

AGENDA
POLICY & STRATEGY COMMITTEE MEETING

Bridgewater, NS

Tuesday, May 15, 2018 – 9:00 a.m.

Time & Page

1. CALL TO ORDER
2. ANNOUNCEMENTS, ACKNOWLEDGEMENTS, RECOGNITION
3. PUBLIC INPUT (15 Minutes)
4. APPROVAL OF AGENDA (as circulated)
5. APPROVAL OF MINUTES – March 20, 2018 (as circulated)
6. BUSINESS ARISING FROM MINUTES & UNFINISHED BUSINESS – Nil (if applicable)
7. PRESENTATIONS
 - 7.1 Claire Louise Osmond, Project Coordinator, and Shelly Moran, Public Health Nutritionist, NSHA, Public Health Services
re South Shore School Food Project 1-14 9:15 a.m.
 - 7.2 Sharon Archibald, President Founder, Refresh Market Research
Re: Tick Awareness Research Results..... 15-56 10:15 a.m.
8. STAFF REPORTS
 - 8.1 Administration Department
 - 8.1.1 Lyme Disease Update..... 57-58
 - 8.1.2 Options Report for Council's Connectivity Strategy 59-68
 - 8.1.3 Strategic Priorities Update 69-72
9. MAYOR'S/DEPUTY MAYOR'S/COUNCILLORS' MATTERS:
10. IN CAMERA - Nil
11. NEXT MEETING – June 19, 2018 – 9:00 A.M.
12. ADJOURNMENT

South Shore School Food Project

- ★ Funded by the Nova Scotia Health Authority and supported by the South Shore Regional School Board
- ★ Focused on working together to build healthy menus in schools and make positive changes to food culture in cafeterias, classrooms and communities on the South Shore.
- ★ Without our school cafeterias, we lose the most significant opportunity to collectively influence the way our children eat; to educate on the importance of healthy food; and to build greater connections to local food.

The Project focuses on bringing food back into education to strengthen the foundations for the future of our children and Province.

There are many parts to the South Shore School Food Project and the four priorities are:

- ★ Healthy Menus in School Cafeterias
- ★ Food Education in the Classroom
- ★ Collective Local Procurement from NS Farmers & Producers
- ★ Food Security in School Communities





What did we do?

- Spent 2 months in 5 schools (SQMS, WNES, BA, CAMS/CDS)
- Learned from existing processes & applied best practice (US/CAN/EUR)
- Developed & implemented new recipes and menus
- Met with producers and suppliers
- Set up new purchasing channels
- Worked with & trained cafeteria workers
- Organized classroom learning opportunities, e.g. food labs, food safety & safe food handling, survey activities, local author's food project stories
- Set up financial reporting systems in each cafeteria that are online and viewable on a comparable platform
- Developed a reporting mechanism and policy for free lunches and assessed how to best serve the most food insecure





Partnerships

Partners Year 1:

South Shore Regional School Board; Nova Scotia Health Authority; Common Good Solutions; Innoweave; Community Fund; Local Food Fund; Food Project Initiative Funding; Farmers' Market Nova Scotia; Department of Education & Early Childhood Development; Agri-Futures/Grow Nova Scotia; Fishermen's Memorial Hospital Auxiliary

Potential Partners:

McConnell; Vibrant Communities; Federation of Agriculture; Department of Agriculture; Municipality of District of Lunenburg & Queens; Town of Lunenburg/Mahone Bay/ Bridgewater/Chester; Nourish NS; Feed NS; Ecology Action Centre; NOW Lunenburg County; Dalhousie University

Successes – YEAR 1

- **Provided** fresh ingredients, whole foods, from scratch cooking.
- **Increased** volume of students' orders and willingness to try new things.
- **Shifted** school food culture – impacted children's eating habits and this is reflected in improved classroom behaviours.
- **Built** familiarity as more kids enjoying the same healthy meal is the best way to influence more kids to eat well. School is the only place this can happen.
- **Supported** Cafeteria Worker by proving demand for healthy menu, showed cost effectiveness & favourable changes to work environment
- **Improved** financial stability for each of the Food Project cafeterias
- **Featured** local produce on menu
- **Increased** student engagement & learning around food





Successes – YEAR 1 cont.

- **Increased** community engagement through marketing, communications and social media
- **Created** connections with community organizations, partners & funders
- **Established** new and improved supplier connections
- **Developed** an approach to addressing food security in schools:
- **Engagement** through a 'try it' day on ***Toonie Tuesdays:*** a strategy to encourage trying new things, as well as to reach the most food insecure students
- ***THE MUNCH CARD*** – subsidized meal card available to all students and offered at no cost to our hungry students

**The South Shore School
Food Project presents**

T H E
MUNCH
C A R D

**The school meal plan where
more kids eat well for less.**

★ **Healthy food.**
★ **Nourished kids.**
★ **Education.**
★ **Eat it up.**
★ **#goodfoodinschools**



Lessons Learned – YEAR 1

- **Quality Control:** With each kitchen operating on its own it is difficult to maintain similar standards and quality of food offered.
- **Economies of Scale:** Local procurement is difficult when purchasing school by school, there are no economies of scale and procuring becomes resource intensive.
- **Equity:** The practice of feeding hungry students varies and children who are the most food insecure remain unidentified. (complex issue)
- **Expertise:** School, administrators and educators are taxed and adding expectations around better food service is beyond their current scope.
- **Best Practice:** There is no standardized reporting, monitoring, financial management systems in place; therefore, no shared efficiencies and support; no way to respond to the weaknesses in the system.

Lessons Learned – YEAR 1 cont.

- **Resources:** There have not been the resources assigned to ensure sustainable food quality that reflects provincial nutrition guidelines for schools.
- **Centralization:** Cafeteria Worker working conditions are insecure, wages low & kitchen routines well established, and therefore changing the system school by school is not sustainable nor scalable.
- **Capacity Building:** Health, Education and Agriculture priorities are vast, a not for profit centralized model builds primary representation for the work; access to new partnerships and ways of funding.



Next Steps – YEAR 2

Centralized Kitchen & Not for Profit Organization

- Continue to develop a strong partnership with school kitchens and the teams who run them and respond to what is needed to ensure we build a model that other regions of the Province can follow
- Create a strong model for "buy in", so we can develop healthier "approved" menus; procure greater percentage of local food; better subsidize school lunches with funding partnerships; and seek investment to create jobs, improve & standardize contracts & pay for kitchen staff
- Develop a model for collective local food procurement, processing & distribution into schools that is, at first, sustainable and then scalable across the region and then Province
- Develop nutritionally-dense main meals for school kitchens
- Help streamline the food service in school cafeterias so more kids can access good food within the time limitations of short lunch "hours"
- Offer a training program in a "hub" kitchen for all aspects of service and cooking for schools, best practice, salad bars, soup bars etc.
- Munch card, Menu support, Marketing support, Build your own days-increase sales by 500%, Point of sale system (cash registers all the same linked to one database, gathering all the same information)

The economic potential for a project like this is far-reaching beyond schools, into homes and communities. Considering a student who has a meal every school day has a higher chance of graduating, the Coalition for Healthy School Food shares this: “It is estimated that each 1% increase in graduation rates could result in a \$7.7 billion savings per year in Canada since high school graduates earn higher salaries, pay more taxes, have lower healthcare costs, are less likely to encounter the justice system, and are less dependent on social assistance”.



The benefits of healthy food are out of reach
for far too many Nova Scotian children.
Local agriculture is largely untapped by schools
and daycare facilities.
Collectively, we can re-imagine the role healthy,
locally-sourced food can play in our schools and
in the wellbeing of our children.
Together we can pave the path to a more
prosperous Province.

What is important to the MODL?

- ★ Wellbeing of our children
- ★ Food security
- ★ Agricultural opportunity
- ★ Population growth
- ★ Economic prosperity
- ★ Innovative partnerships



Ticks and Lyme Disease Knowledge, Awareness, Attitudes and Behaviours Study (Pre-Campaign) FINAL Report

Municipality of the District of Lunenburg



May, 2018

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Background

Following its discovery in the late 1970s, Lyme disease has become the most common tick-borne disease in both North America and Europe. Lyme disease is a bacterial infection transmitted to humans by a bite from an infected tick. In Nova Scotia, only the blacklegged tick carries the bacteria that causes Lyme disease, and not all blacklegged ticks carry the bacteria.

Due to the expansion of blacklegged tick populations, Lyme disease is increasingly becoming prevalent across Nova Scotia. In 2015, there were 254 reported cases of Lyme disease in Nova Scotia, an increase from 115 cases reported in 2014. Despite the effectiveness of protective behaviours, relatively few Nova Scotians adopt them when in areas where ticks are known to be present.

Studies have shown that improved knowledge of basic protective behaviours that can be taken to reduce tick bites may decrease the risk of tick-borne disease. Certainly, in the case of Lyme disease, understanding of the effectiveness of prevention strategies should make it a preventable illness, yet the incidence of the disease continues to increase.

Low uptake of protective behaviours among the general public lies at the heart of this problem. Observational studies conducted in areas with endemic tick-borne disease repeatedly find that a large proportion of people fail to take even the most basic of precautions, such as wearing long trousers, using repellent, or avoiding locations of highest risk. Self-reported checking for ticks after potential exposure is also low, despite the fact that removal of a tick within 24 hours may effectively prevent transmission of bacteria and infection.

Improving the uptake of protective behaviours among members of the public is an important challenge for those working to reduce the incidence of tick-borne disease. The impact of educational and awareness interventions intended to encourage the widespread use of protective barriers against tick-borne disease have proven successful in some jurisdictions. This suggests that educational and awareness interventions can increase an uptake in a range of personal protective measures, including the use of insecticide, better checking of ticks, avoidance of areas where one might encounter ticks, along with changes in perceptions about the likelihood of contracting Lyme disease, together with basic knowledge about ticks.

In light of the low level of protective behaviours among the Nova Scotian general public and the residents of Lunenburg County, the Municipality of Lunenburg is attempting to improve uptake through the dissemination of a public education and awareness campaign.

STATEMENT OF PURPOSE

The purpose of this baseline pre-campaign study was to measure and validate, in a statistically reliable fashion, knowledge, awareness, attitudes and behaviours regarding ticks and Lyme disease among the general population of Lunenburg County.

The results of the survey will guide the development a public education and awareness campaign. In July, 2020, a second survey wave is scheduled. This post-campaign survey will evaluate the impact of the campaign on whether the public acquired increased knowledge of ticks and Lyme disease, along with a greater likelihood or incidence of preventive activities such as performing tick checks, using repellent, and engaging in other preventive behaviours.

METHODOLOGY

The sample universe included residents of communities located within Lunenburg County, 18 years of age and older. A total of 400 surveys were completed producing a sample size with a margin of error of plus or minus 4.88 percent, at a 95% confidence level.

In drawing sample, random (probabilistic) sampling was applied to the population universe to ensure that every individual had a known chance of being selected to participate in the study. Sample was generated and drawn from a population database. Cell phone numbers were included in the sample as a means of boosting response rates of younger residents (18-29 age grouping).

The survey was administered in English only and the length of time to administer was between 5 and 7 minutes. A total of 10 pre-tests were conducted. Respondents selected to participate in the pre-test were representative of the sample population. The pre-test ensured the length of the survey was within the 5 to 7-minute mark; identified whether important variables such as response codes were missing; and, confirmed that the questions posed were unambiguous, ill-defined, loaded, or double-barreled. The pre-test also identified deficiencies regarding skip patterns, and issues related to survey programming. These deficiencies were rectified before fieldwork began. (See Appendix A: Survey Instrument)

Once interviewing was complete and the data set generated, the raw data was processed. This consisted of systematic editing (involving verifying and coding) and cross-tabulating and statistical testing.

ABOUT THIS REPORT

This report presents the findings from a telephone survey (N=400) administered April 7th to 26th, 2018. The data is presented in both a quantitative (statistical or objective) and qualitative (subjective) manner based on open-ended comments obtained during the telephone interviews. Throughout the report, verbatim using *respondent's verbatim comments in their own language* is shown wherever possible. However, for easier reading, we have:

- Identified verbatim responses in italics, through the use of a different style of font and/or quotations; and,
- Paraphrased and/or slightly edited some comments, staying as close as possible to the original phrases and terms used by participants.

Our goal in preparing this report was to identify knowledge, awareness, attitudes, and behaviours of the target audience through both concrete statistical and anecdotal evidence. The quantitative survey elicited many levels of reaction to the topic explored and as such provided in-depth insights and relevant feedback useful in providing the Municipality of Lunenburg with sound communications direction and guidance.

Key Observations and Implications

Key observations are outlined in point form below:

- Sixty percent (60%) are “very aware” of ticks and Lyme Disease. Ninety-one percent (91%) believe Lyme disease is a “serious” (21%) or “very serious” (70%) problem. Despite the majority indicating ticks and Lyme disease are a serious problem, 84% report their level of outdoor activity remains unchanged.
- Ticks that infect a person with Lyme disease are believed to be found most often in wooded areas with dense bushes and shrubs (54%), grassy areas (54%), or everywhere (25%). Specific seasons when ticks are thought to be more active include Summer (34%), Spring (24%), and/or Fall (14%). Over half (54%) report ticks are active year-round.
- Most commonly self-reported preventive behaviours or measures used to avoid tick bites include – wearing long trousers (35%), wearing long-sleeved shirts (30%), avoiding areas where ticks are present (28%), using repellent/bug spray/anti-tick products (27%), conducting tick checks after spending time outdoors (24%), wearing closed-toe shoes (23%), tucking pants into socks (19%), keeping grass on property cut low (12%), wearing light coloured clothing (11%), and/or pre-treating clothing with repellent (9%). Just over one in ten (12%) *never* use protective measures.
- While fifty-six percent (56%) “always” conduct daily tick checks as a way to prevent exposure to infected ticks, the remaining 45% conduct daily tick checks “sometimes” (32%) or “never” (13%). Main reasons given for *sometimes* or *never* conducting daily tick checks include – only conducting checks after being in wooded areas (46%), inactive/disabled – rarely go outside into woods/wilderness (16%), couldn’t be bothered – too much hassle (11%), and Lyme disease is not viewed as a concern/problem.
- If bitten by a tick, residents would take the following actions – visit doctor/emergency room/walk-in clinic immediately (60%), remove tick if still visible (58%), and/or do nothing – monitor the situation through a wait and see approach (22%). Seven percent (7%) would watch for the appearance of a red ring/bullseye.

- In the past year, just over eighty percent (82%) have seen, heard, or read something related to ticks and Lyme Disease in Lunenburg County. Messages recalled include the importance of being careful/vigilant/aware (27%), how one gets Lyme disease including information on ticks and animals that carry ticks (17%), prevention measures in general (16%), that Lyme disease is serious, spreading, and there is a high incidence of Lyme disease in Lunenburg County (16%), the importance of daily tick checks (14%), signs and symptoms of Lyme disease (14%), what to do in the case of a tick bite (13%), anecdotal stories about people who have contracted Lyme disease (10%), and/or where ticks can be found along with time of year when they are most prevalent/active (9%).
- Sources of information about ticks and Lyme disease in Lunenburg County include print media such as newspapers (51%), posters (10%), flyers and pamphlets (11%), online (27%) radio (9%), through family and friends (7%), and/or TV news (6%).
- Males are less aware and as a result less predisposed to engage with or seek out information on ticks and Lyme disease. In contrast, women are more aware, hence probably more interested in and more likely to engage or seek out ticks and Lyme disease information.
- With regard to age-related differences, young adults (18-29 years of age) tend to have a lower level of awareness of ticks and Lyme disease than their older counterparts. In fact, as age increases, the greater the likelihood of awareness.

STRATEGIC IMPLICATIONS

This study has several implications for the development of a ticks and Lyme disease public education and awareness campaign. It demonstrates that knowledge, awareness, and level of concern are main determinants of preventive behaviour. Therefore, any educational and awareness campaign should focus on these key determinants – for example, by providing facts and raising awareness of Lyme disease and protective measures that can be taken with a focus on daily tick checks. The campaign should focus on removing any barriers for complying with recommended protective measures, especially in people who are less concerned about the risks. Furthermore, it is important to tailor the information to specific socio-demographic sub-groups and high risk groups. The results of this study can be used as a base for developing an effective public educational and awareness campaign that connects the needs of the target group with the main goal to increase compliance with recommended measures, with a focus on daily checking of skin.

Key Messages

Some key messages in which the campaign should focus on and deliver include:

- Ticks are everywhere – not just in wooded, grassy, wilderness areas with large deer populations.
- A daily tick check is a simple and effective method to reduce risk of Lyme disease (versus conducting tick checks *only* after time in areas deemed high risk).
- Ticks are active year-round, not just in the spring, summer, and fall – every season is tick season.

Characteristics of Study Population

As the chart below indicates, there are distinct differences between the survey population and the Statistics Canada Census (2016) population data for the Municipality of Lunenburg. However, while the study population characteristics do not exactly match the population characteristics on key demographic variables, it is our view that despite some differences between the two groups, the accuracy of the overall data collected has not been compromised nor negatively impacted - the *overall* data reflects a good cross-section of the Municipality of Lunenburg population and therefore study results can be applied to decisions to be made; adequate sample size provides a great deal of statistical reliability. For smaller sub-samples, caution should be exercised especially when the sample size is lower than n=50; sub-sample data should be used for directional purposes only.

Municipality of Lunenburg Survey Population and 2016 Census Population Key Demographics	
Survey Population	Statistics Canada (2016)
Gender: Male – 45% Female – 55%	Gender: Male – 49% Female – 51%
Age Grouping: 18-29 years (10%) 30-44 years (28%) 45-59 years (33%) 60 years and over (29%)	Age Grouping: 18-29 years (10%) 30-44 years (18%) 45-59 years (30%) 60 years and over (42%)
Income: \$20K or less (10%) \$20K to \$49,999 (26%) \$50K to \$79,999 (33%) \$80K to \$149,999 (24%) \$150,000 and over (8%)	Income: \$20K or less (33%) \$20K to \$49,999 (40%) \$50K to \$79,999 (15%) \$80K to \$149,999 (10%) \$150K and over (1%)

Knowledge and Awareness

Lyme disease is a bacterial infection transmitted to humans by a bite from an infected blacklegged tick. In Nova Scotia, only the blacklegged tick carries the bacteria that causes Lyme Disease, and not all blacklegged ticks carry the bacteria. Blacklegged ticks survive best in areas that provide a moist habitat, such as wooded or forested areas, because the trees provide shade, and leaves provide protective ground cover. They are found on a wide range of hosts including mammals and birds. Infected blacklegged nymphs and adults can transmit Lyme disease to their hosts if attached and feeding for at least 24 hours. Nymphal ticks are the primary vectors because their small size makes it difficult to see and remove them.

Black type of ticks cause Lyme disease.

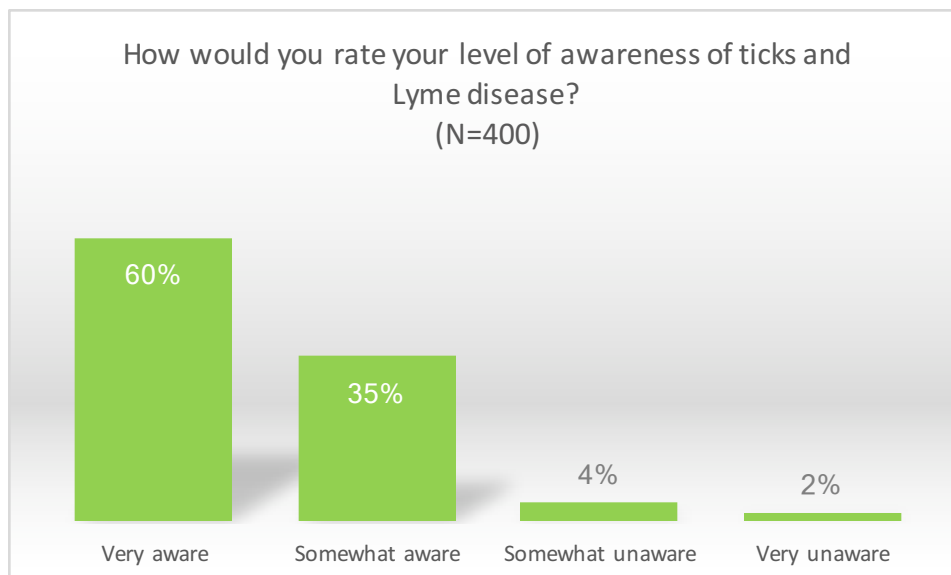
Nova Scotia has a suitable climate for tick populations. Blacklegged ticks are found throughout Nova Scotia, with Lunenburg County considered an area of higher risk and heavy concentration of blacklegged ticks due to their abundance of natural areas and environments home to numerous deer, mice and other mammals that support a healthy population of ticks. Their habitat has expanded and ticks now can be found everywhere in Lunenburg County. Blacklegged ticks are now established as part of the County's local ecology.

Lunenburg is an area at high risk for Lyme disease; Lunenburg County is one of the most active areas for ticks and Lyme disease. Ticks that carry Lyme disease are multiplying and coming into the area much more than they used to.

Ticks are worse than a few years ago.

AWARENESS OF TICKS AND LYME DISEASE

This study demonstrates knowledge and awareness of ticks and Lyme disease is very high, with 95% "very aware" (60%) or "somewhat aware" (35%) of the problem. This level of awareness is consistent (albeit at a slightly higher level) with results from a recent Lyme awareness study conducted in 2016 on behalf of the Public Health Agency of Canada where nine in ten respondents reported awareness of Lyme disease and 78% possessed a high level of knowledge.



Interestingly, there is a significant gap in level of awareness between the men and women in our study, with women more aware of ticks and Lyme disease than their male counterparts. Studies have shown that men, due to gender role constraints and social constructions of masculinity, tend to be unaware of sources of health-related information and have inadequate competency to search for them because of either pure ignorance or reluctance, and accordingly low motivation, of seeking out what they do know to be available. Women, simply put, are more active seekers of health-related information than men.

With regard to age-related differences, young adults (18-29 years of age) tend to be less aware of ticks and Lyme disease than their older counterparts. In fact, as age increases, the greater the likelihood of awareness. This suggests that younger people are more likely to perform risky health behaviours as they are not focused on later life health consequences of their actions, whereas increased age predicts more protective health behaviours (i.e., daily tick checks). Older individuals are more concerned with potential health disorders and diseases, as well as their current and future health status. Therefore older individuals can be regarded as consumers with high health consciousness.

Visitors to Lunenburg County from nearby municipalities where tick populations are not as abundant may have even lower levels of knowledge of Lyme disease which may put them at increased risk of disease and decreased adherence to prevention practices.

AREAS WHERE TICKS ARE MOST OFTEN FOUND

Blacklegged ticks often wait on the edge of trails or transitional areas, like clearings with grass or the border of wooded areas, preferably in a shady spot. They often lie in wait in low-standing vegetation and shrubbery, then climb to the end of leaves or twigs, holding on tight using two pairs of limbs. A third set of outstretched legs latch on to its prey.

To gauge the public's knowledge, we asked residents where they believed ticks are most often found. The majority indicated ticks are more prevalent in grassy (54%) and wooded areas containing bushes and shrubs (54%); one-quarter (25%) indicated that ticks are found everywhere.

Be careful in wooded and grassy areas.

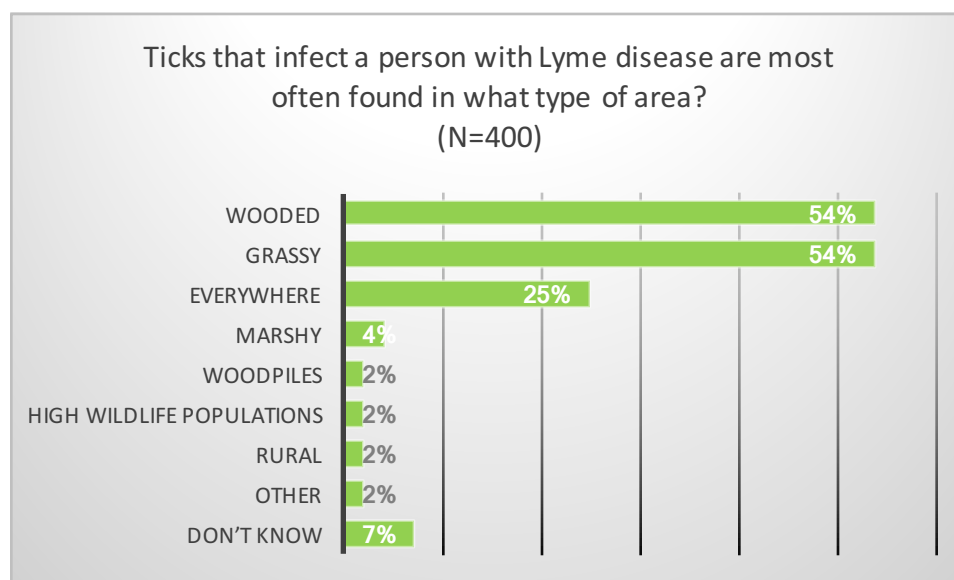
Try not to go into the woods too much.

Take extra precaution in certain areas like woodlands.

Stay out of tall grass.

Ticks are everywhere.

Ticks that infect a person with Lyme disease are found throughout Nova Scotia. According to the Nova Scotia Department of Health and Wellness website (novascotia.ca/ticksafety), while “everyone who spends time outside in Nova Scotia – even in urban and suburban areas – is at risk of being bitten by a tick,” the site goes on to highlight environments or areas where ticks are likely to inhabit – “moist and humid environments, in or near woods, shrubs and long grass.” While these messages may appear contradictory or confusing, the distilled or key message is “ticks are everywhere” *including* wooded and grassy areas. One is not exclusive of the other.



The table below breaks down the data (top three mentions) by gender (where applicable) and demographic characteristics according to those who most often hold certain beliefs as to specific areas where ticks are more prevalent:

Ticks that infect a person with Lyme disease are most often found in what types of areas? (N=400)	
Type of Area	Population Characteristics
Wooded (54%)	18-29 years of age (69%) University/college graduates (59%) Annual household income - \$80K or more (61%)
Grassy (54%)	18-29 years of age (72%) Annual household income - \$80K or more (60%)
Everywhere (25%)	30-44 years of age (31%)

Younger adults (18-29 years of age) are more likely to believe that ticks are most often found in wooded and grassy areas, while those 30-44 years of age are more likely to believe that ticks are found everywhere (which, by the way, includes grassy and wooded areas). In the younger age category, there is a risk associated with believing that ticks are confined to specific areas as it makes this group less likely to engage in preventive measures such as daily tick checks. Data from this study has shown this to be the case. To illustrate, of the respondents in the 18-29 age category *only*:

- 10% *always* engage in daily tick checks;
- 10% have read, seen, or heard about ticks and Lyme disease in the past year;
- 11% are “very aware” of ticks and Lyme disease; and,
- 9% believe ticks and Lyme disease are a “very serious” problem.

TIME OF YEAR WHEN TICKS ARE MOST ACTIVE

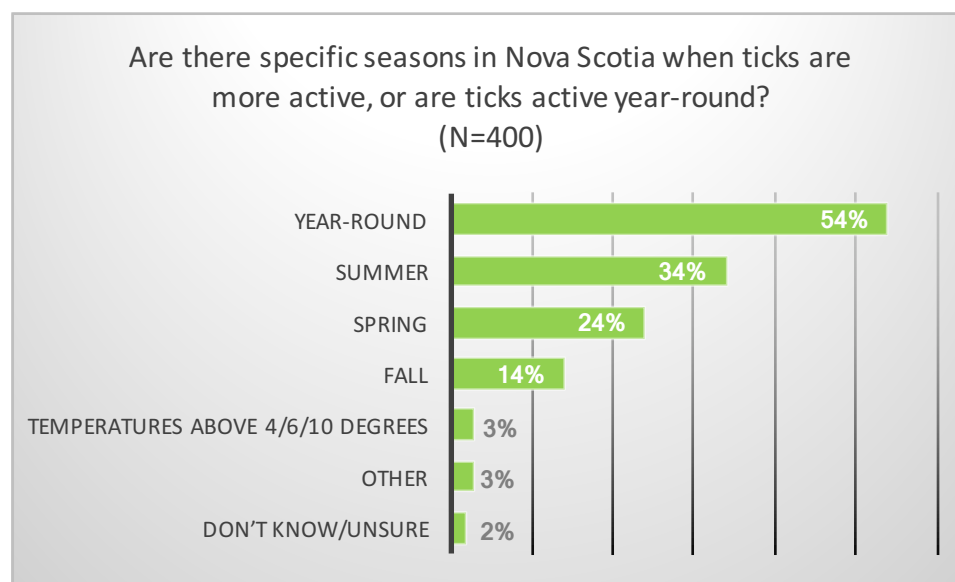
While the general rule is that ticks are active above 4 degrees Celsius, within Lunenburg County there can be warmer pockets of ground that allow ticks to be active during cooler temperatures, making every season tick season. In other words, Lyme ticks are active year-round, but spring is often touted as the most dangerous season – that is when baby ticks or nits – so tiny as to be almost invisible – are born.

More than fifty percent (54%) of respondents believe ticks are active year-round, while 34% feel they are more active in summer and/or spring (24%). These common beliefs have been reinforced by messaging on ticks and their patterns of behaviour – more precisely, when they most actively hunt for blood (April to early May). However, ticks can survive year-round. Tick populations are shifting and rising in Lunenburg County. This change is in all likelihood due to changing climate and spread of animals the ticks like to feast on, such as deer, small mammals, and birds. Warmer than usual weather and an overabundance of wildlife creates an ideal environment for ticks to remain active year-round.

They were saying that it is only a seasonal thing – which we don't believe.

They are no longer a seasonal concern; people think they are only active in Spring and Summer, but they are now being found year-round.

They are not going dormant any more.



Males are considerably less likely to report ticks are active year-round than their female counterparts (39% versus 65% respectively) and are more likely to state that “summer” (44%) and/or “spring” (32%) are the most active season for ticks.

It is worse from Spring to Fall.

Ticks are rampant during this time of the year (Spring).

The table below breaks down the data (top three mentions) by gender and demographic characteristics:

Specific seasons in Nova Scotia when ticks are more active (N=400)	
Season	Population Characteristics
Spring (24%)	Males (32%) \$50K or less (36%)
Summer (34%)	Males (44%) 18-29 years of age (44%) High school or less (40%) \$50K or less (39%)
Active year-round (54%)	Females (65%) 45-59 years of age (62%) Some trade/technical college/university (63%) \$50K-\$79K (62%)

PERCEIVED SEVERITY OF LYME DISEASE

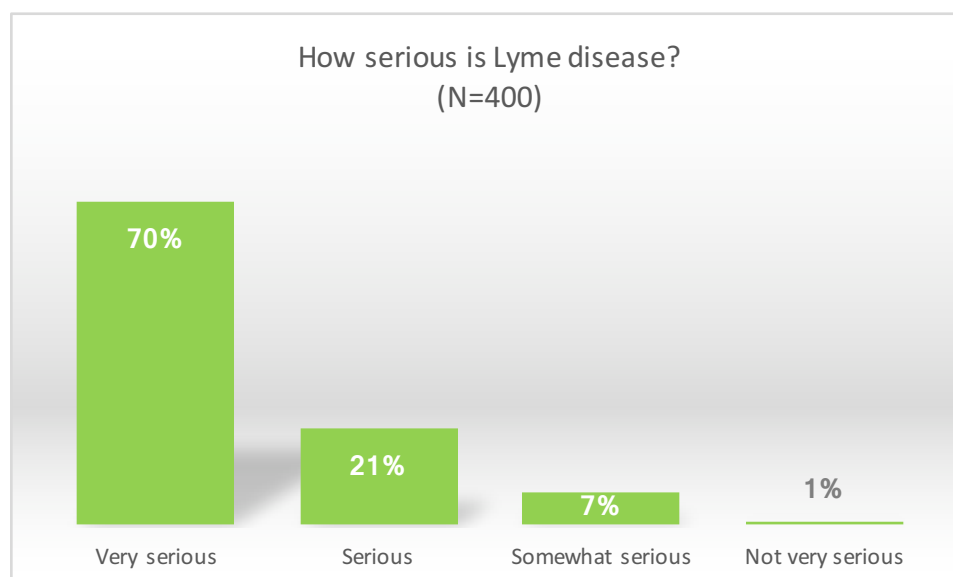
While 91% of respondents perceive Lyme disease as a “serious” (21%) or “very serious” (70%) problem, the minority (8%) perceive Lyme disease as a “not very serious” (1%) or “somewhat serious” (7%) problem. Those who indicated Lyme disease is not very/somewhat serious problem are more likely to be are young males between 18 and 29 years of age.

Lyme disease is life altering.

Larger problem than most people are aware of.

It is a very serious issue. We need to become better educated because the disease is becoming more widespread.

Ticks and Lyme disease are bad stuff and it cannot be avoided.



So, while nearly all respondents perceive high severity of Lyme disease, perceptions of personal vulnerability appear lower. The fact that a good majority of respondents do not conduct daily tick checks implicates some public underestimation, given the fact that people living in Lunenburg County are at real risk of getting tick bites and developing Lyme disease. This underestimation of risk may be caused by factors such as lack of knowledge and awareness. Furthermore, if people underestimate their personal risk they will be less willing to engage in preventive behaviour.

The table on the following page illustrates this dichotomy. Those who are “very aware” of ticks and Lyme disease are more likely to view Lyme disease as a “very serious” health concern or threat. Conversely, those somewhat aware of ticks and Lyme disease are more likely to perceive the threat of Lyme disease as less than very serious.

Perceived Severity of Lyme disease by Level of Awareness (N=400)		
Awareness	Perceived Severity	
	Very Serious (n=278)	Less than Very Serious (n=117)
Very aware (60%)	68%	43%
Somewhat aware (35%)	30%	47%

It can also be posited that persons exposed to first-hand accounts of family, friends, and pets contracting Lyme disease are more cognizant of the dangers associated with infected ticks, and probably have a heightened awareness of the dangers associated with contracting Lyme disease.

Again, the gender divide is clearly evident:

Perceived Severity of Lyme disease by Level of Awareness (N=400)			
Gender	Lyme disease is "very serious" (n=281)	"Very aware" of ticks and Lyme disease (n=241)	"Always" conduct daily tick checks (n=222)
Male (45%)	40%	46%	43%
Female (55%)	60%	54%	57%

Looking at the data from a demographic perspective, significant differences between age groupings is evident, with perceived level of severity increasing as age increases.

Perceived Severity of Lyme disease by Level of Awareness (N=400)			
Age	Lyme disease is “very serious” (n=278)	“Very aware” of ticks and Lyme disease (n=238)	“Always” conduct daily tick checks (n=220)
18 to 29 years of age (10%)	9%	11%	10%
30 to 44 years of age (28%)	25%	26%	28%
45 to 59 years of age (33%)	32%	29%	32%
60 years of age or over (29%)	33%	34%	30%

Preventive Behaviour

The best way to avoid infection is to prevent exposure from infected ticks from happening in the first place. Preventive behaviours, such as wearing long trousers when visiting wooded areas, applying tick repellent, checking for and removing ticks after visiting areas where ticks are active, have demonstrated some efficacy in preventing Lyme disease.

PREVENTIVE MEASURES TAKEN

Respondents use a variety of preventive measures or behaviours to avoid being bitten by infected ticks – wearing long trousers (35%), wearing long-sleeved shirts (30%), using repellent/bug spray/anti-tick products (27%), wearing closed-toe shoes (23%), and/or tucking pants into socks (19%). While almost one-quarter (24%) conduct tick checks after being outdoors, 12% *never* use protective measures. This suggests that wearing protective clothing (wearing long trousers, long-sleeved shirts, closed-toe shoes, treating clothing with repellent), using repellent and checking the skin after being outdoors are perceived to be most effective measures for preventing tick bites. Some, in addition to employing these measures, simply avoid areas where ticks are present (28%) – such as grassy (1%) and wooded areas containing bush and shrubs (2%), along with keeping grass on property cut low and removing debris on property (e.g., weeds, woodpiles, etc.) (5%).

Overall, the percentage of respondents taking preventive measures range from 9% (pretreating clothing with repellent) to 35% for wearing long trousers when outdoors. These percentages are rather low when compared to other studies undertaken. Studies in the US reported that 66%-99% of respondents took measures to prevent Lyme disease. It can be surmised that the lower incidence of wearing protective clothing (trousers, long-sleeved shirts, etc.) may be a product of Nova Scotia's Maritime climate. As temperatures increase, many Nova Scotians prefer to don lighter clothing such as shorts and short-sleeved shirts.

Given the relatively low uptake of preventive measures, the data may suggest that most believe the efficacy of protective measures are exaggerated or unwarranted, and the risk does not warrant the behaviour (i.e., diminished risk perception).

Whether it is serious as the media makes it out to be is a good question.

What preventive measures or behaviours do you take to ensure that you and your family are not bitten by infected ticks?
(N=400)

Preventive Measure	Percentage of Overall
Wearing long trousers	35%
Wearing long-sleeved shirts	30%
Avoiding areas where ticks are present	28%
Using repellent/bug spray/anti-tick products	27%
Conducting tick checks after being outdoors	24%
Wearing closed-toe shoes	23%
Tucking pants into socks	19%
Never use protective measures	12%
Keeping grass on property cut low	12%
Wearing light coloured clothing	11%
Pretreating clothing with repellent	9%
Using preventive treatment on dog/pet	6%
Removing debris on property (e.g., weeds, woodpiles, etc.)	5%
Checking/grooming dog/pet	4%
Avoiding bush, wooded and shrub areas	2%
Avoiding grassy areas	1%
Wearing special/proper clothing	1%
Shaking off clothing when at destination/inside	1%
Washing off with rubbing alcohol/peroxide	1%
Other	2%
Don't know	3%

About one-quarter (24%) of respondents check skin for ticks after being outdoors. This finding is comparable with other studies. Some barriers for not checking skin for ticks may be low perceived personal risk as already mentioned, and lack of knowledge as to how to recognize and identify a tick.

On the other hand, 27% of respondents reported using repellent /bug spray/anti-tick products on themselves and in some cases pretreated their clothing with repellent (9%). This finding is consistent with other studies undertaken in Brazil and the US where 34% and 31% of respondents respectively used insect repellent skin products for protection against Lyme disease. One of the barriers for not using insect repellent identified in both studies cited is the belief that the products could make them ill. This underscores the need for people to believe in the effectiveness of a recommended behaviour, along with appropriate knowledge on the subject.

As the table below illustrates, there appears to be a strong correlation between high awareness (“very aware”) and perceived risk of Lyme disease (“very serious” problem) and uptake of preventive measures.

What preventive measures or behaviours do you take to ensure that you and your family are not bitten by infected ticks? (N=400)			
Preventive Measure	“Very aware” (n=241)	“Very serious” (n=281)	Always conduct daily tick checks (n=222)
Wearing long trousers (35%)	40%	36%	41%
Wearing long-sleeved shirts (30%)	34%	31%	36%
Avoiding areas where ticks are present (28%)	26%	28%	25%
Using repellent/bug spray/anti-tick products (27%)	31%	30%	31%
Conducting tick checks after being outdoors (24%)	27%	26%	27%
Wearing closed-toe shoes (23%)	27%	22%	25%
Tucking pants into socks (19%)	21%	20%	22%
Never use protective measures (12%)	8%	9%	8%
Keeping grass on property cut low (12%)	14%	13%	14%
Wearing light coloured clothing (11%)	13%	11%	15%
Pretreating clothing with repellent (9%)	12%	10%	13%

Check yourself when you are in woods or grassy areas.

The table below shows the preventive measures most often adopted by respondents according to gender (where applicable) and demographic characteristics.

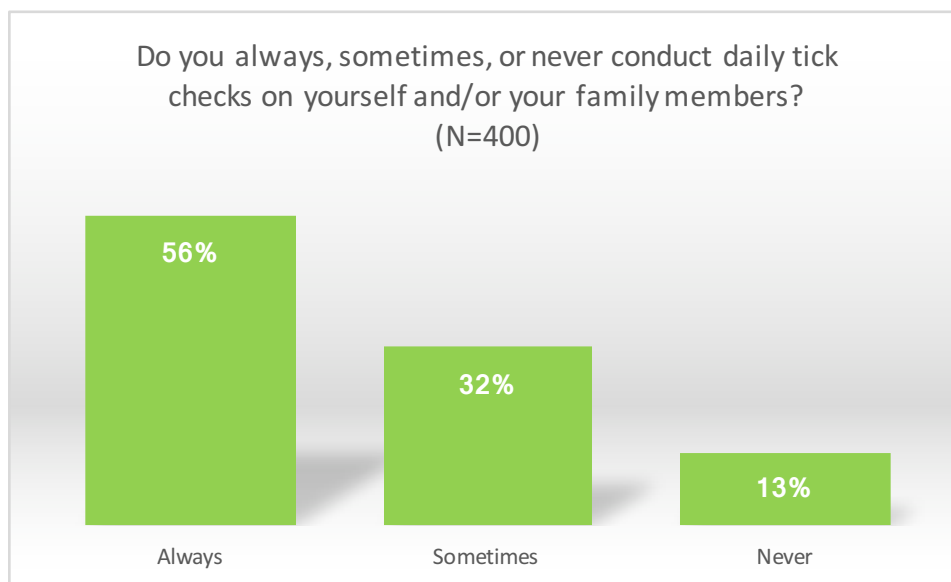
What preventive measures or behaviours do you take to ensure that you and your family are not bitten by infected ticks? (Top responses only) (N=400)	
Preventive Measure	Population Characteristics
Wearing long trousers (35%)	18 to 29 years of age (59%)
Wearing long-sleeved shirts (30%)	18 to 29 years of age (54%) \$80K or more (37%)
Avoiding areas where ticks are present (28%)	Fairly consistent across all age, education, and income groupings
Using repellent/bug spray/anti-tick products (27%)	18 to 29 years of age (51%) \$50K-\$79K (36%)
Conducting tick checks after being outdoors (24%)	45 to 59 years of age (33%)
Wearing closed-toe shoes (23%)	18 to 29 years of age (49%) \$80K or more (28%)
Tucking pants into socks (19%)	Females (23%) 18 to 29 years of age (23%) Some trade/technical college/university (26%)
Never use protective measures (12%)	30 to 44 years of age (16%)
Keeping grass on property cut low (12%)	N/A
Wearing light coloured clothing (11%)	18 to 29 years (28%)
Pretreating clothing with repellent (9%)	18-29 years of age (33%) 80K or more (17%)

One-quarter (25%) of respondents who indicated that Lyme disease is somewhat/not very serious never use protective measures and never conduct daily tick checks. These respondents are more likely to report rarely going outside/into the woods (32%), and to believe Lyme disease and ticks are not a problem (21%).

Older respondents, or respondents 60 years of age and older are less likely than other age groups to use repellent, conduct tick checks after being outdoors, tuck pants into socks and wear light coloured clothing. Males are less likely than females to tuck pants into socks, or use bug repellent. Younger respondents are less likely to conduct tick checks after being outdoors, and respondents in the 30 to 44 age category are less likely to avoid areas where ticks are and wear light coloured clothing, but more likely to never use protective measures. Those earning less than \$50K per annum are also less likely to use protective measures.

DAILY TICK CHECKS

Respondents were reminded that the best way to prevent exposure to infected ticks that cause Lyme disease is to conduct daily tick checks and then asked whether they always, sometimes or never conduct daily tick checks on themselves and/or their family members. Fifty-six percent (56%) indicated they always conduct daily tick checks, 32% sometimes conduct daily tick checks, and 13% never conduct daily tick checks (this was more prevalent in the 60 and over population (18%).



Protect yourself. Do the checks.

The overall incidence of self-reported daily tick checks is fairly low, despite the fact that removal of a tick within 24 hours may effectively prevent transmission of the bacteria and infection associated with Lyme disease. And, gender plays an important role in propensity to engage in daily tick checks – females are more likely to always conduct daily tick checks (58%) than their male counterparts (53%).

Higher levels of knowledge and awareness and moderate/high levels of concern (as indicated by perceptions of Lyme disease severity) are significant predictors for checking the skin. There is a positive correlation between higher level of knowledge and awareness and the propensity to engage in protective behaviour such as daily tick checks. For example, 60% of “very aware” respondents, 72% *always* conduct daily tick checks. This suggests that lack of awareness of ticks and Lyme disease may increase the risk of disease and decrease adherence to this simple yet effective preventive practice.

The table below shows key populations always likely, somewhat likely and least likely to engage in daily tick checks:

Do you always, sometimes, or never conduct daily tick checks on yourself and/or family members? (N=400)	
Frequency	Population Characteristics
Always (56%)	High school or less (61%)
Sometimes (32%)	Some trade/technical college/university (39%)
Never (13%)	60 years or more (18%) \$50K or less (18%)

Barriers

A disconnect exists between those that believe Lyme disease is a serious or very serious disease, and motivation to engage in the simplest of prevention strategies, such as the daily tick check. Many are of the belief that ticks *only* reside in wilderness, wooded and grassy areas so therefore a daily tick check is perceived as a meaningless or moot exercise. While 46% indicate they only conduct tick checks after they have been in wooded, grassy (2%) or “risky” area (5%), another 16% indicate they rarely go outside or venture into the wilderness or woods. This finding underscores the importance of creating educational and awareness messaging that focuses on the fact the “ticks are everywhere” not just in wooded, grassy, or wilderness areas.

One in ten (11%) simply “couldn’t be bothered” as daily tick checks constitute too much work and are viewed as a hassle, 9% believe Lyme disease is not a concern and that ticks do not pose a problem, 6% often forget, 6% report not being exposed to ticks, 5% do not check if not in risky areas, 2% only conduct checks after being in grassy areas, 2% report being able to feel ticks when they are on them so no need for them to always check, and/or 1% maintain ticks are too small to find.

Most of the time you are bit before even seeing them because they are so small.

It is not something that is a huge concern of mine. I am not worried about ticks.

What is the main reason you sometimes or never conduct daily tick checks on yourself and/or your family members?
(N=177)

Reason	Percentage of Total
Only conduct checks after being in wooded areas	46%
Inactive/disabled – rarely go outside into woods/wilderness	16%
Couldn't be bothered – too much hassle	11%
Lyme disease is not a concern; Lyme disease is rare; ticks do not pose a problem	9%
Often forget – absent-minded	6%
Not exposed to them; not in areas where ticks are	6%
Depends on the location or activity; do not check if not in risky area	5%
Only conduct checks after being in grassy areas	2%
Can feel them when they are on me so no need to always check	2%
Ticks are too small to find	1%
Frequency of testing based more on season	1%
Other	1%
Don't know	5%

As mentioned, for 9% of respondents, ticks and Lyme disease do not constitute a concern; the disease is viewed as rare. This suggests that a portion of the public underestimates their personal risk for tick bites and Lyme disease and find the process of daily skin checks for ticks as an overly exaggerated measure of protection. This thinking feeds into their beliefs that their own susceptibility to this seemingly innocuous health threat, including their perceptions about the threat severity, and the benefits or barriers associated with protective actions, such as daily tick checks, is key to determining whether the action will (or will not) be adopted.

Understanding perceptions of individuals are central to increasing uptake of preventive measures and behaviours:

- Do individuals view ticks and Lyme disease as a *personal* health threat?
- How *severe* is the perceived threat?
- What are some of the perceived *benefits and barriers* associated with protective action, such as daily tick checks?

Motivators

Overall, the main motivators as to why respondents engage in protective measures and behaviours correlate strongly with their high level of awareness and their belief that Lyme disease is a very serious problem. This in turn leads to personal feelings of responsibility regarding their own health and the belief that there is a high chance or probability of being bitten by an infected tick.

ACTION TAKEN IF BITTEN BY AN INFECTED TICK

Tick bites often go undetected because the initial bite is usually not felt and the effects resemble those of a mosquito bite. It takes 3 to 30 days for signs and symptoms of Lyme disease to appear, which is why the infection is often overlooked. It is recommended that prompt medical attention should be sought after being in a grassy or wooded area symptoms if fever, fatigue, muscle aches and headaches and/or a rash (particularly a bullseye shaped rash) develop. However, the rash associated with Lyme disease is not always in the typical bullseye shape.

Sixty percent (60%) of respondents, if bitten by an infected tick, would immediately visit a doctor, emergency room, walk-in clinic, 58% would try to remove the tick if still visible, and/or 22% would take a “wait and see” approach.

If bitten by an infected tick, what action would you take? (N=400)	
Action	Percentage of Overall
Visit doctor/emergency room/walk-in clinic immediately	60%
Remove tick if still visible	58%
Wait and see	22%
Watch for red bullseye/ring	7%
Clean (bite) area with peroxide/soapy water and apply Polysporin/Vaseline	3%
Keep tick for identification	3%
Nothing	2%
Watch for flu-like symptoms/sluggishness	1%
Other	1%
Don't know	2%

Be on the lookout for the red bullseye, swelling and rash.

Remove with a tick remover or tweezer; keep the tick in case it is infected.

Use a match to get them out.

You are tired all the time, and you get weaker.

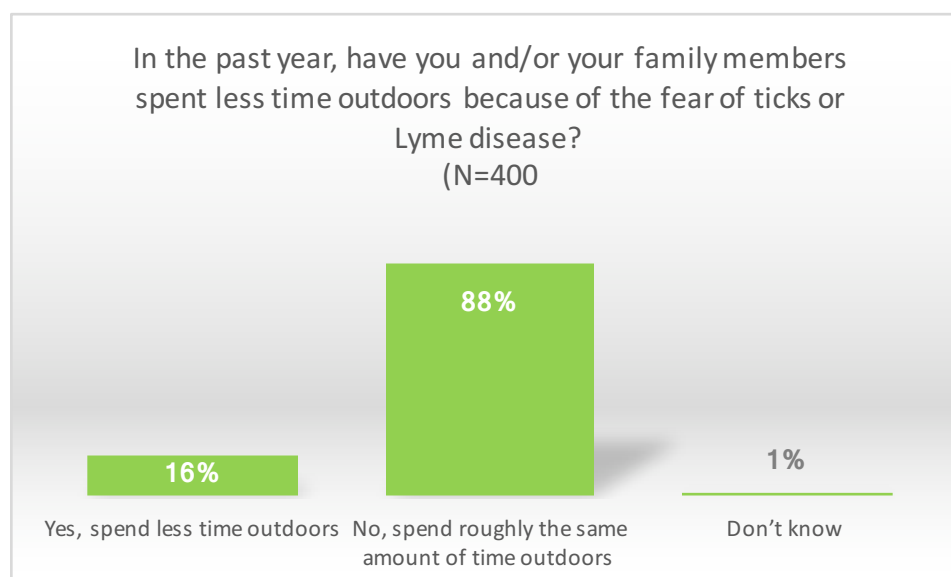
See a doctor if bitten; go to the hospital if you have a tick on you.

The table below shows the top three actions taken in the event of a tick bite, along gender (where applicable) and demographic lines:

If bitten by an infected tick, what action would you take? (N=400)	
Action	Population Characteristics
Visit doctor/emergency room/walk-in clinic immediately (60%)	Females (64%) 45-59 years of age and 60 years of age or more (64% respectively) High school or less (67%)
Remove tick if still visible (58%)	Males (62%) 30-44 years of age (67%) \$80K or more (70%)
Wait and see (22%)	18-29 years of age (46%) \$80K or more (30%)

FEAR OF TICKS AND LYME DISEASE AND IMPACT ON OUTDOOR ACTIVITIES

The impact on outdoor activities as a result of fear of ticks and Lyme disease was explored. In other words, does information on ticks and Lyme disease cause fear and the undesirable effect of causing residents to avoid the outdoors or outdoor activities? It would appear that 16% of the population surveyed, increased awareness has curtailed their outdoor activity resulting in a decrease in outdoor activity. This suggests that the vast majority (84%) are inclined to engage in some form of preventative measure against tick bites than to avoid tick risk locations. That said, almost three in ten (28%) respondents indicated that they protect themselves by avoiding areas where ticks are present and 3% avoid wooded, grassy, bush and shrub areas.



Those more likely to spend less time outdoors because of the fear of ticks and/or Lyme disease are females (19%), between 45-59 years of age (21%), university/college graduates (18%), and those with an annual household income of \$50K or less (19%).

Cannot stop living. Check yourself.

Acquired Information

In order to gauge the reach and effectiveness of information pertaining to ticks and Lyme disease in Lunenburg County, we asked respondents to recall messages they had read, seen, or heard in the past year including information sources. This was an *unaided recall* test whereby respondents were not given any clues, but recalled the information from memory alone.

MESSAGE RECALL

In the past year, just over eight in ten residents (82%) saw, heard or read something related to ticks and Lyme disease in Lunenburg County. Specific message recall centred on the following broad themes:

Awareness and Vigilance (27%)

Importance of being aware and vigilant.

Be aware of ticks in the area.

How Lyme Disease is Contracted (17%)

How Lyme disease is contracted including types of ticks (i.e., kinds, types, sizes, and species of ticks), what ticks look like before and after swelling, along with types of animals that carry ticks.

Where you can get it from.

Different types of ticks.

Deer tick is the most common tick to carry Lyme disease.

Ticks are out in full force and Lyme disease has gone up. Now we have the Colorado Tick or Rocky Mountain Tick. There have been a few cases of Rocky Mountain Fever. There seems to be a lot of new kinds of ticks in the area. New types of ticks on the go. New strains of Lyme disease.

New types of ticks.

Prevention (General – Non-Specific) (16%)

Generalized ways to combat risk through non-specific preventive measures.

How to prevent being bitten and infected (with Lyme disease)

Lyme Disease is Serious and Growing (16%)

Lyme disease is serious and life altering; Lyme disease is increasing/becoming more widespread; high incidence of Lyme disease in Lunenburg County – Lunenburg County is a high-risk area for ticks and Lyme disease; ticks are everywhere.

Ticks are becoming a problem we need to address.

Lunenburg is in trouble.

Prevalence of ticks in the area that carry Lyme disease.

This issue has been overlooked – it is serious for people's health.

Importance of Daily Tick Checks (14%)

Importance of daily tick checks, along with how to check for ticks.

Inspect yourself every night.

Check daily.

Do daily inspections.

Signs and Symptoms of Lyme Disease (14%)

Signs and symptoms of Lyme disease – red bullseye, swelling, rash, fatigue and weakness.

Most likely to cause a bullseye rash.

Bullseye rash does not always appear, but nausea does.

Keep an eye for red areas.

It affects people in different ways.

It takes a long time to appear.

If you have a rash or a bite, it is advisable to get it checked as quickly as possible because it causes a lot of negative internal impacts.

What to do in the Case of a Tick Bite (13%)

What to do in the event of a tick bite; how to remove a tick; circling tick bites and saving ticks for identification in the case of infection.

Tag it and bag it.

Be careful removing them if you get a bite.

Always remove ticks; circle them.

How to identify a tick, remove a tick without destroying it; how to save a tick.

There are many different ways to remove them.

Real Life Stories (10%)

Real life stories of people, friends and family members (and pets) suffering from Lyme disease.

Three people we know have it.

Locations and Time of Year When Ticks are Most Active (9%)

Locations where ticks can often be found and areas to avoid such as wooded, grassy areas; time of year when ticks are more common (Spring to Fall); ticks are now found year-round – no longer a seasonal problem.

Places to stay away from; places to avoid; where ticks can be found.

Do not go into long grass.

Where outbreaks are happening.

Specific Prevention/Protective Measures (6%)

Specific prevention/protective measures – wear high socks, wear light coloured clothing, wear long sleeves and long pants, conduct tick checks, use insect repellent, pull socks over pants, shake boots off, wear rubber boots, and/or wear a hat.

Wear high socks.

Wear light coloured clothing

Wear long clothes.

Check yourself regularly.

Check yourself after being outside.

If you have been in a wooded area, check before you retire to bed.

Use repellent.

Shake off boots.

If you are going into grassy or wooded areas, wear long clothing.

Pull socks over your pants (but they still can get in).

I have seen people put sprays on and stuff and they still get them.

Diagnosis and Treatment (6%)

Some blame has been placed on the medical profession's failure to diagnose and treat the range of symptoms often presented when a person is infected with Lyme – ailments that often seem to be subjective, with no physiological cause making diagnosis more difficult. Medical professionals need to be more diligent in treating Lyme disease; there is not a good test for diagnosing Lyme disease; Lyme disease is overlooked; lack of medical knowledge; not enough known about Lyme disease therefore Lyme disease is not taken seriously enough; doctors unaware of what to do; new strains of Lyme disease are emerging.

When you don't feel good and you think you might have Lyme disease don't let anyone convince you that you don't until you are actually tested.

It is a serious disease and I don't think our doctors know what to do about it. Basically, Nova Scotia doctors are misdiagnosing Lyme disease. The medical community is unsure about the implications and treatment. The medical profession needs to be more diligent in treating the disease.

Mixed, Contradictory Messages (2%)

Mixed and confusing messages – misconceptions and misinformation. Some say ticks and Lyme disease are not a major problem, some feel it is; fallacy that ticks are seasonal; “untrue stuff” and “scare tactics.”

Overpopulation of Deer Contributing to the Problem (2%)

Overpopulation of deer are contributing to the problem. There is a need to cull deer carrying ticks into the area. In an effort to control deer populations, deer feeders have been outfitted with toxic bait to kill ticks and decrease tick populations.

We are overrun by deer; numerous ticks as a result.

Do not feed the deer.

Provincial Financial Support to Deal with the Issue (2%)

Municipality trying to force response from provincial government about the issue of ticks and Lyme disease, along with the lack of financial support to deal with the issue.

The table below shows the messages recalled by message content.

Can you tell me in your own words what the message was? (N=327)	
Message	Percentage of Overall
Be careful/vigilant/aware	27%
How one gets Lyme disease	17%
Prevention (general)	16%
Lyme disease is common, life altering and serious – ticks are everywhere	16%
Importance of tick checks including daily tick checks; how and where to check for ticks	14%
Signs and symptoms of Lyme disease	14%
What to do in the case of tick bite	13%
Stories about people, friends, family members, pets who have contracted Lyme disease	10%
Locations where ticks can be found; time of year most people are bitten; places people should avoid; ticks are no longer seasonal problem	9%
Specific prevention/protective measures	6%
Diagnosis and treatment of Lyme disease	6%
Mixed and confusing messages, misconceptions and misinformation	2%
Overpopulation of deer bringing ticks contributing to the problem	2%
Municipality forcing response from NS government around issue; lack of provincial government financial support	2%
Other	4%
Don't know/cannot recall	11%

The way residents seek, obtain, evaluate, categorize, and use relevant health-related information to perform desired health behaviours, such as daily tick checks, etc., is a critical prerequisite to appropriate and consistent performance of daily tick checking behaviour. With respect to gender, the study clearly identified males are less predisposed to engage or acquire information about ticks and Lyme disease. In contrast, the study data shows women are more aware, hence probably more interested in and more frequently engage in seeking information ticks and Lyme disease. Thus, to succeed in building an effective public education and awareness campaign, measures should be taken to address the gender gap.

The findings also suggest that certain genders and demographic groups ought to be specifically targeted according to message as outlined in the table below:

Target Audience by Specific Message (N=327)	
Message	Target Audience
Be careful/vigilant/aware (27%)	18-29 years of age (19%) High school or less and some trade/university/technical college (22% respectively) \$50K or less per annum (21%)
How one gets Lyme disease (17%)	18-29 years of age (9%)
Prevention (general) (16%)	60 years or more (9%) High school or less (11%)
Lyme disease is common, life altering and serious – ticks are everywhere (16%)	18-29 years of age (9%)
Importance of tick checks (14%)	Males (10%) 18-29 years of age (6%) High school or less (7%)
Signs and symptoms of Lyme disease (14%)	N/A
What to do in the case of tick bite (13%)	Some trade/technical college/university (9%)
Stories about people, friends, family members, pets who have contracted Lyme disease (10%)	30-44 years of age (7%) University/college graduates (7%) \$80K annual household income (6%)
Locations where ticks can be found; time of year most people are bitten; places to avoid; ticks no longer seasonal (9%)	Males (4%)
Specific prevention/protective measures (6%)	Some trade/technical college/university (2%)

More research needs to be undertaken to better understand information that is inaccurate, contradictory and confusing.

I did some research on it last year so I had a wide range of opinions that I heard from controlling them is getting much worse to the fact that it is increasing but not getting worse. I have seen the hysteria on social media about it as well.

One compelling but controversial theory about the sudden emergence of the disease in Lyme, Connecticut (ground zero) was mentioned by *one respondent*. This theory posits that Lyme disease emerged as the result of an accidental release of infected ticks during experiments at Plum Island Animal Disease Centre, on Long Island Sound about eight miles south of Lyme.

I heard it was created by the US Biological Warfare Department. It was kept away from the public on a place called Plum Island. They were experimenting with animals there trying to find out a way to spread Lyme disease.

Lyme disease is caused from bears.

Misconceptions I heard that are not true.

Some untrue stuff. Some of the information is scare tactics.

INFORMATION SOURCES

In the past year, just over half (51%) of respondents received information on ticks and Lyme disease in Lunenburg County from newspapers, followed by online/internet sources (27%). While one in ten (10%) obtained information from posters, 9% obtained the information from the radio, and 7% obtained information through family and friends.

Specific Types and Sources of Information (N=327)	
Media	Sources
Newspaper (51%)	<ul style="list-style-type: none"> Chronicle Herald (34%) The Lighthouse (32%) Bridgewater Bulletin (16%) The Breaker (15%) The Progress Bulletin (14%) Local paper (general) (5%) The Bulletin (5%) Masted News (1%) Other (1%) Other (magazine, online website) (2%) Don't know/cannot recall (11%)
Online site (27%)	<ul style="list-style-type: none"> News websites (38%) Social media websites (30%) Provincial government website (22%) Municipal/community websites (8%) Google search (6%) Natural Resources website (1%) Provincial health website (1%) Other (1%) Don't know/cannot recall (16%)
Poster (10%)	<ul style="list-style-type: none"> Vet's office (38%) Doctor's office (25%) Hospital (9%) Municipal/community offices (9%) SPCA (6%) Other (9%) Don't know/cannot recall (25%)

Specific Types and Sources of Information (N=327)	
Media	Sources
Radio (9%)	CKBW (20%) 103.5 (13%) C100/100 FM (10%) 105.9/Seaside FM (7%) 89.9/ Hal FM (7%) CBC (3%) Other (7%) Don't know/cannot recall (37%)
Doctor's office/hospital (7%)	N/A
Family and friends (7%)	N/A

On Facebook, people are sharing things about prevention.

There is more literature at the vet's office on tick prevention than anywhere else.

Natural Resources Department put out pamphlets about awareness.

I have seen information on Facebook about increased sightings of ticks – more so in populated areas.

Pamphlet from the drug store.

Warning signs posted at lakes.

I work around farms and Christmas trees so we tend to get a lot of information distributed to us that way.

Sign at campground reminding you to check for ticks.

Word of mouth and sharing information with others.

There was a pamphlet at the doctor's office with steps on how to remove a tick and what to look for.

I saw pictures of what ticks look like just from talking to my hunting friends; we talk about it.

I received something in the mail, but I don't recall the details.

Attended town hall meeting on this issue.

Most of it has been word of mouth.

The table below provides a profile of populations most likely to use specific media to obtain information on ticks and Lyme disease.

Specific Types and Sources of Information by Awareness and Perceived Severity (N=327)			
Media	Population	"Very aware" of ticks and Lyme disease (n=205)	Lyme disease is "very serious" (n=238)
Newspaper (51%)	18-29 years of age (69%) 60 years of age or more (65%) \$50-\$79K (56%)	54%	52%
Online (27%)	45-59 years of age (32%) Some trade/technical college/university (33%)	29%	28%
Poster (10%)	30-44 years of age (16%)	8%	9%
Radio (9%)	N/A	N/A	N/A

Appendix A: Survey Instrument

Hello, my name is _____ from Refresh Market Research, a Halifax-based market research company. We are calling on behalf of the Municipality of the District of Lunenburg and we are interested in speaking to individuals, between 18 and 59 years of age living in Lunenburg County to find out about their level of awareness of ticks and Lyme disease. All information you or a member of your household provide will be confidential and anonymous.

May I speak with someone in your home 18 years of age and over whose birthday has most recently passed (for those households with more than one individual that would qualify for the survey)? (If asked about “last birthday”) – speaking to the adult in the home who has had the most recent birthday helps to ensure that we speak to a variety of different people who may not normally answer the phone.

Would that be you?

Yes, I am that person	01	Continue
No	02	Arrange call back

The interview will take about 5-6 minutes of your time. May I interview you now?

Yes.....	01	Continue
No	02	Arrange call back

Record gender (by observation)

Female.....	01
Male	02

Are you a resident of Lunenburg County?

Yes.....	01	Continue
No	02	Thank & terminate

If no - “for this study, we are only looking for residents of Lunenburg County. Thank you for your time.”

Knowledge and Awareness

1. To begin, how would you rate your level of awareness of ticks and Lyme disease. Would you say you are ... ?

Very aware;.....	01
Somewhat aware;.....	02
Somewhat unaware; or	03
Very unaware.....	04
Volunteered	
Don't know	99

Now, I am going to ask you some questions regarding your level of knowledge of Lyme disease. Please remember this is not a test; "don't know" is a perfectly acceptable response.

2. Ticks that infect a person with Lyme disease are most often found in what type of area? (Do not read; record all that apply.)

Grassy areas	01
Wooded areas	02
Marshy areas	03
Woodpiles	04
Everywhere	05
Other (specify)	06
Volunteered	
Don't know	99

3. In your opinion, are there specific seasons in Nova Scotia when ticks are more active, or are ticks active year-round?

Specific seasons	01
Active year-round	02
Volunteered	
Don't know	99

4. In your opinion, how *serious* is Lyme Disease? Would you say Lyme disease is a ... problem?

Not very serious;	01
Somewhat serious;.....	02
Serious; or	03
Very serious.....	04
Volunteered	
Don't know	99

(Rotate response code order)

Preventative Behaviour

This next section explores your behaviour around tick prevention.

5. What preventative measures or behaviours do you take to ensure that you and your family are not bitten by infected ticks? (Do not read; record all that apply.)

Wearing long trousers	01
Wearing long-sleeved shirts.....	02
Wearing closed-toe shoes	03
Wearing light coloured clothing	04
Keeping grass on property cut low	05
Removing debris on property (i.e., weeds, woodpiles, etc.)	06
Tucking pants into socks	07
Pretreating clothing with repellent.....	08
Using insect repellent/using bug spray	09
Avoiding areas where ticks are present	10
Never use protective measures.....	11
Other (specify)	12
Volunteered	
Don't know	99

6. The best way to prevent exposure to infected ticks that cause Lyme disease is to conduct daily tick checks. Do you ... conduct daily tick checks on yourself and/or your family members?

Always	01	Skip to Q.8
Sometimes.....	02	Continue
Never.....	03	Continue
Volunteered		
Don't know	99	Skip to Q.8

7. What is the main reason you sometimes or never conduct daily tick checks on yourself and/or your family members? (Do not read; record all that apply.)

Ticks do not pose a serious health problem	01
Only conduct checks after being in wooded areas.....	02
Lyme disease is rare	03
Lyme disease is not a concern.....	04
I couldn't be bothered; too much work/hassle	05
I am inactive/disabled – rarely go outside.....	06
Other (specify)	07
Volunteered	
Don't know	99

8. If you or your family member were bitten by a tick, what action would you take? (Do not read; record all that apply.)
- Visit doctor/emergency room/walk-in clinic immediately01
 - Remove tick if still visible02
 - Nothing03
 - Wait and see04
 - Other (specify)05
 - Volunteered
 - Don't know99
9. In the past year, have you and /or your family members spent less time outdoors because of the fear of ticks or Lyme disease?
- Yes, spend less time outdoors; or01
 - No, spend roughly the same amount of time outdoors02
 - Volunteered
 - Don't know/cannot say99

Acquired Information

Now a few questions about where you get your information about ticks and Lyme disease in Lunenburg County.

10. In the last year, have you seen, heard, or read anything related to ticks and Lyme Disease in Lunenburg County?
- Yes01 Continue
 - No02 Skip to Q.12
 - Volunteered
 - Don't know/cannot say99 Skip to Q.12
11. Can you tell me in your own words what the message was?
- Specify01
 - Volunteered
 - Don't know/cannot say99

12. Where did you see, hear, or read about ticks and Lyme Disease in Lunenburg County? (Don't read; record all that apply.)
- Newspaper (specify).....01
 - Poster (specify).....02
 - Heard about it on the radio (specify)03
 - Online (specify).....04
 - Other (record)05
 - Volunteered
 - Don't know/cannot remember99

Demographics

Finally, a few demographic questions to help us analyze the results of the survey. Remember all your responses are strictly confidential.

13. Into which of the following broad age categories does your age fall?
- 18-29 years01
 - 30-44 years02
 - 45-59 years03
 - 60 years and over04
 - Volunteered
 - Prefer not to say99
14. Which of the following best describes the highest level of education you have completed?
- Less than high school01
 - Graduated high school.....02
 - Some trade/technical college.....03
 - Graduated trade/technical college04
 - Some university05
 - Graduated university06
 - Post-graduate (i.e., Masters, PhD).....07
 - Other (specify)08
 - Volunteered
 - Prefer not to say99

15. Which of the following best describes your total household income in 2017, before taxes?

- Below \$20,000.....01
- \$20,000-\$49,99902
- \$50,000-\$79,99903
- \$80,000-\$149,99904
- \$150,000 and over05
- Volunteered
- Don't know/refused.....12

Thank you very much for participating in this study!



INFORMATION UPDATE

POLICY & STRATEGY MEETING

Date: May 15, 2018

Item No: 8.1.1

Authorization: K. Malloy

REPORT TO: Policy & Strategy Committee

SUBMITTED BY: Staff working Group on Lyme
Norma Schiefer
Britt Vegsund
Sherry Conrad
Alex Dumaresq
Sarah Kucharski

DATE: May 14, 2018

RE: Lyme Disease Project

BACKGROUND

In 2017, Council received presentations from Nova Scotia Public Health, the Public Health Agency of Canada (PHAC) and a staff working group on the issue of Lyme Disease. Three motions were passed, and an update on the work done to date on each motion is detailed in this memo.

Motion: Establish a partnership with the Public Health Agency of Canada on a project to assess the effectiveness of deer bait stations in reducing the tick population.

- MODL has received a shipment of bait stations delivered through a PHAC order.
- Staff are developing an RFP to secure a contractor able to refill the bait stations with corn and Permethrin and collect data. The RFP is being reviewed by PHAC and municipal legal and insurance advisors prior to release for bidding.
- Local feed store Shur-Gain has offered a discount on the purchase of corn.
- Dr. Lindsay will be coming to the province to install the bait stations; Council members will have an opportunity to meet with Dr. Lindsay in the field prior to the installation of the stations.

Motion: Seek a partnership with Nova Scotia Public Health to launch an aggressive public campaign to increase awareness and use of tick checks, which includes public information sessions.

Communications Goal:

- Increase overall awareness of actions MODL is taking to reduce the tick population.
- Increase awareness within MODL of the importance of tick checks.

Steps taken to date:

- Completed public benchmarking research to understand resident knowledge about ticks and Lyme Disease prevention. Results presented today by Sharon Archibald, Refresh Market Research.
- Local volunteers manned a booth at the Lunenburg Farmer's Market on May 3, along with Mayor Bolivar-Getson and Councillor Knickle. We spoke to hundreds of residents about their experiences with ticks and Lyme Disease, and encouraged them to conduct daily tick checks. Feedback from residents was very positive – they are very happy that the Municipality is engaging in both research and education, and many were aware of our work.
- Radio ads are currently running on local radio stations.
- Newspaper ads will begin mid-May and run until the end of summer.
- Facebook ads will begin mid-May and run until the end of summer.
- New signage has been distributed to Trails groups.

Motion: Advocate to provincial and federal officials on the importance of the development of vaccines to reduce the spread of disease borne by ticks.

- Mayor Bolivar-Getson had a positive meeting with our local MLAs to discuss Lyme Disease, including opportunities for provincial partnership
- Current focus has been on the development and launch of the bait station and public awareness projects.

To: Policy & Strategy Committee

From: Staff Internet Working Group
Trudy Payne,
Dave Waters,
Alex Dumaresq
Sarah Kucharski

Re: MODL's Internet Connectivity Strategy - Options Paper

Recommended Motion

Move that the Policy and Strategy Committee Direct Staff to prepare a Municipal Internet Connectivity Strategy Document based on the Committee discussion and present same to Council for Approval.

Background

In December 2016, the Canadian Radio-television and Telecommunications (CRTC) made a ruling that high speed Internet is a basic service, just like the telephone. Reliable Internet access is now a basic need, whether you are a student, a small business operator, or a resident trying to access government services.

Large sections of the Municipality do not have access to reliable high-speed Internet service. This is affecting our citizens' quality of life and is preventing new residents from moving to our communities. Through direct contact with Councillors on the doorsteps during the election and in our annual Your Government, Your Ideas meetings, residents have made it clear that access to high speed Internet is critical to the growth and success of the region. It's not simply fulfilling the desire for entertainment, high speed Internet is needed to participate in the economy, to attract residents and it is critical to protect the property value of rural homes. Increasingly, the education system requires students to have high speed Internet access for their studies, and residents also require it to complete basic government and societal interactions.

The Municipality has been one of the leaders in responding to community outcry. Access to high-speed Internet is of critical importance to the Municipality, and a key priority for our Council. The Municipality has been working hard to outline the extent of the issue, identify options, and make improvements to connectivity. An Internet Connectivity Strategy will take into consideration the provincial government's recently released Middle-Mile Strategy and will build on the knowledge and partnerships the Municipality has developed in pursuing the short-term opportunities.

Quick Glossary:

Backbone or Middle-Mile: Core infrastructure needed to bring internet service to communities. Most often the backbone is provided via fibre-optic cable. Using the analogy of roads, the backbone is the 100 series highway that connects local roads but does not connect directly to homes.

Canadian Radio-television and Telecommunications (CRTC): The CRTC is an independent public authority in charge of regulating and supervising Canadian broadcasting and telecommunications.

ISP: Internet Service Provider or ISP, in this report, the term ISP is used to refer to any private firm involved in providing internet service.

Last-mile: Internet technology that connect individual homes and businesses to “Back-bone” or middle-mile” infrastructure. A wide range of technology can be used to provide last mile connections, including Fibre to the home (FTTH), cable or telephone lines, fixed wireless, cellular systems. Using the analogy of Roads, last mile-technology are the local subdivision roads that connect homes to the bigger transportation network.

Mbps: Megabits per second or Mbps is the measurement of internet speeds. The majority of MODL properties currently have internet service below 1.5 Mbps download speeds, which is far below the CRTC standard.

Other governments response

Provincial Municipal and Community Group Rural High-Speed Internet Funding Program

The Municipal and Community Group Rural High-Speed Internet Funding Program launched in November 2016. This program helped groups partner with ISPs to make immediate improvements to last-mile service in communities across Nova Scotia. It provided up to \$75,000 per project. There was a strong response to the program and government was able to support 22 projects, with a total investment of approximately \$1.4 million.

MODL leveraged \$75,000 from this fund to create the Sweetland pilot project. In partnership with NCS networks, the municipality built a fixed wireless system that is currently providing 15 Mbps service to over 75 properties, with connections expected to grow.

Federal Connect to Innovate program

The Connect to Innovate program will invest \$500 million by 2021, to bring high-speed Internet to 300 rural and remote communities in Canada. This program supports new "backbone" infrastructure to connect institutions like schools and hospitals with a portion of funding for upgrades and "last-mile" infrastructure to households and businesses.

MODL worked in collaboration with Eastlink to submit a joint application to the fund to extend fibre up to Hemford. MODL Council also provided letters of support to ISPs submitting bids that would improve connectivity in the Municipality. Announcements for Southwest Nova Scotia are expected soon.

CRTC industry fund

The CRTC is establishing a fund to support projects in areas that do not meet basic service levels. ISPs will be able to submit funding proposals to build or upgrade infrastructure for fixed and mobile broadband Internet access services. The fund will make available up to \$750 million over the first five

years, be complementary to existing and future private investment and public funding, focus on underserved areas and be managed at arm's length by a third party.

Recent Provincial Announcement

In late March 2018, the Province announced \$120 million for Internet improvements, managed by an arm's length trust. The agency that will manage the trust is still being established so there is no concrete information on how these funds will be invested in projects. However, based on the information available to date, and the middle-mile strategy, it is expected the trust will expand and fill in gaps in the existing network of fibre and pursue last mile connections where possible. It is not expected to provide a province-wide network, and funds likely to go to existing ISPs like Bell, EastLink and others.

Current Situation

While pockets of funding are available, a complete solution to provide comprehensive coverage across the province has not been proposed by other partners. In addition, the combination of funds and approaches currently proposed is not likely to rapidly address those with the worst service today.

Our rural municipality has several challenges to connectivity, namely: MODL has a low density of connections compared to a town or a city; our topography of rolling hills and drumlins reduces the coverage provided by wireless technology; and the coverage is further reduced by the proportion of conifers which obstruct wireless signals more than a leafy canopy.

Based on civic address data and MODL Internet mapping research, we estimate up to 65% of properties do not have reliable high-speed Internet. We consider reliable high-speed Internet to be a minimum 10Mbps speed, with the ability to increase to CRTC standards.



MODL Actions To Date:

The Municipality has taken a very active role in researching the issues with current Internet service and developing solutions. This work has been critical in learning about options available to the Municipality, and leverage funding and opportunities to attract partners. Below is a short summary of the work completed to date, which includes:

- Completing a survey of residents to learn about connectivity issues;
- Developing an Internet map intended to identify areas of need;
- Securing \$75,000 from the provincial government for a fixed wireless pilot project;
- Constructing two telecommunications towers and partnering with NCS Networks to provide fixed wireless internet service in Sweetland and surrounding communities. The project currently provides 15Mbps service to 75 residents and continues to grow;
- Submitting a joint application with an ISP which would see the Municipality invest up to \$246,800 in internet infrastructure, through the Connect to Innovate CTI fund, if approved by the Federal Government;
- Providing letters of support for two additional project applications made by other ISPs to the CTI Fund;

- Partnering with the Municipality of Chester and the Region of Queens to commission a report from iValley on the feasibility of an Internet solution. This information is needed to inform the development of the Municipality's Internet Connectivity Strategy;
- Council has committed to a Canadian Internet Registration Authority (CIRA) study, in partnership with the Municipality of Chester and the Region of Queens, which will more accurately map Internet speeds and service gaps;
- Continuing to work with potential public and private sector partners to identify potential projects that will expand high speed Internet service in the Municipality.

Council is also preparing to develop more projects with partners to expand access to high speed Internet in 2018/19 and beyond. This year's budget includes \$500,000 in capital and operating funds to invest in a long -term strategy and individual projects that will help expand access to reliable high speed Internet. The outcome of this report and Council's discussions will be a multi-year strategy that will guide the selection and execution of projects that will expand connectivity in the municipality each year.

Key Elements of a Municipality Internet Connectivity Strategy

Municipal Role

When the Municipal Government Act (MGA) was written in the late 1990s, there was not thought that municipalities would have some form of responsibility for access to high speed Internet service. The Act does give Councils broad authority to work for the betterment of their community and to work to foster economic development. Municipal governments across the country are grappling with how they fit in the constellation of partners who may be involved in expanding this critical service. Based on inter-jurisdictional research, and the approaches of the federal and provincial governments, below is a spectrum of roles that Council may choose for MODL. At the direction of Council, the Municipality can strive to fulfill one or more of these roles.

- **Advocate and facilitator**

The Municipality has been a strong advocate on this issue for several years now. Municipal research, meetings with ministers and private sector partners have been effective in helping shape some of the funding programs and creating opportunities for concrete improvements in MODL. Council can choose to continue to engage in research and advocate for improved Internet service in the Municipality, and continue to commit staff time to exploring and facilitating Internet projects in the community.

This could be the extent of municipal involvement in the issue, or it could be paired with other roles that involve more direct investment of municipal funds and resources.

- **Invest in Private Infrastructure**

The Municipality may decide that in order to create concrete improvements in access to high speed internet service, direct financial investment is required. One form that this could take would be through direct investment in privately owned infrastructure. Under this approach, the Municipality seeks out ISPs who have interest in expanding service and invests municipal funds to offset capital costs. The municipal contribution either allows the project to proceed or expands the area the ISP is willing to serve. Some notable features of this approach include:

- Beyond the initial capital investment, MODL does not bear any responsibility or liability for the infrastructure. The maintenance, operation, and eventual asset upgrades and replacement are the responsibility of the ISP.
- A service agreement is put in place that requires the private sector ISP to meet minimum speeds for customers and to provide reports demonstrating these speeds are being met. Penalties are included in the contract to ensure the ISP is providing the minimum required service for the life of the agreement.
- Other than ensuring the provider does not cap the Internet service, or charge higher rates than other customers, MODL does not intervene in the operation or pricing of the service

The Joint Connect to Innovate (CTI) application with Eastlink is an example of this type of project. Some notable features of this approach include:

- **Build infrastructure and Lease to an ISP**

MODL May choose to expand internet infrastructure by seeking partners to construct assets, and then leasing those assets to an ISP who will operate the system and provide service to customers. Under this type of project, the Municipality retains greater control of the assets, however, the Municipality bears more responsibility for the upgrade and asset management of the infrastructure.

- The Municipality is more involved in the design and construction of the asset, requiring more municipal resources to launch the project.
- The lease agreement with the ISP requires the provider to meet minimum speeds for customers and to provide reports demonstrating these speeds are being met. Penalties are included in the contract to ensure the ISP is provided the minimum required service for the life of the agreement.
- Some potential partners (such as landowners with high elevation) are more willing to partner and lease property for towers with the municipality than with a private sector ISP.

The Sweetland Fixed Wireless Pilot Project is an example of this type of project.

- **Build and operate Internet Infrastructure**

MODL may choose to forgo partnership with a private ISP and construct and operate an Internet service. This approach would involve a greater role for the municipality, requiring municipal staff to maintain, market and operate the service. Some notable features of this approach include:

- Currently MODL does not have the staff resources or the expertise to manage an internet utility. The utility and staff would have to be created.
- The Municipal utility would be in competition with private companies in some areas of the municipality.
- While funding from other governments might be sourced for such a project, there is no opportunity to leverage private sector investment.
- MODL would control operate, market and maintain the network. Pricing would be established by the Municipality.

MODL does not have a project in this category, however, there are examples in Canada. For example, Stratford Ontario owns and operates a municipal internet utility.

Options for identifying projects

To date the infrastructure projects proposed or undertaken to expand internet were developed to respond to provincial or federal grant applications. Due to the restricted timelines, the Municipality did not have the opportunity to complete a competitive procurement process, and exercised authority provided under the alternative procurement sections of the procurement policy. Council has authorized staff to prepare and release a public call for ISPs interested in developing projects that will expand connectivity in the Municipality. The process will help identify qualified partners who can work with MODL to provide last mile connections.

To evaluate the merits of any individual project proposed to be undertaken with municipal support, Council should establish standard criteria to be applied to projects. Some options for consideration include:

- The number of new high-speed connections created by the project. This figure should include both upgrades from little or no service (e.g. 1.5Mbps or less) as well as upgrading connections to a service that is above 10Mbps.
- The potential economic development impact. For example, greater priority would be given to projects where identifiable business expansions, creations, or relocations may improve Internet service.
- Projects that include some increase in the number of fibre-based connections, because of the capability for fibre-based solutions to provide “future-proofed” service.
- The total cost and amount of non-municipal funding available for the project. With the range of grants available for Internet projects, and the potential for non-government funding from an ISP partner, the Municipality should not be required to be the sole financial investor in a project. Projects that have a smaller municipal share of the total budget and a lower cost per connection are more cost effective for the Municipality.

Council also may wish to establish a recommended maximum percentage of municipal contribution, and/or a maximum recommended municipal cost per connection. For example, the Sweetland project involved a municipal contribution to the capital project of slightly more than 40%. The Proposed CTI project extending fibre if approved as proposed requires a municipal share of slightly more than 12%.

- The feasibility of project proposal should also be considered when prioritizing projects. This could be impacted by a number of factors including:
 - Ease of locating and connecting infrastructure;
 - Proposed ISP’s ability to complete installs and provide service; and
 - Length of time required to construct the project and connect the proposed client base.

Options for sourcing Municipal Funding

If the Municipality is to be a direct funding partner in Internet projects, funding must be provided from a reasonable source of municipal revenue. Below are some possible sources and an indication of the scale of projects permitted from that source.

- **No municipal funding**
Should council adopt the role of researcher and advocate, then there is no need to dedicate a source of municipal funding. Such an approach limits MODL's ability to attract partners and access funding from other governments, but preserves municipal dollars for other priorities.
- **Fund from within existing financial resources:**
The current Five Year Financial Strategy includes annual capital budget of \$250,000 for Internet-related projects coming in part from gas tax revenue. The existing plan also includes the possibility of an additional \$250,000 per year from general operating revenues for projects should opportunities become available.
- **Area Rates**
Area rates have been suggested as a means to recover tax revenue from areas benefitting from the Internet projects. Preliminary analysis suggests that this approach will not generate sufficient revenue without additional use of general rate or gas tax revenue. There are additional fairness issue with this approach as it penalizes rural residents for choosing to live in more rural areas, and there will be properties that will have the area rate applied to their tax bill, without being able to access the service.
- **User Pay**
Another potential source of funding could be to negotiate with partner ISPs to charge a tariff on top of fees to fund future expansions. While this would directly target properties using the service, it would generate even less funds than the area rate approach and would have a much longer period of time required to recover funds. This approach also shares the drawback of areas that it will penalize rural residents who aren't already connected.
- **General rate increase:**
A final option for Council to consider would be to adopt a general rate increase in a future budget and dedicate the revenue to internet infrastructure. A one cent increase would produce approximately \$265,000 in additional revenue. This approach should only be considered if there is a project requiring municipal funding that would provide a major increase in percentage of properties connected (e.g. greater than 80% of properties in MODL would have access to high speed Internet).

Proposed Direction

The staff working group has outlined the broader elements of an proposed Internet Connectivity Strategy based on the information summarized above and are seeking direction from the Policy and Strategy Committee on what elements require clarification, adjustment or revision.

Municipal Role:

- Continue to **Advocate** for funding and action from the Federal government, the Provincial government and the CRTC, and continue to advocate for better service from ISPs.
- Continue to **Research** to prepare “shovel-ready” projects. This research would aid in the preparation of proposals that will meet eligibility requirements of other funders (e.g. CIRA Study).
- Use a competitive procurement process to identify qualified partners for expanding high speed coverage. This will allow MODL to:
 - **Invest** in private infrastructure that will expand coverage (with appropriate performance conditions); and/or
 - **Build** municipally-owned infrastructure leased to an ISP.
- Develop projects and proposals that will **Leverage** funding from public and private partners (e.g. federal government, provincial, CRTC and ISPs)

Criteria for Selecting New Projects

The Municipality should evaluate potential projects based on the following proposed criteria, giving preference to projects:

- With a greater number of connections, particularly connections that upgrade areas receiving internet service at 1.5Mbps or slower;
- With greater potential economic development impact;
- That increase the number of fibre-based connections;
- That lower the municipal share of costs by leveraging funding from other levels of government and ISPs;
- With a lower municipal cost per connection; and
- With greater feasibility of timely completion.

In addition to the proposed criteria for evaluating projects, there are some fundamental requirements that staff recommend be included as mandatory requirements for any project, including:

- MODL will not proceed with a project where it is the sole funder;
- MODL will not partner on projects that provides capped service;
- MODL will not partner on projects that cannot provide at least 10Mbps download speed with the capability to expand to meet CRTC guidelines; and
- MODL will not partner on projects where the ISP will not sign an agreement committing to minimum service levels.

Municipal Funding:

- MODL has the ability to work within existing municipal revenue streams and still make sizeable progress in increasing access to high speed Internet. The current Five Year Financial Strategy will permit Council to invest up to \$500,000 each year for Connectivity projects, should projects and funding partners be available.
- Council may consider additional investments, but this would only be considered if a proposed project had the capability of significantly increasing the percentage of properties receiving high-speed Internet.

Conclusion

The proposed direction for an Internet Connectivity Strategy are based on numerous Council and Committee discussions, public engagement, research with various partners, Provincial and Federal funding opportunities and reports, and practical experience gained with the Sweetland pilot project. Council must carefully debate the options and provide direction to staff on elements to be incorporated in the final Internet Connectivity Strategy.

Staff will prepare a draft Internet Connectivity Strategy for Council approval based on direction from the Committee today.

MEMORANDUM

TO: Policy and Strategy Committee

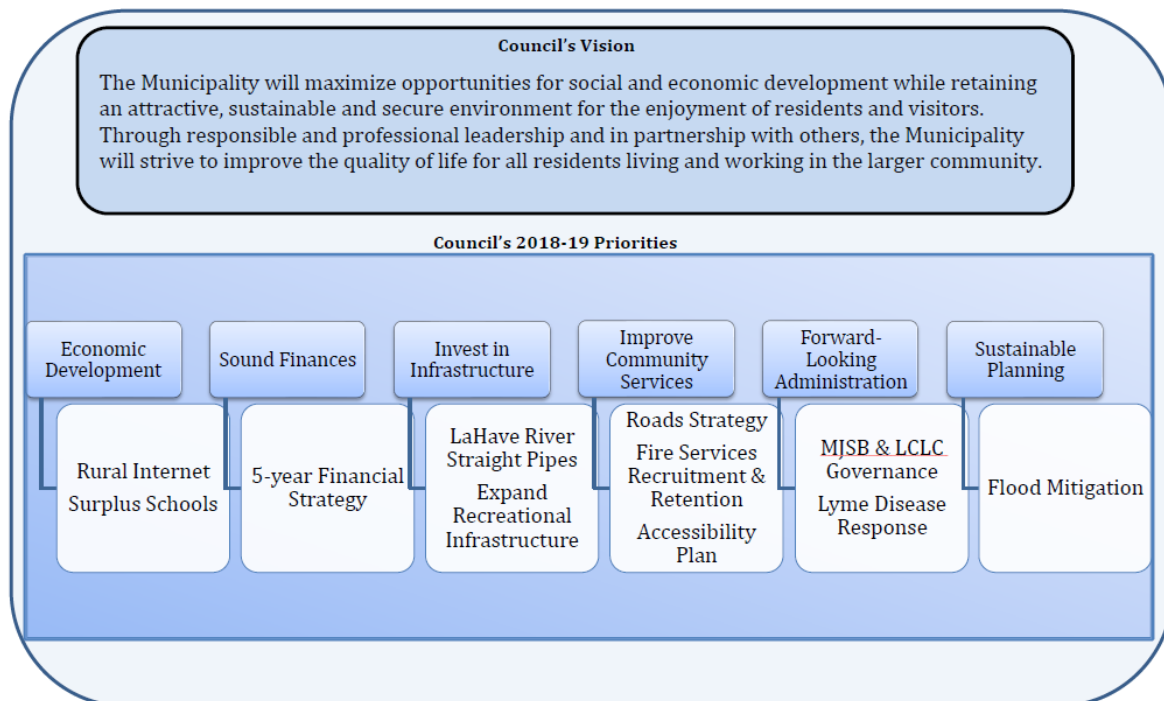
FROM: Alex Dumaresq, Deputy CAO

DATE: May 15th, 2018

RE: Strategic Priorities update – May 2018

Background

Council approved the 2018/19 Strategic Priorities Chart on January 9, 2018. The chart reflects input received by Council members during the 2016 election and the feedback received during the 2017 Your Government Your Ideas meeting series. The Chart identifies major initiatives for the Municipality in this fiscal year and council term.

Strategic Priorities Chart 2018/19

Project Highlights

Rural High-Speed Internet:

- The construction phase of the Sweetland Fixed Wireless Internet Project was completed in 2017/18, and NCS Networks has been providing service to residents since the fall of 2017. There are currently over 70 customers receiving high-speed service, and more possible connections to come. The Federal government has yet to make an announcement with respect to Connect to Innovate projects (CTI) but a decision is expected soon and, if any MODL related applications are successful, they will result in significant funding for expanded connectivity in the Municipality.
- The Policy and Strategy Committee is deliberating on a multi-year connectivity strategy for the Municipality and is expected to make recommendations to Council this month. A report to the Committee is included in this agenda package.

Surplus Schools

- The Court overturned the SSRSB decision to close Pentz and Petite schools, and GPACA representatives have come to Council to thank MODL for intervening in the court case. Council has taken the opportunity presented by the dissolution of the school boards to write to the premier requesting that the approach to disposing of surplus schools be changed to a more holistic decision-making process.
- A hazardous materials survey has been completed at the former Centre School, and tender documents are nearing completion which will allow Council to select a firm to demolish portions of the Centre School property. MODL will be seeking an extension on the NSE deadline for remediation contamination found at the abandoned school in Riverport.

Five-Year Financial Strategy

- Council, via the Audit and Finance Committee, has completed and adopted the 5-Year Financial Strategy. The Strategy documents were used in the development of the 2018/19 Municipal Budget. The model underlying the Strategy is updated regularly and will continue to be a valuable tool for Council when making decisions on capital projects, reserves, and tax policy.

LaHave River Straight Pipes

- More than 1100 properties have responded to the call to identify whether they have an approved system or a straight pipe. Installations have begun for the first program applicants, and it is anticipated that between 75 and 100 installations will occur this building season.
- A full project update to Council including maps of the Wastewater Management District, and representation from Nova Scotia Environment is planned for the next Council meeting.

Expand Recreational Infrastructure

- Council continues to aggressively pursue expansions to the network of public parks and trails. The 2018/19 budget includes construction in the lower portion of River Ridge Common, design and committee work for Sherbrooke Lake, and continued investment in the regional trail network.

Roads Strategy

- 2018/19 marks the first year of implementing Council's new Road Improvement Policy. A set of road paving priorities were submitted to the province for cost sharing. Further correspondence from NSTIR on which projects have been approved for tendering will be presented to Council as they are received.
- This year will also see improvements to municipal roads including the replacement of culverts on Whitley and paving and culvert upgrades on White Av.

Fire Services Recruitment and Retention

- The FESC has made significant progress in researching a draft strategy. At their May meeting, the Committee is expected to recommend a consultative draft to Council for approval. Once approved by Council and the FESC, there will be a series of engagements with the Fire Service before presenting a final strategy to Council for approval. Some implementation may begin in 2018/19, depending on the extent of review and revision required after consultation.

Accessibility Plan

- Municipal staff remain engaged in the Province's efforts to develop a new regulatory framework for accessibility requirements. The Acting Deputy CAO, Trudy Payne, has provided regular information and opportunities for engagement.
- As part of the 2018/19 budget, Council included funds for a new administration building, in part to address accessibility issues. Currently an RFP for design services is in preparation and MODL continues to work to address intermunicipal agreements on water service at the potential sites in Osprey Village.

MJSB & LCLC Governance

- Revisions to the MJSB agreement were delayed when the Town of Bridgewater did not endorse the proposed revisions. In the meantime, MJSB has begun investigating the joint procurement of municipal insurance for the partner units.
- The LCLC Board has established a subcommittee to explore governance issues. MODL is represented on the committee by Councillor Ernst.

Lyme Disease Response

- MODL continues to work with the Public Health Agency of Canada to launch the deer bait station research project, and the Mayor recently had a positive meeting with the local MLAs, which may assist in securing provincial assistance for the work. This month, the

Municipality launched the public education campaign to help residents prevent the spread of Lyme disease. A full update on the project is included elsewhere in this agenda package.

Flood Mitigation

- MODL now has completed LIDAR data for the entire Municipality. The next step in the project is to convert the data into elevation maps showing floodplains for a range of storms. With this information, Council can proceed with a policy discussion on measures to protect against flooding. This project does not currently have staff resources assigned to it as the current focus of the planning department is to complete the subdivision bylaw review.