



# QUISPAMSIS PRESENTATION CLIMATE CHANGE ACTIONS

SEPTEMBER, 2019



# TOWN OF QUISPAMISIS



- **Population:** 18,245 (2016 Census)
- **Vision Statement:** “Quispamsis is a forward thinking community where families enjoy a safe, friendly and active lifestyle surrounded by a beautiful, natural environment.”



# JUST A QUICK REVIEW ON WHAT CLIMATE CHANGE IS AND HOW IT AFFECTS OUR WORLD -

- Climate Change or “global warming” is the process of our planet earth heating up. It has warmed by an average of 1°C in the last century. While that does not sound like a lot, these rising temperatures don't necessarily mean we will get nicer, warmer weather.
- Rather, the changing temperatures actually make our weather more extreme and unpredictable, affecting parts of the world in different ways -
  - Heavier rainfalls,
  - More snow,
  - More drought,
  - Changing seasons,
  - Shrinking sea ice,
  - Rising sea levels.

Scientists believe it is important to keep the earth's warming below 2 °C.



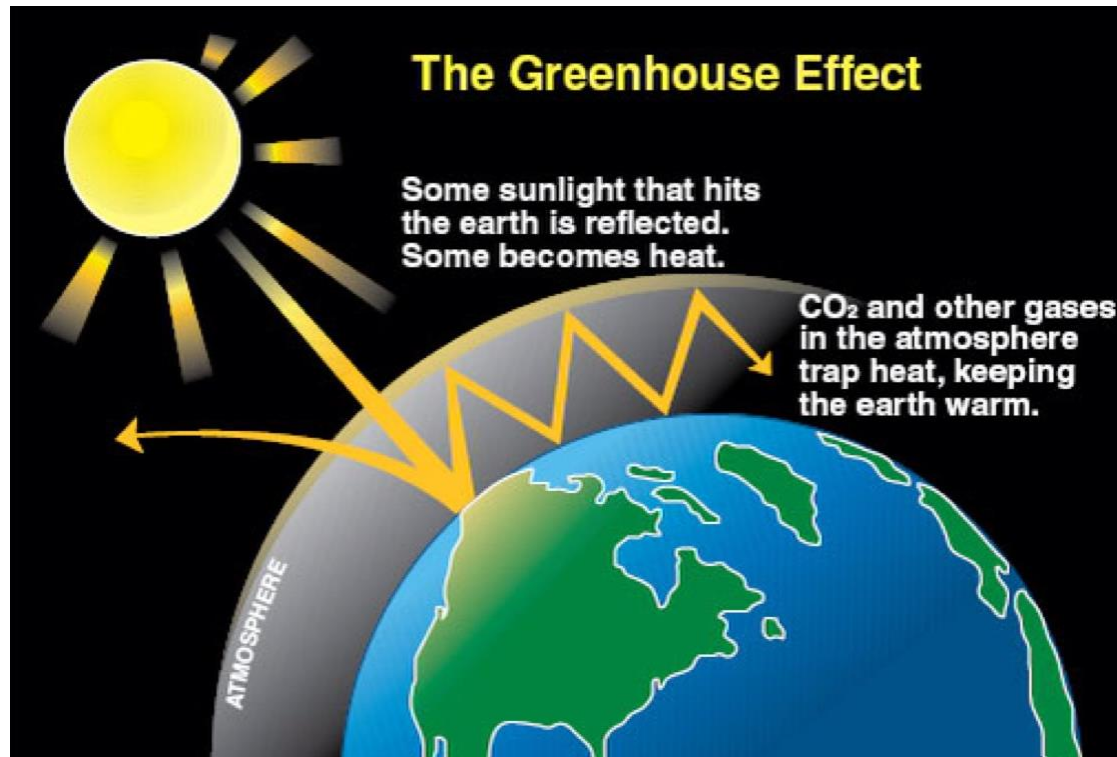
# MAIN CAUSES OF CLIMATE CHANGE:

1. **Burning Fossil Fuels** – For the past 150 years, industrialized countries, have been burning large amounts of fossil fuels – coal, oil and gas. Power plants burn these fuels to generate steam that drives large turbines to produce electricity. Fossil fuels used for electricity and heat are the biggest climate change villains, Electricity is used to run our industries, manufacturing and construction plants as well as our home appliances, TVs, computers, lights, washers, dryers, toasters, etc.
2. **Transportation** – Driving vehicles, flying airplanes and the like, are considered the second most important cause of global warming.
3. **Farming** - Cows' (and sheep') eating habits contribute to greenhouse gases. Just like humans, when these animals eat, 'methane gas' builds up in their digestive system and is released in their 'poop'. Funny as it may sound, when there is 1.5 *billion* cows living on the earth, that's a lot of cow manure!

# MAIN CAUSES OF CLIMATE CHANGE (CON'T):

4. **Fertilizers** - Farmers use fertilizers to help grow crops, many of these contain nitrogen which is one of the greenhouse gases.
5. **Deforestation** - Our forests absorb huge amounts of carbon dioxide, (another greenhouse gas), from the air and release oxygen back into it. The Amazon Forest is so large and efficient at doing this that it is often called 'the lungs of the Earth'. Sadly, many rainforests are being cut down to make various products as well as for development.
6. **Garbage** - Our garbage landfills produce methane, (just like the cows), which also contribute to global warming.

These gases, (carbon dioxide, methane, nitrogen), go up into the earth's atmosphere and become like an invisible blanket trapping the heat from the sun and warming the earth – “The Greenhouse Effect”.



# QUISPAMISIS' PARTICIPATION IN THE PARTNERS FOR CLIMATE PROTECTION PROGRAM

- Quispamsis was the first municipality in New Brunswick to join the Partners for Climate Protection (PCP) in 1998.
- The Partners for Climate Protection is a group of towns and cities across the country that have made a commitment to reduce their greenhouse gas emissions. The Town has achieved 3 of the 5 Milestones in this Program, and is now working on the 4<sup>th</sup>.
- In 2016, the Town joined a partnership with the Union of Municipalities of NB to help Quispamsis establish a Local Action Plan, (both for the Community and for the Town's Operations), to fight Climate Change.
- As a result of this, Council on July 17, 2018, passed a resolution committing Quispamsis to set a target reduction to reduce GHG Emissions in Town operations by 12% by 2025 from its 2015 levels; and set a target reduction to reduce the Community's GHG Emissions by 8% by 2025 and 16% by 2035 from the 2015 baseline levels. This is where people like you can really help us come up with ideas to meet these targets!!

# TOWN (CORPORATE) GHG ACTION PLAN

## Corporate GHG Inventory & Action Plan

## Town of Quispamsis

### V. ACTION PLAN

#### D. PROJECT PORTFOLIO

#### Project Portfolio Summary

TABLE 9 : CORPORATE PROJECT PORTFOLIO

Projects (MAT)			Total GHG reductions (tons)
<b>Buildings</b>			69,8
1	B1 Buildings (arenas, fire stations, recreational, ...)	Energy Efficiency (Electricity)	69,8
<b>Vehicle Fleet</b>			95,9
2	VF1 Gradual Fleet Renewal Policy	Number of vehicles : 41	16,3
3	VF2 Clean Vehicle Purchase Policy	Number of vehicles : 10	20,5
4	VF3 Idle-free Policy	Number of vehicles : 67	30,9
5	VF4 Telemetry & Idle-free Policy	Number of vehicles : 36	22,7
6	VF5 Electric Vehicle Car Sharing System	Number of vehicles : 2	2,5
7	VF6 Electric Vehicle	Number of vehicles : 1	3,1
<b>Streetlights</b>			-
8	SL1 Streetlight management		n/a
<b>Water and Sewage</b>			63,7
9	WS1 Water & Sewage	Energy Efficiency (Electricity)	63,7
<b>Corporate Waste</b>			-
<b>TOTAL</b>			229,4



# COMMUNITY GHG ACTION PLAN

## Community GHG & Energy Action Plan

### VI. THE PLAN

#### D. PROJECT PORTFOLIO

#### Project portfolio Summary

TABLE 10 : COMMUNITY PROJECT PORTFOLIO

Projects (MAT)				Total GHG reductions (tons)
Residential				3 832,6
1	R 1	LED lighting		640,0
2	R 2	Clean Energy Conversion (Oil to Electricity)	Conversion rate : 50%	1 153,9
3	R 3	Energy efficiency (Residential buildings)		1 642,1
4	R 4	Energy efficiency - Residential - Clothes Line Program		396,7
ICI				621,0
5	ICI 1	LED lighting	See also R 1	340,3
6	ICI 2	Energy efficiency (commercial buildings)		280,8
Transportation				6 350,8
7	T 1	Idle-free Policy		4 325,1
8	T 2	Fuel-efficient driving		1 310,9
9	T 3	Compact vehicles	EV Units 239	440,8
10	T 4	Electric Vehicle Community Program		264,6
11	T 5	Community Van	Number: 1	9,3
Community Waste				-
12	W 1	Domestic composting		-
TOTAL				10 804,5

# QUISPAMISIS, FOR MANY YEARS, HAS BEEN ACTIVELY INVESTING IN LONG TERM SUSTAINABILITY -

- Town Council appointed a Local Action Committee on Climate Change in 2005. The Town has taken on many Community Initiatives -
  - Energy Efficient Light Bulb Give-A-Way Campaigns – (Partnerships with Efficiency NB, NB Power, Local Retailers)
  - Water Week Awareness – Rainbarrel Contests
  - Green Presentations including hosting Carl Duivenvoorden's, "An Inconvenient Truth"
  - Cleaner, Greener Quispamsis - 2019 will mark the Town's 14<sup>th</sup> Annual Litter Pick Up
  - Tree Planting Programs
  - Community Garden
  - Active Transportation – Continuous expansion of trail system, wider shoulder lanes
  - Recognizing Earth Hour – "Lights Out"
  - Partnership with NB Power who replaced approximately 750 Street Lights throughout the Town with LED Bulbs.



## QUISPAMISIS' SUSTAINABLE ACTIONS INCLUDE -

- An Energy Audit was done on all Town Facilities, Municipal Vehicle Fleet and Municipal Water & Wastewater Systems. Energy Savings Initiatives included -
  - Automated computer system installed to operate ice plant at Quispamsis Memorial Arena which maintains ice by regulating ice temperatures;
  - Installation of Automatic Vehicle Locaters, (AVL's). This is innovative technology placed on all town vehicles to keep track of their positions, idling times, speed, etc. to help drivers be aware of their fuel consumption habits.
  - Completed upgrades to the municipal sewer by eliminating an old system and replacing it with more energy efficient air diffuser pumps;
  - Installed programmable thermostats to allow for heating schedules to coincide with building occupancy;
  - Retrofitted Civic Centre, Food Bank Building and Recreation Building with new energy efficient windows, doors, and siding.

# QUISPAMISIS LEADS BY EXAMPLE

- Quispamsis was one of the first NB Municipalities to adopt a *No Pesticide Policy on Public Properties*.
- Quispamsis Adopted an *Anti-Idling Policy for Town Vehicles*;
- Quispamsis, in 2011, was one of the first NB Municipalities to go with Paperless Council Meeting Agendas;
- The Town's Building Inspection Department has gone completely paperless;
- Quispamsis has developed a Land for Public Purposes Policy taking land in lieu of cash for developing green areas, and trail systems.
- Quispamsis, every year, puts on a Spectacular LED Christmas Lights Display at our Arts & Culture Park, using approximately 80,000 LED lights that use very minimum amounts of electricity.



# PUBLIC TRANSIT

Quispamsis, along with the other outlying communities partnered with the Saint John Transit Commission to extend the COMEX public transit service to our communities.

A challenge facing us today is how to increase ridership to make the bus service economically sustainable, while removing the high number of personal vehicles (and GHG's) from the roads. The majority of our residents travel back and forth to Saint John for work.



# QUISPAMISIS BUILDS GREEN BUILDINGS

**KV Public Library Expansion** - This was New Brunswick's first certified Five Green Globes building.

In 2014, our Library was recognized with the *Premier's Outstanding Energy Efficiency Achievement – Community Award*



**qplex** - In 2011, Quispamsis opened the doors of the innovative & environmentally sustainable qplex facility built to LEED Gold Standards.

LEED stands for Leadership in Energy and Environmental Design.



# QPLEX'S LEED FEATURES INCLUDE -

- Geothermal loop that heats the pools, building and ground by the entrances;
- Collects rainwater/gray water for flushing toilets and filling up the electric zamboni to flood the ice.
- Waterless urinals;
- Motion sensor lights.



<http://www.zamboni.com/machines/zamboni-552/>



# COMMUNITY GARDEN

The Community Garden was developed adjacent to the qplex. Its been a big success, providing a place where residents can grow local and pesticide free food.

There are 112 plots. One of the plots is maintained by a local Senior's home, and our Town's Park's Department maintains 2 plots to grow veggies for our local food bank.

If this is something your family would like to do, call our Community Services Department and book your plot!





# WATER

- Hydrogeological modelling project was completed to provide comprehensive information about our groundwater.
- The Town's municipal well water is designated under a Wellfield Protection Zone. Prohibits or limits chemical storage and land use activities within a certain radius of the water supply. Consumption meters used for municipal water.
- Much of our Town remains on individual wells. The Town recognizes this very precious resource, and will be expanding its municipal water system over the coming years.



# WASTEWATER SEWER SYSTEMS

- Quispamsis' Meenan's Cove Wastewater Treatment Project, completed in 2014, is an innovative new concept - an engineered wetland system with specialized plants that stimulate bacterial growth around their roots.
  - The bacteria consumes the sewage contaminants and naturally cleans the effluent without the use of **electricity** or **chemicals**.



# WASTEWATER SYSTEMS (CONT'D.)

The Town has spent over \$20 million over the past few years in upgrades to the municipal sewer system;

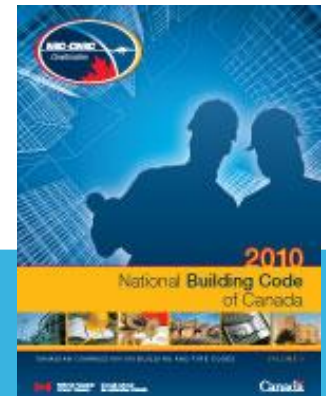
We are now reviewing best options to upgrade five sewer lift stations located adjacent to the Kennebecasis River.

All of these upgrades enhance the delivery of the municipal sewer system in a more environmentally sound way.



# BUILDING EFFICIENCY REGULATION:

- Quispamsis adopted minimum energy standards for housing and small scale commercial buildings in 2015. This has reduced green house gas emissions by 88.2 tonnes annually for houses built in 2015 alone.
- The Town's Building Inspector is a federal certified energy advisor, who created tools to assist the local contractors to comply with the energy code, including an assembly guide of over 90 different wall, roof and floor designs that are pre-approved to meet the energy code.
- Town officials regularly assist other municipalities from across Canada with their interpretation on this section and have taught courses on it for the New Brunswick Building Officials' Association.





# ACTIVE TRANSPORTATION

- The Town adopted an Active Transportation Plan several years ago. It is considered any transportation that is human powered and not motorized.
- Lowers pollution and promotes good health.
- The trails are designed to connect neighborhoods with common destinations.



# ACTIVE TRANSPORTATION

- Another part of Active Transportation is the “*share the road*” concept promoting motorists to share the road with cyclists and pedestrians.
- As major roadways are upgraded, road shoulders are widened to create safer pathways for cyclists and pedestrians.



# TOWN VEHICLES

- The Town of Quispamsis owns three hybrid cars.
- The Town has two fully Electric Cars.
- Quispamsis started a partnership with NB Power in 2014 to install a Charging Station at the Town Hall Building where people can come to charge their electric vehicles. This will help promote others to purchase electric vehicles.



# CURBSIDE RECYCLING PROGRAM

- In 2016, the Town introduced its first Curbside Recycling Program that sees recyclable materials picked up at residents' curbside along with compost, and household garbage on the alternate week.
- This convenient service will increase recycling which in turn reduces the amount of garbage going into our landfill.





# WASTE PACKAGING AND PAPER STEWARDSHIP PROGRAM

- In 2016, Quispamsis began discussions with the Union of Municipalities of NB urging NB municipalities to lobby the Province to enact legislation that will allow Recycle NB to implement a Waste Packaging and Paper Stewardship Program as an Extended Producer Responsibility in NB. Such Programs already exist in many other Canadian Provinces.
- These are a lot of words which simply mean redirecting the costs related to the recycling of paper and plastics packaging back to industry and away from the cities, towns and villages.
- The redirecting of the responsibility back to the manufacturer, usually results in the manufacturer producing LESS packaging . . .

# QUISPAMISIS' NEW MUNICIPAL PLAN WILL GUIDE DEVELOPMENT OVER THE NEXT 10 YEARS . . .

The Town has enacted a new Municipal Plan that will guide its future development through policies based on Smart Growth Principles, i.e. –

- Will identify and protect the natural environment and conserve sensitive natural areas for future generations;
- Will review the existing practices of the Town, including heating, waste management, transportation with the view towards improving sustainability;
- Will enable the development of higher density housing, (like apartment buildings and condos), to reduce land use, which positively impacts the natural environment;
- Will integrate all aspects of transportation, including Active Transportation planning to address climate change, and,
- Will work with residents and organizations to identify areas where individual households can become more sustainable.

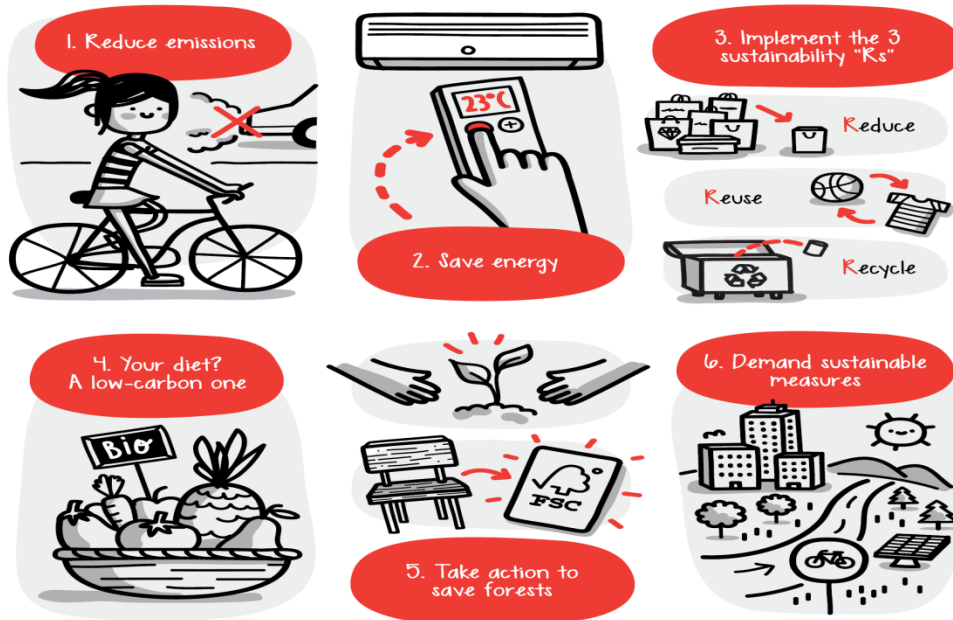
# RESILIENCY PLANNING

- Quispamsis recognizes we must be resilient and adopt collaborative strategies to cope with the mounting risks we face due to climate change. New development and infrastructure plans include assessments of flood zones, hydrogeological reviews and, impacts on infrastructure systems.
- Quispamsis has a comprehensive EMO Response Plan and an active EMO Committee to be prepared to respond to weather event emergencies, which have become a more common concern for everyone.



# WHAT CAN WE, AS INDIVIDUALS DO TO HELP FIGHT AGAINST CLIMATE CHANGE?

## 6 actions preventing climate change



# WHAT CAN WE DO?

1. Eat less beef and dairy;
2. Eat organic when you can – grown without pesticides and synthetic fertilizers.
3. Buy local when you can – this minimizes transportation of goods.
4. Live in the climate - only use home heating and cooling when necessary.
5. Dry your clothes on the clothes line – besides reducing GHGs, your clothes will last longer.
6. Walk or ride a bicycle or take the public transit when you can – don't drive
7. Reduce & reuse, then recycle – Including the use of recyclable bags when shopping.
8. Plant a tree, a flower garden and/or your own vegetable garden. Plants absorb one of the GHG's, 'carbon dioxide' in order to grow. Plants also cool the earth through the process known as transpiration.
9. Young people, like yourselves, are well placed to contribute to the fight against climate change with your ability to adapt to new low carbon lifestyles, spreading new positive habits and technologies to protect the infinite number of future generations!
10. WE ARE ALL IN THIS TOGETHER!

# ALL OF THE ACTIONS WE CAN DO TO FIGHT CLIMATE CHANGE JUST MAKE GOOD SENSE ANYWAYS . . .

