56	13,239
I.1.3	3	Emissions from transmission and distribution losses from grid-supplied energy consumption	**Yes**		956	1	4	962
I.2		**Commercial and institutional buildings/facilities**						
I.2.1	1	Emissions from fuel combustion within the city boundary	**Yes**		2,806	1	35	2,843
I.2.2	2	Emissions from grid-supplied energy consumed within the city boundary	**Yes**		18,022	26	77	18,126
I.2.3	3	Emissions from transmission and distribution losses from grid-supplied energy consumption	**Yes**		1,309	2	6	1,317
I.3		**Manufacturing industry and construction**						
I.3.1	1	Emissions from fuel combustion within the city boundary	**Yes**		0	0	0	0
I.3.2	2	Emissions from grid-supplied energy consumed within the city boundary	**Yes**		0	0	0	0

[9] The GPC can be found here: https://ghgprotocol.org/sites/default/files/standards/GHGP_GPC_0.pdf

I.3.3	3	Emissions from transmission and distribution losses from grid-supplied energy consumption	**Yes**		0	0	0	0
I.4		**Energy industries**						
I.4.1	1	Emissions from energy used in power plant auxiliary operations within the city boundary	**No**	NR	7,226	5	37	7,268
I.4.2	2	Emissions from grid-supplied energy consumed in power plant auxiliary operations within the city boundary	**No**	NR	0	0	0	0
I.4.3	3	Emissions from transmission and distribution losses from grid-supplied energy consumption in power plant auxiliary operations	**No**	NR	0	0	0	0
I.4.4	1	Emissions from energy generation supplied to the grid	**No**	NR	0	0	0	0
I.5		**Agriculture, forestry and fishing activities**						
I.5.1	1	Emissions from fuel combustion within the city boundary	**No**	NR	0	0	0	0
I.5.2	2	Emissions from grid-supplied energy consumed within the city boundary	**No**	NR	0	0	0	0
I.5.3	3	Emissions from transmission and distribution losses from grid-supplied energy consumption	**No**	NR	0	0	0	0
I.6		**Non-specified sources**						
I.6.1	1	Emissions from fuel combustion within the city boundary	**No**	NR	0	0	0	0
I.6.2	2	Emissions from grid-supplied energy consumed within the city boundary	**No**	NR	0	0	0	0
I.6.3	3	Emissions from transmission and distribution losses from grid-supplied energy consumption	**No**	NR	0	0	0	0
I.7		**Fugitive emissions from mining, processing, storage, and transportation of coal**						
I.7.1	1	Emissions from fugitive emissions within the city boundary	**No**	NR	0	0	0	0
I.8		**Fugitive emissions from oil and natural gas systems**						
I.8.1	1	Emissions from fugitive emissions within the city boundary	**Yes**		0	888	0	888

II		TRANSPORTATION						
II.1		**On-road transportation**						
II.1.1	1	Emissions from fuel combustion for on-road transportation occurring within the city boundary	**Yes**		8,069	15	53	8,137
II.1.2	2	Emissions from grid-supplied energy consumed within the city boundary for on-road transportation	**Yes**		1	0	0	1
II.1.3	3	Emissions from portion of transboundary journeys occurring outside the city boundary, and transmission and distribution losses from grid-supplied energy consumption	**Yes**		5,469	11	19	5,499
II.2		**Railways**						
II.2.1	1	Emissions from fuel combustion for railway transportation occurring within the city boundary	**No**	NR	0	0	0	0
II.2.2	2	Emissions from grid-supplied energy consumed within the city boundary for railways	**No**	NR	0	0	0	0
II.2.3	3	Emissions from portion of transboundary journeys occurring outside the city boundary, and transmission and distribution losses from grid-supplied energy consumption	**No**	NR	0	0	0	0
II.3		**Water-borne navigation**						
II.3.1	1	Emissions from fuel combustion for waterborne navigation occurring within the city boundary	**No**	N/A	0	0	0	0
II.3.2	2	Emissions from grid-supplied energy consumed within the city boundary for waterborne navigation	**No**	N/A	0	0	0	0
II.3.3	3	Emissions from portion of transboundary journeys occurring outside the city boundary, and transmission and distribution losses from grid-supplied energy consumption	**No**	N/A	0	0	0	0
II.4		**Aviation**						
II.4.1	1	Emissions from fuel combustion for aviation occurring within the city boundary	**No**	N/A	0	0	0	0

II.4.2	2	Emissions from grid-supplied energy consumed within the city boundary for aviation	**No**	N/A	0	0	0	0
II.4.3	3	Emissions from portion of transboundary journeys occurring outside the city boundary, and transmission and distribution losses from grid-supplied energy consumption	**No**	N/A	0	0	0	0
II.5		**Off-road**						
II.5.1	1	Emissions from fuel combustion for off-road transportation occurring within the city boundary	**No**	NR	0	0	0	0
II.5.2	2	Emissions from grid-supplied energy consumed within the city boundary for off-road transportation	**No**	NR	0	0	0	0

III		WASTE						
III.1		**Solid waste disposal**						
III.1.1	1	Emissions from solid waste generated within the city boundary and disposed in landfills or open dumps within the city boundary	**Yes**		0	0	0	0
III.1.2	3	Emissions from solid waste generated within the city boundary but disposed in landfills or open dumps outside the city boundary	**Yes**		0	901	0	901
III.1.3	1	Emissions from waste generated outside the city boundary and disposed in landfills or open dumps within the city boundary	**No**	N/A	0	0	0	0
III.2		**Biological treatment of waste**						
III.2.1	1	Emissions from solid waste generated within the city boundary that is treated biologically within the city boundary	**Yes**		0	0	0	0
III.2.2	3	Emissions from solid waste generated within the city boundary but treated biologically outside of the city boundary	**No**	N/A	0	0	0	0
III.2.3	1	Emissions from waste generated outside the city boundary but treated biologically within the city boundary	**No**	N/A	0	0	0	0
III.3		**Incineration and open burning**						
III.3.1	1	Emissions from solid waste generated and treated within the city boundary	**No**	N/A	0	0	0	0
III.3.2	3	Emissions from solid waste generated within the city boundary but treated outside of the city boundary	**No**	N/A	0	0	0	0
III.3.3	1	Emissions from waste generated outside the city boundary but treated within the city boundary	**No**	N/A	0	0	0	0
III.4		**Wastewater treatment and discharge**						
III.4.1	1	Emissions from wastewater generated and treated within the city boundary	**Yes**		0	188	11	198
III.4.2	3	Emissions from wastewater generated within the city boundary but treated outside of the city boundary	**No**	NR	0	0	0	0
III.4.3	1	Emissions from wastewater generated outside the city boundary	**No**	N/A	0	0	0	0

IV		**INDUSTRIAL PROCESSES AND PRODUCT USE (IPPU)**						
IV.1	1	Emissions from industrial processes occurring within the city boundary	**No**	ID	0	0	0	0
IV.2	1	Emissions from product use occurring within the city boundary	**No**	ID	0	0	0	0

V		**AGRICULTURE, FORESTRY AND LAND USE (AFOLU)**						
V.1	1	Emissions from livestock within the city boundary	**No**	NR	0	0	0	0
V.2	1	Emissions from land within the city boundary	**No**	NR	5	0	0	5
V.3	1	Emissions from aggregate sources and non-CO2 emission sources on land within the city boundary	**No**	NR	0	0	0	0

VI		**OTHER SCOPE 3**						
VI.1	3	Other Scope 3	**No**	N/A	0	0	0	0

Appendix D: Data Summaries

Low-carbon scenario energy use by sector, 2016 and 2050.

Gigajoules	2016	2016 Share	2050	2050 Share	% change 2016-2050
Commercial	50,239	29%	44,093	45%	-12%
Industrial	530	0%	230	0%	-57%
Residential	41,165	24%	19,121	20%	-54%
Transportation	82,159	47%	34,326	35%	-58%
Total	174,092	100%	97,770	100%	-44%

Low-carbon scenario energy use by end use, 2016 and 2050.

Gigajoules	2016	2016 Share	2050	2050 Share	% change 2016-2050
Industrial Processes	530	0%	230	0%	-57%
Lighting	15,995	9%	16,467	17%	3%
Major Appliances	3,711	2%	4,115	4%	11%
Plug Load	22,509	13%	23,116	24%	3%
Space Cooling	2,992	2%	4,392	4%	47%
Space Heating	34,458	20%	5,577	6%	-84%
Transportation	82,159	47%	34,326	35%	-58%
Water Heating	11,737	7%	9,547	10%	-19%
Total	174,092	100%	97,770	100%	-44%

Low-carbon scenario energy use by fuel type, 2016 and 2050.

Gigajoules	2016	2016 Share	2050	2050 Share	% change 2016-2050
Diesel	34,484	20%	9,670	10%	-72%
Electricity Procurement	0	0%	14,002	14%	100%
Fuel Oil	24,033	14%	316	0%	-99%
Gasoline	47,673	27%	10,654	11%	-78%
Grid Electricity	40,248	23%	0	0%	-100%
Local Electricity	14,257	8%	57,972	59%	307%
Other	0	0%	2,733	3%	100%
Propane	4,792	3%	2,234	2%	-53%
Wood	8,603	5%	189	0%	-98%
Total	174,092	100%	97,770	100%	-44%

Low-carbon scenario emissions by sector, 2016 and 2050.

tonnes CO2e	2016	2016 Share	2050	2050 Share	% change 2016-2050
Commercial	6,642	43%	155	9%	-98%
Industrial	82	1%	0	0%	-100%
Residential	3,948	25%	9	1%	-100%
Transportation	4,348	28%	1,221	71%	-72%
Waste	490	3%	328	19%	-33%
Total	15,510	100%	1,713	100%	-89%

Low-carbon scenario emissions by fuel type, 2016 and 2050.

tonnes CO2e	2016	2016 Share	2050	2050 Share	% change 2016-2050
Diesel	1,315	8%	531	31%	-60%
Fuel Oil	1,709	11%	22	1%	-99%
Gasoline	3,033	20%	690	40%	-77%
Grid Electricity	8,443	54%	0	0%	-100%
Non Energy	490	3%	328	19%	-33%
Propane	293	2%	137	8%	-53%
Wood	229	1%	5	0%	-98%
Total	15,510	100%	1,713	100%	-89%

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Community Alcohol Strategy Process Update

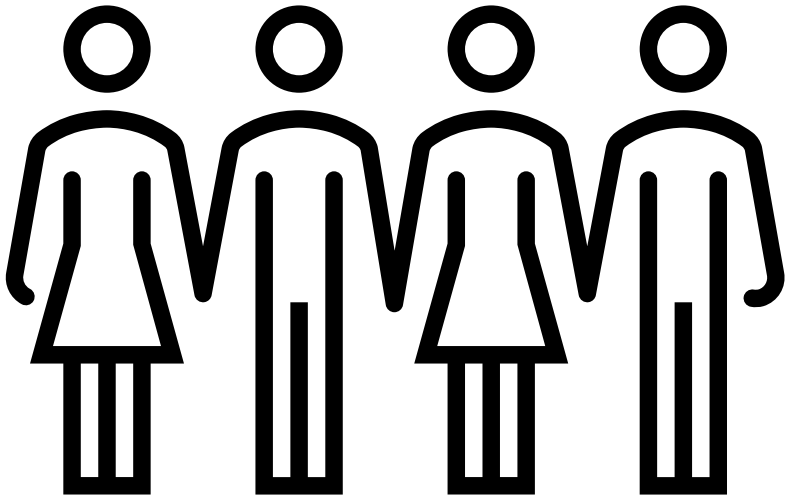
Barb Shaw, Special Projects Coordinator

Community Alcohol Strategy

As a “spirited community,” a University Town, and the premiere destination for craft beverage and wine experiences in Eastern Canada, Wolfville has both an opportunity and a responsibility to lead a targeted process to build understanding around our relationship with alcohol.

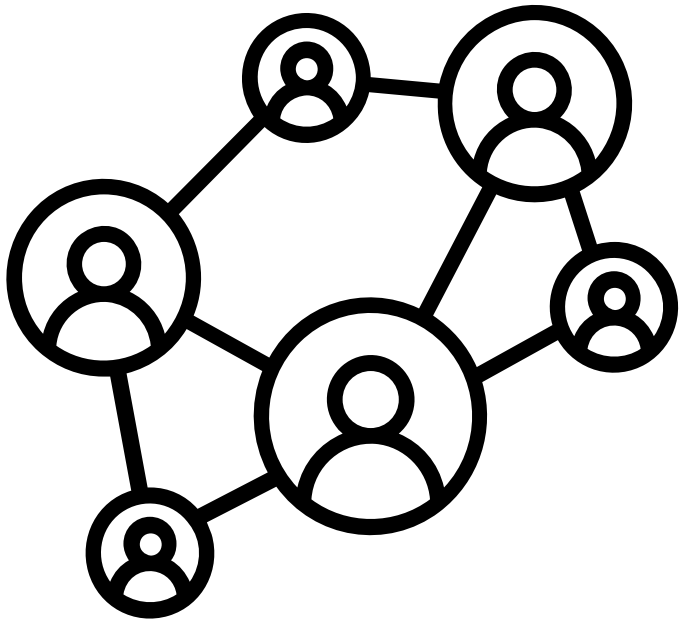
How strategy is different

- adoptable vs. enforceable
- engage the community in thoughtful dialogue
- mindful of stigma
- creating a climate of awareness & understanding
- establish expectations
- build partnerships
- daylight concerns



Clear concern – community harmony

- Primary concern is **community harmony**
- This needs to be developed to form the foundation of any future strategy
- Policy and enforcement only one small piece
- Changing behaviours and attitude takes more time

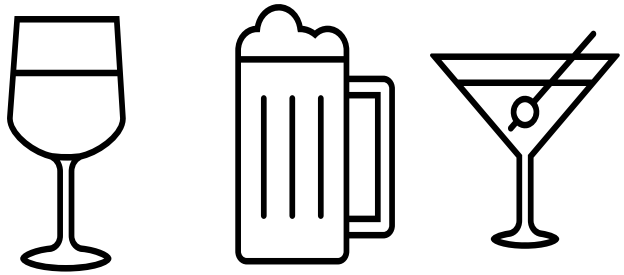


Community Alcohol Strategy

A committee has been working to develop a framework for the strategy over the past two years

The strategy is aspirational

Pieces of the draft strategy include a draft Policy and community-led actions



Action item:

Council review/adoption of the **Municipal Alcohol Policy,** as a supporting piece of the Strategy

Community Harmony

- The Town has been working on community harmony processes
- Community harmony is connected to alcohol use/mis-use
- Foundation of MOU
- Nuisance Party By-law
- Noise By-law
- Enforcement process
- Who to call

Preventative actions are key

- Policy and enforcement mechanisms are in place
- Residents are developing relationships
- Residents need to call
- Residents report fear of reprisal

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Complaint Lifecycle

- Nuisance party in progress
- Call made to 24-Hour RCMP line
- RCMP attend scene

- RCMP speak with occupant
- Goal is to end the disturbance

Warning issued

1
- Notice to Acadia
- Notice to Town

2
- Follow-up with students

Summary Offence Ticket issued

1
- Follow-up with complainant
- Town notified
- Acadia notified

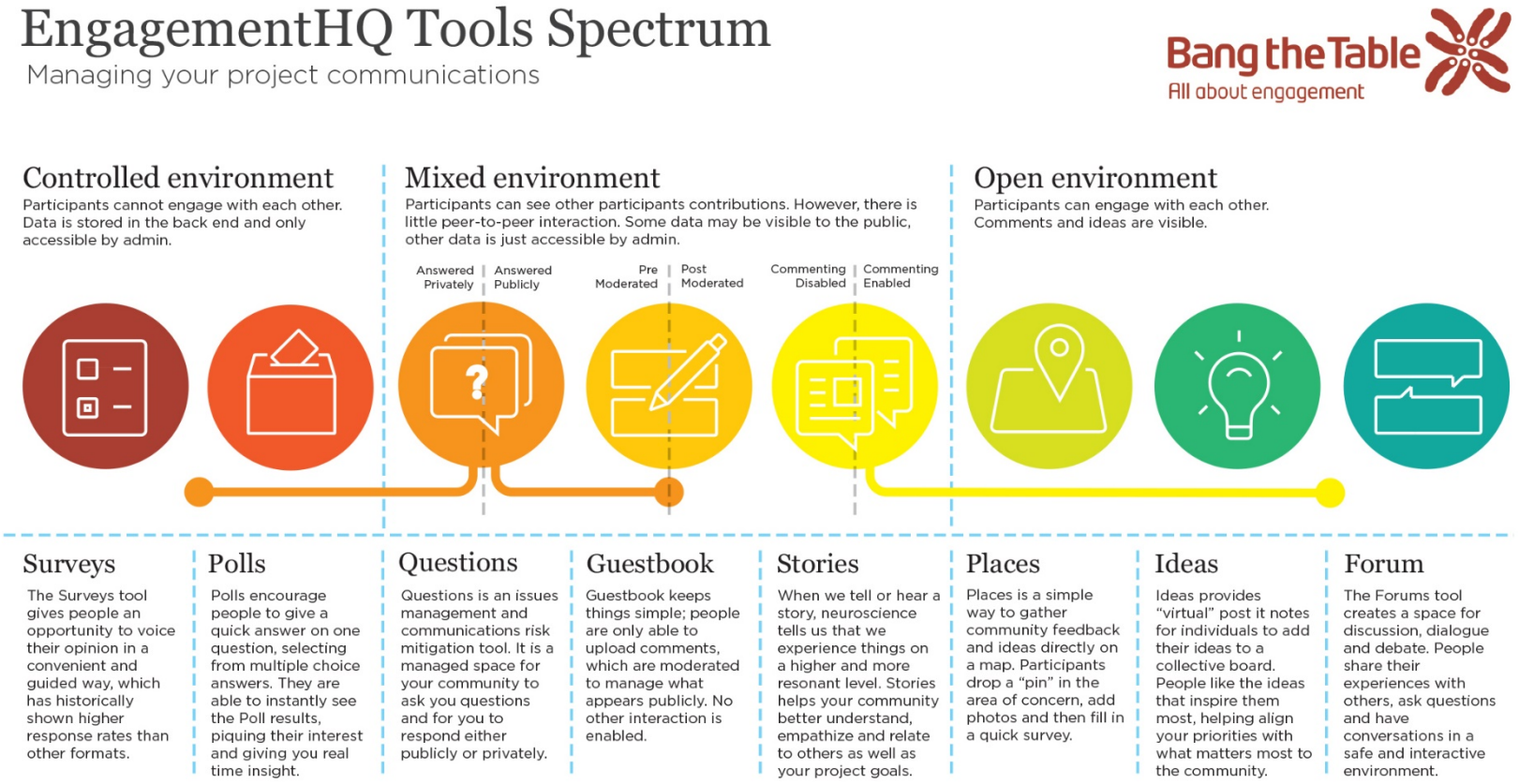
2
- Acadia follows-up with students
- Town checks database for complaint history

3
- File opened on property by Town
- Second report triggers landlord fine

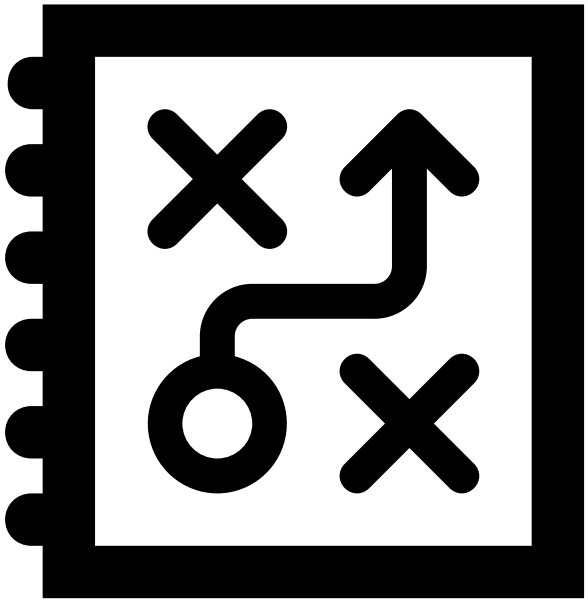
Public Safety, After Hours, and Nuisance Party Issues:
Concerns regarding parties, excessive noise, public intoxication, people on roofs, disturbing the peace, any other after-hours/weekend concerns, traffic enforcement concerns, or any other public safety issue:
Wolfville RCMP 902-542-3817 (24 hours)

COMMUNITY HARMONY

Highlighting a **Community Harmony** approach with **Bang the Table** to create space for dialogue, reflection.



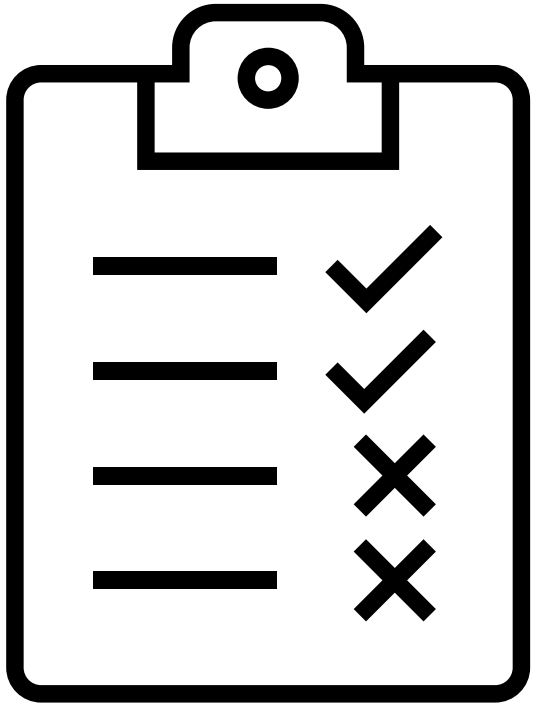
Additional steps



- Once online engagement data is compiled, a report will come back to Council
- Community Harmony work added into strategy

Additional outcomes suggested in Alcohol Strategy

- Industry led accreditation program
- Increased support of www.keepitsocial.ca in partnership with Acadia
- Support of community-based harm reduction strategy
- Support of community harmony initiatives



Timeline

- Policy to Council in September
- Bang the Table materials loaded by October
- Report back to Council and Community in December
- Alcohol Strategy Review by January
- 2022: Roll-out of Community Alcohol Strategy


Balance. That's what we're all looking for.
In our work. In our personal lives. And,
most of all, in the place we call home.

Report Card – Full Accessibility Plan

Covering Progress Up to March 31, 2021

✗	means – items/action has NOT been done
⏳	means – in progress
✓	means – item/action has been done

Action Item	*Page*	*Is it done?*	*Comments/Suggestions*
Built Environment			
Top priorities			
Add sidewalk curb cuts at all intersections where sidewalks exist.	11	⏳	• Improvements in downtown core started in summer 2020. • Full review of all crosswalks currently underway.
Commit portion of annual budget to install, maintain or improve accessibility in public buildings and spaces	11	✓	
Ensure all pedestrian buttons or light controls at intersections and pedestrian-controlled crosswalks are located on flat area	11	⏳	• Full review of all crosswalks currently underway
Place street furniture, sandwich boards, planters…away from path of travel and curb cuts	11	⏳	• Locations tweaked during 2020 season to facilitate easier pedestrian movement. • Town's Municipal Planning Strategy (MPS) adopted in 2020 includes Policy statement to prohibit signs that create hazards to traffic or pedestrians (page 110 of MPS)
Widen doorways and install power door buttons or automated sliding doors at the entrance of municipal buildings and public washrooms.	11	✗	• Not started yet.
Staff to bring forward recommendations to improve the standard timeline for snow removal on sidewalks.	11	✓	

Put auditory, visual and tactile markers at busy intersections where people cross roads…core/schools/parks	11		• Full review of all crosswalks currently underway
Other			
Ensure Council Chambers meet Canadian Standard Association Accessibility requirements by March 31st 2020, including providing a mid-ramp landing to improve access to the first floor of Town Hall	12		• Improvements to ramp started in 2020, not complete until June 2021. • Work on Council Chambers started
Ensure service desks are at an accessible height, including Dykeland Facility (Planning & Public Works offices.	12		• Town Hall currently has an accessible height service counter.
Work with Library to make sure collections are more accessible	12		• A built environment audit in progress.
For renovations to private buildings that aim to meet the Rick Hansen Foundation Accessibility Certification, fast track the approval and waive the development fee	12		
For new developments that aim to meet RHFC consider, * deducting cost of RHFC fees from development fees and * fast tracking these applications through development approval process	12		
Promote province's Small Business ACCESS-Ability Grant Program to business community, including WBDC	12		
Consider changing LUB to make easier for homeowners to: *add a secondary suite/backyard suite, and *create co-housing	12		• Town's new MPS adopted in September 2020 addresses these issues
Encourage aging-in-place housing options in MPS/zoning by-laws	12		

Information and communications			
Top priorities			
Train relevant staff in plain language and inclusive communication	15		
Develop/implement a public awareness program to build	15		

awareness around barriers to accessibility and what an accessible community means			
Provide modified editions of key municipal resources – in large print and/or plain language – on request	15		• No requests received, but until public awareness is improved, requests may not be received by Town.
Ensure digital communications, including emergency alerts, are screen readable. Encourage partner agencies to achieve the same standard	15	✗	
Other			
By 2021, ensure the Town's website meets latest Web Content Accessibility Guidelines (WCAG)	15		• Now part of website upgrade underway
Provide American Sign Language (ASL) and/or Communications Access Realtime Translation (CART) services at Town Council and Town-hosted public meetings, on request	15	✗	• Staff need to look into the "how" to provide these services, if requested. This would include how to provide ASL on screen during live streaming Town Council meetings.
Include Braille on all business cards	15	✗	• Two suppliers contacted with unsuccessful results.
Work with Nova Scotia Federation of Municipalities (NSFM) to advocate for accessibility to be included in the public notice requirements of the MGA	15	✗	
Issue meeting agendas with enough lead time to review and book communication accommodations, if needed	16	✗	• Need to define what "enough lead time means" in order to implement change
Ensure public have enough notice to give feedback and participate in discussions before Council makes a decision	16	✗	

Employment			
Top priorities			
Update employee training manual to include respecting diversity, including requirements for all employees taking Working with Abilities online training offered through the NS Human Rights Commission	18	✗	

Establish a centralized accommodation fund to cover cost of assistive devices. Promote funding on job postings	18		• Covered with Town Reserves Funds
Other			
Survey town workforce to get baseline data on ages/abilities of all employees	19		
Produce annual diversity reports, including trends and analysis about workforce with varying abilities	19		• Not possible until survey started and more than one year of data available
Share opportunities for accessibility training with residents and local businesses - with staff training	19		
Investigate strategies to reach wider/more diverse audience with job postings…noting Town will provide accommodations	19		
Asking a designated staff person to help individuals who may need assistance in their jobs	19		• As yet, no defined or requested need for such assistance

Goods & Services			
Top priorities			
Ensure public parks can be enjoyed by people of all ages and abilities	21		• This will take a number of years to complete. • Improvements have been made in last couple of years in pathways to the Mona Parson's statue, and the Remembrance Day memorial at the Post Office.
Create an accessible playground at Willow Park	21		• The Parks and Recreation Department is reviewing where and what elements can best meet this need.
Improve snow clearance	21		
Provide an adapted listing of recreation programs and services for people of all ages and abilities, update annually	21		• An example of newer programming is the Memory Café sessions which have proved successful to the point of creating a joint program with Town of Kentville.
Train staff responsible for delivering accessible services	22		
Other			
Waive entrance fees at leisure activities for individuals who are there as a support person for someone with a disability	22		• Informally practiced.

Establish an accommodation fund to provide services for residents who need accommodations (eg. CART or ASL)	22		
Provide ASL interpreters, on request, to enable people to participate in recreation and library programs	22		• No requests received to date
Provide accessible exercise equipment at municipal recreational facilities	22		.
Provide accessibility training to the Building Inspector, through RHFAC, through NSCC	22		• Director of Parks and Recreation started training. Building Inspector to be trained in future years.
Where applicable include an Accessibility Lens/Impact Analysis in reports to Council and consultant reports to staff and Council	22		

Transportation			
Top priorities			
Town staff to work with Kings Transit staff to review snow removal at transit stops. Prepare steps (incl $$) required to improve snow removal timelines.	24		• Town staff carrying out work.
Ensure all bus stops designed to meet or exceed CSA B651-18 Accessible Design	24		• Working with Kings Transit to define who carries out upgrades
Other			
Explore subsidized transit fares/passes for people with disabilities and/or low income	24		
Ensure training is available for operators and drivers of public transportation	24		•
Ensure accessible taxi service is available by doing the following; Consult with AAC and public to determine how many on-demand taxis are needed, *demonstrate progress meeting that demand, *Ensure no additional fees OR any fee to store mobility assistive devices, * Ensure vehicle registration is visible/available in accessible	25		• Accessible taxi service may be better suited to revised transit models. Kings Point to Point has filled a key service area and micro transit discussions are ongoing in the region.

formats for passengers of all ages and abilities			

Spring	means anytime between March 21st and June 21st
Summer	means anytime between June 21st and September 21st
Fall	means anytime between September 21st and December 21st
Winter	means anytime between December 21st and March 21st

SUMMARY

Accessibility Committee – Annual Report Card

In February 2019, Council approved the Town's first ever Accessibility Plan, Wolfville Access By Design, formally starting the process for the Town to meet provincial legislation mandating all NS municipalities become accessible under the legislation by the year 2030.

The Accessibility Plan covers five areas of focus, as well as a section on Implementing the Plan (page 26 of the Plan). Included is a Monitoring provision calling for the Accessibility Advisory Committee (AAC) to annually prepare a Report Card for Council and the public.

As with many issues over the last year and a half, the COVID-19 pandemic negatively impacted the timing of the annual accessibility report card. The first Report Card was due last April, but not complete until late 2020 and forwarded to Council in February 2021 (Request for Decision 010-2021). This report now brings forward the second annual Report Card which the AAC completed it's assessment during the April 2021 AAC meeting. It is now forwarded to Committee of the Whole (Council) to complete the reporting cycle. ***No motion is required on the report card itself as the responsibility for the Report Card is the AAC's and it represents their assessment of progress on action items. Once received by Committee of the Whole the Report Card will be posted on the Town's website***.

1) CAO COMMENTS

For information purposes.

2) REFERENCES AND ATTACHMENTS

- Bill No. 59 – NS Accessibility Act (2017)
- Town of Wolfville's Accessibility Plan 2019-2022
- AAC Report Card – for the year ended March 31, 2020
- AAC Report Card – for the year ended March 31, 2021

3) DISCUSSION

The attached Report Card marks the second assessment carried out by the Accessibility Advisory Committee (AAC) as part of its mandate outlined in the Towns Accessibility Plan – Access By Design (2019-2022). It represents the AAC's assessment of the ***Town's progress up to the operational year ended March 31, 2021.*** Any progress made by the Town between March 31st and today's date will be reflected in the next Report Card some nine months down the road.

As noted in the first page Summary section, Staff feel no motion is required by Council as the Report Card is being received as submitted. There may be discussion regarding specific items of evaluation, the layout of the report card template, or other aspects of this stage of the process. However, the AAC has carried out its assessment and as such it is submitted to Council as assessed.

The Report Card is meant to be a high level, quick, and easy to digest indication of what the status of each action item is outlined in the Plan. Additional details may be appropriate for an appendix, i.e. with added information as to why the status of completion is what it is. In an ideal world, all action items would be complete by the end of the upcoming year (March 31, 2022). Progress has been made each year since the adoption of the Plan, with early success in certain instances and lack of success in others.

The first report card (for period ended March 2020) only assessed action items noted to be done within the short term (1-2 years). It provided limited notations on longer term action items. This year's version of the Report Card (period ended March 31, 2021) includes an assessment of all action items in the Accessibility Plan. Given we are now in the final year of the Plan, it made sense to start evaluating all action items. This provides a more fulsome progress update and helps to inform the work currently underway to develop the next version of the Plan (due by early 2022).

As an indication of progress being made, the following can be noted:

- The March 31, 2020 Report Card noted 4 action items complete and 7 in progress
- The March 31, 2021 Report Card notes 9 items complete and 15 in progress.
- There are 48 action items in all.

Although there has been progress, there are still numerous items not started as of March 31, 2021. Some were delayed as Town staff worked through the impact of the COVID-19 pandemic, and others relate to plans beyond the timeframe of the last 3 years, e.g. improving accessibility standard for all municipal buildings like Town Hall or Library. Major changes for these buildings are currently not in the capital plans for another five to eight years, i.e. closer to the provincial goal of a barrier free province by the year 2030.

The Report Card format was developed by the inaugural Advisory Committee and is intended to be brief but informative and striving to adhere to plain language concepts. Staff will develop an additional reference document that outlines more details on each action item's evaluation and make it available upon request. At this stage, our focus is more forward in terms of tasks yet to be complete while acknowledging the importance of the Report Card looking back to ensure transparency and accountability to the public.

4) FINANCIAL IMPLICATIONS

There are no specific financial implications of this report. There are relevant Report Card assessments that will become part of upcoming Town budgets, be it in fiscal 2022/23 or over the next 4 years operating or ten-year capital plans. There are also some action items that staff have already started making progress on in the current year and, if possible, these will be completed, e.g. website meets latest Web Content Accessibility Guidelines.

5) REFERENCES TO COUNCIL STRATEGIC PLAN AND TOWN REPORTS

Although the development of an Accessibility Plan has become a legislated requirement for all municipalities, it also fits within previous Council Strategic Plan (2017-2021) which included the goal of "Improving quality of life for all". It also fits the current Council's Strategic Plan in terms of all four strategic directions which involve Economic Prosperity, Social Equity, Climate Change, and Community Wellness.

6) COMMUNICATION REQUIREMENTS

As noted on page 26 of the Accessibility Plan, the Report Card will be made available to the public and will be posted on the Town's website.

7) FUTURE COUNCIL INVOLVEMENT

Council's future involvement will be to work with Staff in ensuring action items are addressed in upcoming years.

REQUEST FOR DECISION 041-2021

Title: Additional Budget for Wickwire Well Generator
Date: 2021-07-06
Department: Engineering & Public Works

SUMMARY

Additional Budget for Wickwire Well Emergency Standby Generator

The Town has engaged Hatch Infrastructure to complete a design and tender specifications for the supply and installation of a permanent, stationary emergency standby generator for the Wickwire Ave raw water well pump, which is the primary source of water for the Town's water treatment and distribution system. Consistently available power to the well pump is crucial to ensuring supply to our system storage reservoir is uninterrupted regardless of time, day, weather, or emergency. At present, Public Works staff must locate and tow a portable generator to the Wickwire pump house, lift and connect a very heavy extension cable, and transfer power manually. This process is time consuming and creates unnecessary life safety risk to staff, especially during inclement weather when standby power is likely to be needed most.

The original approach to supplying this well with standby power was for the Town to purchase an additional portable standby generator, which could be stored at the well site. This approach was tendered previously, however none of the submissions met the requirements of the Town. This project was re-tendered as a permanent installation including automatic startup and transfer controls, and closed on June 24, 2021. The project received six bids, the lowest of which met the Town's requirements, however, was slightly over the allocated budget.

Based on the above considerations, staff recommend that an additional $20,000 be added to the budget allocation to allow this work to proceed as designed and bid.

DRAFT MOTION:

That Council approve a $20,000 increase to the Water Utility Capital Budget for the Wickwire Ave. Generator Project, bringing the total approved spending up to $100,000.

REQUEST FOR DECISION 041-2021
Title: Additional Budget for Wickwire Well Generator
Date: 2021-07-06
Department: Engineering & Public Works

1) CAO COMMENTS

The CAO supports the recommendations of staff.

2) LEGISLATIVE AUTHORITY

Municipal Government Act (MGA) 65A(1)(a)

3) STAFF RECOMMENDATION

Staff recommend that an additional $20,000 be added to the budget allocation to allow this work to proceed as designed and bid.

4) REFERENCES AND ATTACHMENTS

None.

5) DISCUSSION

Following a review of the allocated budget for this project, Staff anticipated the likelihood of requiring additional funds to complete this work.

The lowest bid for the complete supply and installation of the new permanent emergency standby generator for the Wickwire Ave well pump was received from SCO Electric Limited, and reviewed for compliance by Hatch. The bid price received for the option which included supply and installation of a new automatic transfer switch was compliant, and met all the requirements of the Town.

Table 1: Tender Results Abstract

Bidder	**Option 1** **No Automatic Transfer Switch** *(Excluding HST)*	**Option 2 (PREFERRED)** **With Automatic Transfer Switch** *(Excluding HST)*
SCO Electric	$85,130.00	$88,490.00
Atlantica Contractors	$94,457.00	$99,777.00
TJ Electric	$95,756.75	$101,301.80
Mid-Valley	$101,875.00	$110,620.00
Gilson Contractors	$106,339.00	$112,066.00
BCL Buildon	$110,685.00	$119,291.00

6) FINANCIAL IMPLICATIONS

The approved 2021/22 Capital Budget includes $80,000 for this project. To date, approximately $3,950 has been allocated towards this project for engineering design and specifications. The low bid for this project is $88,490 + HST. A total approved budget of $100,000 will ensure all final costs are covered.

The $20,000 increase to the project can be managed within the current budget framework. The final funding source will come from either Capital From Revenue or transfer from Accumulated Surplus funds. This decision can be made later in the year when more information is available on the expected year end surplus position. Staff will update Council during quarterly financial updates as to the preferred funding source later this year.

7) REFERENCES TO COUNCIL STRATEGIC PLAN AND TOWN REPORTS

- MPS Section 7.1 – Water Supply
- MPS – Community priority: Climate Action
    - One of the core concepts of the climate action priority is to provide strategies and actions that manage the impacts of climate change, including climate variability and extremes. *Extreme climate events often significantly increase the risks of electric power disruption. Completion of this project will add operational resiliency to this key piece of the infrastructure.*

8) COMMUNICATION REQUIREMENTS

N/A

9) ALTERNATIVES

Do not award this contract and continue to require Public Works staff to manually supply emergency standby power to the well site as described above.

REQUEST FOR DECISION 039-2021

Title: AVCC Funding Request – Physician Recruitment
Date: 2021-07-06
Department: Finance

SUMMARY

AVCC Funding Request – Physician Recruitment Position

This report follows the presentation by the Annapolis Valley Chamber of Commerce (AVCC) to the June 1st Committee of the Whole Meeting. The presentation included a summary of work done over the last year as part of a physician recruitment and retention initiative being coordinated by the AVCC Physician Navigator Position. During the June 1st presentation, representatives from AVCC provided additional comment on the data included in their document.

Last year the Town paid a grant of $4,000 towards the Navigator position. This year the request is $5,000, including a 3 year commitment towards funding the staff position.

DRAFT MOTION:

That Council approve a $5,000 grant contribution to the AVCC Physician Navigator Position and that future year's contributions be considered during the budget processes for fiscal 2022/23 and 2023/24.

1) CAO COMMENTS

The CAO supports the recommendations of staff.

2) LEGISLATIVE AUTHORITY

- Municipal Government Act (MGA) 65A(a)

3) STAFF RECOMMENDATION

That Council approve the grant funding for the current year as requested. Ongoing support should be re-evaluated each year taking in account both the Town's financial resources and level of success of the physician recruitment efforts.

4) REFERENCES AND ATTACHMENTS

- AVCC June 1st presentation document - attached.

5) DISCUSSION

The presentation by the AVCC on June 1st highlighted the impact of the doctor shortage in Nova Scotia, i.e. the number of people without access to a family physician (refer to attached document). The AVCC representatives also provided an overview of the retention efforts underway on the Valley, most notably with Family Medicine Residents who do a 2-year work term throughout the Valley region. The goal, to show Residents that the Valley is the spot to locate their practice after their family residence term is completed.

In the past year financial support for the Navigator position came from a number of partners including County of Kings and the Town of Wolfville in the municipal sector. To date the program had not been in place for a sufficient number of years to have a strong measurement of it's success in terms of number of practitioners who choose the Valley for their practice.

In terms of success measured by highlighting all the reasons one would pick the Valley as their home, the program has received positive feedback. This relates to Welcome Baskets provided to Residents when they first arrive for their two-year Residency terms to seasonal activities to build relationships and show all that the region has to offer. The Valley, and especially the Wolfville area, has everything most Residents are looking for.

Given the limited duration the Navigator position has been in place, continued financial support will allow the program a better opportunity to prove its effectiveness, i.e. doctors choosing to set up family practices in the region. That said, staff believe that an annual review of the level of success would be important to ensure grant funds are leveraged effectively.

Council support last year was approved during the June 30th Council Meeting. At that time there was no staff report dealing with the specific AVCC request, but rather it came out of discussion during Council discussion of an RFD dealing with financial decision points in relation to Covid's impact on approved budget initiatives. Last year's support was in the amount of $4,000 and it had not been an item included in the budget.

6) FINANCIAL IMPLICATIONS

The $5,000 request this year is slightly higher than last year, but in an amount that is manageable within the Town's operations even if not part of the approved budget expenditures. This year's budget does not include an allowance for this request. The budget allocation for AVCC was $4,000 and that was for their tourism/marketing initiative (refer to AVCC presentation in April).

If approved by Council, staff will work to ensure the unbudgeted amount fits within the overall operation of the Town and that it does not result in a deficit by year end. Given the smaller dollar amount, there is no need for Council to draw reserve funds to dollars to cover the expense.

7) REFERENCES TO COUNCIL STRATEGIC PLAN AND TOWN REPORTS

In terms of strategic directions (2021-2025 Strategic Plan), doctor recruitment directly and/or indirectly positively impacts Economic Prosperity, Social Equity, and Community Wellness.

8) COMMUNICATION REQUIREMENTS

Nothing provided at this time. Once a decision made by Council, communicate decision to AVCC.

9) ALTERNATIVES

Limited options available:

- Not approve the grant funding request – would require the AVCC to make up the shortfall through other fundraising activities. No impact on Town as the amount is unbudgeted.
- Approve the funding and also make the three year commitment to annual funding – given dollar amount this would likely be manageable within future budgets. Staff feel one more year of measuring results would be helpful to inform Council spending in future years.


ANNAPOLIS VALLEY
Town of Wolfville
Presentation

Annapolis Valley Collaborative Committee

- Annapolis Valley Chamber of Commerce
- The Municipality of the County of Kings
- The Town of Wolfville
- Western Kings Memorial Health Society
- The Town of Middleton
- A Representative from the Mid Valley Region Physician Recruitment & Retention Committee

Funding Partners

- The Municipality of the County of Kings
- Valley Regional Hospital foundation
- Town of Wolfville
- Western Kings Memorial Health Society
- New Minas Sunrise Rotary Club
- Rotary Club of Kentville
- Department of Communities, Culture & Heritage
- Doctors Nova Scotia

What We Know:

There is a significant doctor shortage in Nova Scotia and citizens NEED HELP!

- According to NSH's Need a Family Practice (NAFP) registry, as of April 1, 2021, 64,921 *Nova Scotians* are on the Need A Family Practice Registry
- The NAFP report for April 1,2021 shows 24,942 registrants in the *Western zone* and 11,135 in *Annapolis and Kings County* are without a Family Practice

We NEED Doctors!

Our Opportunities:

Let's show the Dalhousie Medical Residents that they can HAVE IT ALL!

- 10 Dalhousie Family Medicine Residents (5 first year & 5 second year) work alongside preceptors for a 2- year work term throughout Kings and Annapolis Counties
- The residents are adventure enthusiasts who enjoy the outdoors, exploring, local cuisine and culture
- After their second year we hope they choose the Annapolis Valley to practice!
- 60 % of residents placed in the Annapolis Valley choose to stay after their 2-year term
- We need to provide support and community connections for these medical residents

Building Relationships:

Build relationships to support doctors and Dalhousie Family Medicine Residents!

- Provide lifestyle, recreation and community supports
- Building relationships with the Dalhousie Family Medicine Site Administrator and NSH staff
- Working with community members to provide resources and support to medical residents and established doctors
- Building community networks to aid friendships for doctors and medicine residents

Our Action Plan:

Our goal is to bridge the gap in physician retention and help ensure all residents in our region have access to primary Health Care!

- Continue to build relationships with NS Communities, NSH, community volunteers & stakeholders, doctors and medical residents
- Celebrate new and existing medical residents' and physicians
- Market the Annapolis Valley as a welcoming community that HAS IT ALL!
- Compile and deliver a Toolkit of resources available to NSH
- Create a strong supportive volunteer action team
- Continue to host events for medical colleagues and inviting community partners

Welcoming New Doctors & Residents!

Medical Resident Welcome Baskets

Baskets filled with donations from local businesses and community members to support our new and returning Dalhousie Family Medicine Residents each year

“Spooktacular” Ghost Walk

October 28, 2020

Frolic the Sugar Bush Tour

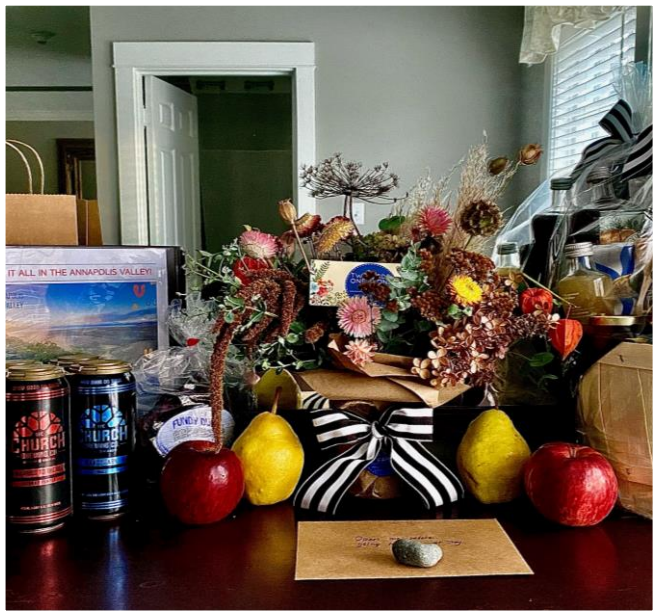
March 27, 2021

Apple Dome Skating Party

March 31, 2021

Dalhousie Family Medicine Virtual Retreat

From over 100 Dalhousie Family Medicine Residents, the Annapolis Valley had the most visits during the virtual job fair. NS Communities and myself partnered with DNS to create a “Weekend Giveaway Package”

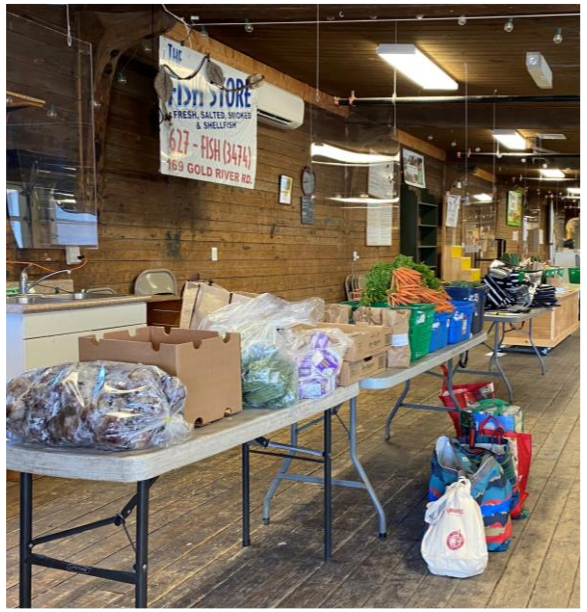


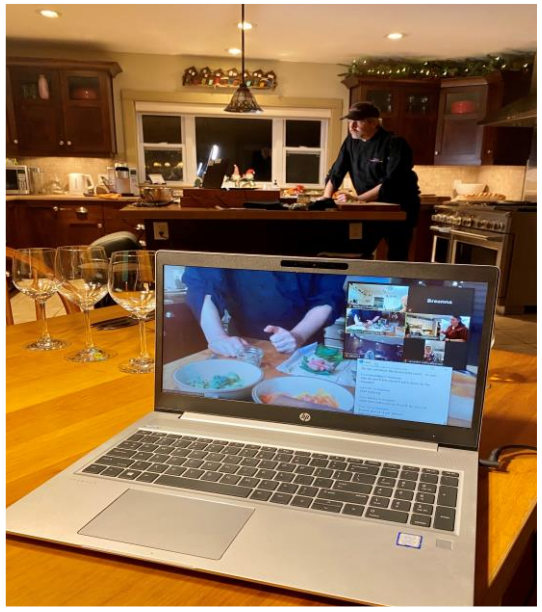
Hot Air Balloon Ride For Two

Virtual Retreat Door Prize

Doctors NS Virtual Holiday Event

Locally sourced food & beverages were delivered to over 25 Residents and Preceptors from Wolfville – Annapolis Royal for a Virtual Holiday Cooking Show with local Chef, Sean Laceby.





Volunteer Opportunities

With small steps from local supporters, like yourselves, we can bridge the gap in healthcare in the Annapolis Valley!

Welcome baskets

- For example: picking up donations and assembling the gift baskets.

Assisting Site Visits

- For Example: Showing doctors the area.

Co- host events

- Build relationships, share experiences and provide support

Outreach Resource

- For Example: When finding available accommodations in the community for doctors relocating to the Annapolis Valley

Connections

- Connect physicians and medical residents with community volunteers for one-on-one excursions

Funding Support

Last year the Town of Wolfville supported our Navigator position in the amount of $4000.

While we continue to see the need for more hours to maintain the workload,

We are asking for a contribution of $5000 for each of the next 3 years to enable us to increase hours paid.

Thank You!

Thank you for seeing the gap in healthcare and being proactive with taking the first step in making a change by helping to fund the Physician Community Navigator position for our community!

REQUEST FOR AGENDA ITEM

Title: Shall we re=examine Wolfville's twinning with Ste. Anne de Bellevue
Submitted by: Wendy Elliott
Submitted on: June 22

Date of Committee of the Whole requested: Recommendation

Given that a resident just posted the image of the Ste. Anne sign acknowledging Wolfville on our Facebook page with a question mark, it seems like a twinning worth discussing.
FCM paid for two exchanges after the late Peggy Hope-Simpson suggested the twinning. She thought that with the MacDonald campus in Ste. Anne and Acadia here we'd have plenty in common. Location by the water and population size were other ones. As the local reporter, I got to visit Ste. Anne with the group from Wolfville. We were billeted with local families and got to explore the community. I know that since then visitors from Ste. had lunch with the late Mayor Bob Stead.

Summary

Background:

- https://montrealgazette.com/news/world/bill-tierney-ste-anne-and-its-n-s-twin-have-a-lot-in-common
- https://en.wikipedia.org/wiki/Sainte-Anne-de-Bellevue,_Quebec
- https://www.ville.sainte-anne-de-bellevue.qc.ca/en/184/local-sustainable-development (references Wolfville in its 2015 sustainability plan)

Expected Outcome:

For information/discussion purposes only – I have spoken with one bilingual resident, who hails from Quebec, who would be very willing to further communication.

CAO Report

The following updates provide a glimpse into the work staff have been focused on during the past month in relation to Council's strategic objectives.

Economic Prosperity

With the Wolfville Farmers Market and Acadia University, staff are participating in longer-term strategic planning and consideration of funding applications. This includes working toward the utilization of the DeWolfe building and other expansion areas. A feasibility study team will be working over the next number of months.

A grant application was submitted to the Canada Healthy Communities Initiative to support work at Waterfront Park, integration with Devour Studios, and trail connectivity, including a rest area (similar to the library) adjacent to the Farmer's Market along the Harvest Moon trail.

Planning for "scaled-down" version of Mud Creek Days has started with a focus on the Mud Challenge. A smaller concert is booked for the Saturday night featuring Tara Spencer. Event promotion will roll out in the weeks ahead once the date is determined.

Global Halifax visited Wolfville for a number of days in June to promote the Town as a staycation destination. The Global crew shot at Willow Park, featuring the new Splash Pad and a morning of programming was broadcast live from the Lightfoot winery. Our mascot, Mudley, made a guest appearance and stole the show with some remarkable dance moves. Global Televisions' promotion of the Town's tourism assets and brand was a great boost in the same week that our Visitor Information Centre opened, and the Magic Wine Bus resumed service.

Website development continues with a focus on connecting all the people (residents, visitors, students) to all the things (places to visit, things to eat, Municipal programs and services). The WBDC is partnering on the build and providing much-needed local photography to visually boost our brand.

Social Equity

Staff were successful in securing funding for a Community Transit Feasibility Study through the Nova Scotia Transit Research Incentive Program and more information will come to Council on this project after the summer break.

Our Accessibility Advisory Committee had an engaged discussion on June 14th, and a field trip is planned so committee members can visit a couple of selected Parks to gather input to prioritize improvements to the Town's open spaces. A number of staff also attended a Plain Language workshop, presented by AMANS, and this communications approach is now being practiced.

With COVID restrictions easing, a long list of rec programs can resume. These provide opportunities to try new things, meet people and stay connected in our community. The "Trans & Queer-Friendly" Drop-In Music Program starts on July 8. Yoga and music programming is also available.

With the call to cancel Canada Day, the Town opted for a day to reflect on the Mosaic of our Country. A walk featuring notable Canadians was installed for the month of July to highlight the accomplishments of a diverse group of Canadians. Our orange brick installation in Willow Park remains in place, attracting those who wish to reflect and engage in difficult dialogue.

Climate Action

Staff and our consultants advanced the costing of our future all-ages-accessible bike network. The current focus is on Highland Avenue, given the upcoming re-build of a large portion of this street. The final investment package and report for the entire network will come to Council after the summer break when it is finalized.

Climate Action work progresses with a Climate Plan (PCP milestone 3) and our workplan for the summer coming to Council in July. The Climate Plan is being packaged for stakeholder engagement our new Bang the Table platform, which goes live later this month.

The Wolfville Switch Program (PACE) now has a live website, and we anticipate the program opening in the month of July. Meetings continue to develop the resident experience and internal management of the funding process. This program provides more support for residents to help move Wolfville along the path to becoming a low carbon community.

The Town's Environmental Camp start July 5th. All our five themed camps will run this summer and are camps are booked to capacity.

Community Wellness

Engineering and Public Works is grateful for the continued patience of residents while staff work to manage the intermittent sewer odours from our treatment plant.

The odors occurred after the aeration system for the lagoons were turned off over the winter and early spring. When switched back on in May, the biological process restarted but with the way the plant is designed, there was a noticeable smell.

Plant upgrades are now complete, improving treatment levels and the quality of effluent being discharged. One of the two lagoons no longer has any observable odour, while odours from the other lagoon will continue to improve over time.

In addition to increasing air volumes into the lagoon, the Town is using chemical additives that have helped with odour issues at similar plants. While the product does not speed up the

biological stabilization process (going from anaerobic to aerobic conditions in the lagoons), it does helps to suppress odours in the meantime by bonding to the hydrogen sulfide molecules in suspension, preventing them from off-gassing.

Staff continue to monitor the situation daily, while making the necessary changes to transition out of this phase as quickly as possible.

The Splash Pad in Willow Park was successfully opened and has been well-used by the community. Steps have been replaced on the Millennium trail nearest the small pond. The Tennis Club is in full swing – with summer tennis pro starting work June 28th and we are proceeding with the design and tendering for Pickleball Courts.

Additional Updates

The Audit Committee met June 25th to review the March 31, 2021 Financial Statements with the Town's external audit firm, Grant Thornton LLP. No changes were required to the draft statements prepared by Management and the year end statements were recommended to move forward to Council for approval. With the completion of year end financials, our focus now shifts to monthly variance reporting for fiscal 2021/22.

Notification of tax arrears has begun for those properties falling within the Tax Sale Policy criteria. Based on review of the March 31st year end financials, there are three properties that immediately fall within the Tax Sale Process for this year (typically there are 8 – 10 properties annually). There are another four properties that may avoid the process if they maintain their installments against arrears.

The IT Department is still awaiting implementation of the new tech gear for the Council Chambers, held up as the contractor awarded the work has experienced delays in shipment of equipment and the GIS portion of the IT Department has started the process of updating the GIS to integrate new functions now possible with the ESRI enterprise platform.

Water Utility will be issuing 1st quarter customer bills once all meter reads are completed for end of June. Data from this billing will provide an indication of how much impact the COVID-19 pandemic continues to have on portions of the Town's commercial base. Messaging included in the bills reminds residents who to call for items like noise and nuisance party complaints.

The Town received UARB approval of the 2021/22 Water Utility Budget submitted. The Finance Department is awaiting final sign off/approval by the Minister of Municipal Affairs on the Temporary Borrowing Resolutions submitted to the province.

COMMITTEE UPDATE

Title: Valley Waste Resource Management
Date: July 6, 2021
Department: Committee of the Whole

UPDATE

The monthly Valley Waste Management Authority meeting took place on June 16 virtually. Highlights of that meeting included:

- The Eastern (Kentville) and Western (Lawrencetown) waste management centres reopened to the public on June 2, 2021 and drop off volumes continue to be high. During spring clean up services almost 900 tonnes of material was processed at the Eastern Centre and over 1,000 tonnes at the Western Centre.
- Implementation of services to the Municipality of Annapolis County has gone smoothly with all materials flowing through the Western Management Centre.
- With respect to enforcement, during the month of May Valley Waste investigated 14 cases of illegal dumping and 3 cases of illegal burning, another 14 complaints relate to waste accumulation, sorting and improper storage of waste.
- Beach Clean-up and Marine Waste management continue to be a dominant environmental activity of many committed groups in our area.
- New Brunswick has announced draft regulations for Extended Producer Responsibility (EPR) for Packaging and Printed Paper (PPP) and are taking comments until July 1, 2021. The NB proposed regulations are similar to the proposal put forward by NSFM to the Province of NS.
- The contract with TerraPure Environmental Services to collect and dispose of hazardous waste was renewed for five years.

Respectfully Submitted

Councillor Wendy Elliott
July 2021

COMMITTEE UPDATE

Title: Kings Transit Update
Date: June 23, 2021
Department: KTA for Committee of the Whole

Meeting was held June 23RD Virtually.

Councillor Harding has been unwell – and has been excused from attending meetings, and we wish him well.

Audit Report was done by BDO. Given the changes in management, the reporting was still very well done and it was a clean report. There was only one area that requires a policy and that is in regards to capital expenses -what is to be expensed and what is to be capitalized – there was a varying opinion over the 2 past Managers – and a policy will be developed to address this.

The Severe Action Weather Plan was approved. This will assist both the riders and employees should critical weather arise.

Ridership and Revenues were reviewed – and this was during a Covid lockdown, so they were not favorable.

Capital Budget was approved. The two major items were a heat pump for the bay – it is very hot in the summer and very cold in the weather. This will certainly go a long way in staff satisfaction.

The buses from Halifax have yet to arrive – but we are hoping very shortly and refurbishing will then start.

The hiring committee is re-established and will do interviews on June 30th to review potential candidates. We hope this transition will happen in late July. In the interim Brian Smith has agreed to come to give us a hand to bridge the gap.

COMMITTEE UPDATE

Title: Kings Point to Point
Date: June 16, 2021
Department: Committee of the Whole – July 2021

- The meeting was held on June 16th at 5:30 pm
- The new manager was hired and was attending his first meeting.
- The financials were presented and approved.
- The Annual General Meeting was held at 6:15 pm on the same day.
- The new board was approved.
- The date for the next committee meeting was not discussed at the board meeting. I will send along when I received the information.

COMMITTEE UPDATE
Title: Diversity Kings County Committee
Date: July 6,2021
Department: Committee of the Whole

Diversity Kings met virtually on June 7, 2021. The next meeting is scheduled for July 5, 2021.

We were introduced to the summer student, Inclusive Communities Intern Willow who attends U of T. She has been working closely with Britney who will be taking on a new role in Recreation and Community development. Currently a new diversity specialist is being recruited.

Project Update from Lighthouse Strategies on the Action plan on ending racism was presented, and much discussion was had.

Draft Actions discussed: 1) Implementation and actions are the most important, stop talking and start listening was considered the most important message to convey, as well as diving into the truths. 2) The vision of the organization must be safe and supportive and reflect diversity. 3) Re-wording in the plan is important. The responsibility of the plan belongs to all of us," calling you in, instead of out," starts with action, not reaction. 4) The pillars of the action plan, leadership, Economic empowerment, truth, cultural celebrations, and creating safe spaces were also discussed. It was suggested that council designate 20% of their PD budget to equity and inclusion training.

The county of Kings has taken part in Overcoming History training through VANDSA (Valley African NS development Association) and encourages the other towns to do so also.

Britney discussed the implementation of friendship benches in the Kings region in September/ 21. Rainbow benches, where it is safe space for students to talk.

Committee member, Violy reported students at EMS were making T-shirts for the Diversity group at the school and were excited about the design.

Respectively submitted by:

Councillor Jennifer Ingham

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