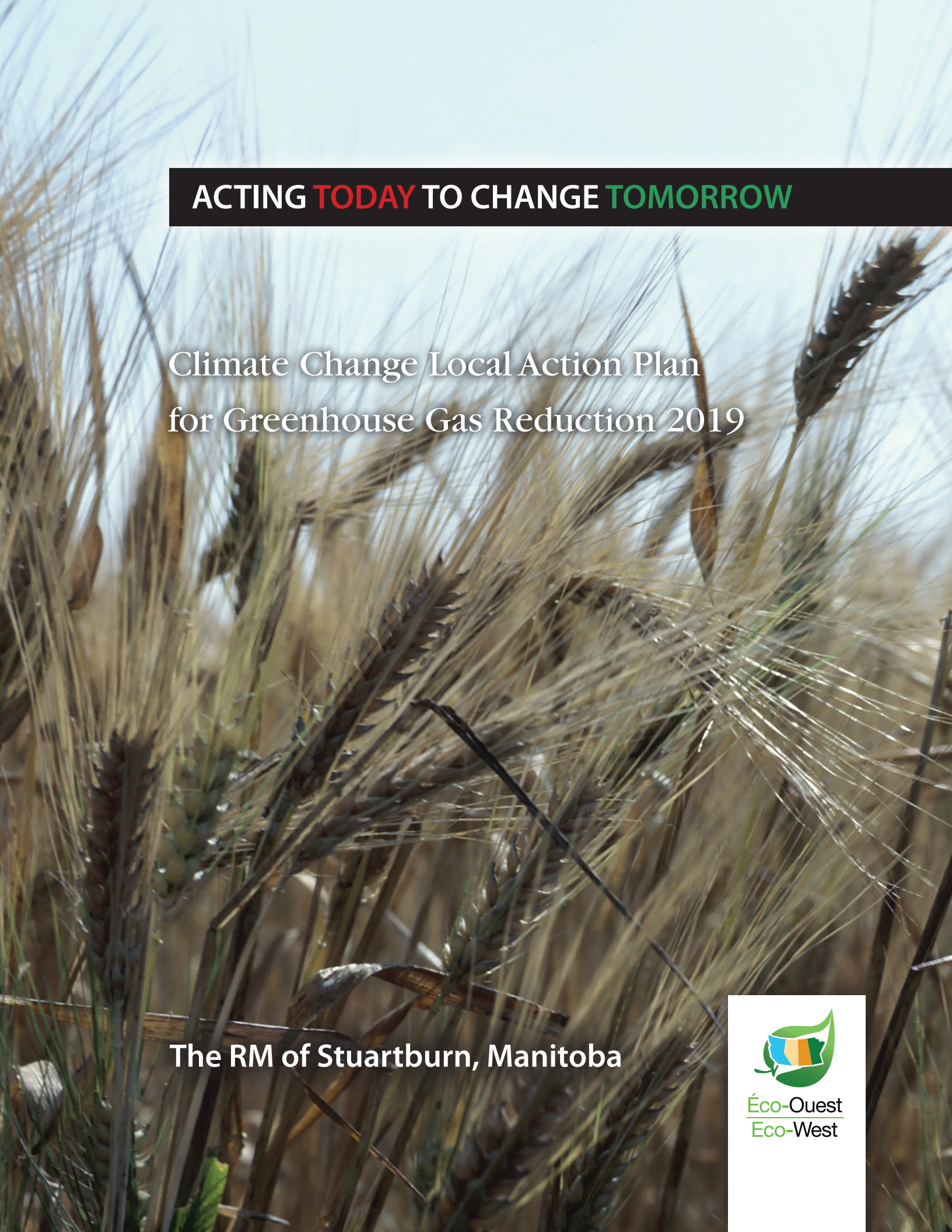

ACTING TODAY TO CHANGE TOMORROW

Climate Change Local Action Plan for Greenhouse Gas Reduction 2019

The RM of Stuartburn, Manitoba

Éco-Ouest
Eco-West

Foreword

Eco-West Canada: Leading the Way to Sustainable Communities and a Greener World.

During the last few decades, the world has seen an unprecedented rate of acceleration in climate change and the effects of this game-changing evolution are already being felt on a daily basis in communities everywhere in Canada and elsewhere across the globe.

Average annual mean temperatures are on the rise due to an increase in greenhouse gas (GHG) emissions across many sectors of society. Landfill areas are becoming a major source of concern as they expand, reach capacity and become toxic to the point of no longer being usable. Bodies of water have been rendered useless either as a source of potable water and/or are no longer viable as areas of recreation due to a rapid rise in the levels of eco-damaging nutrients found there.

Since 2008, Eco-West Canada's mandate has been to understand the impacts of these and other causes of climate change on our world. And so for the past several years, we have been working towards enhancing the growth and prosperity of Canada's municipalities through the planning and implementation of more progressive, eco-friendly communities and infrastructures.

The framework that we use to create local action plans that focus on climate change issues is the Federation of Canadian Municipalities' Partners for Climate Protection (PCP) program. This includes the conducting of a municipal inventory of GHG emissions and establishing a target for the reduction of these emissions, which in turn leads to the development of a Climate Change Local Action Plan (CCLAP) that shows how a municipality will be able to achieve its goals in this area. With that strategic document in hand and as members of the PCP program, communities can take matters into their own hands and put the wheels in motion that will enable them to implement change by tackling climate change issues head-on.

At Eco-West Canada, we believe that the time to just talk about climate change has passed, and we are committed to working with municipalities and other interested parties to bring about real change in our communities, and to make them better, cleaner and safer places in which to live and play.

The time has come to take action and turn back the tide against climate change. Together we can make a difference.

Yours truly,

Dany Robidoux
Director, Eco-West Canada

Message from AMM

Heading to Come

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RURAL MUNICIPALITY OF STUARTBURN

Office of the Chief Administrative Officer
Rural Municipality of Stuartburn
Box 59, 108 Main Street
Vita, MB R0A 2K0

Message from the Reeve

As a provider of basic municipal services such as roads, waste management, emergency services, and other community services, our municipality's facilities, operations and budgets are directly affected by climate change. This creates significant challenges as concerns the ongoing maintenance and improvement of municipal buildings, operations and infrastructure.

A few years ago, we were approached by Eco-West Canada to participate in a project to measure our greenhouse gas emissions and also create a local action plan to help us deal with the potential impacts of climate change in our municipality and its communities.

Since that time, we have worked alongside the Eco-West team in a comprehensive process that has included consulting with community stakeholders to create a practical, community-supported action plan that is outlined in this document. This plan contains concrete actions that we can all undertake to reduce emissions, conserve energy and save money, while at the same time providing us with an effective tool for making a difference in our community.

Some projects are already under way and more will likely be undertaken in the future. This plan demonstrates that residents, businesses, institutions and municipalities all have a role to play as we 'think globally and act locally' to better position our community and protect our environment to improve our quality of life.

On behalf of the RM of Stuartburn, I would like to thank the many community members who were involved in the various stages of the development of this plan for their contribution.

Yours truly,

David Kiansky, Reeve
RM of Stuartburn

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BACKGROUND

ACTING TODAY TO CHANGE TOMORROW

Éco-Ouest
Eco-West

What is This Document?

Project Background

In an effort to develop a Climate Change Local Action Plan (CCLAP), the RM of Stuartburn has partnered with the Association of Manitoba Municipalities (AMM) and Eco-West Canada to reach the first three milestones of the Partners for Climate Protection (PCP) program of the Federation of Canadian Municipalities (FCM).

MILESTONE 1: Creating a GHG emissions inventory and forecast

MILESTONE 2: Setting an emissions reduction target

MILESTONE 3: Developing a local action plan (LAP)

This document is the LAP that represents the results of that multiyear process. The RM of Stuartburn has completed Milestone 1 and has proceeded concurrently with Milestones 2 and 3 in collaboration with the municipal government and the people of the RM of Stuartburn in a participatory process. This included both a municipal and a community survey in the spring of 2019.

The community must now move forward by formally adopting this LAP in order to further develop, approve and implement potential programs identified in this plan. In doing so, they will demonstrate leadership and provide a positive example of a motivated, sustainable community that is taking action against climate change.

Terms and Acronyms

CCLAP	Climate Change Local Action Plan (as an overall process)
CO^2	Carbon Dioxide
CO^2e	Equivalent CO^2
FCM	Federation of Canadian Municipalities
GHG	Greenhouse Gas
ICLE	International Council for Local Environmental Initiatives
LAP	Local Action Plan (for Greenhouse Gas Emission Reduction)
MATs	Measures, Actions and Technologies
PCP	Partners for Climate Protection Program

Climate Change Local Action Plan

Project Background

Be Enviro Aware

Whenever possible, make environmentally conscious purchasing decisions such as water and energy efficient fixtures and appliances, electric or hybrid vehicles and phosphate-free products, soaps, and detergents.

Look for environmentally preferable logos and labels like the **EcoLogo®** *and the* **It's Lake Friendly!** *logo.*

While climate change is a challenge often viewed on a global scale, solutions are also needed at national, provincial, and local levels.

Acting Today to Change Tomorrow: Climate Change Local Action Plan For Greenhouse Gas Reduction has been developed as a resource tool to assist the RM of Stuartburn in reducing GHG emissions in their community.

The recommended actions represent the ideas and issues that were brought forward through this process. It is a living document that will require regular review to measure and evaluate progress to ensure that the goals and recommended action plans become a reality.

Taking Action to Reduce GHG Emissions Local Action Plan

WE CAN REDUCE EMISSIONS BY:

Substituting non-carbon forms of energy (renewable energy) for fossil fuels.

Reducing energy consumption through energy conservation and efficiency.

POSSIBLE ENERGY STRATEGIES INCLUDE:

Stimulating the retrofit of buildings and processes to conserve energy.

Promoting energy-efficient construction of buildings.

Promoting energy-efficient modes of transportation together with energy-efficient and alternative fuel vehicles.

Promoting and installing renewable forms of energy generation.

Designing our communities to reduce energy consumption and increasingly using community energy systems.

POSSIBLE NON-ENERGY STRATEGIES INCLUDE:

Reducing emissions from solid waste through further diversion and alternative treatment of residual waste (including energy from waste).

Planting trees and reforming agricultural practices to sequester carbon.

Increasing local food production and use.[1]

Project Description

Project Background

Project resources required for the development of an inventory and a climate change local action plan

Climate Change Local Action Plan (CCLAP) Goals & Mission

The CCLAP project aims to offer participants as much support as possible to assist in the completion of their GHG emission inventories and local action plans.

STEP 1: Eco-West Canada/AMM will partner with specialists and experts and request the assistance of the Federation of Canadian Municipalities (FCM) in the various technical and specific projects to be carried out.

STEP 2: Eco-West Canada/AMM would like to take these issues and transform them into opportunities for participants. The development of local action plans will allow municipalities to identify structuring projects enabling them to face environmental challenges and generate significant socio-economic impacts. For instance, these potential impacts could result from the introduction of high-performance and innovative equipment that is better suited to local or regional needs, thereby reducing energy consumption and its related expenses, or even locally producing renewable energy to be distributed or sold locally (i.e. geothermal, solar thermal, solar photovoltaic, biomass heating systems, etc.).

STEP 3: To benefit from supplementary FCM assistance for the funding of inventories, participating municipalities must be or become members of the FCM's Partners for Climate Protection (PCP) program. Membership is free and requires only the adoption of a resolution by municipal council. Members will complete the first three (3) milestones of the PCP program in the context of the CCLAP project.

The intent of the project is to duplicate the production of quality inventories and action plans at the lowest possible cost in order to enable the following actions:

- Identify innovative model projects for participating municipalities
- Establish the preliminary design of green projects that can more easily be adopted by the population and funded by different levels of government and the FCM's funding programs - Green Municipal Fund (GMF), Municipalities for Climate Innovation Program (MCIP), etc.
- Improve and enrich local and regional knowledge and expertise with the help of specialized contractors and firms in order to create innovative infrastructures tailored to the needs of local and regional populations

Through the execution of the project, Eco-West Canada/AMM will establish partnerships and collaborate with institutional partners in Manitoba to improve and safeguard provincial knowledge and expertise.

Context and Background

Project Background

The Partners for Climate Change Protection

Climate change is a global issue yet addressing it will require countless local actions worldwide. In Canada, the Federation of Canadian Municipalities (FCM) has developed the Partners for Climate Protection (PCP) Program to guide municipal governments towards reducing GHG emissions. The PCP program defines a process for municipal governments to quantify their GHG emissions and then to develop and implement action plans that can achieve emissions reductions.

PCP membership covers all provinces and territories and accounts for more than 80% of the Canadian population. Since the program's inception in 1994, over 250 municipalities have joined PCP, making a public commitment to reducing emissions.

PCP is the Canadian component of the ICLEI's Cities for Climate Protection network, which involves more than 1,100 communities worldwide. PCP is a partnership between the Federation of Canadian Municipalities and ICLEI — Local Governments for Sustainability. PCP membership is free for municipalities. Since cost is not an obstacle, municipalities of all sizes can empower themselves to take action against climate change.

The program empowers municipalities to take action against climate change through a five-milestones process.

This process guides members in creating GHG inventories, setting realistic and achievable GHG reduction targets, developing local action plans, and implementing plans using concrete actions to reduce emissions. Benefits of PCP membership include:

- Obtaining the means to fight against climate change
- Asserting the need for joint authority and global action on climate change
- Becoming a positive example for your community and other Canadian municipalities
- Sharing your knowledge and experience on how to reduce GHG emissions
- Benefitting from Green Municipal Fund (GMF) program services offered to municipalities such as grants and loans

The PCP program consists of five milestones:

MILESTONE ONE

Creating a Greenhouse Gas Emissions Inventory and Forecast.

MILESTONE TWO

Setting an Emissions Reduction Target.

MILESTONE THREE

Developing a Local Action Plan (that sets out how emissions and energy use in municipal operations and the community will be reduced).

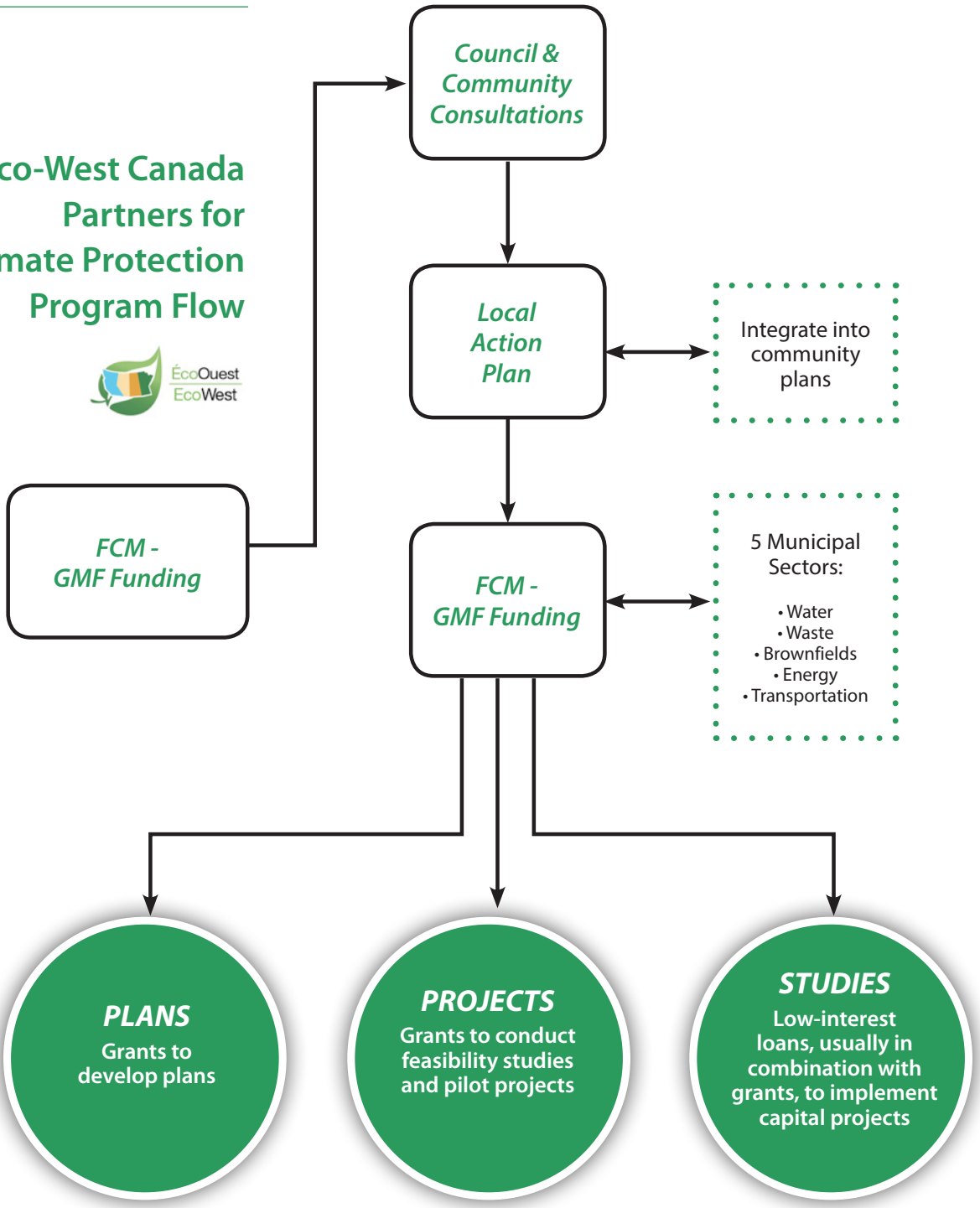
MILESTONE FOUR

Implementing the Local Action Plan.

MILESTONE FIVE

Monitoring Progress and Reporting Results.

Eco-West Canada Partners for Climate Protection Program Flow



The Need

FOR COMMUNITY ACTION ON CLIMATE CHANGE

ACTING TODAY TO CHANGE TOMORROW

Éco-Ouest
Eco-West

The Climate is Changing

The Need for Action

Weather records confirm that temperatures and weather patterns around the world, and here in Manitoba, are changing.

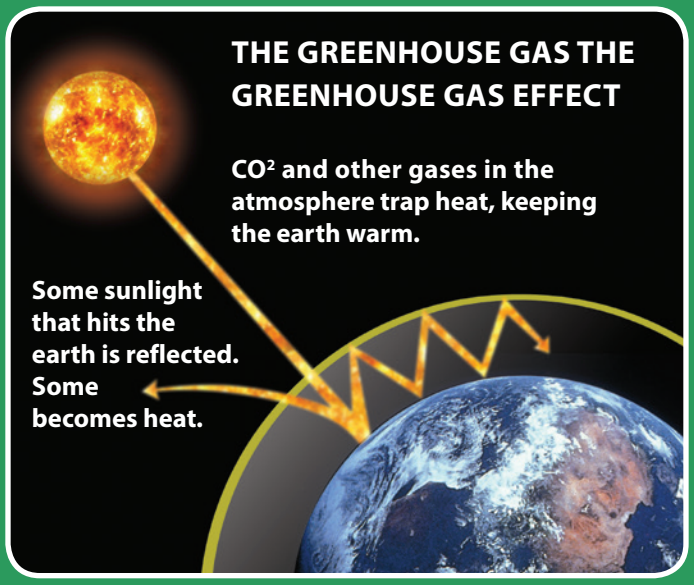
Scientific sources state that the average global temperature has risen almost 1°C over the last 50 years, and in Canada it has risen 1.5°C over the last 64 years.[2]

While that may not seem like a big change given the daily and seasonal variations in weather, it is quite a significant change in average temperature. Along with the increase in temperatures, communities from the different regions of Canada are already confronted with additional effects of climate change. Some face more severe droughts, while others face more violent storms and floods. The longer, colder winters and hotter summers increase damage to municipal infrastructure. All of these impacts cost cities and municipalities millions of dollars, and communities will expect that adaptation measures be implemented.

According to the Intergovernmental Panel on Climate Change (IPCC), warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea levels have risen, and the concentrations of greenhouse gases have increased. Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system (which could cause significant damage to our environment, economy and society). Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.[3]

What is Causing Climate Change?

The greatest contributor to human-caused climate change is carbon dioxide created by the burning of fossil fuels: coal, oil and natural gas. Currently fossil fuels constitute about 86% of energy supply worldwide.[4] Other gases, such as methane, water vapour, ozone, nitrous oxide and chlorofluorocarbons, and other sources such as forest fires, deforestation, agricultural and industrial practices also contribute to the increase of GHGs in the atmosphere. These gases trap heat in the atmosphere through the Greenhouse Effect.[5]



What are the Implications?

The Need for Action

Canada's infrastructure deficit is significant, and the continued effects of climate change will no doubt increase this deficit by shortening asset-replacement cycles. In its report 'Paying the Price: The Economic Impacts of Climate Change for Canada' published in 2011, the National Round Table on the Environment and the Economy suggested that the economic impact on Canada could reach $5 billion per year by 2020, and between $21 and $43 billion per year by 2050.

These issues present important challenges in the improvement of municipal buildings and infrastructure, as well as local communities.

These issues present important challenges in the improvement of municipal buildings and infrastructure, as well as local communities.

What Can be Done? Create a LAP

An inventory of emissions is the first step in the creation of a local action plan (LAP). It brings together data on community and municipal energy use and solid waste generation in order to estimate GHG emissions in a given year. The LAP is a strategic document that outlines how the municipality will achieve its GHG emissions reduction objectives.

The LAP covers municipal operations and the community. It provides a preliminary description of the proposed measures, actions and technologies (MATs) and, in its first phase, estimates the environmental and economic advantages expected to be derived from the application of the MATs. The proposed MATs will also take into account the potential environmental consequences of climatic damage. The LAP puts forward various tools (geomatics) considered useful in the selection and development of measures to be taken.

What is the Municipal Role?

Municipal governments have an important role to play in the use of a new corporate planning method that is consistent with the trend toward sustainability when faced with climate change. Through planning and the implementation of a green economy infrastructure, small municipalities can guarantee sustainable economic development, which will also lead to the growth and prosperity of their communities.

- Ensures environmental sustainability
- Ensures economic sustainability

In this way, municipalities that participate in greening their local economies by inventorying greenhouse gas emissions and creating local action plans to address climate change will create opportunities to commercialize clean technologies, attract foreign direct investments and train a qualified workforce.

THE INVENTORY
can identify emissions sources based on the types of energy used, the sectors involved (transportation, building, water treatment plants, residual materials management, etc.), and the equipment being utilized. An inventory serves as a management tool to:

SAVE MONEY:
The inventory helps to track the dollars spent on energy. That which can be measured can be managed. An inventory highlights opportunities to invest in energy efficient upgrades.

PROVIDE USEFUL INFORMATION:
Inventorying significant sources of GHG emissions helps municipalities to establish adequate measures to reduce emissions and create an efficient LAP.

Helping Municipalities Face Challenges

The Need for Action

Faced with the challenges posed by climate change and economic development, municipal populations and governments must tackle many threats and challenges:

- Revising infrastructure and equipment needs
- Revising sustainability and adaptation strategies to take into account the environmental and economic vulnerability of lands under municipal authority
- Municipalities' limited resources and financial capabilities

Why Should the RM of Stuartburn Act?

By positioning the RM of Stuartburn as a leader in tackling climate change, they have the opportunity to influence other villages, towns and municipalities to do the same.

To combat climate change and ensure the economic viability of municipalities, or in other words, to reduce the causes of climate change and protect against its impacts, it is suggested that local governments employ the following strategies:

- Identify the source of emissions and evaluate the quantity of GHG emissions produced by municipalities (Inventory)
- Select measures and take actions to reduce GHG emissions produced by municipalities, both directly and indirectly (Local Action Plan)
- Become better established and better developed by planning for serious events linked to climate change (flooding, drought, erosion, etc.) and selecting methods to protect against these impacts

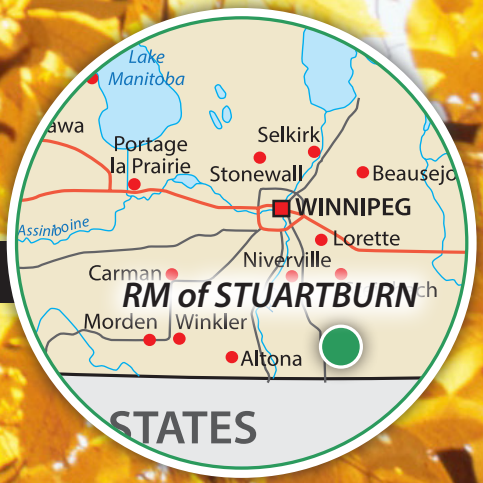
Because of their roles and responsibilities, municipalities must act as leaders to chart the way forward and make a difference so that these strategies can be integrated by all civil society stakeholders.

Éco-Ouest
Eco-West

RM of Stuartburn

COMMUNITY AT A GLANCE

ACTING TODAY TO CHANGE TOMORROW



Community Profile

Community at a Glance

RM of Stuartburn

Country	Canada
Province	Manitoba
Region	Eastman
Incorporated	1902, 1997
Elevation	297m (974 ft.)
Land area	1,164 km^2
Total Private Dwellings	824
Population (2016 census)	
Total	1,648
Density	1.4/km^2

The RM of Stuartburn

Stuartburn is a rural municipality located in the Eastman Region of Manitoba, along the U.S border north of the state of Minnesota. It is home to the Ukrainian-Canadian village of Stuartburn, as well as the communities of Gardenton, Sundown and Vita.

The area was first opened to homesteading in 1896, and most of the early settlers were of Ukrainian background. The offer of virtually free land, prospects of employment and freedom of religion attracted them to Canada. The area was also attractive for its abundant fresh water and wooded areas that provided shelter from the harsh winter weather.

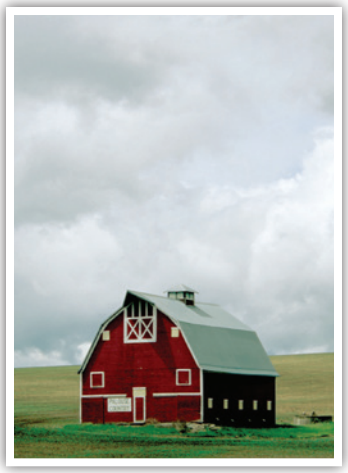
The land in the municipality is generally flat, with sandy soils and many low-lying, swampy areas. Wooded areas dot the landscape, in which stands of ash, poplar and oak provide ample cover for wildlife. The region supports a large population of white-tailed deer, elk, as well as many small mammals and birds. The eastern portion of the municipality gives way to spruce and evergreen forests where the area leads into the Sandilands Provincial Forest. Many areas around the community of Gardenton remain as rare, virgin tall-grass prairie, with an abundance of endangered species. These areas are increasingly scarce on the prairies and conservation groups have taken steps to preserve and protect them.

Many of Stuartburn's residents are actively involved in bovine farming. The soils of the area are sandy, rocky, and often suffer from poor drainage. The fields do not lend themselves well to grain production, but the wooded area is almost perfectly suited to cattle farming and forage crop production.

Vita, the municipality's largest Unincorporated Urban Centre, functions as a service centre for surrounding areas. The town has a school, hospital, a grocery store and other small businesses offering retail goods and services. A curling rink and hockey arena offer a wide variety of recreational activities. Vita is home to the award-winning Ukrainian dance ensemble Susydka, who have often demonstrated their talent at Folklorama in Winnipeg.

Community Profile

Community at a Glance



Gardenton is a community that is also rich in Ukrainian history and culture. The town features many historical sites in and around the areas such as St. Michael's Church, which was the first permanent Ukrainian Greek Orthodox church built in Canada; there is also the Gardenton Bridge, the last existing wooden truss bridge in Manitoba. Gardenton Park is home to a historic schoolhouse and museum which contains historic artifacts and costumes original to the area. The Tall Grass Prairie Preserve is home to endangered and protected animal and plant species. The preserve includes a scenic nature trail that allows visitors to view this unique habitat from up close and catch a glimpse of the rare plants and wildlife that are to be found there.

The RM of Stuartburn is also home to the Roseau River, which attracts visitors, cottagers and residents to take in the scenic natural habitat by enjoying activities such as canoeing, tubing and hiking in the summers, and snowmobiling, cross country skiing and snowshoeing during the winter. The Weston Family Tall Grass Prairie Interpretive Centre spans 160 acres and features the Agassiz Interpretive Trail, which allows the public to explore one of the rarest ecosystems in North America.

Each August, the community of Sundown plays host to the annual Gymkhana horse show. Festivities include Gymkhana events, food and entertainment. There is a rich and full Ukrainian heritage in the community that can be seen in the many historic churches and cemeteries, which are popular points of interest for visitors.

GHG Emissions Inventory

Community at a Glance

The RM of Stuartburn

Eco-West Canada completed a GHG inventory in 2011 and 2015 for the RM of Stuartburn, both at the corporate and community levels.

Corporate Inventory: This inventory includes data on all municipal government installations, including buildings, street lighting, water and sewage, the municipal fleet and solid waste within the community and / or the municipal government.

Community Inventory: This inventory includes residential, institutional, commercial and industrial, as well as transportation and solid waste data.

Corporate Emissions

The operations of the RM of Stuartburn emitted 24 tonnes of CO^2e in 2015, from the consumption of 1,049GJ of energy. These energy purchases cost approximately $33,972.

The RM of Stuartburn's most energy intensive sector is the **buildings** sector, consuming 40.8% of all energy used by the corporation (428GJ in total), and emitting 0.5t of CO^2e.

The buildings sector tends to be quite a significant energy consumer because buildings must be kept lit and habitable for people to function. In Canada, this means significant heating and cooling costs.

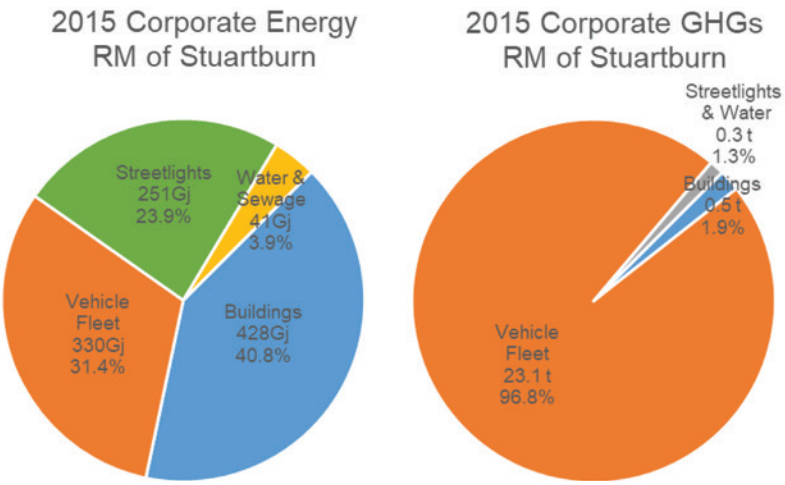
Typically, for large urban municipalities, the major consumer of energy is this sector, at 3,937GJ total energy consumed, or 1.3GJ/capita. The RM's consumption is more than that.

The second most energy intensive sector for Stuartburn is **vehicle fleet** accounting for 31.4% of consumption, and 96.8% of emissions. On a per capita basis, this is 80% less than the urban average. Care must be taken when considering the vehicle fleet sector; it uses primarily fossil fuels, which makes its energy consumption the "dirtiest" per unit of consumption. It is also the most difficult to measure, though any changes made will have significant GHG emissions impacts.

The third highest sector is **streetlights** at 23.9%.

Finally, the **sewage** sector represents just 3.9% of total consumption, which is not very significant.

Corporate GHG Emissions by Sector
RM of Stuartburn, 2015



GHG Emissions Inventory

Community at a Glance

The RM of Stuartburn

Community Emissions

This inventory divides community energy consumption into the following sectors: **residential, commercial, industria**l and transportation. Emissions here include an additional sector: **waste**.

The community at large in the RM of Stuartburn uses the most energy in the **transportation** sector, which comprises 36.9% of the total. This consumes 94,728GJ of energy, and emits 6,640 t of CO2e. Typically, for urban municipalities, the transportation sector consumes 47.8GJ per capita. Stuartburn, at 58.3Gj per capita, is more than the average (21.9% the per capita average).

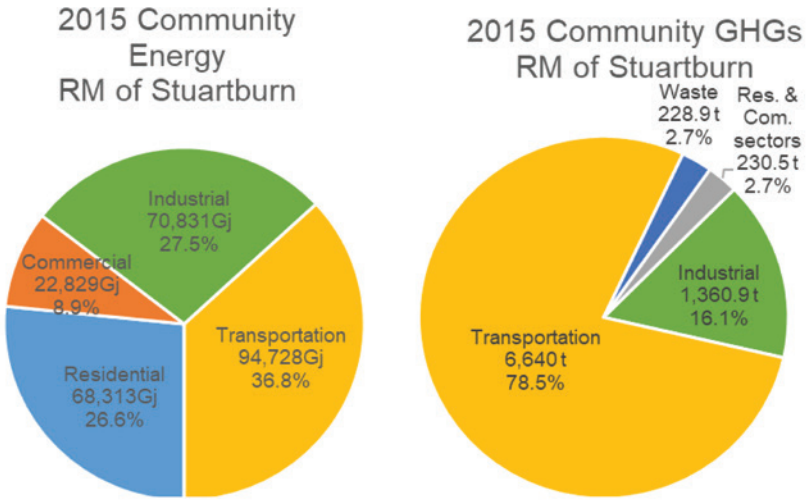
The second highest energy consumer in the community is the industrial sector, with 70,831GJ, 27.6% of total consumption. Per capita this is 43.6GJ, about half the urban average of 114.3GJ.

Residential was next highest at 68,313GJ, 42.0GJ per capita and 26.6% of total energy consumption, less than the urban average of 42.6GJ/capita.

The least energy intensive sector, accounting for 8.9%, is the **commercial** sector, which consumed 22,829GJ total and 14.1GJ/capita (half the average of 28.2GJ on a per capita basis).

The **waste** sector is not considered in energy consumption, as energy used in the production and transport of waste is covered in the industrial, commercial, residential and transportation sectors. In terms of GHG emissions, the waste sector emitted 229 tonnes of CO2e from 475 landfilled tonnes of garbage, 2.7% of total emissions.

Community GHG Emissions by Sector
RM of Stuartburn, 2015



Vision Statement

By participating in the

Climate Change Local Action Plan process,

the **RM of Stuartburn** has positioned itself as a community leader in the area of climate change action and the reduction of greenhouse gas emissions in order to help navigate the potential long-term impacts of climate change.

How is One Tonne of GHGs Produced?

Every day activities that add up to one tonne of GHGs:

40

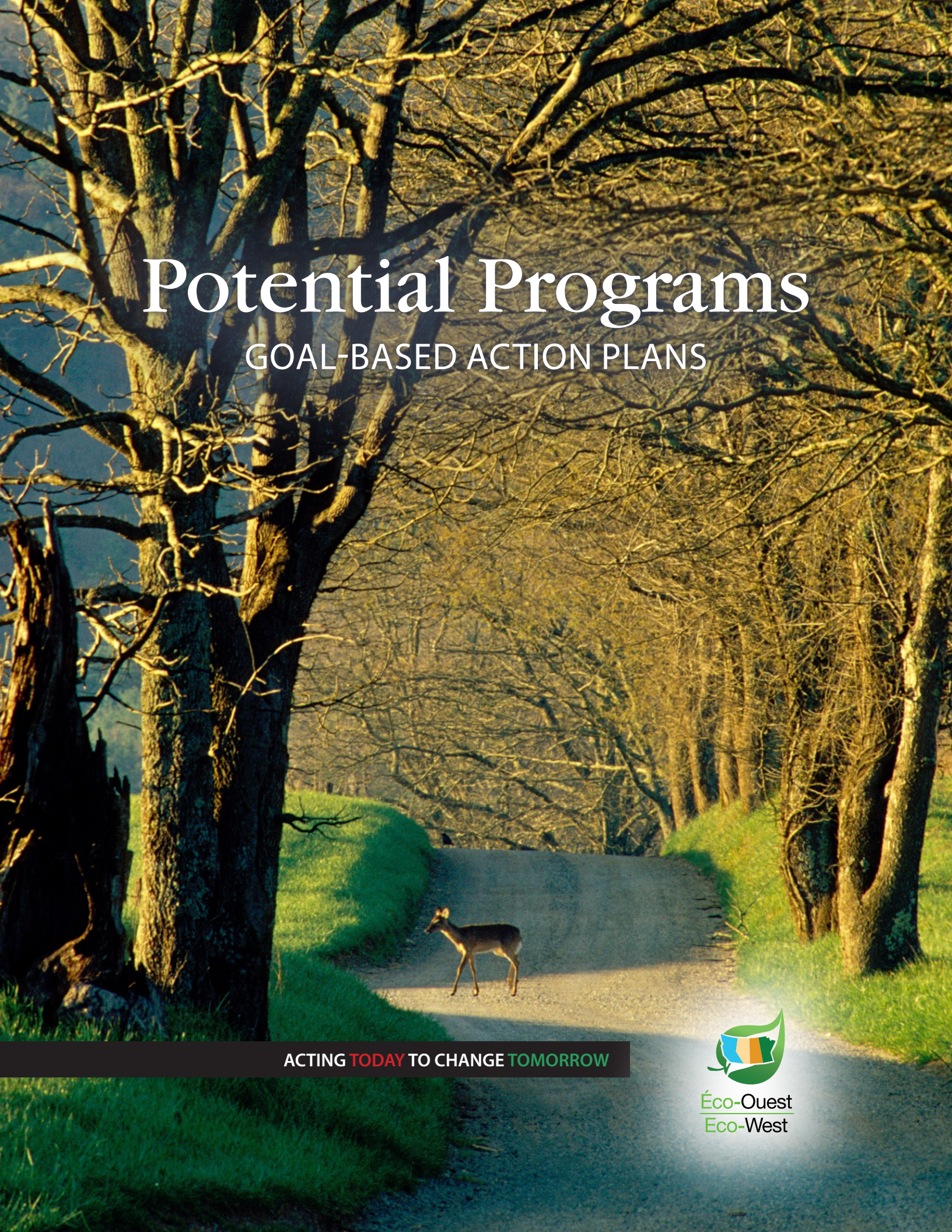
average Manitoban homes' electricity use in one year

22 - 150 KM

round-trip drives (from point A to point B and back again)

42

BBQ propane tanks



Potential Programs

GOAL-BASED ACTION PLANS

ACTING TODAY TO CHANGE TOMORROW

Éco-Ouest
Eco-West

Greenhouse Gas Reduction Action Plans

Potential Programs

This set of potential programs represents initiatives identified and endorsed by stakeholders and community representatives.

Together, these goals constitute a Climate Change Local Action Plan (LAP) that can be characterized as:

- Ambitious
- Strategic
- High-leverage
- Effective in reducing GHG emissions
- Attractive to the community by producing environmental, economic and social benefits

It is important to recognize that each program within the plan will require subsequent development and individual approval by Council before being implemented in the years ahead. Not all of these potential programs will necessarily be approved and launched.

What is Green Building

Green building is the practice of increasing the efficiency with which buildings use resources — energy, water, and materials — while reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal — the complete building life cycle.[6]

It takes a village - get started now!

Easy wins at home include:

- Have an energy audit conducted for your home and implement the recommendations (such as home energy retrofits and the installation of residential renewable energy systems)
- Compost kitchen and garden organic waste to build soil
- Use native trees, plants, ornamental grasses, and ground covers to replace lawn
- Capture run-off in a rain barrel and use it for all your outdoor watering needs (such as lawn, garden, car washing)

Greenhouse Gas Reduction Action Plans

Potential Programs

Easy wins at work include:

- Participate in workplace and community-based carpools
- Implement an anti-idling program to reduce emissions from municipal fleet vehicles
- Turn off lights and get rid of phantom loads by using a power bar and shutting it off when equipment (computers, monitors etc.) is not in use
- Buy sustainable and/or recyclable supplies Easy wins in the community include:
- Walk and bike to get around – help increase demand for pedestrian and bike-friendly infrastructure!
- Support local Council in making decisions consistent with corporate policies and sustainability

Easy wins for the municipality include:

- Implement high performance buildings energy retrofits and the installation of renewable energy systems; develop guidelines for green buildings and sites
- Purchase alternative fuel for corporate fleets
- Initiate a Streetlight Replacement Program (such as replacing mercury vapour lamps)

New Developments

Buildings / Energy

Waste

Water

Natural Disaster Mitigation

IT Infrastructure

Vehicles / Equipment

Transportation

Action Plan Legend

Goal

Goals are general statements of desired ends to be incorporated into the future direction strategies of the community.

Objective

Objectives are more specific statements of the general goals. Objectives require detailed action plans.

Action

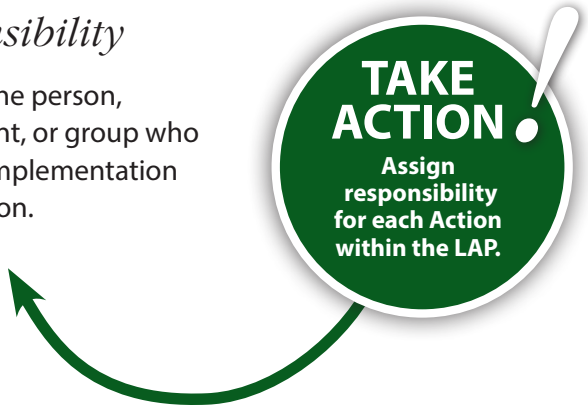
Actions are quantifiable and time sensitive; they are taken to achieve the objective.

Step

The tasks undertaken to fulfill the Action.

Responsibility

Indicate the person, department, or group who will lead implementation of the action.



GOAL 1: Sustainably Manage Water in the RM of Stuartburn

Be proactive in educating the public on ways to reduce water consumption and minimize water runoff

Potential Programs

ACTION 1A

Promote community education on maintaining clean and safe drinking water

STEPS

- Promote good water practices and related information through municipal communications such as on the website and in community e-mails and newsletters

ACTION 1B

Provide public education for programs such as MB Hydro's Water & Energy Saver Program and other water conservation programs

STEPS

- Promote MB Hydro & Efficiency Manitoba programs and other water conservation programs through municipal communications such as on the RM website and in community emails and newsletters

GOAL 1: Sustainably Manage Water in the RM of Stuartburn

Be proactive in educating the public on ways to reduce water consumption and minimize water runoff

Potential Programs

OBJECTIVE

Improve management capabilities to deal with climate events such as droughts and/or heavy rainfalls, flooding, and associated drainage issues

ACTION 1C

Manage land use to retain excess water and mitigate potential drainage and flooding issues

STEPS

- Work with Manitoba Infrastructure to continue solving drainage issues along Provincial Roads in the municipality
- Identify parcels of land that can be used as water retention ponds and implement strategies for optimal land uses in this regard
- Explore specific land uses that will help to remove debris and pollution out of surface runoff water (for ex., 'bioswales') and also look into other possible options for surface water management such as multi-functional storage (MFS) designs

GOAL 2: Improve Air Quality in the RM of Stuartburn

Potential Programs

Seek to improve air quality and reduce GHG emissions through a reduction in the number of motor vehicle kilometers travelled

OBJECTIVE

Reduce fossil fuel use

ACTION 2A

Install "No Idling" zone signs

STEPS

- Determine appropriate locations for sign installation
- Purchase and install signs

OBJECTIVE

Investigate alternatives to fossil fuels for transportation

ACTION 2B

Investigate potential for electric vehicles for municipal fleet and other transportation

STEPS

- Conduct investigation into alternative fuelled vehicles in the market to determine costs and appropriateness for municipal operations
- Provide information to residents concerning the options that are available and evaluate the level of interest for electric vehicles and a potential infrastructure (local charging station) to accommodate owners of these vehicles

GOAL 3: Reduce Community Waste in the RM of Stuartburn

Seek to reduce waste per household in the RM of Stuartburn

Potential Programs

OBJECTIVE

Expand the awareness, education and capacity for recycling and solid waste diversion

ACTION 3A

Encourage recycling/waste diversion programs already in place in the municipality

STEPS

- Promote existing recycling/waste diversion programs such as 'Recycle to Win' to local residents

ACTION 3B

Develop a community organics strategy to determine possible steps such as community compost drop off sites or organics pick up

STEPS

- Review best practices in yard waste and organics programs from other municipalities
- Consult with the public on what they currently do in the home and services they would like
- Council should consider the possibility of creating an SSO (source separated organics) program across the municipality

WALK TO WORK

even if it's four miles. Ride a bike to work. Drive a different way.

(Nolan Bushnell)

GOAL 3: Reduce Community Waste RM of Stuartburn

Seek to reduce waste per household in the RM of Stuartburn

Potential Programs

OBJECTIVE

Expand the awareness, education and capacity for recycling and solid waste diversion

ACTION 3C

Conduct compost and gardening workshops in the RM for local residents

STEPS

- Initiate dialogue with compost education programs such as those offered through the Green Action Centre
- Invite residents to educational workshops

DID YOU KNOW?

As a consumer society it is important to practice the 6 "Rs" related to waste reduction; RETHINK, REFUSE, REDUCE, REUSE, REPAIR and RECYCLE in that order. Recycling should be the last step in reducing the amount of waste sent to the landfills each year.

GOAL 4: Reduce Energy Consumption and Improve Energy Efficiency

Seek to reduce energy consumption for existing buildings

Potential Programs

OBJECTIVE

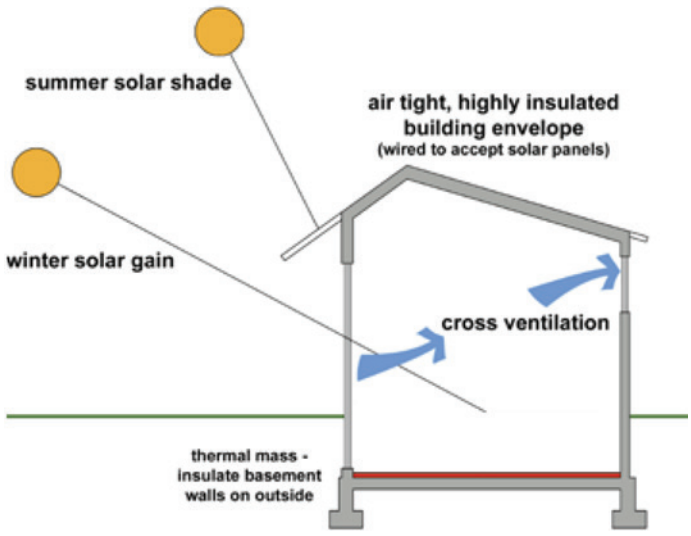
Promote sustainable retrofit measures for existing facilities and residents' households

ACTION 4A

Promote Efficiency Manitoba energy efficiency programs

STEPS

- Include educational information on Efficiency Manitoba programs on municipal website, publications and emails, etc.



Climate Resilient Architecture

Features like screened-inporches, attached sunrooms and greenhouses, more glazing on east and south exposures, and vegetated roofs may help to "Future Proof" against the predicted increase in frequency and severity of weather events as a result of climate change.

GOAL 4: Reduce Energy Consumption and Improve Energy Efficiency

Seek to reduce energy consumption for existing buildings

Potential Programs

OBJECTIVE

Promote sustainable retrofit/upgrade measures for existing municipal facilities and commercial buildings in general

ACTION 4B

Install LED lighting at municipally-owned properties and infrastructure

STEPS

- Develop a policy to incorporate energy efficiency measures in any future municipal building plans – LED lighting, solar panels, etc.
- Retrofit municipally-owned existing properties to LED lighting fixtures (offset purchase of electricity and create a more direct and visually appealing white light)

GOAL 5: Manage Risk Concerning Wildfires in the RM of Stuartburn

Seek to enhance risk management and safety measures

Potential Programs

OBJECTIVE

Promote the Manitoba Sustainable Development Wildfire Program

ACTION 5A

Identify areas that are most at risk of wildfires in the municipality

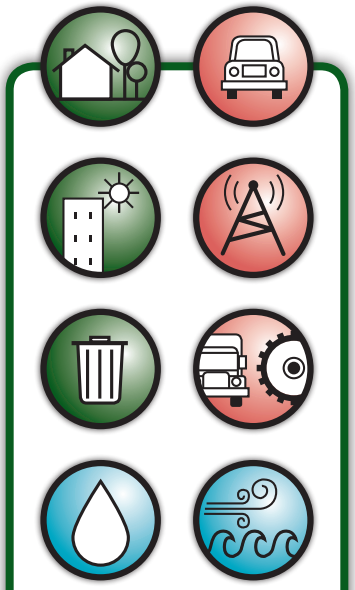
STEPS

- Work with Manitoba Sustainable Development to ensure that measures are in place to combat wildland/urban interface (WUI) wildfires throughout the residential 'at risk' areas of the RM.
- Ensure that residents are aware of emergency procedures in case of wildfires in their area
- Promote FireSmart Canada® to guide Stuartburn communities in assuming responsibility for their neighbourhood's and community member's safety by recognizing the wildfire issues and taking the initiative to reduce the hazards

GOAL 6: Increase Climate Change Awareness in the RM of Stuartburn

Seek to educate municipal council, employees and residents on climate change issues

Potential Programs



OBJECTIVE

Provide opportunities for activities and discussion forums on climate change issues

ACTION 6A

Identify local environmental assets and liabilities, potential risks and hazards arising from climate change

STEPS

- Identify areas of the municipality that continue to be at risk concerning drainage issues as well as 'interface' wildfires (areas where residential, industrial, or agricultural developments are located in a wildland setting with natural vegetation at risk of being impacted by wildfire), among other risks
- Create a climate discussion forum on municipal website with links to areas of interest on the science underlying climate change, etc.
- Invite environmental consultants to visit the municipality and hold seminars and public meetings on climate change issues
- Use this climate change local action plan as a springboard towards implementing actions to adapt and mitigate the effects of climate change
- Apply for sustainable project funding from the FCM and other sources (federal, provincial, etc.)

Local Benefits & Impacts

ENVIRONMENTAL, ECONOMIC & SOCIAL

ACTING TODAY TO CHANGE TOMORROW

Éco-Ouest
Eco-West

Types of Benefits

Local benefits serve as motivation for action. . .

"What does this mean to me, my family, my job or business, my community?"

The topic of global climate change can be rather abstract for some people. The setting of greenhouse gas reduction targets helps to create a tangible, overarching goal that unites and aligns the diverse motivations and agendas of the residents, businesses, institutions, community organizations and municipal government. However, this is not enough to enable and motivate stakeholders to act: the overarching goal must be translated to local benefits. One of the key principles in the PCP Program is to emphasize local benefits.

Economic Benefits

- Energy and operating cost savings in all sectors
- Physical asset renewal in municipal operations and private sector
- Improved municipal service delivery
- Reduced healthcare costs
- Increased productivity and employee morale
- Greater support for local businesses – significant multiplier effect
- New local business opportunities in sustainable development sector
- Local job creation in new "green" businesses and services

Environmental Benefits

- Improved air quality
- More green space and trees in the community
- Improved health of natural ecosystems
- Better indoor living and working environments (e.g. improved lighting, better indoor air quality, reduced noise, increased comfort)

Social Benefits

- Improved health of residents
- Reduced traffic congestion
- Increased community investment and services
- Opportunity for the municipal government to show leadership and influence other community stakeholders to take action
- Greater sense of community; enhanced quality of life

Next Steps

GETTING STARTED

ACTING TODAY TO CHANGE TOMORROW

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Conclusion

This report confirms that

the RM of Stuartburn

has completed the 3rd milestone of the Partners for Climate Protection (PCP) program.

With this Climate Change Local Action Plan received by council

on _____, 2019,

the **RM of Stuartburn** now has a report that can be described as comprehensive, effective, and achievable.

The next step for Eco-West Canada and the RM of Stuartburn will be to engage participating stakeholders in implementing the initiatives that have been identified in this report, and to seek all available sources of funding in order to make these projects come to fruition with sustainable results.

The timelines for many of these activities will vary, as some programs maytake only a matter of months to fine-tune and launch while others may require more time and resources to fully develop and reach the point of approval.

Once launched, some programs could take years to fully implement. As the community is developing and implementing these projects, best practices for additional project concepts that could be added to this plan should be identified. Moreover, technologies, policies, economic/legal drivers and climate conditions will inevitably change in the years ahead.

New opportunities and obligations arising from this changing environment may require a revision of this report in the short term and create a "second generation" of initiatives in the longer term.

Appendices

REFERENCES | GHG EMISSIONS INVENTORY | COMMUNITY SURVEY

ACTING TODAY TO CHANGE TOMORROW

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Appendices

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Rural Municipality of Stuartburn

September 3, 2019

Éco-Ouest
Eco-West

Greenhouse Gas (GHG) Emissions Inventory

This report is an inventory of GHG emissions that were generated within your territory in 2011 and 2015, both at the Corporate and the Community levels.

Corporate Inventory: This inventory includes data on all municipal government installations, including the buildings, the street lighting, water and sewage, the municipal fleet and solid waste within the community and / or the municipal government.

Community Inventory: This inventory includes residential, institutional, commercial and industrial, as well as transportation and solid waste data.

Why an energy and emissions inventory?

Energy consumption is an important management factor for municipalities. Each unit of energy, whether litres of fuel, kilowatts of electricity or the more abstract gigajoule (GJ), costs something to purchase and use. Knowing how much is being used, and where, gives municipalities a chance to manage energy consumption costs and to look for efficiencies.

Energy consumption has side effects, and one important side effect is Greenhouse gas emissions (GHGs). Measuring and reducing GHGs allow municipalities potential access to carbon credits and funding opportunities, as well as the altruistic goal of impacting climate change.

The Federation of Canadian Municipalities (FCM) has, in association with ICLEI, produced a protocol for monitioring and reporting energy consumption and emissions called the Partners for Climate Protection Protocol (PCP). This protocol will be phased out in the coming years in favour of the Global Protocol for Community Scale Greenhouse Gas Emissions (GPC) protocol. Eco-West has prepared all data to be compatible with both protocols.

The PCP protocol, presented in this document, measures GHGs from two facets of municipal life: Corporate, or Municipal Operations, and Community.

Corporate Energy Consumption and Emissions

The Corporate inventory includes all consumption and emissions brought about by the operations of the municipal corporation. This includes the heating and powering of all Buildings and Water infrastructure, all Streetlights (though Manitoba Hydro has near-exclusive control over this sector) , and the Vehicle Fleet. Depending on the energy mix of the sector and where electricity comes from the impacts of these sectors c an vary considerably. In Manitoba, where electricity is generated by hydro electric dams the GHG impact is nearly 0, while in Alberta or the East Coast the emissions rates per kilowatt hour are significant. Usually, however, the major impact for rural municipalities is found in the Vehicle Fleet sector, where fossil fuels are burnt for energy.

Community Energy Consumption and Emissions

The Community inventory includes all consumption and emission brought about by the citizens of the municipality and its neighbours going about their daily lives. This includes the heating and powering of the Residential, Commercial and Industrial sectors, as well as vehicle Transportation sector and all Community waste. Again, depending on the energy mix of the sector and where electricity comes from, the impacts of these sectors can vary considerably. In Manitoba, where electricity is generated by hydro electric dams the GHG impact is nearly zero, while in Alberta or the East Coast the emissions rates per kilowatt hour are significant. Usually, however, the major impact for rural municipalities is found in the Transportation sector, where fossil fuels are burnt for energy.

Note to the Reader

This report makes comparisons across a number of dimensions to give context to the consumption and emissions figures presented. Comparisons are made between communities, between years for the Municipality, and to averaged Manitoba municipalities. Although not exhaustive, they give a global picture of the magnitude of consumption and emissions in the Municipality and whether that is high or low.

An important additional consideration for the reader is annual weather differences. The two years compared in this report—2011 and 2015—had different weather. Normalized to a 24 year average, 2015 had as much as 4.9% less heating requirements than 2011, and 15.7% less cooling requirements. This likely had a significant impact on energy requirements for any buildings or water infrastructure in use by the Municipality. 2015 also had 12.0% more snowfall than 2011(using snowfall data for Winnipeg), which likely had a significant impact on fuel use, requiring fewer snow plow trips. Cross-community comparisons do not take into account differences between surveyed years despite that most other communities shown in this report are displaying 2015 or 2016 data.

Data sources

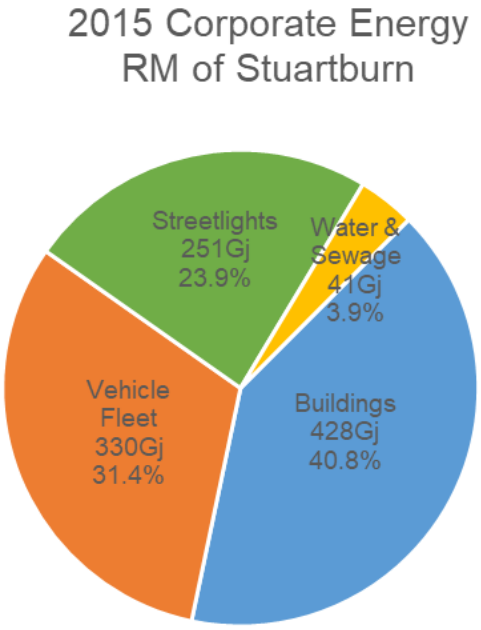
The data in this report come from a variety of sources. Electricity and natural gas consumption information for the municipality's operations and for the aggregate of the community at large comes from Manitoba Hydro. Vehicle fleet consumption, and the fuel types and respective quantities used are provided by municipal staff. Waste and recycling tonnage similarly come from municipal records, supplemented by recycling data from Manitoba Multi-Materials Stewardship. Transportation data is estimated using a proxy rate provided by the Federation of Canadian Municipalities.

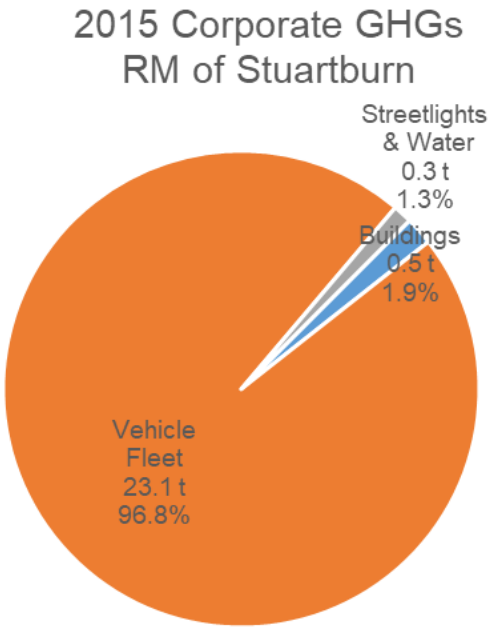
Additional data allowing cross-community comparisons comes from the communities themselves.

2015 Corporate Data

Energy Sources: Electricity, Natural Gas, Diesel, Gasoline, Propane, Waste

Total 2015 CO^2e: 24 t





Sector	2011 Energy Gj	2011 Emissions tonnes	2015 Energy Gj	2015 Emissions tonnes
Buildings	359	0.3 t	428	0.5 t
Vehicle Fleet	458	32.2 t	330	23.1 t
Streetlights	248	0.2 t	251	0.3 t
Water & Sewage	44	0.0 t	41	0.0 t
Total	1,108	**33 t**	1,049	**24 t**

Corporate Emissions

The operations of the RM of Stuartburn emitted 24 tonnes of CO_2e in 2015, from the consumption of 1,049GJ of energy. These energy purchases cost approximately $33,972.

The RM of Stuartburn's most energy intensive sector is the **buildings** sector, consuming 40.8% of all energy used by the corporation (428GJ in total), and emitting 0.5t of CO_2e.

The **buildings** sector tends to be quite a significant energy consumer because buildings must be kept lit and habitable for people to function. In Canada, this means significant heating and cooling costs. Vehicle bays have the added issue of having doors the size of whole walls that can vent an entire building's heat in seconds, creating problems for firehalls and public works garages.

Typically, for large urban municipalities, the major consumer of energy is this sector, at 3,937GJ total energy consumed, or 1.3GJ/ capita. The RM's consumption is more than that.

The second most energy intensive sector for Stuartburn is **vehicle fleet** accounting for 31.4% of consumption, and 96.8% of emissions. On a per capita basis, this is 80% less than the urban average.

Care must be taken when considering the vehicle fleet sector; it uses primarily fossil fuels, which makes its energy consumption the "dirtiest" per unit of consumption. It is also the most difficult to measure, though any changes made will have significant GHG emissions impacts.

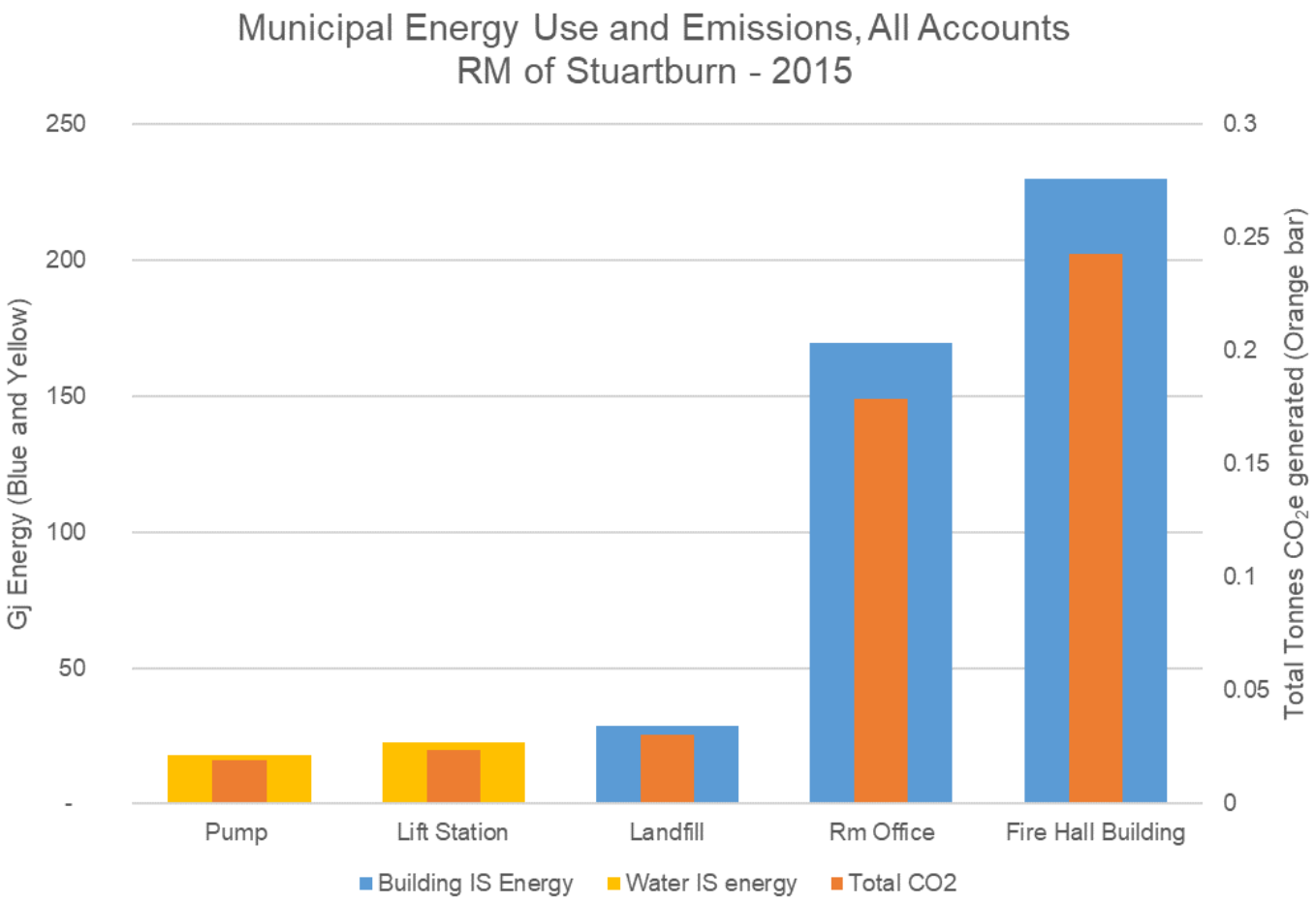
+ Preliminary Observations: Corporate

The RM of Stuartburn experienced population growth between 2011 and 2015 (5.8%) while undergoing a decrease of -5.3% in energy consumption.

The largest consumer of energy, and therefore energy costs, is the **buildings** sector, consuming 40.8% of all energy used by operations. This is much less than the average for Urban communities studied so far (23.6% of the per capita average).

The third highest sector is **streetlights** at 23.9%.

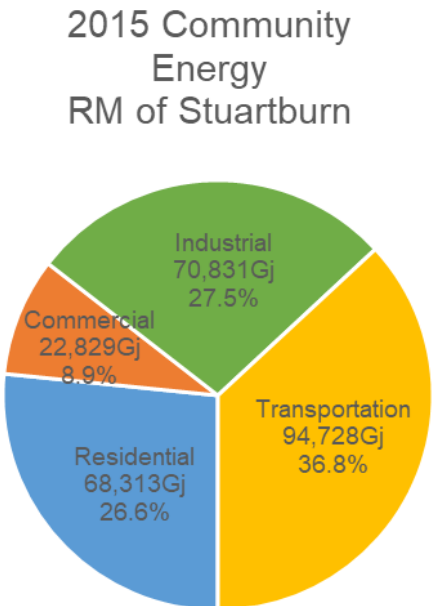
Finally, the **water and sewage** sector represents just 3.9% of total consumption, which is not very significant.

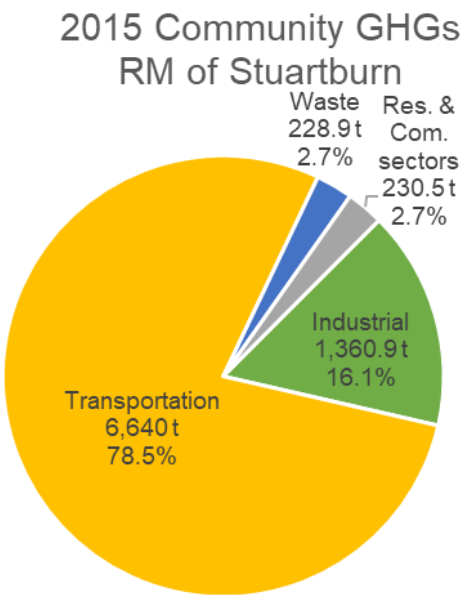


2015 Community Data

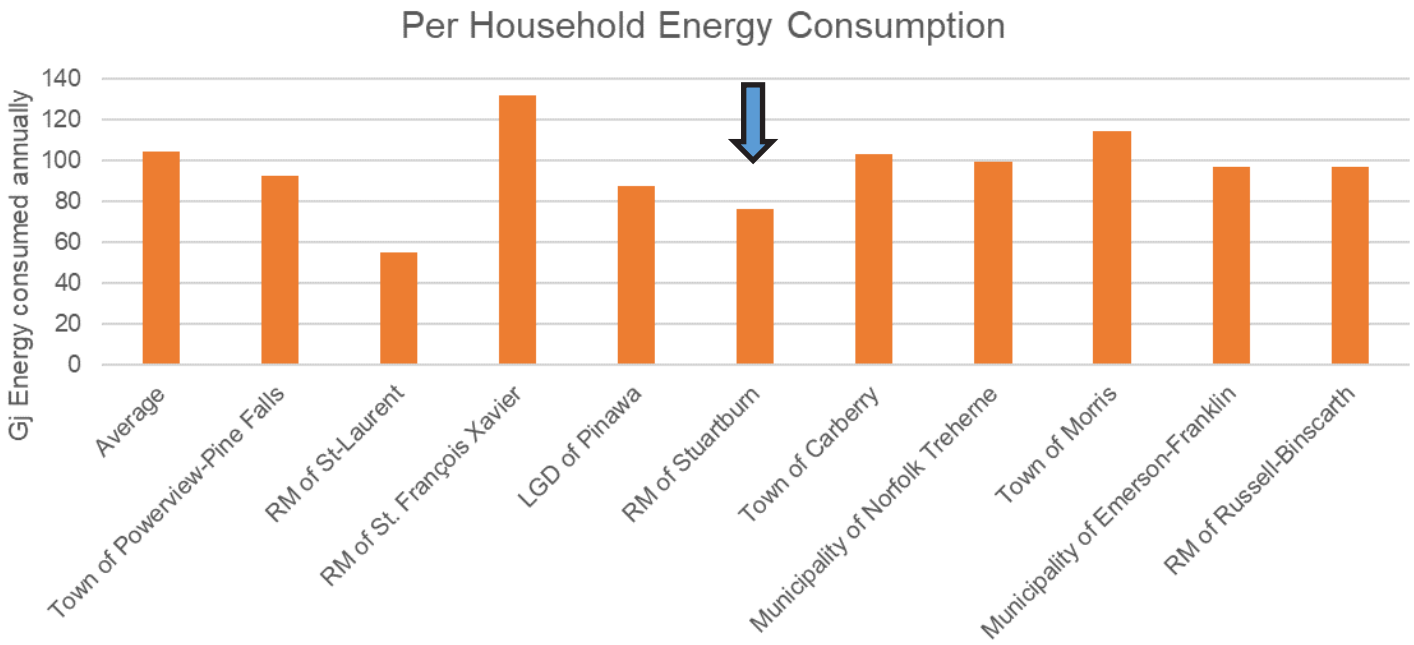
Energy Sources: Electricity, Natural Gas, Diesel, Gasoline, Propane, Waste

Total 2015 CO^2e: 8,460 t





	2011		2015	
Sector	**Energy Gj**	**Emissions tonnes**	**Energy Gj**	**Emissions tonnes**
Residential	65,554	64 t	68,313	72 t
Commercial	19,618	31 t	22,829	158 t
Industrial	84,108	1,839 t	70,831	1,361 t
Transportation	91,551	6,417 t	94,728	6,640 t
Waste	92	45 t	475	229 t
Total	260,832	**8,332 t**	256,701	**8,460 t**



Community Emissions

This inventory divides community energy consumption into the following sectors: **residential, commercial, industrial** and **transportation**. Emissions include a further sector: **waste**.

The community at large in the RM of Stuartburn uses the most energy in the **transportation** sector, which comprises 36.9% of the total. This consumes 94,728GJ of energy, and emits 6,640 t of CO_2e.

Typically, for Urban municipalities, the transportation sector consumes 47.8GJ per capita. Stuartburn, at 58.3Gj per capita, is more than the average (21.9% the per capita average).

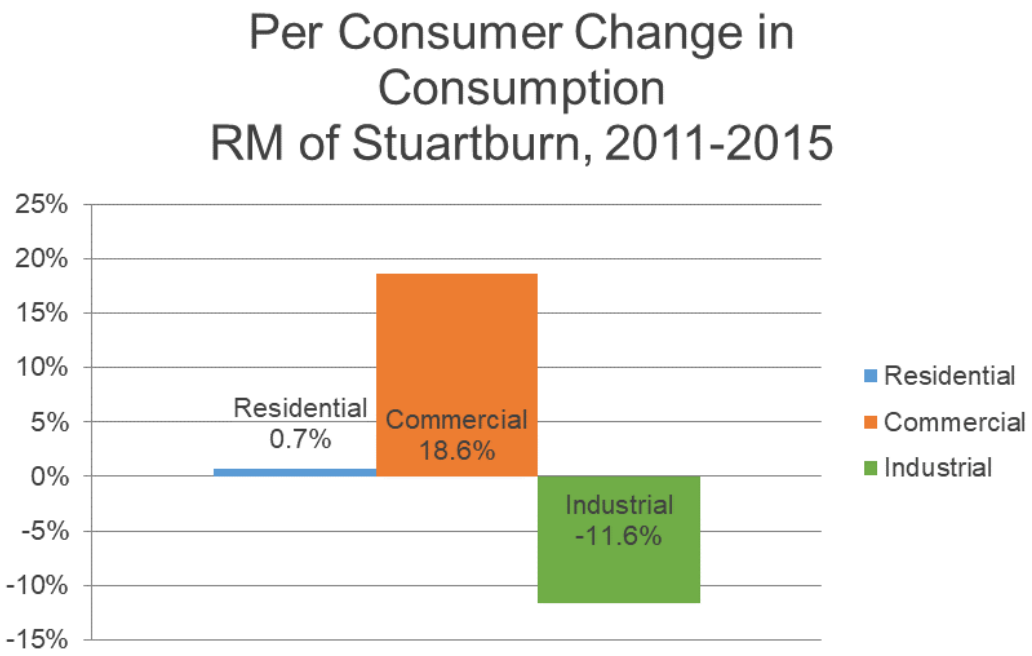
The second highest energy consumer in the community is the **industrial** sector, with 70,831GJ, 27.6% of total consumption. Per capita this is 43.6GJ, about half the Urban average of 114.3GJ.

Residential was next highest at 68,313GJ, 42.0GJ per capita and 26.6% of total energy consumption, less than the Urban average of 42.6GJ/capita.

The least energy intensive sector, accounting for 8.9%, is the **commercial** sector, which consumed 22,829GJ total and 14.1GJ/capita (half the average of 28.2GJ on a per capita basis).

The **waste** sector is not considered in energy consumption, as energy used in the production and transport of waste is covered in the industrial, commercial, residential and transportation sectors.

In terms of GHG emissions, the waste sector emitted 229 tonnes of CO_2e from 475 landfilled tonnes of garbage, 2.7% of total emissions.



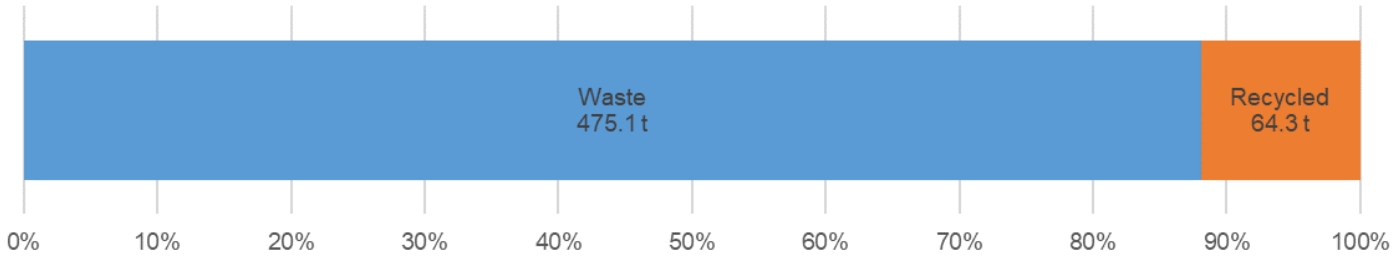
+ Preliminary Observations: Community

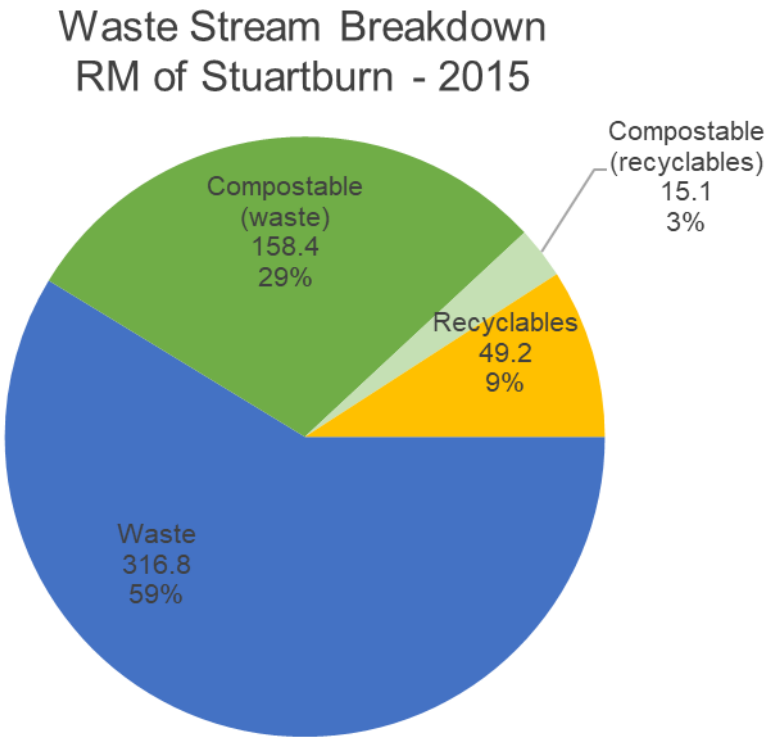
The two tables on the previous page demonstrate a decrease in total energy consumption within the community, with 1.6% less energy consumption but 0.8% more GHG emissions; less than population's increase over the same time frame, in the same time period.

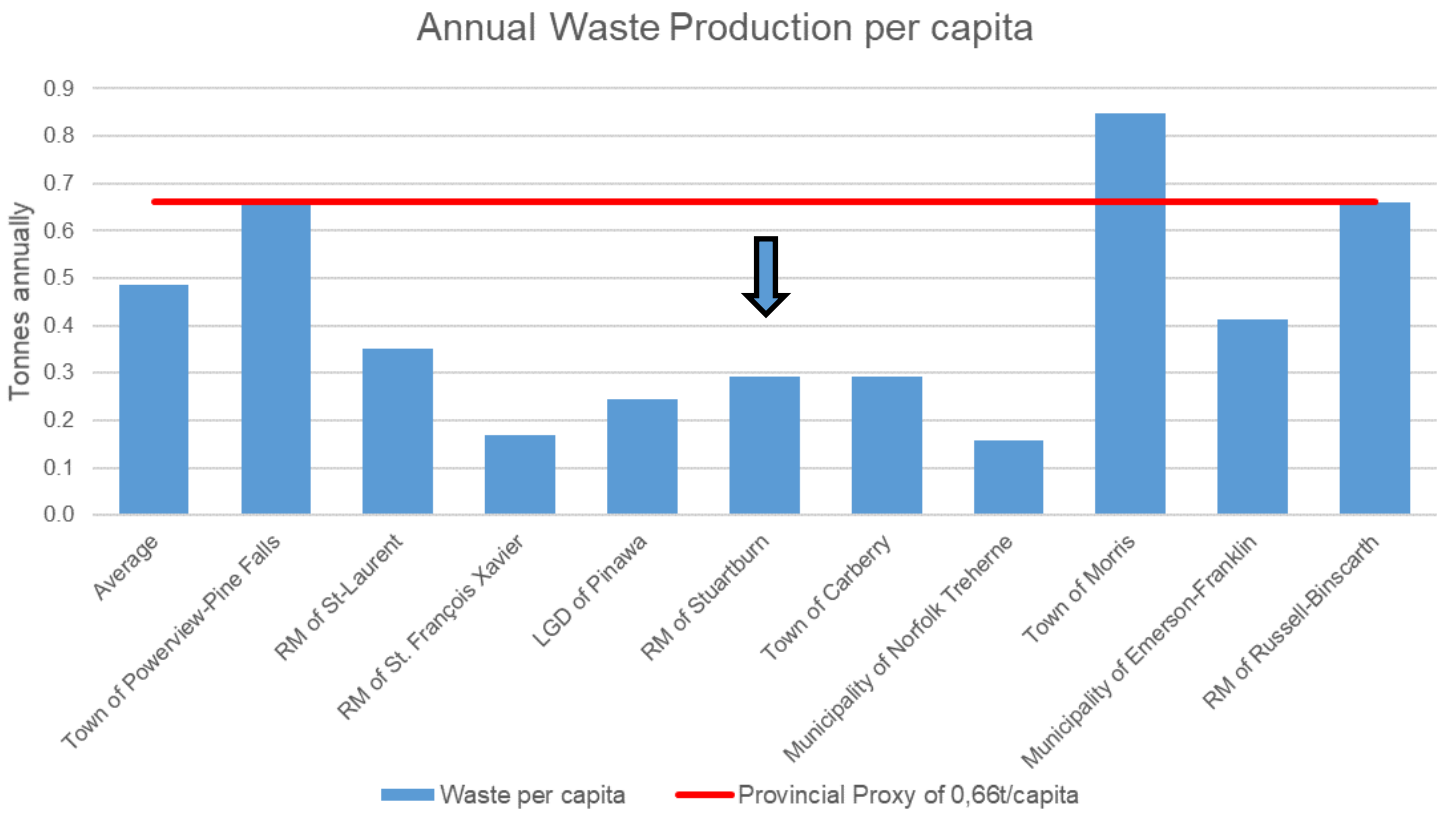
By far the greatest change in energy consumption was in the **industrial** sector, which accounted for 321.4% of energy use change (taking into account countervailing changes in other sectors). Per user consumption of energy increased in the **residential** and **commercial** sectors (by –0.7% and 18.6%, respectively). Per user consumption of energy decreased in the **industrial**, sector (by -11.6%).

Waste Appendix

In Brief: The RM of Stuartburn creates less waste per capita than its peers, and recycles more. An organics processing initiative could reduce the GHG impacts of that portion of the waste stream.







Waste per capita as reported to Eco-West Canada

Waste Analysis

In 2015 the RM of Stuartburn reported 475.1 tonnes of waste landfilled, or about 292.4 kg per person per year.

This amount of waste is more than half to the average level seen by most other communities, though this average includes communities using the provincial proxy, which is set high to encourage weighing, and those communities using their landfills as revenue generators.

Stuartburn recycles 41.5 kg/capita, more than the peer group average of 63.7 kg/capita.

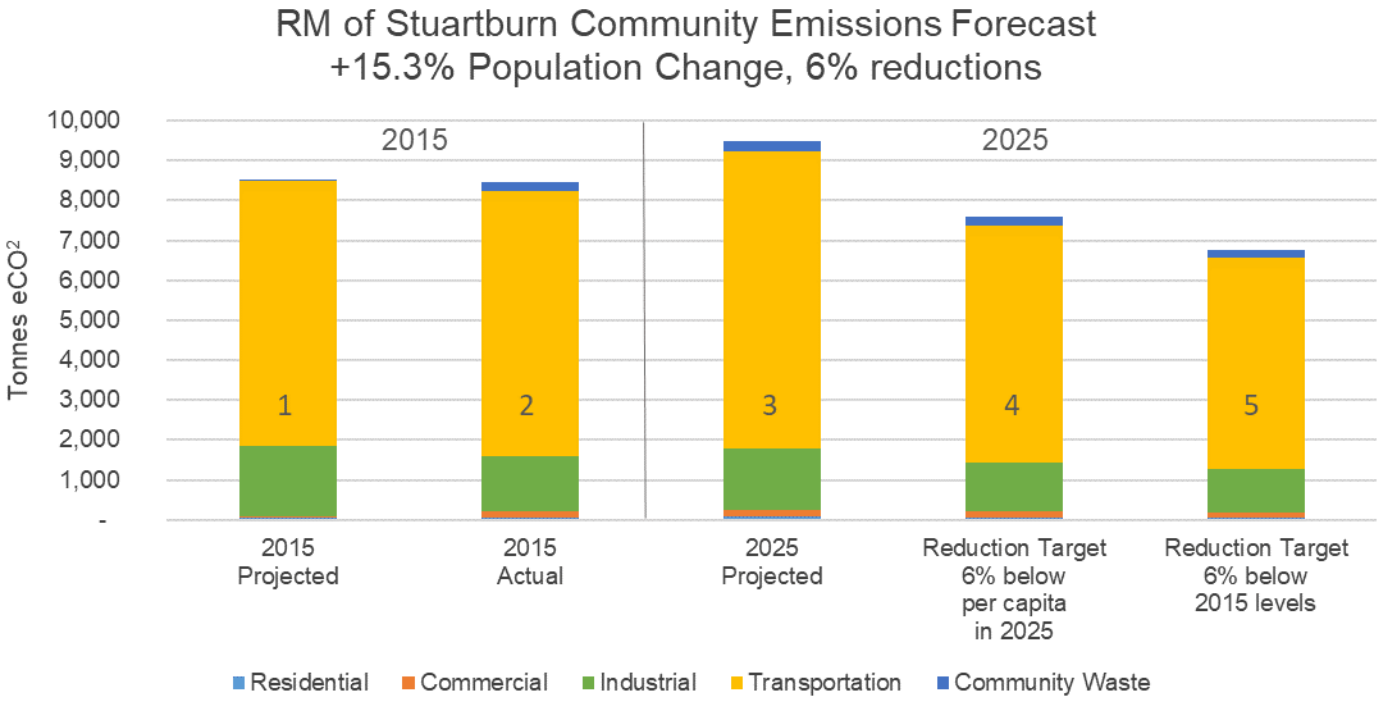
The total waste stream of the community, with recycling and waste combined, is 333.9 kg/capita. This is more than half than the estimated average for the peer group.

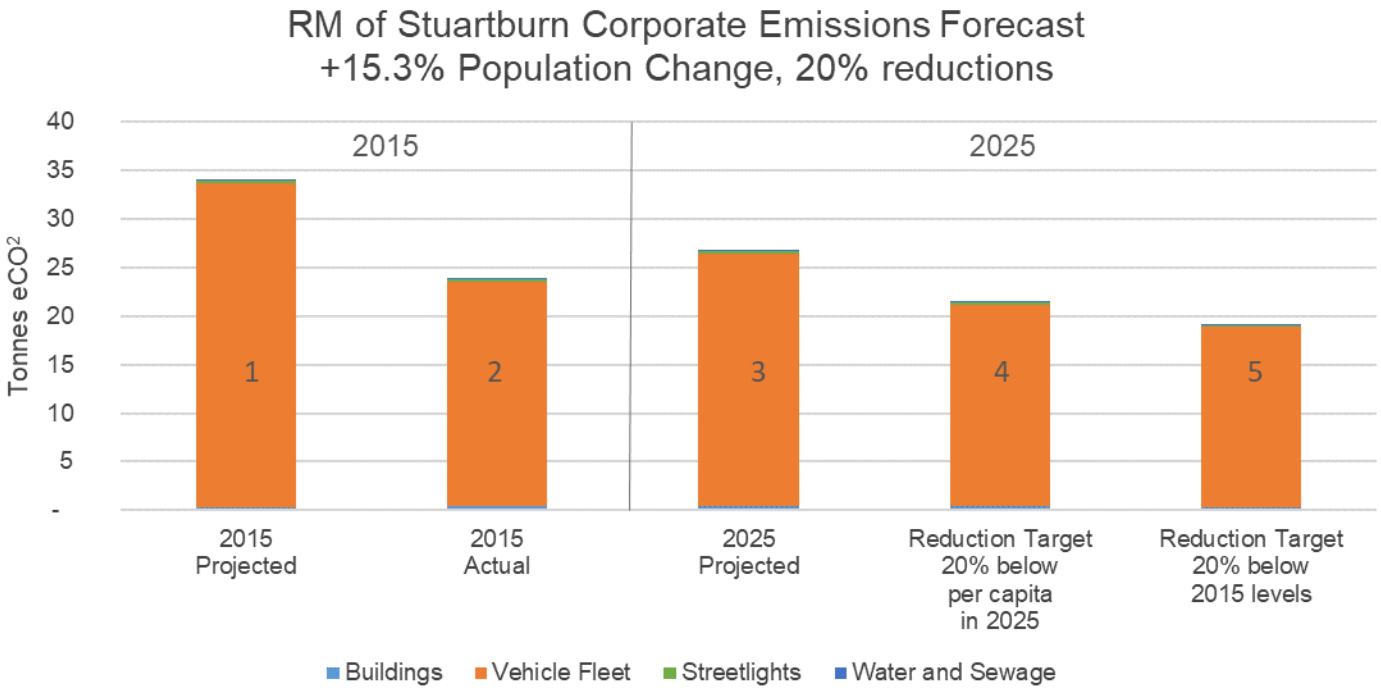
As the community produces less waste per capita than average, and recycles more per kg of waste it is very likely that the recycling program is operating very successfully.

Stuartburn has no organics waste processing, which puts about one third of the waste stream, the third most responsible for GHGs and ground water issues, into landfills. An organics processing system would reduce landfill fees, WRARS levies, landfill use rates, GHGs, odor issues and generate a usable material for landscaping.

+ Business-as-Usual and Emissions Projections

In Brief: In a period of strong population growth, the RM decreased energy consumption and emissions for operations, as did the community-at-large. Transportation has the largest impact on community emissions, so measures aimed at that sector could have major impacts. For municipal operations, measures aimed at improving the vehicle fleet's efficiency would have the largest impact.





Stuartburn Past, Present and Future

In 2015 Stuartburn reported 24 tonnes of CO_2 or equivalent emissions for Municipal operations, and 8,460 tonnes for Community operations. To determine whether this describes an improvement since 2011 a forecast was made for 2015 using data from 2011. This was scaled on the increase in households for the **residential**, **transportation** and **community waste** sectors, and by **commercial** and **industrial** Hydro clients for those sectors.

Community

Compared to the projection, the community-at-large is emitting 0.9% less GHGs than would have been expected.

Going into the future, if no changes are made total emissions will increase by 5.4% assuming growth remains constant for the next ten years (bar 3, top graph). A commitment to a 6% per capita decrease in emissions would save 535.2 tonnes of CO_2e annually, removing the equivalent of nearly 113 cars from the road (bar 4, top graph). A more ambitious target of 6% off unmodified 2015 levels would put that at 967.4 tonnes, the equivalent 204 cars (bar 5, top graph).

Corporate

Compared to the projection, municipal operations is emitting 57.5% more GHGs than would have been expected (bars 1 and 2, bottom graph).

For RM operations, **vehicle fleet** and **buildings** sectors both had significant impacts on the total change in energy consumption and emissions; with vehicle fleet decreasing energy consumption while buildings decreased energy consumption from the previous period., causing total emissions to fall short of the projected levels by -5.3%. Efficiency measures aimed at decreasing the usage of vehicle fleet or increasing efficiency of the equipment would have significant impacts on energy bills and emissions rates.

While the population is increasing by 5.8% every 4 years and 15.3% every 10 years a 20% reduction in CO_2e emissions from 2015 levels could save an estimated $9,819 in energy expenditures and 7 tonnes of GHGs (off projected levels), the equivalent of 1 cars annually in 2025 (bar 5, bottom graph).

Éco-Ouest
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Survey Report
Rural Municipality of Stuartburn, Manitoba
June, 2019

Notice to reader: This document was prepared by Eco-West Canada Inc. (EWC) for the municipality pursuant to the terms of our engagement with the Client. The materials and observations in this report reflect best judgement of EWC considering the information available to it at the time of preparation. The contents of this report are based on information and materials provided by the Client, as well as community surveys, consultations and interviews conducted in the process and so its accuracy and completeness is dependent on the same. This document may not be relied upon by any person or entity other than the Client, and EWC hereby expressly disclaims any and all responsibility or liability to any person or entity other than the Client in connection with their use of this document.

EXECUTIVE SUMMARY

This report is a summary of three surveys distributed between the months of February and April, 2019 to residents, staff and council members of the Rural Municipality of Stuartburn, Manitoba by Eco-West Canada Inc. (EWC), as part of the Climate Change Local Action Plan process.

The Residents Survey identified the community members' opinions and knowledge regarding climate change, municipal infrastructure and services.

The Staff Survey identified the basic readiness of the municipality regarding possible changes to conditions of environment and energy consumption.

The Council Survey addressed the big picture, vision and council's opinions regarding the direction of the municipality.

As per agreement, The Rural Municipality of Stuartburn Administration distributed links for Staff Surveys and Council Surveys by e-mail if necessary and publicized the Residents Survey on the Rural Municipality of Stuartburn website as well as through social media channels where possible. Each survey had the following number of respondents:

Residents Survey: **50 respondents**
Staff Survey: **3 respondents**
Council Survey: **4 respondents**

Not all responses are identified in this report. Please ask your EWC consultant for a detailed compilation.

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CURRENT PICTURE of STUARTBURN

Population: **1648** (2016)
# of council members: 5

RESIDENTS AND COUNCIL SURVEY RESULTS BY TOPIC

Respondent profiles

Fifty **residents** responded to the Residents Survey. The respondents' ages vary from 18 to 65+, distributed as follows:

Age	% of Resident Respondents
18 to 30	16%
31 to 45	34%
46 to 55	26%
56 to 65	20%
65+	4%

41% of respondents have lived in the community for more than 20 years, while 31% have lived in the community between two and ten years. 57% of community respondents live with one other adult in the household, and 43% of respondents have children under the age of 18 living in the home.

52% of respondents plan to continue living in the community for the next 20 years to come or more, while 18% are unsure of their future living plans. 42% of community respondents live in a house in town while 52% live in a house outside of town. 86% plan to live in their current home for as long they intend to live in the community. Of those who do not plan to stay in their current home, most say they would prefer to live in a house outside of town (86%).

77% of community respondents are employed or self-employed. Of these, 86% work full time, the other 14% work less than 30 hours a week.

Four of five **council** members responded to the Council Survey.

WATER

Water Management

Council members believe the main water assets or issues that require investment or need to be addressed are the quality of drinking water and the availability of drinking water, improving drinking water quality and drainage.

46% of community respondents either have water savers on all faucets and showers, low-flow toilets or a combination thereof.

41% of resident respondents believe the tap water is fine to drink, while 33% only drink it if it is filtered or treated. 13% do not drink tap water out of concern for its quality.

WASTE

Waste Management

33% of community respondents reported producing less than one garbage bag in household waste per week, 44% produce one to two garbage bags per household, and 23% reported producing three garbage bags or more per week. 26% of respondents recycle less than a quarter of their household waste, 36% recycle between a quarter and half, another 28% recycle between half and three quarters, and 10% recycle more than three quarters of all household waste.

Compost

38% of respondents do not compost, 5% of respondents compost yard waste and 51% compost kitchen waste.

Council respondents answered that the municipality holds composting as an important investment.

Proper disposal of harmful products

When it comes to proper disposal of potentially harmful products (electronics, paint, batteries, car fluids) 43% of respondents recycle or use proper disposal sites.

TRANSPORTATION

Attitudes and Habits

86% of community respondents work away from home, some or all of the time. To get to work, 89% of respondents use a motor vehicle while 11% walk. 32% of respondents work less than 5 kilometers from their home and 32% of respondents work more than 45 kilometers from their home. Most respondents (59%) never walk or bike to work, while 17% do it to a varying frequency. 74% of respondents travel outside the municipality for work.

Electric Vehicles

54% of respondents express no interest in hybrid or electric vehicles. Despite concerns about range, performance or functionality, 32% of respondents are either considering buying a hybrid or electric vehicle or are interested in learning more about them.

ENVIRONMENT

Climate Change

86% of community respondents understand that human activity greatly contributes to climate change, but 29% don't think they can make much of a difference. 57% of respondents are concerned about the effects of climate change.

Half of Council respondents believe most residents of the community agree that the global climate is changing as a result of human activity, and that residents of this municipality are engaged and actively contribute to municipal governance and planning. A majority respondents did however indicate uncertainty regarding whether they believe the residents are ready to reduce their contributions to climate change, or if residents will support the local government if it takes actions to reduce its contributions to climate change.

When asked what the municipal council's needs regarding technical or information support are on issues regarding sustainable development and climate change, a majority of Council respondents expressed the need for support on understanding the science of climate change, applying for grants for environmental projects, understanding that there does not need to be a trade-off between the economy and the environment, communicating with the public about conservation and sustainability, identifying local environmental assets and liabilities, understanding the science of climate change and establishing an environmental or sustainability plan.

Attitudes and Beliefs

Regarding attitudes and beliefs toward the environment, a majority of community respondents **agree** with the following statements:

- *Individuals first need to change their own habits in order to reduce society's impact on the environment.*
- *A municipal government that reduces its environmental impact is making a smart decision on behalf of its residents.*
- *Municipal governments need to take steps to reduce their impact on the local environment*
- *There does not need to be a trade-off between the economy and the environment*

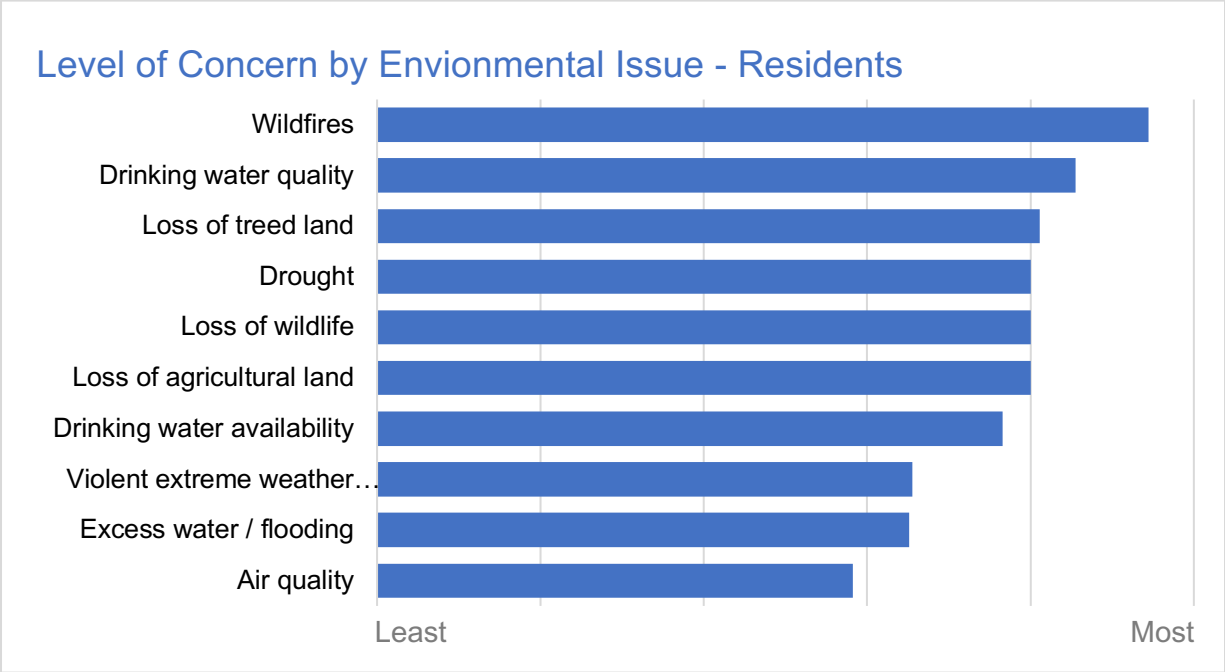
A majority disagree with the following statements:

- *I don't have time to worry about how my actions affect the environment*
- *I am confused about environmental issues*
- *Pollution is inevitable if we make improvements to our standard of living*

A majority are unsure about the following statements:

- My municipal government views environmental issues as a top priority

The chart below represents the level of concern residents have for various environmental issues:



Regarding Council respondents, a majority **agree** with the following statements:

- *Municipal governments need to take steps to reduce their impact on the local environment*
- *A municipal government that reduces its environmental impact is making a smart decision on behalf of its residents*
- *Pollution is inevitable if we make improvements to our standard of living*
- *Governments need to focus their spending on municipal services, not protecting the environment*

A majority disagree with the following statements:

- *We don't have time to worry about how our actions affect the climate*
- *New technologies will solve environmental problems before they get out of hand*

A majority are unsure about the following statements:

- *Council members view environmental issues as an important priority*
- *Council members are confused about environmental issues*

Council members indicated the following groups as those that should take the lead on solutions to environmental problems:

Federal, Provincial and Municipal governments; Conservation and watershed Management districts; Individuals; Businesses; Scientists and universities; Activists and organized interest groups.

The majority of municipal staff respondents rate their readiness, and the readiness of municipal managers to the following assignments, if directed to do so by the municipal council:

Area	Readiness				
	High	Moderate	Low	Not ready	Unsure
Planning and implementing energy consumption audits of the municipal fleet vehicles		√	√		√
Planning and implementing strategies for greenhouse gas reduction				√	√√
Planning and implementing improvements to recycling programs		√√			√

When indicating what areas municipal staff requires more support in addressing environmental concerns, all respondents indicated establishing an environmental sustainability plan for the municipality, identifying environmental assets and liabilities, applying for grants to support environmental projects or programs and finding money within existing budgets to support environmental projects or programs.

GENERAL MUNICIPAL AFFAIRS

Homes and Buildings, and Properties

90% of respondents own their homes. When it comes to home renovations, a majority of community respondents found that improving the energy efficiency of the home was the most important renovation worth considering while improving or repairing the electrical, plumbing or heating systems; making repairs to the roof, walls, floors or foundation; and maintaining of or increasing the value of the home were also very important.

The last time that a repair, addition or renovation was done to a majority of community respondents' homes (53%) was within the last two years, while 31% of respondents responded having done repairs, and addition or a renovation between two and ten years ago. The main factors in deciding to have renovations done are cost, finding a qualified contractor/tradesperson, timing and deciding whether the benefits are worth it, with cost of renovations being the most important factor. Repair or replacement of windows, electrical or plumbing features or water treatment systems as well as interior remodelling or cosmetic repairs are the most popular types of intended future renovations in Stuartburn.

Council respondents believe that energy efficiency renovations to municipal buildings are somewhat important.

Private Properties

All community respondents have a yard or land surrounding their home which they take care of themselves. According to residents, the most important yard/land improvements

are improving drainage, improving the grading (slope) of the land, adding or expanding a garden and adding or removing trees and shrubs. The most important factors in deciding to do an outdoor project are cost, timing, and deciding on whether the benefits are worth it.

Agricultural Operations

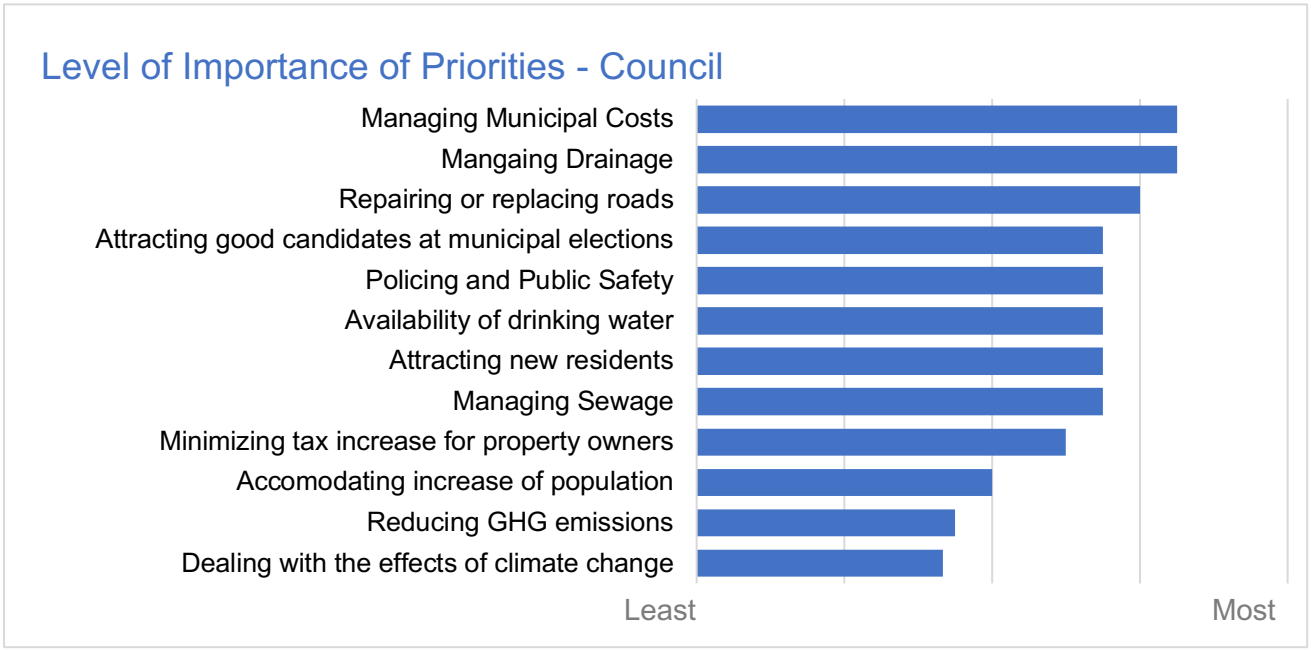
22% of respondents run an agricultural operation or live with someone who does. Of these agricultural operations, 100% use it for livestock and dairy, 33% use it to grow grains or oilseeds, and 33% use it for forages.

Municipal Capabilities

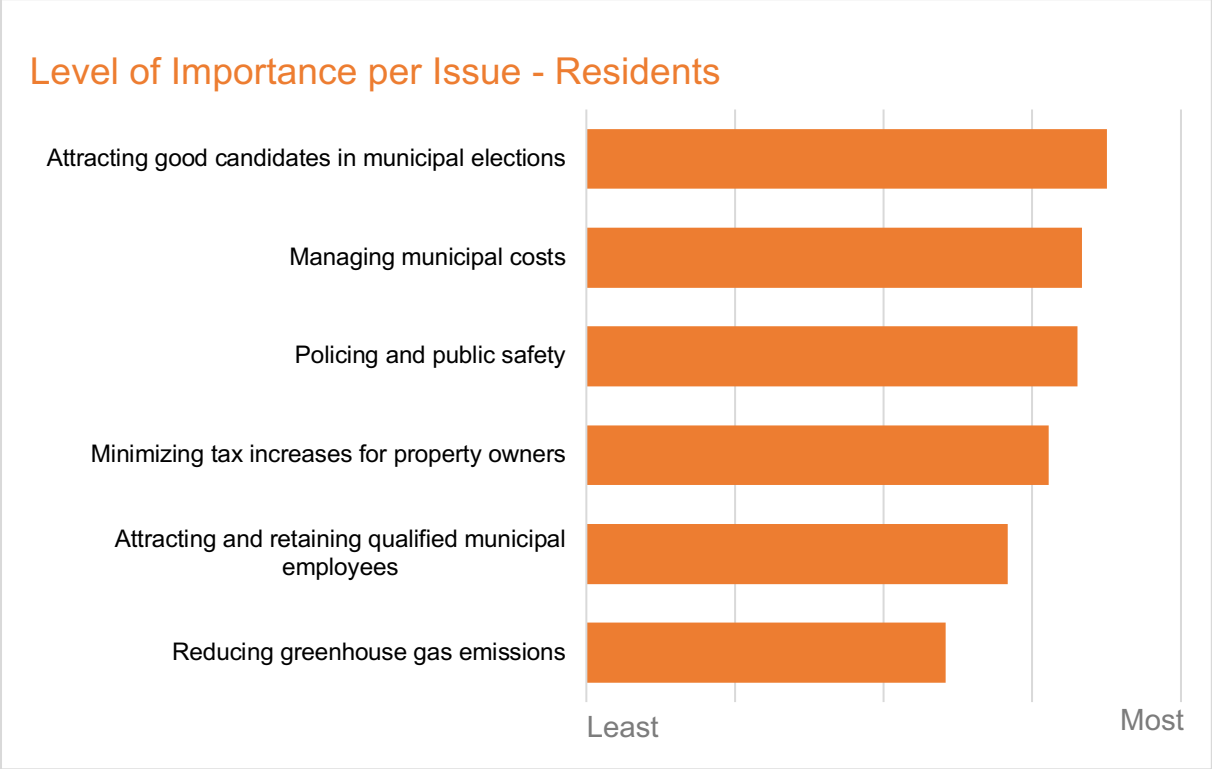
The majority of **council** respondents rate the municipality as having the following capabilities in these areas:

Area	Capabilities		
	Excellent	**Moderate**	**None**
Development planning		√	
Policy and legislation		√	
Managing Municipal Finances		√	
Engaging with constituents		√	
Promoting conservation and sustainability		√	
By-law enforcement		√	
EMO planning		√	

According to **Council** respondents, the most important priorities are the following issues or problems:



The table below represents residents' beliefs of the importance of the following issues for the municipality:



Additionally, residents mentioned the following additional priorities:

- Job opportunities
- Climate Change
- Environmental awareness
- Drainage
- Roads
- Tax reductions
- Economic development

Economic Future

When asked to highlight the most important investments for the municipality, one council member wrote economic development.

Notes:

Notes:

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