

# ENVIRONMENTAL FRAMEWORK:

Renewing our Future



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# LAND ACKNOWLEDGEMENT

Strathcona County resides on Treaty 6 Territory and the homeland of the Métis Nation of Alberta, Region Four and Two. Strathcona County honours the First Peoples of this land. We recognize that we stand upon a land that carries the footsteps of Cree, Blackfoot, Métis, Nakota Sioux, Dene, and Inuit, amongst others, who have been here for thousands of years. Strathcona County has an inherent responsibility to foster healthy relationships with First Peoples and further the Calls to Action as outlined by the Truth and Reconciliation Commission.





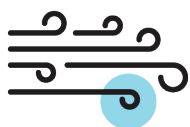
# EXECUTIVE SUMMARY

Ecosystems are the complex of living organisms, their physical environment, and all their interrelationships in a unit of space. An ecosystem model is built on the interconnectedness between abiotic (minerals, climate, soil, water, light, and air) and biotic (living) parts. The abiotic and biotic parts are linked through energy flows and nutrient cycling. This framework will follow the ecosystem model, focusing abiotic (air, water, land) and biotic (biodiversity) outcomes with energy and waste outcomes. The network of relationships, including County departments, government agencies, non-governmental organizations, and our citizens, will be defined as and built across all boundaries as per the ecosystem model.

The Environmental Framework will support a coordinated approach between administrative departments and external stakeholders in Strathcona County by enabling them to work together, leveraging people and financial resources, and responding to community needs.

The foundation for this framework is based upon six overarching outcomes and 35 objectives. These elements prioritize healthy ecosystems and set a foundation for healthy citizens.

Topic areas have been expanded from five to six and include Air, Water, Land, Biological Diversity (Biodiversity), Waste, and Energy. Each topic area has a clear goal and specific actions identified. Each action is then manifested by Innovative Practices, Supportive Tools, and Strategic Initiatives.



## OUTCOME: Airshed sustains healthy ecosystems and healthy citizens

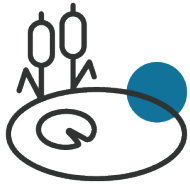
**MONITOR** air quality

**MANAGE** air quality

**EDUCATE** and **ENGAGE** with citizens to encourage stewardship behaviours

**REDUCE** emissions, including greenhouse gases, by reducing energy use, committing to energy efficiency, developing and using renewable energy sources





**OUTCOME: Watershed sustains healthy ecosystems and healthy citizens**

**MONITOR** water quality

**MANAGE** water quality

**MONITOR** water quantity

**MANAGE** water quantity

**EDUCATE** and **ENGAGE** with citizens to encourage stewardship behaviours

**ENSURE** water supply meets future planning needs

**ENSURE** the North Saskatchewan River and its tributaries are protected from pollution



**OUTCOME: Land planning, use, and management sustains healthy ecosystems and healthy citizens**

**LAND USE PLANNING** focuses on environmental (smart growth/complete) community design

**LAND USE DEVELOPMENT** focuses on wise use and development of land and buildings

**LAND MANAGEMENT** builds on ecosystem resilience and includes conservation and restoration

**NORTH SASKATCHEWAN RIVER** valley planning, use, and management builds on ecosystem resilience and includes conservation and restoration

**AGRICULTURAL** land planning, use and management builds on ecosystem resilience and conservation

**REMEDIATE** and **RECLAIM** degraded public lands

**PREVENT POLLUTION** and reduce the use of harmful substances on public and private land

**PREVENT LIGHT POLLUTION** and reduce the use of artificial light on public and private land

**EDUCATE** and **ENGAGE** with citizens to encourage stewardship behaviours





**OUTCOME: Biodiversity sustains healthy ecosystems and healthy citizens**

**PLAN** for a healthy connected ecological network

**PROTECT** a healthy connected ecological network

**MANAGE** a healthy connected ecological network

**RESTORE** degraded habitats

**EDUCATE** and **ENGAGE** with citizens to encourage stewardship behaviours



**OUTCOME: Waste management protects healthy ecosystems and healthy citizens**

**MONITOR** waste collection

**MANAGE** waste collection

**REDUCE** waste

**EDUCATE** and **ENGAGE** with citizens to encourage consumption behaviours that reduce waste



**OUTCOME: Reducing energy use, committing to energy efficiency, and embracing renewable energy sources sustains healthy ecosystems and healthy citizens**

**REDUCE ENERGY USE** within municipal **BUILDINGS** through energy efficiency

**REDUCE ENERGY USE** within municipal **OPERATIONS** through energy efficiency

**INCREASE ENERGY EFFICIENCY** via land use and transportation planning decisions

**INCREASE RENEWABLE AND ALTERNATIVE ENERGY SOURCES** (solar, wind, geothermal)

**EVALUATE** procurement of goods and services to increase energy efficiency and increase renewable/alternative energy sources

**EDUCATE** and **ENGAGE** with citizens to encourage behaviours that support energy efficiency and the transition to renewable/alternative energy

# STRATEGIC ALIGNMENT

## *2013 – 2030 Strategic Plan “We strive to be a model of ecological integrity”*

The strategic plan is Strathcona County’s principal guiding document for governance, community development, infrastructure, and program and service delivery. It serves as the foundation on which the County’s corporate business plan, department business plans, master plans and budgets are developed and approved.

“Becoming Canada’s most livable community”. This statement summarizes what we aspire to be as a municipality and paints a picture of what the community could look like in the future. Our vision statement outlines the primary elements that make our community livable and describes the County-wide priorities and results necessary to achieve that vision. One specific vision element is to strive to be a model of ecological integrity, protecting our environment and preserving our agricultural heritage.

Of the eight strategic goals that support the vision, six of these are directly supportive and reliant on this framework:

**Goal 2:** Manage, invest and plan for sustainable municipal infrastructure.

**Goal 3:** Cultivate economic diversification, within the petrochemical industry and beyond, through a business-friendly environment.

**Goal 4:** Ensure effective stewardship of water, land, air and energy resources.

**Goal 5:** Foster collaboration through regional, community and governmental partnerships.

**Goal 6:** Provide facilities and services that are available and accessible to residents

**Goal 7:** Provide opportunities for public engagement and communication  
Sustainability is about stabilizing the currently disruptive relationship between earth’s two most complex systems — human culture and the living world.





When developing the Environmental Framework, existing County strategic planning documents, as well as overarching regional environmental frameworks, were considered to ensure alignment to Strathcona County goals.

The County's **Social Framework** provides direction and opportunities to create and sustain a supported, safe and connected community for all. The Social Framework endeavors to set a path to shifting behaviors to improve our community. This theme has been carried across to inform the Environmental Framework to ensure environmental education, awareness, engagement, and empowerment opportunities are available to all. The Environmental Framework documents existing programs/plans/policies and strives to identify strategic initiatives that support the four outcomes of the Social Framework:

1. **Affordability:** Citizens have an increased capacity to meet their basic needs.
2. **Access to Programs and Services:** Citizens have straightforward access to programs and services that are easy to find.
3. **Safety:** Citizens feel physically, emotionally, spiritually, and mentally safe.
4. **Connectedness and Inclusion:** Citizens are connected to one another, and their individual differences are valued and respected.

The County's **Community Heritage Legacy Framework** sets the thesis that "if residents were to have a greater awareness of the history of the area, then they would have a greater appreciation for the welfare and continuity of their community overall, and its cultural and natural heritage. And with a greater appreciation, they would want to contribute to maintaining this continuity for the future". The Heritage Legacy Framework adopted the Natural Heritage definition from the 17th Session of the General Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO) meeting in Paris from 1972 as:

"Natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view;

Geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation;

Natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty."

The Vision and Mission focus on fostering a strong community where residents share a sense of belonging, identity and place based on their appreciation for the County's unique history and heritage – including natural heritage. The Community Heritage Legacy Framework informs the Environmental Framework, which has documented and identified programs/plans/policies that support the principle that "an awareness and appreciation of community history and heritage are vital to the well-being, strength and continuity of the community".

The current **Environmental Sustainability Framework** will be transitioned to the new Environmental Framework. Current programs/plans/policies will continue to be documented and implemented under the Environmental Framework. As a living and dynamic document, the Environmental Framework will provide guidance and direction for the provision of publicly funded strategic initiatives moving forward. The updated Framework will expand our focus on renewing and introducing new initiatives to meet a more holistic view of environmental priorities in the community. Most of the programs/plans/policies outlined in the Environmental Framework are being achieved, those strategic initiatives identified will be prioritized and, if relevant, carried forward in the implementation process.







# REFLECTING & INFORMING





## Ecosystem model

Ecosystems are the complex of living organisms, their physical environment, and all their interrelationships in a unit of space. An ecosystem model is built on the interconnectedness between abiotic (minerals, climate, soil, water, light, and air) and biotic (living) parts. The abiotic and biotic parts are linked through energy flows and nutrient cycling. This framework will follow the ecosystem model, focusing abiotic (air, water, land) and biotic (biodiversity) outcomes with energy and waste outcomes. The network of relationships, including County departments, government agencies, non-governmental organizations, and our citizens, will be defined as and built across all boundaries as per the ecosystem model.

The International Society for Ecosystem Health has proposed that a healthy ecosystem is one that has the ability to maintain its form and function over time and under external stress – it is resilient. The form and function of a healthy ecosystem has its abiotic and biotic components and their interrelationships intact, which directly affects how it withstands change and stress.

A healthy system is not experiencing a

decline of native species, concentration of contaminants, or drastic landscape changes. It is a system that provides abundant and beneficial food, water, shelter, economic livelihood, recreation and natural beauty. It is composed of a diversity of plant and animal species and communities interacting with the landscape.

The World Health Organization has defined human health as, “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. It states that physical and mental well-being is a fundamental human right. The World Health Organization and Healthy Peoples 2020 have recognized environmental factors that affect human health – air quality, water quality, waste and sanitation, toxic substances and hazardous wastes, unhealthy homes and communities and disease investigation and surveillance. Our ecosystems – where we live, what we eat and how we interact with the natural world – define how environmental health is critical to human health.

“Nature is not more complicated than you think, it is more complicated than you CAN think”

- Frank Egler, botanist & forester

“The human race is challenged more than ever before to demonstrate our mastery, not over nature but of ourselves”

- Rachel Carson, biologist & writer



## INPUTS THAT INFORMED THE UPDATED ENVIRONMENTAL FRAMEWORK

In order to develop this framework, it was first important to understand the state of our environment globally, regionally and locally since the first framework was approved in 2009. Significant research was completed in analyzing similar frameworks and strategies, assessing current trends in air, water, land, biodiversity, waste and energy, and reviewing Strathcona County, regional, provincial, and national programs, policies and frameworks.

One of the most important indicators of the current state of our environment, and a reference in defining what the future could hold, was the input and insight gathered from Strathcona County administration and the community. The understanding is that this is an internal guiding document – as such there was limited public engagement. A Communication and Public Engagement Plan was developed with support from Corporate Communications and implemented with a focus on internal audiences and supported by external stakeholders.

Internal engagement was defined at the departmental levels. A series of six workshops with department representatives and the Indigenous Working Group captured challenges and opportunities. These department representatives also reviewed the draft Environmental Framework.

External engagement and input were gathered from the community in a variety of ways, including via the Strathcona County Online Opinion Panel (SCOOP), focused insight from the Indigenous Working Group and the Youth Advisory Committee, facilitated discussions with environmental organizations and facilitated discussions with municipal, provincial and federal representatives within the Capital Region. The perspectives of these stakeholders were gathered and considered in the development of the Environmental Framework.

## ENVIRONMENTAL SUSTAINABILITY FRAMEWORK SINCE 2009

The Environmental Sustainability Framework (ESF), approved in 2009, set municipal priorities and provided a guide to assess environmental factors and impacts in planning and decision making. The ESF was intended to:

- Be used as a guide for responding to environmental issues
- Assess the impact of changes in the environment on residents and municipal operations
- Prioritize and plan for future environmental concerns
- Maintain a focus on current studies, indicators and trends
- Guide new policies
- Strengthen the County's commitment to integrated planning (environmental, social, economic)
- Ensure we are a leader in new, innovative and efficient technology
- Assist with the advocacy efforts of Strathcona County for environmental grant opportunities
- Assist in engaging residents, businesses, community groups in becoming more environmentally aware and motivated

### 2009 GUIDING STATEMENT:

Strathcona County cares about doing its part for an environmentally healthy and sustainable community. The Environmental Sustainability Framework is a guide to assist in facilitating informed decision making. It is intended for use by County staff and Council, though its direction and tools can be helpful to the business and community sectors. This framework is designed to help decision makers at the governance and service delivery levels in Strathcona County determine the impact of their decisions on environmental sustainability.

Environmental sustainability was defined as “the ability to maintain attributes or qualities that are valued in the natural environment”.



Guiding statements described what future success would look like with respect to land, air, energy, water and material use. Corporate indicators and goals were set to determine whether the County was progressing along a path to environmental sustainability. Finally, recommended strategies were set to support the ESF. Most of these strategies were completed, though gaps were identified:

- ✓ Create policies for conserving land to ensure all representative natural landscapes are protected.
- ✗ Develop a greenhouse gas inventory and management plan to maintain and update the County's emissions profile, assist in setting education targets, timelines and responsibilities, and monitor progress.
- ✓ Develop an integrated transportation master plan to encourage effective and efficient multi-modal travel.
- ✓ Improve energy efficiency in municipal facilities.
- ✓ Develop a water conservation plan that affects both infrastructure needs and County practices.
- ✗ Establish a waste management policy.
- ✗ Enhance the existing procurement policy to ensure the goals of the Environmental Sustainability Framework are considered and include a sustainable procurement checklist.
- ✓ Inject environmental sustainability perspectives into existing policies and procedures to ensure this perspective is considered.
- ✗ Provide engagement, learning and training opportunities to increase staff and residents' acceptance and involvement in the Environmental Sustainability Framework.
- ✓ Departments will review the Environmental Sustainability Framework and develop strategies that will assist in meeting the goals of the framework.

## Global Growth since 2009

The Organisation for Economic Co-operation and Development's (OECD) Environmental Outlook to 2050 highlights the need for new models of development, centred on human

well-being and the interface with the natural environment. Without a change in development, global demand for natural resources will continue to increase, often beyond the capacity of the environment to replenish itself. By 2030, an additional one billion people are expected to live in severely water-stressed areas and global terrestrial biodiversity is expected to decline an additional 10%, leading to a loss of essential ecosystem services. By 2050, growing levels of dangerous air emissions from transport and industry will increase the global number of premature deaths linked to airborne particulate matter to 3.6 million people a year, more than doubling today's levels. Failure to act could also lead to a 50% increase in global greenhouse gas emissions by 2050 and global mean temperature increases of 3-6°C by the end of the century, in turn contributing to more severe and sometimes more frequent natural disasters, such as heat waves, tropical cyclones, floods and landslides. Reconciling the consumption of our natural resources with environmental protection and sustainable resource management is the central concern. Sustainable development needs to foster economic growth while ensuring that natural resources continue to provide the resources and environmental services on which well-being relies (OECD, 2013).

Achieving greener growth requires shifting to models for development that value and recognise that natural assets are essential to people's well-being and livelihoods. Putting Green Growth at the Heart of Development (OECD, 2013) explains why green growth is vital to secure a more sustainable future and outlines a policy agenda to guide national and international actions for:

- sustainably managed natural assets on which to build economic growth and human well-being;
- more secure and sustainable livelihoods for those dependent on natural resources, such as agricultural land and fertile soil, fisheries and forests;
- poverty reduction through careful design of policies and complementary measures for green growth which influence the equitable distribution of costs and benefits;
- new economic growth opportunities

- and potentially new job opportunities through targeted labour policies and skills development to support a green economy, measures to deliver ecosystem services and technological innovation, as well as new markets for green goods and services;
- resilient infrastructure and green investment that avoids locking countries into fossil-fuel based energy and emission-intensive pathways and vulnerability to climate change; and
  - more resilient livelihoods through greater access to clean water and sanitation services, diverse energy supplies and greater energy security accompanied by lower pollution and greenhouse gases, and better land use planning and disaster risk management.

## Persistent issues since 2009

The loss of insects, birds and other varied forms of life are an increasingly accepted part of our modern world. Species extinctions have defined the global biodiversity crisis, but extinction begins with loss in abundance of individuals that can result in compositional and functional changes of ecosystems. The underlying cause for the loss of essential life is the loss of land – or more specifically – the loss, or deterioration, of habitat.

### INSECT BIOMASS

Recent studies have recognized declines of insect abundances, many focusing on butterflies and bees, those charismatic species with identified ecosystem benefits. Patterns of insect declines were unknown until a report released in April 2020 that compiled data from 166 long-term surveys (1925 – 2018). The report identified a clear average decline of approximately 9% per decade decline in terrestrial insect abundance, with notable variations between regions. (van Klink et al. 2020). There was an increase of approximately 11% in freshwater insect abundance per decade, which was likely the result of water quality legislation coupled with wetland protection across the North American landscape. Overall, the insect population has shrunk by 27% since the 1990's.





With the loss of insect species and their biomass, we lose a piece of the complex puzzle that is our living world. Insect biomass feeds other animals in the living chain, perform ecosystem functions on which humanity depends (i.e. pollination, decomposition) and insects have unique genes and substances that contribute to cures for diseases. (Cardoso et al. 2020).

**“If all mankind were to disappear, the world would regenerate back to the rich state of equilibrium that existed ten thousand years ago. If insects were to vanish, the environment would collapse into chaos. ”**

- Edward O. Wilson, biologist & writer

## BIRD POPULATIONS

Cornell Lab of Ornithology conservation scientist Ken Rosenberg led an international team of scientists from seven institutions in the analysis of population trends for 529 bird species. Recent research identified that wild bird populations in Canada and the US have declined by almost 30% since 1970 (Rosenberg et al. 2019). More than 90% of the total loss of birdlife in Canada and the U.S. (more than 2.5 billion birds) comes from just 12 avian families, including sparrows, warblers, blackbirds, and finches. We report population losses were reported across much of the North American avifauna over 48 years, including once common species and from most biomes. Integration of range-wide population trajectories and size estimates indicates a net loss approaching 3 billion birds, or 29% of 1970 abundance. A continent-wide weather radar network also reveals a similarly steep decline in biomass passage of migrating birds over a recent 10-year period. Furthermore, losses among habitat generalists and even introduced species

indicate that declining species are not replaced by species that fare well in human-altered landscapes.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services 2019 report, quantified that one million species are now at risk of extinction, many within decades, more than ever before in human history. According to the International Union for Conservation of Nature Red List of Threatened Species, 41% of amphibians, 25% of mammals, 34% of conifers, 13% of birds, 31% of sharks and rays, 33% of reef-building corals, and 27% of crustaceans are threatened with extinction.

The Alberta Biodiversity Monitoring Institute (ABMI) measures and reports on species that are naturally rare or that have demonstrated a significant decline in abundance (ABMI, 2015). Rare species are referred to as “species at risk” as continued declines in abundance may result in the loss of the species from an area (local or complete extinction). Of the 37 species at risk in the North Saskatchewan Region, 22 are bird species. For example, the Pileated Woodpecker has been assessed with an intactness of 69%, which is rated as below reference conditions.

**“We were astounded by this net loss across all birds on our continent, the loss of billions of birds. ”**

- Ken Rosenberg, conservation scientist

ABMI measures and reports on the state of biological diversity (biodiversity) and human impact across the province. The ABMI assessed the status of 542 species in the North Saskatchewan Region and determined them to be 65% intact (intactness index ranges from 100% - which indicates an area with little human impact - to 0% which indicates an area dominated by human impact). Of the 37 species at risk in the North Saskatchewan Region, most were less abundant than expected.



## LAND DEGRADATION & CONVERSION

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services 2019 report, quantified

- 75% of the land-based environment and about 66% of the marine environment have been significantly altered by human actions.
- More than 30% of the world's land surface and nearly 75% of freshwater resources are now devoted to crop or livestock production.
- The value of agricultural crop production has increased by about 300% since 1970, raw timber harvest has risen by 45% and approximately 60 billion tons of renewable and nonrenewable resources are now extracted globally every year – having nearly doubled since 1980.
- Urban areas have more than doubled since 1992.

The ABMI has documented the human impact on the Alberta landscape. The North Saskatchewan Region makes up 13% of Alberta's land area and stretches from the Rocky Mountains to the Saskatchewan border. In 1999, the human impact was 50.1%, in 2012 the impact grew to 53.3%, largely due to forestry operations in the foothills. Overall, the largest human impact is agriculture, covering 44.4% of the Region (ABMI, 2015).

## PLASTIC POLLUTION

Over 300 million tons of plastic are produced every year for use in a wide variety of applications. A 2015 study concluded that the ocean contains far more degraded plastic than previously believed. Scientists estimate the ocean contains an estimated 150 million tons of plastic, with 8 million tons added annually (equivalent to a garbage truck load every minute) (Jambeck et al. 2015). A 2016 Ellen MacArthur Foundation study predicted oceans will contain more plastic than fish by 2050 if no actions are taken to reduce the flow of plastics into waterways. Marine species ingest or are entangled by plastic debris, which causes severe injuries and deaths.





On October 7, 2020, the Federal Government announced a ban on single-use plastics under the Canadian Environmental Protection Act. A scientific assessment of single-use plastics and their impact to the environment concludes there is evidence of harm. The assessment stated that 29,000 tonnes of plastic garbage ended up as litter across Canada's landscape in 2016.

The degradation of natural systems as a result of plastic leakage is especially deleterious in the ocean. Plastics can remain in the ocean for hundreds of years in their original form and even longer in small particles, which means that the amount of plastic in the ocean cumulates over time. Leaked plastics can also degrade other natural systems, such as forests and waterways, and induce direct economic costs by clogging sewers and other urban infrastructure (Ellen McArthur Foundation, 2016).

Despite Alberta being inland, litter and plastics pollution remains relevant for public spaces and water bodies that are found both locally and regionally. With the shift in recycling markets and the general public acknowledging that plastics are problematic, many municipalities are taking steps to find solutions. We are exploring the following opportunities driving the need for products that are designed and managed responsibly: circular economy principles, extended producer responsibility and single-use item strategies.

## CARBON FOOTPRINTS

A carbon footprint relates to the amount of carbon dioxide (CO<sub>2</sub>) emissions associated with all the activities of a person or entity. It includes direct emissions, such as those that result from fossil-fuel combustion in manufacturing, heating, and transportation, and indirect emissions, such as those that result from the consumption of goods and services. In addition, the carbon footprint concept also often includes the emissions of other greenhouse gases, such as methane, nitrous oxide and chlorofluorocarbons. Therefore, a carbon footprint is defined as the total amount of greenhouse gases produced to directly and indirectly support human activities. A carbon footprint is typically expressed in equivalent tons of CO<sub>2</sub> for the time period of a year.

We have initiated a Strategic Energy Management Plan (SEMP) in alignment with many organizations and municipalities. With support from the Municipal Climate Change Action Centre (MCCAC), our Municipal Energy Manager leads the SEMP to achieve operational efficiencies, set energy efficiency improvement targets and create a framework to identify and implement energy improvement opportunities for municipal buildings. Facility Services identified over 130 energy improvement opportunities via 14 major facility energy audits. Of particular interest is the development of a corporate Greenhouse Gas (GHG) Inventory, which set the baseline for evaluation at our 2018 emissions and recommended a 15% reduction from facility operations by 2030. Approval of this emission target is based on resource capacity, improvement opportunities, and realized investment benefits.

ONLY WE HUMANS MAKE WASTE THAT  
NATURE CAN'T DIGEST.

- Charles Moore, author Plastic Pollution



AS THE SAYING GOES, THE STONE AGE DID NOT END BECAUSE WE RAN OUT OF STONES; WE TRANSITIONED TO BETTER SOLUTIONS. THE SAME OPPORTUNITY LIES BEFORE US WITH ENERGY EFFICIENCY AND CLEAN ENERGY.

- Steven Chu, physicist, Nobel laureate

## CLIMATE CHANGE

Climate change is a long-term shift in the average climatic conditions – such as temperature, precipitation, wind, and snow cover – in a region over a long period of time. It can involve both changes in average conditions and changes in variability, including changes in extreme conditions. Climate change can be caused by natural processes, such as changes in the output of the sun or an increase in volcanism (volcanic emissions to the atmosphere). It can also be affected by human activities, in particular, those that involve the combustion of fossil fuels such as coal, oil and natural gas. Ultimately, we have changed the composition of our atmosphere through a build-up of emissions of greenhouse gases (CO<sub>2</sub>, methane, nitrous oxide, and/or chlorofluorocarbons). The climate is always changing over extended periods of time – having been both hotter and cooler than it is now – but the pace of change has increased significantly since the First Industrial Revolution (1760 – 1840).

The results of the world's largest survey of public opinion on climate change – the People's Climate Vote – was released on January 27, 2021 (United Nations Development Programme in partnership with the University of Oxford). The survey asked 1.2 million respondents across 50 countries if climate change was a global emergency and whether they supported climate policies across six action areas: economy, energy, transport, food and farms,





nature, and protecting people. Climate policies had wide-ranging support, with the most popular being conserving forests and land (54% public support), more solar, wind and renewable power (53%), adopting climate-friendly farming techniques (52%) and investing more in green businesses and jobs (50%). The aim of the Peoples' Climate Vote is to connect the public to policymakers – and to provide the latter with reliable information on whether people considered climate change an emergency, and how they would like their countries to respond.


The 2016 Pan-Canadian Framework on Clean Growth and Climate Change is Canada's first-ever national climate plan that was developed with provinces and territories, and in consultation with Indigenous peoples. Canada's A Healthy Environment and a Healthy Economy was introduced in December 2020, strengthening the 2016 Framework by building on efforts to further decrease pollution, to create more good jobs, and to support a healthier economy and environment. The Framework and plan are designed to set the track towards meeting and exceeding the 2030 Paris Agreement emissions reduction target and to reach a net-zero emissions future by 2050.

Canada has committed to achieving net-zero emissions by 2050 through the Canadian Net-Zero Emissions Accountability Act – introduced in Parliament on November 19, 2020. Once passed, the Act will formalize Canada's 2050 target, and establish a series of interim emissions reduction targets at 5-year milestones toward that goal.

Alberta's Climate Leadership Plan was introduced in 2015 to reduce carbon emissions and diversify the economy. The Plan was developed in consultation with a wide range of Albertans including industry, the public, farmers, and Indigenous communities. It is founded on four key pillars that will help us achieve our climate goals, strengthen our economy and drive innovation in the

province; (1) Capping oil sands emissions at 100 megatonnes per year, (2) Putting a price on greenhouse gas emissions, (3) Ending pollution from coal-fired electricity and developing more renewable energy, and (4) Reducing methane emissions from industry by 45% by 2025. The intent is to take meaningful actions toward a low carbon future.

To mitigate climate change, or at the very least avoid the worst consequences, we must collectively reduce the concentration of greenhouse gases in the atmosphere. That means reducing global emissions by at least 49% of 2017 levels by 2030, according to the Intergovernmental Panel on Climate Change. Conserving energy and transitioning to alternative energy sources, coupled with conserving and restoring natural ecosystems, are important and necessary activities to focus on between now and 2030. In parallel with mitigation activities, we must also recognize that the climate is already changing, and we need to prepare for the effects, including extreme weather events. To adapt to climate change, we must build resiliency into our grey (human-engineered) and green (natural area networks) infrastructure, and ultimately our communities. Examples of how this has been accomplished in the built system is through centralized wastewater treatment, reservoirs and potable water pipelines, and in the natural system through constructed wetlands, watershed restoration, and green roofs.

 Those Innovative Practices, Supportive Tools and Strategic Initiatives that relate directly and indirectly to both mitigating climate change and adapting to climate change, are denoted with this icon within the Framework.





# REFRAMING OUR FOCUS



The Environmental Framework will support a coordinated approach between administrative departments and external stakeholders in Strathcona County by enabling them to work together, leveraging people and financial resources and responding to community needs.

The foundation for this framework is based upon six overarching outcomes and 35 objectives. These elements prioritize healthy ecosystems and set a foundation for healthy citizens. It has been ten years since approval of the ESF. We are taking the opportunity to reflect, reframe and renew our environmental priorities. Several new priorities have been identified and incorporated into the Framework to ensure consistency with the foundation set within the ESF and ensure relevance with current issues and trends.

Topic areas have been expanded from five to six and include Air, Water, Land, Biological Diversity (Biodiversity), Waste, and Energy. Each topic area has a clear goal and specific actions identified. Each action is then manifested by Innovative Practices, Supportive Tools, and Strategic Initiatives.

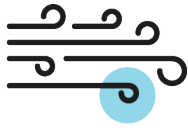
**Innovative Practices in Action** recognize and document what we have been doing since 2009 to achieve the goals set out by Council and administration. These are new and original plans, processes and programs that involve multiple activities across the organization to realize new ways of operating and governing.

**Supportive Tools in Action** are those plans, policies, bylaws and standards that serve as a foundation for, and substantiate, innovative practices and strategic initiatives.

**Strategic Initiatives to Consider** are plans, processes and programs that focus on change, spur discussion and garner commitment. They required an investment of resources dedicated to accomplishing a goal or action, and would include a scope, budget and timeline. Any action with a strategic position in an organization will be the most useful and have the most effect. Initiatives need to be bold, scientifically credible, practically achievable and hopeful!







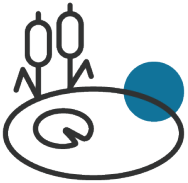
### OUTCOME: Airshed sustains healthy ecosystems and healthy citizens

OBJECTIVE A1: Monitor air quality

OBJECTIVE A2: Manage air quality

OBJECTIVE A3: Educate and engage with citizens to encourage stewardship behaviours.

OBJECTIVE A4: Reduce emissions, including greenhouse gases, by reducing energy use, committing to energy efficiency, developing and using renewable energy sources



### OUTCOME: Watershed sustains healthy ecosystems and healthy citizens

OBJECTIVE W1: Monitor water quality

OBJECTIVE W2: Manage water quality

OBJECTIVE W3: Monitor water quantity

OBJECTIVE W4: Manage water quantity

OBJECTIVE W5: Educate and engage with citizens to encourage stewardship behaviours that support water conservation

OBJECTIVE W6: Ensure water supply meets future planning needs

OBJECTIVE W7: Ensure the North Saskatchewan River and its tributaries are protected from pollution

*“Water and air, the two essential fluids on which all life depends, have become global garbage cans.”*

- Charles Moore, author Plastic Pollution





### **OUTCOME: Land planning, use, and management sustains healthy ecosystems and healthy citizens**

- OBJECTIVE L1:** Land use planning focuses on environmental (smart growth /complete) community design
- OBJECTIVE L2:** Land use development focuses on wise use and development of land and buildings.
- OBJECTIVE L3:** Land management builds on ecosystem resilience and includes conservation and restoration
- OBJECTIVE L4:** North Saskatchewan River valley planning, use and management builds on ecosystem resilience and includes conservation and restoration
- OBJECTIVE L5:** Agricultural land planning, use and management builds on ecosystem resilience and conservation
- OBJECTIVE L6:** Remediate and reclaim degraded public lands
- OBJECTIVE L7:** Prevent pollution and reduce the use of harmful substances on public and private land
- OBJECTIVE L8:** Prevent light pollution and reduce the use of artificial light on public and private land
- OBJECTIVE L9:** Educate and engage with citizens to encourage stewardship behaviours that support appropriate planning, use, and management of public and private land



### **OUTCOME: Biodiversity sustains healthy ecosystems and healthy citizens**

- OBJECTIVE B1:** Plan for a healthy connected ecological network to ensure conservation of biodiversity
- OBJECTIVE B2:** Protect a healthy connected ecological network to ensure conservation of biodiversity
- OBJECTIVE B3:** Manage a healthy connected ecological network to ensure conservation of biodiversity
- OBJECTIVE B4:** Restore degraded habitats within a healthy connected ecological network to ensure conservation of biodiversity
- OBJECTIVE B5:** Educate and engage with citizens to encourage stewardship behaviours that support biodiversity conservation on public and private land.





**OUTCOME: Waste management protects healthy ecosystems and healthy citizens**

**OBJECTIVE WM1:** Monitor waste collection to ensure healthy ecosystems and healthy citizens

**OBJECTIVE WM2:** Manage waste collection to ensure healthy ecosystems and healthy citizens

**OBJECTIVE WM3:** Reduce waste to ensure healthy ecosystems and healthy citizens

**OBJECTIVE WM4:** Educate and engage with citizens to encourage consumption behaviours that reduce waste



**OUTCOME: Reducing energy use, committing to energy efficiency, and embracing renewable energy sources protects healthy ecosystems and healthy citizens.**

**OBJECTIVE E1:** Reduce energy use within municipal buildings through energy efficiency

**OBJECTIVE E2:** Reduce energy use within municipal operations through energy efficiency

**OBJECTIVE E3:** Increase energy efficiency via land use and transportation planning decisions

**OBJECTIVE E4:** Increase renewable and alternative energy sources (solar, wind, geothermal)

**OBJECTIVE E5:** Evaluate procurement of goods and services to increase energy efficiency and increase renewable/alternative energy sources

**OBJECTIVE E6:** Educate and engage with citizens to encourage behaviours that support energy efficiency and the transition to renewable/alternative energy

*“You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make.”*

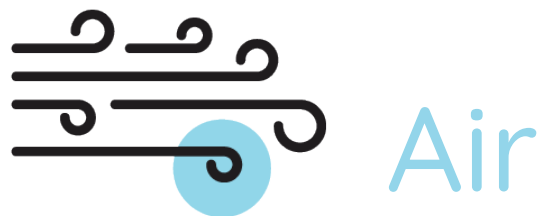
- Dame Jane Goodall, ethologist

## 2009 GUIDING STATEMENT:

Air quality in Strathcona County supports the health and well being of its citizens.

## 2009 CORPORATE GOAL:

Zero exceedances of Canada-wide standards for fine particulate matter (PM<sub>2.5</sub>) and ground-level ozone (O<sub>3</sub>).



## 2020 REFLECTION: Increased air quality monitoring and reporting in Strathcona County

**Alberta Capital Airshed (ACA)** ([www.capitalairshed.ca](http://www.capitalairshed.ca)) is one of two airsheds that operate within Strathcona County. It is a multi-stakeholder organization that works with the Government of Alberta to monitor air quality and provide public information on air quality, as well as develop recommendations regarding air quality management and monitoring. ACA covers the portion of Strathcona County south of Highway 16.

**Fort Air Partnership (FAP)** ([www.fortair.org](http://www.fortair.org)) is the second of two airsheds that operate within Strathcona County. It was first established in 1997 by the City of Fort Saskatchewan and the Fort Saskatchewan Regional Industrial Association. It is a community driven multi-stakeholder organization that works with the Government of Alberta to monitor air quality within its airshed zone. FAP covers the portion of the County north of Highway 16. In May 2019, FAP reported on air quality trending and comparison information, with data going back as far as 1991, for fine particulate matter, ozone, sulphur dioxide, nitrogen dioxide and carbon monoxide. Many of the trends and comparisons for the five substances show notable changes from year to year that can be tied to major natural events like forest fires, or changes over a longer period of time attributed to the introduction of environmental policies or the application of new technologies.

**Strathcona Industrial Association (SIA)** ([www.sia.ab.ca](http://www.sia.ab.ca)) was formed in 1974 in response to land planning issues and environmental concerns. While community safety was paramount, members also realized that together, they could more effectively inform and raise awareness about industry and its practices. SIA provides a shared voice for industry members on many topics, such as environmental monitoring, safety promotions and community involvement and outreach.



SIA established one of the first ambient air quality monitoring networks in Alberta. Through this network, SIA reports on the effects of industry and gathers scientifically valid data about current local air quality as well as long-term trends.

In addition to our direct support of the airsheds, Strathcona County is also an active member within the **Capital Region Air Quality Management Framework Oversight Advisory Committee** administrated by the Government of Alberta. Since 2009, this multi-stakeholder committee developed the Capital Region Air Quality Management Framework. This Framework has set four levels with triggers for ambient air quality and limits for contaminants of concern. Level one is the lowest with level four being the highest concentrations. As the levels increase, Alberta Environment and Parks works with stakeholders to develop actions to reduce the level within a set timeline. The Fine Particulate Management Response (2016) was the first such management action triggered by exceedances within the Capital Region. Currently the Committee is tasked with developing a Capital Region Comprehensive Pollutant Management Strategy to target four pollutants of concern - nitrogen dioxide, sulphur dioxide, fine particulate matter and ground-level ozone.

## 2021 LOOKING FORWARD:

Improve air quality in Strathcona County

Air emissions in the Capital Region come from transboundary, urban, rural, agricultural, industrial, and natural sources. These emissions contribute in various degrees to four pollutants of concern. Information on ambient air concentrations is available on the websites of the monitoring organizations operating within the Capital Region. These organizations report

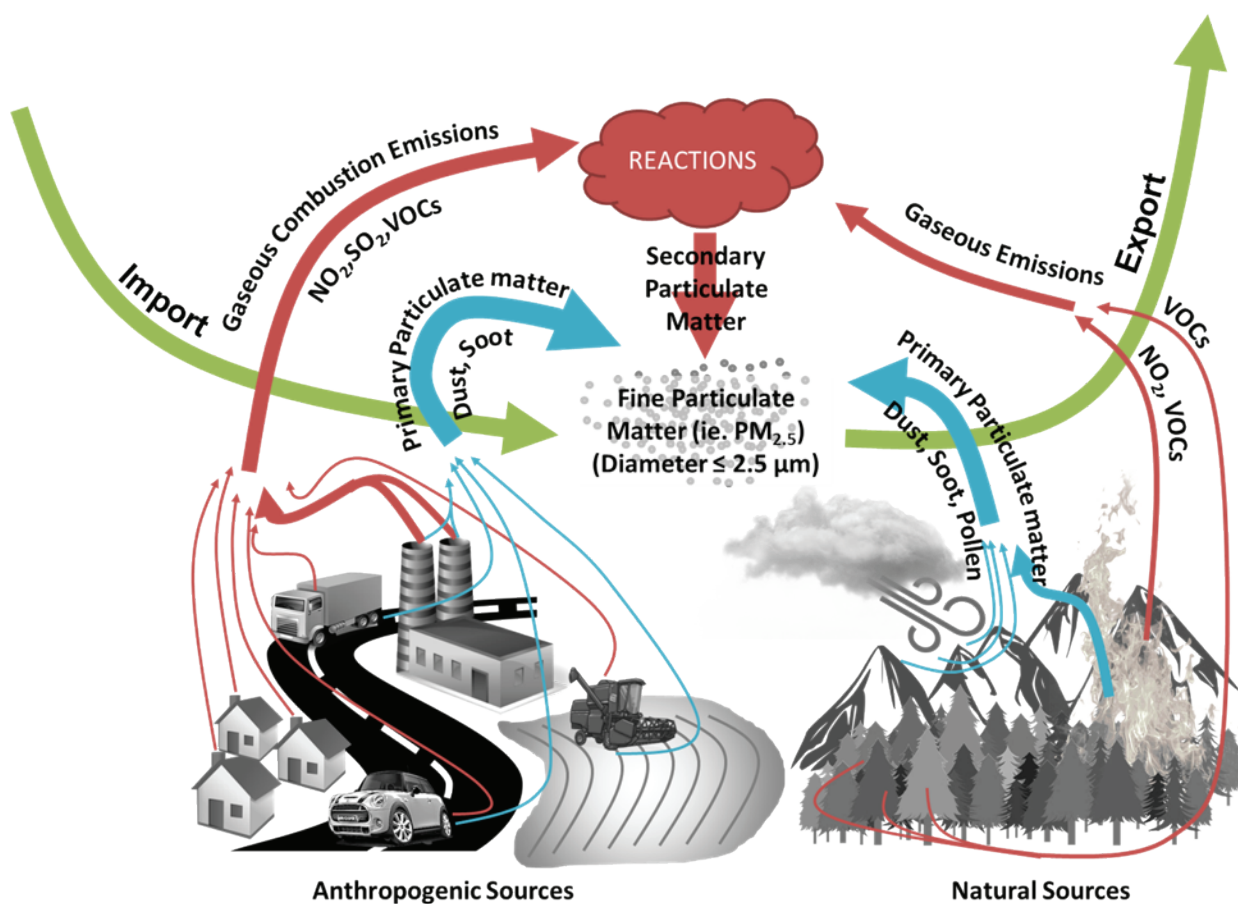
regularly on their monitoring results and summarize their activities.

Nitrogen dioxide (NO<sub>2</sub>) emissions are the result of anthropogenic combustion processes, for vehicle fuel, home heating and the combustion of coal, oil, and natural gas for industrial processes. Acute exposure to NO<sub>2</sub> of 2 ppm or lower can cause airway inflammation and alterations in lymphocytes appearance in healthy individuals. Individuals with asthma have a greater sensitivity to acute exposures. Pre-exposure to NO<sub>2</sub> can increase the responsiveness of mildly asthmatic individuals to inhaled allergens.

Sulphur dioxide (SO<sub>2</sub>) emissions can be natural, such as decay of organic matter, and anthropogenic such as coal combustion, upstream and downstream petroleum operations, chemical production and metal manufacturing. Exposure to SO<sub>2</sub> results in numerous effects to the pulmonary system. Healthy subjects exhibit increased airway resistance and bronchoconstriction, decreased maximum expiratory flow and decreased pulmonary function. Asthmatic subjects exhibit similar symptoms but also report increases in asthma symptoms, wheezing, chest tightness and difficulty breathing

Fine particulate matter (PM<sub>2.5</sub>) refers to airborne particles emitted directly (primary PM<sub>2.5</sub>) or formed in the atmosphere from precursor emissions such as nitrogen dioxide, sulphur dioxide, ammonia, and volatile organic compounds (secondary PM<sub>2.5</sub>). In high concentrations, particulates may lead to human health problems. Inhaling particulate matter can make breathing more difficult or may aggravate existing lung and heart problems. Smaller particles have the ability to travel deep into the lungs where they may cause permanent lung damage.

Ozone (O<sub>3</sub>) is formed through complex chemical reactions in the atmosphere between precursor



emissions (see above) in the presence of heat and sunlight. Potential short-term effects for ozone exposure include pulmonary function reductions, increased airway sensitivities, and airway inflammation. The primary short-term injury is to the lungs, which is characterized by lung congestion, fluid build-up, and bleeding. Inhalation may initiate, accelerate, or exacerbate respiratory tract disease of bacterial or viral origin. Discomfort to individuals may involve coughing and eye, nose, throat and mucous membrane dryness following exposures of high concentrations for short duration.

The **Air Quality Health Index (AQHI)** is a public health tool reported on a scale from 1 to 10+; the lower the number, the lower the health risk. The index has corresponding health risk categories and provides advice to the general public and at-risk audiences on how to lessen risk. Relative health risk is measured via three common air pollutants, nitrogen dioxide, fine particulate matter and ground-level ozone. All three can affect health in the short term and at low levels.

Historically, Strathcona County has been involved with both airsheds in our region (Alberta Capital Airshed and Fort Air

Partnership), as well as being a municipal representative during the development and implementation of the Capital Region Air Quality Management Framework. Over the years, we have developed not only the Framework, but also the Fine Particulate Matter Response. Strathcona County's Air Action Committee was struck in 2013 and consisted of internal expertise from several departments, including Facilities, Fleet and Transit. This committee met quarterly from 2013 to 2014, until development and acceptance of the Capital Region Fine Particulate Matter Response by the province. Since 2015, annual updates are provided to the province, typically through a canvas of those previous Air Action Committee members, which are integrated into the Framework, air management planning and exceedance response. A Capital Region Comprehensive Pollutant Management Strategy (2021) is under development to target four pollutants of concern.



# 2021 OUTCOME:

## Airshed sustains healthy ecosystems and healthy citizens

### OBJECTIVE A.1: Monitor air quality to ensure it is sustaining healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Expand the active air quality monitoring network within Strathcona County
- Expand the passive air quality monitoring network within Strathcona County
- Limited Purple Air sensor deployment within Strathcona County
  - Partner with air quality organizations committed to airshed health (ACA, FAP, Alberta Environment and Parks, Clean Air Strategic Alliance, SIA) to monitor and report regularly
  - Provide comprehensive AQHI data to our citizens
- Support the air quality monitoring network within the Capital Region and Strathcona County

#### Supportive Policies/Plans/Tools in Action

- Conservation of Biological Diversity Policy
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
  - Project Agreement with SIA to operate the Sherwood Park and Ardrossan air quality monitoring stations

#### Strategic Initiatives to Consider

- Deploy Portable Air Quality Monitoring Station (ACA and/or FAP) in Strathcona County
- Develop air quality monitoring site at South Cooking Lake for academic institutions and airsheds to deploy innovative monitoring sensors

- Develop Safe Shelters for our citizens in the event of poor air quality events
- Encourage, undertake and support studies to investigate air quality emissions and their effect on ecosystem and human health
- Microsensor deployment throughout Strathcona County

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### OBJECTIVE A.2: Manage air quality to ensure it is sustaining healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Air Action Committee convened to address management identified by the provincial regulator
- FireSmart and wildfire risk reduction
- Fleet Anti-idling Procedures
- Green Machine technology to calculate fleet emissions
  - Partner with provincial regulators to achieve regional air quality goals
  - Partner with provincial regulators to develop and implement air quality management plans (Oversight Advisory Committee)
- Regional Transit Smart Fare System
- Signalized intersections replaced by roundabouts
  - Traffic and Pedestrian Safety Improvements
- Traffic Calming Policy
  - Traffic Signal/Intersection Replacements

- Urban tree cover inventory
- Winter Road Material Cleanup

#### Supportive Policies/Plans/Tools in Action

- Alberta Implementation of the Air Zone Management Framework for Fine Particulate Matter and Ozone (Alberta Environment and Parks, September 2015)
- Bremner Area Concept Plan
- Bremner Growth Management Strategy
- Capital Region Air Quality Management Framework (Alberta Environment and Sustainable Resource Development, June 2012)
- Capital Region Fine Particulate Matter Response (Alberta Environment and Sustainable Resource Development, December 2014)
- Clean Air Strategic Alliance (CASA) Good Practices Guide for Odour Management (2015)
- Conservation of Biological Diversity Policy
- Dark Sky Preserves
- Integrated Transportation Master Plan
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Municipal Sustainable Building Policy
  - Occupational Safety & Health Administration standards for healthy working conditions
  - Outdoor Fire Bylaw 4-2021
- Ozone Management Plan
- Particulate Matter and Ozone Management Plan (Alberta Environment and Sustainable Resource Development, September 2007)
- Trails Strategy
- Transit Master Plan

#### Strategic Initiatives to Consider

- Alberta Zero Emissions Hydrogen Transit (AZEHT) project
- Capital Region Comprehensive Pollutant Management Strategy (Alberta Environment and Parks)
- Develop procurement requirements for anti-idling procedures
- Tree planting programs to sequester carbon and mitigate pollution

### OBJECTIVE A.3 Educate and engage with citizens to encourage stewardship behaviours that improve air quality and reduce greenhouse gas emissions to ensure healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Air Quality Health Index accessibility
- Air Quality Health Index reporting
- Air Quality Teacher Professional Development Program
- Clean Air Day
- Clean Air Forum
- Clean Air Responsible Schools (CARS) Program
- Mobility Bus Rural Weekend Services
- Sidewalk Missing Links Program
- Staff preferential parking stalls for car pooling
- Staff transit for organizational events
- Stop Needless Idling Campaign
- Student Environmental Education Series

#### Supportive Policies/Plans/Tools in Action

- Alberta Airshed Council Annual Report
- Alberta Capital Airshed Monthly Dashboards
- Alberta Capital Airshed Monthly e-newsletter
- Community Connection and Community Change Grant
- Conservation of Biological Diversity Policy
- Dark Sky Preserves
- Integrated Transportation Master Plan
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Municipal Sustainable Building Policy
  - Outdoor Fire Bylaw 4-2021
- Recreation & Culture Strategy
  - Social Framework
  - Social Framework Community Grant
- Trails Strategy
- Transit Master Plan

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### Strategic Initiatives to Consider

- Alberta Capital Airshed Portable Station
- Alberta Capital Airshed Clean Air Awards
- Bike Share Program
- Community Standards Bylaw
- Drive Clean Program
- Micromobility Program
- Staff transit passes

03.

### Strategic Initiatives to Consider

- CDP and Local Governments for Sustainability (ICLEI) Unified Reporting System
- EcoRoof Initiative
- Green Buildings
- Green Fleet Strategy (2021)
- Green Power

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**OBJECTIVE A.4: Reduce emissions, including greenhouse gases, to ensure healthy ecosystems and healthy citizens by reducing energy use, committing to energy efficiency, developing and using renewable energy sources.**

### Innovative Practices in Action

- Community Energy Centre
- Community Energy System
- Greenhouse gas emission reduction target of 15% (2018 – 2030)
- Municipal Energy Manager
- Sidewalk Missing Links Program
- Water Conservation Programs

### Supportive Policies/Plans/Tools in Action

- Conservation of Biological Diversity Policy
- Dark Sky Preserves
- Fleet Strategy
- Integrated Transportation Master Plan
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Municipal Sustainable Building Policy
  - Recreation & Culture Strategy
- Strategic Energy Master Plan (2022)
- Trails Strategy
- Transit Master Plan
- Water Conservation, Efficiency and Productivity Plan





## 2009 GUIDING STATEMENT:

Strathcona County's watersheds provide an adequate supply of quality freshwater for public and private use while ensuring a healthy ecosystem for future generations.

## 2009 CORPORATE GOAL:

Achieve provincial goals under the Water for Life strategy.

**2020 REFLECTION:** Increased water quality and quantity monitoring and reporting in Strathcona County

**Water for Life** is the overarching government-wide strategy for water in Alberta. Whether concerns involve conservation measures, quality controls for safe drinking water, irrigation or the conservation of aquatic ecosystems, the Water for Life strategy guides policy measures across Government of Alberta ministries. The Water for Life strategy was the first of its kind in North America and remains one of the most comprehensive water strategies for a large geographic area. As in the original, the renewed 2008 strategy has three main goals: (1) safe, secure drinking water supply, (2) healthy aquatic ecosystems, and (3) reliable, quality water supplies for a sustainable economy. These goals will be met through 3 key directions: knowledge and research, partnerships, and water conservation.

Water quality refers to the suitability of water to sustain uses or process and is defined by a range of variables which limit water use (World Health Organization). Any particular use will have certain requirements for the physical, chemical or biological characteristics of water; for example limits on the concentrations of toxic substances for drinking water use, or restrictions on temperature and pH ranges for water supporting aquatic invertebrates. Water quantity defines the timing and total yield of water from a watershed. Quantity is measured by total yield and peak flow over a specific period of time.

Water quality and quantity are affected by a wide range of natural and human influences. The most important of the natural influences are geological, hydrological and climatic, since these affect the quantity and the quality of water available. The effects of human activities are both widespread and varied in the degree to which they disrupt the ecosystem and/or restrict water use.



Strathcona County initiated a **Water Conservation Program** in 2012 in alignment with the Province of Alberta's Water for Life Strategy. The aim of the plan is to educate and empower water users through local water use statistics and adoptable actions for wise water management. The following topics are explored: (a) sources and treatment of water, (b) water targets to be achieved, (c) changes in water demand over time, (d) breakdown of water use by sector, (e) plans for water management and (f) actions for residents and other to adopt. Prior to the plan, Sherwood Park residential water use was over 100 litres per person, per day higher than it is today. Households swapping high water use toilets and washers with low water models and a bylaw for low water use fixtures in new homes along with educational campaigns has meant more water is available for future growth. In 2009 our water consumption was 224 litres/person/day, in 2019 our water consumption was 165 litres/person/day, a reduction of 26 per cent! Strathcona County set a target for water consumption to remain below 200 litres/person/day until 2020, and the target has been met every year.

The **Stormwater Quality Monitoring Program** was initiated in 2018 with the goal to collect data to understand the health and resiliency of 25 stormwater management facilities within Sherwood Park. The program will fill data gaps and provide a baseline of water quality trends within the urban area. Proactive monitoring will allow Strathcona County to be better equipped to handle any potential issue by identifying water quality changes early, before they reach critical points, resulting in maximum cost savings. The monitoring program will also provide invaluable rationale for management decisions, construction standards and provincial guidelines. The data collected in 2018 formed an arbitrary baseline which the subsequent data is compared to, along with the guidelines for the Protection of Aquatic Life through the Environmental Quality Guidelines for Alberta Surface Waters. Initial results demonstrate the impact of winter salt use on roads due to spring melt and the influx of salt from the drainage areas. However, by looking at the drainage basin level data, treatment of the water is occurring as pollutant levels are reduced below the guideline as the water moves through the system. Most sites would be considered

hypereutrophic due to the high nutrient levels due to runoff from surrounding urban areas.

The **Climate Resilience Exchange** brought together Edmonton, Strathcona County, Leduc, Devon, Stony Plain, Spruce Grove, Wetaskiwin and St. Albert to look at the climate change impacts that transcend their municipal boundaries and will impact their economies, quality of life, infrastructure and natural environment. The highest priority areas included the effects of climate change on water security, and increase in invasive species and pests, and how to keep our urban forests healthy. The 2018 project also created a virtual climate resilient home to help homeowners, builders and designers find information on how to protect homes from flooding, wildfire, extreme weather and increasing temperatures. The Climate Resilience Exchange was led by All One Sky Foundation with support from the Municipalities for Climate Innovation Program, delivered by the Federation of Canadian Municipalities and funded by the Government of Canada. Additional funding and support came from the partner municipalities and the Edmonton Community Foundation.

## 2021 LOOKING FORWARD:

Improve water quality and quantity in Strathcona County

A **watershed** is an area of land where water from rain and snow melt flows into a body of water such as a wetland, lake, creek or river. Strathcona County lies within the North Saskatchewan River watershed. Of the twelve subwatersheds that comprise the North Saskatchewan River watershed, the County lies within the Beaverhill and Strawberry subwatersheds.

The Beaverhills subwatershed lies in the boreal forest and parkland natural regions and encompasses 440,544 ha of extensively treed knob and kettle uplands that supports a high diversity of vegetation and wildlife within the aspen dominated mixedwood and wetland habitats. The Strawberry subwatershed lies in the





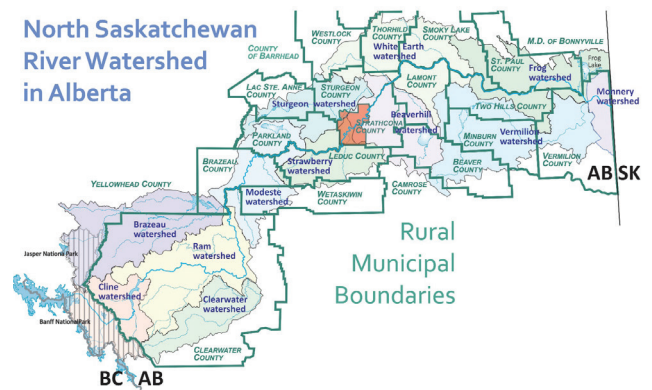


boreal forest and parkland natural regions and encompasses 299,662 ha of forested and converted land for agriculture and oil and gas recovery.

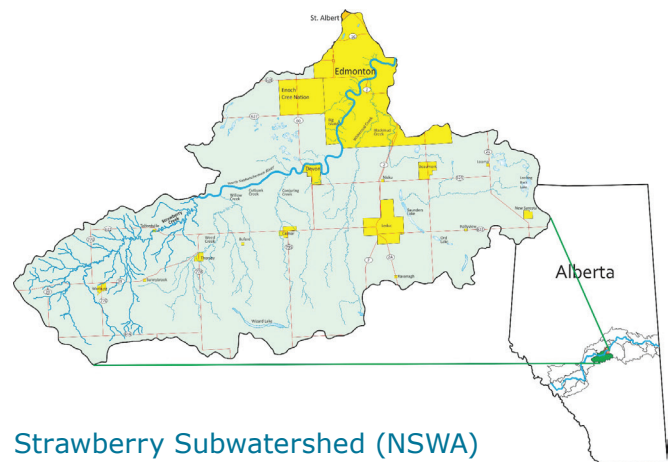
Wetlands are a vital part of Alberta's ecological landscape and necessary for a sustainable economy and healthy communities. **The Wetland Replacement Program (WRP)** aims to re-establish wetlands in partnership with Albertans by providing resources for collaborative restoration projects across the province. Under the Alberta Wetland Policy and the Alberta Wetland Mitigation Directive, WRP will offset wetland habitat lost due to development activities, for example by using wetland replacement fees to replace wetlands on the landscape. A priority of the Alberta Wetland Policy and WRP is to replace wetlands within municipalities and watersheds that have had the highest amount of lost wetland area and value since 2015, as well as areas of high historical loss. WRP will focus on fostering partnerships with municipalities that have a vested interest in wetland replacement. Working together, Alberta Environment and Parks and municipalities will help achieve shared outcomes for wetland replacement and conservation. A new Code of Practice for Wetland Replacement Works will provide regulatory standard for low-risk wetland restoration to further support the implementation of the Wetland Replacement Program.

Being recognized as a high priority area for wetland restoration, Strathcona County signed a memorandum of understanding with the Province in 2020, committing to the WRP. To move ahead with the partnership for the purpose of the WRP, Strathcona County has initiated an internal committee to formalize the resources required to realize opportunities for wetland restoration on our landscape for the term 2021 - 2023.

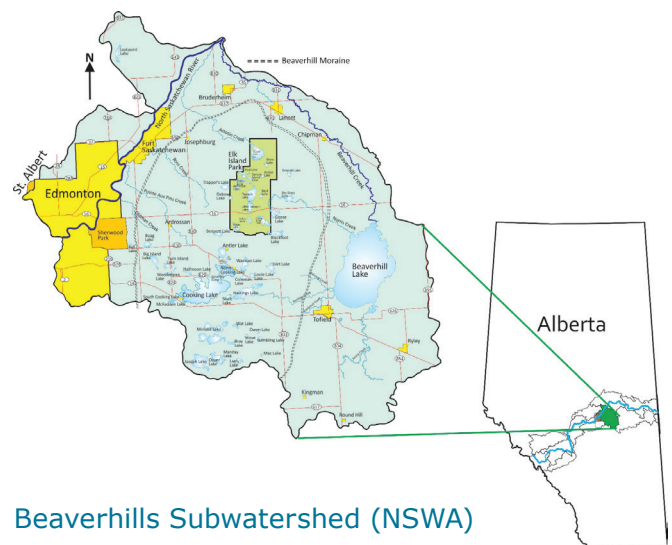
### North Saskatchewan River Watershed in Alberta



### North Saskatchewan River Watershed (NSWA)



### Strawberry Subwatershed (NSWA)



### Beaverhills Subwatershed (NSWA)

# 2021 OUTCOME:

## Watershed sustains healthy ecosystems and healthy citizens.

### OBJECTIVE W.1: Monitor water quality to ensure it is sustaining healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Partner with organizations committed to watershed health (North Saskatchewan Watershed Alliance, Alberta Lakes Management Society, CreekWatch) to monitor and report regularly
- Potable water quality monitoring
  - Provide comprehensive water quality data to our citizens
- Stormwater Quality Monitoring Program
- Support the water quality monitoring network within the North Saskatchewan watershed

#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for Stormwater Management Facilities
- Conservation of Biological Diversity Policy
  - Environmental Quality Guidelines for Alberta Surface Waters
- Wetland Conservation Directive
- Wetland Replacement Program

#### Strategic Initiatives to Consider

- Encourage, undertake, and support studies to investigate water quality and its effect on ecosystem and human health
- Encourage, undertake, and support the development of a Beaverhills Subwatershed Plan
- Pesticide Reduction Plan
  - Winter Road Material Recycling Program

### OBJECTIVE W.2 Manage water quality to ensure it is sustaining healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Catch Basin Cleaning
- Design and locate new infrastructure to mitigate impacts to water resources
- Invasive species management (aquatic and terrestrial)
  - Partner with provincial regulators to achieve regional water quality goals
  - Partner with provincial regulators to develop and implement water quality management plans
- Stormwater Management Facility Inspections
  - Stormwater Quality Monitoring Program
  - Yellow Fish Road Program

#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for Stormwater Management Facilities
- Bremner Area Concept Plan
- Bremner Growth Management Strategy
- Conservation of Biological Diversity Policy
- Design & Construction Standards
  - Environmental Quality Guidelines for Alberta Surface Waters
  - Erosion and Sediment Control Guidelines
  - Road Salt Management Guidelines (2021)
  - Sewer and Wastewater System Bylaw 38-2017
- Surface Water Management and Erosion Control Policy
- Water Conservation, Efficiency and Productivity Plan



- Water for Life Strategy
  - Water Management Framework for the Industrial Heartland and Capital Region
  - Wetland Replacement Program
- Water System Bylaw 16-2016

#### Strategic Initiatives to Consider

- Green infrastructure and appropriate Low Impact Development practices
- North Saskatchewan Watershed Alliance State of the Watershed Report in partnership with Beaver Hills Biosphere
  - Encourage, undertake, and support the development of a Beaverhills Subwatershed Plan
  - Protection of significant creeks, wetlands, and uplands within the watershed
  - Recreation, Parks & Culture Water Strategy

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### OBJECTIVE W.3 Monitor water quantity to ensure it is sustaining healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Partner with organizations committed to watershed health (EPCOR) to monitor and report regularly
- Potable water quantity monitoring

#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for Stormwater Management Facilities
- Conservation of Biological Diversity Policy
- Surface Drainage and Site Grading Bylaw 32-2017
- Wetland Conservation Directive

#### Strategic Initiatives to Consider

- Erosion Control Policy
- Encourage, undertake and support studies to investigate water quantity and its effect on ecosystem and human health

- Identify residential/industrial/commercial/institutional potable water consumption efficiencies
- Instream Flow Monitoring within tributaries of North Saskatchewan River
  - Report annual water losses
  - Surface Water Management Policy

03.

### OBJECTIVE W.4 Manage water quantity to ensure it is sustaining healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Design & Construction Standards
- Integrated Weed Management Program
  - Partner with provincial regulators to achieve regional water quantity goals
  - Partner with provincial regulators to develop and implement water quantity management plans
- Permanent Water Conservation Liaison Position
- Transportation & Agriculture Services alternative water supplies for road spraying ("worst water first")

#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for Stormwater Management Facilities
- Bremner Area Concept Plan
- Bremner Growth Management Strategy
- Conservation of Biological Diversity Policy
- Land Use Bylaw 6-2105
- Municipal Development Plan Bylaw 20-2017
- Surface Water Management and Erosion Control Policy
- Water Conservation, Efficiency, and Productivity Plan
- Water for Life Strategy
  - Water Management Framework for the Industrial Heartland and Capital Region
- Wetland Replacement Program

#### Strategic Initiatives to Consider

- Encourage, undertake, and support the development of a Beaverhills Subwatershed Plan
- Erosion Control Policy
- Recreation, Parks & Culture Water Strategy
- Protection of significant creeks, wetlands, and uplands within the watershed
- Naturalization Plan for open spaces to decrease water use

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### OBJECTIVE W.5 Educate and engage with citizens to encourage stewardship behaviours that support water conservation.

#### Innovative Practices in Action

- Adopt a Storm Drain Program
- Blue Broom Crew Program
- Classroom presentations – water use reduction and source water protection
- CommuniTEA Pond Parties
  - Community Clean Up
- Filtered water taps to reduce waste and encourage reusable containers (Human Resources and public facilities)
- Goldfish Monitoring Program
- Partner with organizations committed to water conservation (EPCOR, North Saskatchewan Watershed Alliance)
- Residential Toilet Rebate Program
- Stormwater Quality Monitoring Program

#### Supportive Policies/Plans/Tools in Action

- Conservation of Biological Diversity Policy
- Municipal Development Plan Bylaw 20-2017
  - North Saskatchewan River Flood Study
- Recreation & Culture Strategy
- Surface Drainage and Site Grading Bylaw 32-2017
- Water Conservation, Efficiency, and

#### Productivity Plan

- Weed Control Act
- Wetland Replacement Program

#### Strategic Initiatives to Consider

- Aquatic invasive species targets
  - Drainage Plans – Consolidated Rural
- Master Drainage Plan
- Eco Tours
  - Incentives to encourage wetland retention when site grading
- Instream Flow Monitoring within tributaries of North Saskatchewan River
- Low Impact Development Policy or Standards
- Incentives, including market-based instruments, to encourage wetland retention when site grading.
- Naturalization plans (Ecoscaping Program, Backyard Diversity)
- Protection of significant creeks, wetlands and uplands within the watershed
- World Water Day events
- Rain barrels
- Rain gardens
- Wetland education materials for site grading enforcement

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### OBJECTIVE W.6 Ensure water supply meets future planning needs.

#### Innovative Practices in Action

- Designated Industrial Zone (DIZ) Water Working Group (2021)
- Partner with Edmonton Metropolitan Regional Board to achieve regional water supply goals
- Partner with provincial regulators to achieve regional water supply goals
- Partner with provincial regulators to develop and implement water supply plans (North Saskatchewan Regional Plan)



#### Supportive Policies/Plans/Tools in Action

- Alberta Capital Region Wastewater Commission
- Bremner Area Concept Plan
- Bremner Growth Management Strategy
- Climate Resiliency Exchange: Best Practices Approaches for Mainstreaming Climate Change into Water Management
- Climate Resiliency Exchange: The Impact of Climate Change on Water Security in the Edmonton Metropolitan Region
- Conservation of Biological Diversity Policy
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
  - Sewer and Wastewater System Bylaw 38-2017
- Water Conservation, Efficiency, and Productivity Plan
- Water for Life Strategy
  - Water Management Framework for the Industrial Heartland and Capital Region
  - Water System Bylaw 16-2016

#### Strategic Initiatives to Consider

- Headwater Protection Strategy
- Indigenous Engagement Policy
- One Water approach

06.

### OBJECTIVE W.7 Ensure the North Saskatchewan River and its tributaries are protected from pollution.

#### Innovative Practices in Action

- Adopt a Storm Drain Program
- Blue Broom Crew Program
- Catch Basin Cleaning
- Classroom presentations – stormwater management
- Designated Industrial Zone (DIZ) Water Working Group (2021)
- Partner with Edmonton Metropolitan Regional Board to mitigate pollution from land use practices

- Partner with provincial and federal regulators to ensure compliance with relevant legislation, policies and Codes of Practice
- Pool Water Education Program
- Yellow Fish Road Program

#### Supportive Policies/Plans/Tools in Action

- Astotin Creek Resiliency Study (2021)
- Best Management Practices for Stormwater Management Facilities
- Bremner Area Concept Plan
- Bremner Growth Management Strategy
- Conservation of Biological Diversity Policy
- Conservation of and Public Access to Water Bodies and Watercourses Directive (2021)
- Erosion and Sediment Control Guidelines
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Water Conservation, Efficiency, and Productivity Plan
- Water for Life Strategy
  - Water Management Framework for the Industrial Heartland and Capital Region

#### Strategic Initiatives to Consider

- Indigenous Engagement Policy
- Instream flow monitoring within tributaries of North Saskatchewan River
- Protection of significant creeks, wetlands, and uplands within the watershed

07.

## 2009 GUIDING STATEMENT:

Strathcona County's urban areas are surrounded and connected by open green space and healthy natural areas, which are home to wildlife and provide recreation opportunities to County residents.

## 2009 CORPORATE GOAL:

Increase conservation of representative ecosystems.



**2020 REFLECTION:** Improved land use planning, development, and management plans and policies in Strathcona County

The **Municipal Development Plan Bylaw 20-2017 (MDP)** “Forwarding our Future; Together” 2017 is our plan for the future. It sets out a clear vision for how Strathcona County will grow and develop over the next 20 years and beyond. The MDP provides a comprehensive long-term land use policy framework within which present and projected growth and development may take place. It also guides Council decisions on key issues like conservation of the natural environment and investment in infrastructure and services.

1. Environmental Goal: Strathcona County will be an environmental leader and ensure responsible use of the natural landscape.
2. Environmental Objectives: Strathcona County will ensure: (1) Responsible use of the natural landscape; (2) Restoration of disturbed natural systems; and (3) Actions or initiatives that work toward creating a more environmentally responsible community.

The **Land Use Bylaw 6-2015 (LUB)** regulates the use, conservation and development of land, habitat, buildings and signs in pursuit of the objectives of Strathcona County's statutory plans. These objectives are to maintain and enhance the quality of life by providing opportunities to attain individual and community aspirations; to conserve and enhance the environmental quality in Strathcona County; and to foster planned, efficient, economical and beneficial development that provides a diversity of choice, lifestyle, and environment.



A **Growth Management Strategy** is a high-level document that describes and illustrates a vision, community design concept and set of policy directions intended to guide more detailed planning should the County decide to proceed with development. It identifies potential locations for residential neighbourhoods, commercial areas and employment areas. It also identifies potential locations for major roads and other infrastructure networks, such as water and wastewater servicing.

The **Municipal Land Framework** guides decision making for the use, acquisition and disposition of County land for current and future operations and services over a 25-year period. The framework, and decisions that flow from it, must consider economic, social and environmental benefits and impacts. It supports the Strategic Plan, as well as the MDP, which provides broad policies regarding the need for, amount of and allocation of County land.

#### 2021 LOOKING FORWARD:

Implement land use planning, development, and management plans and policies in Strathcona County

The Edmonton Metropolitan Region is a desirable place for people to live, and Strathcona County is a major employment generator. The Edmonton Metropolitan Region Board has projected that the region will double its population reaching 2.2 million people and 1.2 million jobs by 2044. Strathcona County's population is anticipated to grow by between 40,000 to 60,000 people in that time. Since Sherwood Park will likely be built out within the next decade, we recognized that planning for a new population must begin now.

On September 10, 2019, Council gave Bylaw 3-2019 second and third readings officially adopting the **Bremner and LEA Area Concept Plan**. An area concept plan is a statutory plan that provides a comprehensive planning framework and a generalized future land use

concept to guide subsequent area structure plans undertaken by developers. Bremner is a continuous expansion of Sherwood Park east of Highway 21. The Local Employment Area (LEA) is located across from Bremner, on the south side of Highway 16. Bremner is based on smart growth principles – growth that minimizes the development footprint and optimizes existing and new infrastructure by creating complete communities that take advantage of increased density and compact design. It focuses on walkable neighbourhoods with a diversity of land uses and housing, transportation choice, conservation of natural landscapes, and cost effective development.



The **Edmonton Metropolitan Region Growth Plan** is the culmination of ongoing research, trend monitoring, consultations and feedback from the members. The most recent, completed in 2016, is The Edmonton Metropolitan Region Growth Plan: Re-Imagine. Plan. Build. It represents a substantive revision of the Region's first 2010 Growth Plan: Growing Forward.

The Vision and Growth Plan were shaped by seven overarching Guiding Principles.

1. Collaborate and coordinate as a Region to manage growth responsibly. We will work together to create a Region that is well managed and financially sustainable with a shared commitment to growing responsibly and achieving long-term prosperity.
2. Promote global economic competitiveness and regional prosperity. We will foster a diverse and innovative economy that builds upon our existing infrastructure and employment areas, and our strengths in energy development to achieve sustained economic growth and prosperity.
3. Achieve compact growth that optimizes infrastructure investment. We will make the most efficient use of our infrastructure investments by prioritizing growth where infrastructure exists and optimizing use of new and planned infrastructure.
4. Ensure effective regional mobility. Recognizing the link between efficient movement of people and goods and regional prosperity, we will work towards a multi-modal and integrated regional transportation system.
5. Recognize and celebrate diversity of communities and promote an excellent quality of life across the Region. In planning for growth, we will recognize and respond to the different contexts and scales of communities and provide a variety of housing choice with easy access to transportation, employment, parks and open spaces, and community and cultural amenities.

6. Wisely manage prime agricultural resources. In the context of metropolitan growth, we will ensure the wise management of agricultural resources to continue a thriving agricultural sector.
7. Protect natural heritage systems and environmental assets. We will practice wise environmental stewardship and promote the health of the region's biodiversity, ecosystems, watersheds, and environmentally sensitive areas.

The **Regional Agriculture Master Plan** is the first major regional initiative undertaken by the EMRB that will create a harmonized policy framework that will: (a) identify and conserve prime ag lands in the Region for agricultural production, (b) minimize fragmentation and conversion of prime ag lands to non-ag uses, and (c) promote diversification and value-added agricultural production. This framework is built on the commitment to the long-term growth, sustainability and competitiveness of the agricultural and value-added agri-food sectors in the Region - and Alberta's second largest economic driver. The Guiding Principle is to ensure the wise management of prime agricultural resources. Objectives are to (1) identify and conserve an adequate supply of prime agricultural lands to provide a secure local food source for future generations, and (2) minimize the fragmentation and conversion of prime agricultural lands for non-agricultural uses.

On October 8, 2019, Council approved the **Recreation & Culture Strategy** which recognized that recreation and culture opportunities are essential to the overall well-being of individuals and the community in Strathcona County. Research has proven that people who participate in recreation and culture activities lead healthier lifestyles and are more socially connected than those that don't. Strathcona County recognizes these benefits and strives to be a leader in the delivery of recreation and culture opportunities to foster a community focused on its citizens' well-being. Priorities and potential actions



have been categorized in five areas of focus: community needs, inclusion, building capacity, environmental stewardship and fiscal responsibility.

Priorities identified under Environmental Stewardship (respecting the natural environment) include:

1. Educate participants and the community on the value of parks and open spaces: explore and share information that highlights the benefits parks and open spaces contribute to individual and community well-being
2. Encourage outdoor participation: explore and facilitate opportunities for year-round outdoor recreation and culture activities that connect people to nature, and promote the year-round use of multi-use trails and outdoor amenities available in parks and open spaces
3. Plan parks and open spaces: conserve parks and open spaces within both urban and rural areas, and conserve sites with heritage and cultural value for future generations
4. Appreciate the environment: consider how the spaces used for recreation and cultural opportunities effect parks and open spaces, raise community awareness of the positive and negative impacts recreation and culture activities have on the environment, and demonstrate leadership in ways that enhance environmental stewardship when using, planning and operating recreation and culture facilities, parks and open spaces and events.



# 2021 OUTCOME: Land use planning, development, and management sustains healthy ecosystems and healthy citizens

## OBJECTIVE L.1: Land use planning focuses on environmental (smart growth/complete) community design to ensure healthy ecosystems and healthy citizens

### Innovative Practices in Action

- Beaver Hills Biosphere
- Sustainable Urban Neighborhood Design (SUN Design)

### Supportive Policies/Plans/Tools in Action

- Area Concept Plan
- Area Structure Plan
- Biophysical Assessment Directive
- Bremner Area Concept Plan
- Bremner Growth Management Strategy
- Conservation of Biological Diversity Policy
- Conservation Easement Program
- Conservation and Environmental Reserve Easements Directive
- Conservation of and Public Access to Water Bodies and Watercourses Directive (2021)
- Edmonton Metropolitan Region Board Growth Plan
- Integrated Transportation Master Plan
  - Intermunicipal Development Plans
  - Joint Planning Agreement with the City of Edmonton
  - Land Management Policy
- Land Use Bylaw 6-2015
- Legacy Lands Directive
- Mature Neighborhood Strategy
- Municipal Development Plan
- Municipal Land Framework
- Recreation & Culture Strategy
- Transit Master Plan
- Tree Conservation Directive
- Wetland Conservation Directive

### Strategic Initiatives to Consider

- Conserve and manage representative examples of the characteristic ecosystems within the municipally protected conservation area network recognized by the various levels of government.
- Conservation Reserve Policy
- Encourage, undertake and support land conservation planning studies
- Identify and recognize a network of reserves to conserve representative natural and recreational values. Conduct an analysis of current and future conservation needs to determine if the conservation area is sufficient to protect biodiversity.
- Indigenous Consultation
  - Measure and report development in metres squared per person (urban vs. rural)

## OBJECTIVE L.2: Land use development focuses on wise use and development of land and buildings to ensure healthy ecosystems and healthy citizens

### Innovative Practices in Action

- Beaver Hills Biosphere
- Sustainable Urban Neighborhood Design (SUN Design)

### Supportive Policies/Plans/Tools in Action

- Best Management Practices for
- Stormwater Management Facilities



#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for
- Stormwater Management Facilities
  - Bremner Area Concept Plan
  - Bremner Growth Management
- StrategyArea Concept Plan
  - Communications towers guidelines
- Conservation and Environmental Reserve Easement Directive
  - Conservation Easement Program
- Conservation of Biological Diversity Policy
- Dark Sky Preserves
  - Design & Construction Standards
  - Edmonton Metropolitan Region Board
- Growth Plan
- Land Use Bylaw 6-2015
- Legacy Lands Directive
- Light Efficient Community Policy
- Municipal Development Plan Bylaw 20-2017
- Municipal Land Framework
- North Saskatchewan Regional Plan
- Tree Conservation Directive
- Wetland Conservation Directive

#### Strategic Initiatives to Consider

- Erosion Control Policy
- Erosion & Sedimental Control Guidelines
- Indigenous Consultation
- Light Pollution Policy
  - Partner with provincial regulators to develop and implement land use plans
- Soil Conservation Policy Encourage, undertake and support land use studies

### OBJECTIVE L.3 Land management builds on ecosystem resilience and includes conservation and restoration to ensure healthy ecosystems and healthy citizens

#### Innovative Practices in Action

- Arbor Day
- Beaver Hills Biosphere
- CommuniTEA Pond Parties
- FireSmart and wildlife risk reduction

- Invasive species management (aquatic and terrestrial)
- Partnerships with organizations committed to managing and restoring habitat and biodiversity (Nature Conservatory of Canada, Ducks Unlimited Canada, Tree Canada)
- Provide restoration opportunities to our citizens (Conservation Easement Program, Stormwater Management Facility Easement Policy, Weed and Pest Control Policy)
- Use, acquisition, and disposition of County land based on science

#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for
- Stormwater Management Facilities
- Biophysical Assessment Directive
- Conservation Easement Program
  - Design & Construction Standards
- Rural Roadside Backsloping and Shelterbelt Policy
- Weed and Pest Control Policy
- Wetland Conservation Directive
- Wetland Replacement Program

#### Strategic Initiatives to Consider

- Allow natural ecosystem processes to evolve and predominate whenever possible
- Cooperative management agreements to ensure adequate levels of protection
- Encourage, undertake and support studies to investigate habitat restoration
- Expand and enhance park and open spaces inventory
- Facilitate community tree planting opportunities
- Identify grant opportunities to support restoration actions
- Indigenous Consultation
- Instream Flow Monitoring within tributaries of North Saskatchewan River
- Partner with provincial regulators to develop and implement habitat restoration plans
- Reuse and recycle vegetation, rocks and soil in design
- Rangeland Health Assessments for municipal lands

- Respect activities (agriculture, hunting, fishing, forestry, mining, resource extraction) of importance to early human settlement to encourage cooperative conservation of natural values and traditions within the reserve network

03.

#### **OBJECTIVE L.4 North Saskatchewan River valley planning, use and management builds on ecosystem resilience and includes conservation and restoration to ensure healthy ecosystems and healthy citizens**

##### **Innovative Practices in Action**

- Designated Industrial Zone (DIZ) Cluster Infrastructure, Regulatory Performance and Environmental Outcomes
- North Saskatchewan Watershed Alliance
- Partner with organizations committed to restoring habitat and biodiversity within the North Saskatchewan River valley
  - River Valley Alliance
  - Riverside Nature Trail
  - Trail Day events
  - Trans Canada Trail
  - Trans Canada Trail events

##### **Supportive Policies/Plans/Tools in Action**

- 2007 Overall Consolidation Reclamation Plan for the North Saskatchewan River Valley
- Biophysical Assessment Directive
- Conservation of and Public Access to Water Bodies and Watercourses Directive (2021)
- Design & Construction Standards
  - Designated Industrial Zone (DIZ) Cluster Infrastructure
  - Designated Industrial Zone (DIZ) Water Working Group (2021)

- Heartland Industrial Area Structure Plan Bylaw
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Northern Strathcona County Regional Park Master Plan (2021)
- River Valley Alliance bridge development

##### **Strategic Initiatives to Consider**

- Conserve and protect natural area connections to the North Saskatchewan River valley
- Define river valley as an area of low intensity, passive recreation and conservation
- Encourage, undertake and support studies to investigate habitat restoration
- Indigenous Consultation
- Integrate and connect the North Saskatchewan River Valley with the Biosphere Reserve
- Invasive species management (aquatic and terrestrial)
- Partner with provincial regulators to develop and implement habitat restoration plans
- Partner with provincial regulators to achieve habitat restoration goals
- Seek out grant opportunities to support restoration actions

04.



## OBJECTIVE L.5 Agricultural land planning, use and management builds on ecosystem resilience and conservation to ensure healthy ecosystems and healthy citizens

### Innovative Practices in Action

- Agri-Tourism
  - Agriculture Services Board
  - Bremner Heritage House Site
  - Club Root Management
  - Invasive species management (aquatic and terrestrial)
  - Multi-Purpose Agricultural Facility
- Partner with organizations committed to conserving agricultural land
- Rural Outreach (Country Talk Newsletter and rural landowner seminars)

### Supportive Policies/Plans/Tools in Action

- Agricultural Master Plan
  - Agriculture Governance Strategy
- Agriculture Land Use and Development Strategy
  - Animal Control Bylaw 18-2011
- Apiculture Bylaw 43-2011
- Astotin Creek Resiliency Study (2021)
- Biophysical Assessment Directive
- Community Garden Policy
- Food and Agriculture Sector Development
- Invasive species management (aquatic and terrestrial)
- Regional Agriculture Management Plan (RAMP)
  - Responsible Livestock Ownership Bylaw (2021)
- Rural Roadside Backsloping and Shelterbelt Policy
  - Stubble Burning Bylaw
- Urban Agriculture Strategy
- Weed and Pest Control Policy
- Wetland Conservation Directive
- Wetland Replacement Program
- Wild boar awareness

### Strategic Initiatives to Consider

- Encourage, undertake and support studies to investigate how agriculture producers can prevent adverse impacts to the environment and human health in their operations while remaining financially sustainable
- Food security plan
- Living with Wildlife and/or Keeping Wildlife Wild Programs
- Manure management
- Partner with organizations committed to sustainable agriculture
- Soil and water conservation

05.

## OBJECTIVE L.6 Remediate and reclaim degraded public lands to ensure healthy ecosystems and healthy citizens.

### Innovative Practices in Action

- Ardrossan Decommissioned Landfill
- Asset Retirement Obligation Program
- Contaminated Sites Management Program
- Cooking Lake Decommissioned Nuisance Ground
- Environmental Site Assessments
- High Ridge Place Decommissioned Nuisance Ground
- Highway 21 Decommissioned Landfill
- Josephburg Decommissioned Nuisance Ground
- Josephburg Public Services Yard
- Josephburg Salt Storage Tent Pond
- Strathcona Public Services Yard

### Supportive Policies/Plans/Tools in Action

- Alberta Environmental Site Assessment Standard
- Alberta Exposure Control Guide Strategy
- Alberta Risk Management Guide

- Alberta Tier 1 Soil and Groundwater Remediation Guidelines
- Alberta Tier 2 Soil and Groundwater Remediation Guidelines
- Bethel Risk Management Plan
- Contaminated Sites Action Plan (2021)
- Contaminated Sites Policy Framework
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Phase 2 Environmental Site Assessment Checklist
- Remediation Action Plan Checklist
- Salt Contamination Assessment and Remediation Guidelines
- Subsoil Salinity Tool

#### Strategic Initiatives to Consider

- Require investigation of potentially contaminated sites for planning applications
- Require remediation to ensure site suitability for planning applications

06.

### OBJECTIVE L.7 Prevent pollution and reduce the use of harmful substances on public and private land to ensure healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Asbestos Removal and Abatement Program
- Contaminated Sites Management Program
- Hydro-Vac Waste Plan
- Integrated Pest Management
- Landowner Option Program
- Pesticide reduction
- Road Salt Management
- Rural Roadside Vegetation Control Program
- Weed Inspection Program

#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for Stormwater Management Facilities
- Climate Resilience Exchange - Managing
- Invasive Species and Pests in a Changing Environment
- Contaminated Sites Action Plan (2021)
- Design & Construction Standards
- Open Space Guidelines
- Emergency Services Spill Tracking Project (2021)
- Erosion and Sediment Control Guidelines
- Road Salt Management Plan Policy
- Road Salt Management Plan (2021)

#### Strategic Initiatives to Consider

- Best Management Practices for Open Space Maintenance
- Educate citizens on harmful substances to minimize their adverse effects
- Harmful Substances Reduction Strategy to minimize the use and impact of harmful substances in municipal operations
- Lake Stewardship communities
- Septic system management

07.

### OBJECTIVE L.8 Prevent light pollution and reduce the use of artificial light on public and private land to ensure healthy ecosystems and healthy citizens.

#### Innovative Practices in Action

- Beaver Hills Biosphere
- Dark Sky Initiative
- Dark Sky events
- Replace sodium roadway lights with LED roadway lights
- Strathcona Wilderness Centre Dark Sky Preserve



#### Supportive Policies/Plans/Tools in Action

- Communications tower guidelines
- 🌱 Dark Sky and Energy Efficient Lighting Community Handbook
- 🌱 Design & Construction Standards
- 🌱 Light Efficient Community Policy
- Recreation & Culture Strategy

#### Strategic Initiatives to Consider

- 🌱 Establish and implement lighting design policies and standards based on best practices for minimizing adverse effects on wildlife
- 🌱 Evaluate adaptive lighting opportunities
- 🌱 Educate landowners on environmentally responsible lighting practices
- 🌱 Investigate becoming a Dark Sky Preserve
- 🌱 Light Pollution Policy
- 🌱 Partner with nature-based organizations to create, promote and provide nature education
- 🌱 Provide Dark Sky stewardship opportunities to our citizens
- Recognize the potential that buildings have to harm wildlife and mitigate these hazards

08.

### **OBJECTIVE L.9 Educate and engage with citizens to encourage stewardship behaviours that support appropriate planning, use, and management of public and private land to ensure healthy ecosystems and healthy citizens.**

#### Innovative Practices in Action

- 🌱 Beaver Hills Biosphere
- 🌱 CommuniTEA Pond Parties
- 🌱 Community Partnership Projects
- 🌱 Communities in Bloom Front Yard Competition
- 🌱 Conservation Easement Program
- 🌱 Stewardship events
- 🌱 Strathcona in Bloom

#### Supportive Policies/Plans/Tools in Action

- 🌱 Conservation of Biological Diversity Policy
- 🌱 Dark Sky and Energy Efficient Lighting Community Handbook
- 🌱 Food and Agriculture Sector Development Strategy (2021)
- 🌱 Recreation & Culture Strategy
- Weed and Pest Control Policy

#### Strategic Initiatives to Consider

- 🌱 Alternative Land Use Services (ALUS)
- 🌱 Conservation, Heritage and Recreation Awareness and Education Program
- Consult with the Indigenous Policy Analyst and Indigenous Working Group to ensure Indigenous values and perspectives are being considered
- 🌱 Create a communications plan promoting nature education
- 🌱 Create an awareness program to define conservation roles and responsibilities of the municipality and the public
- 🌱 Create consistent messaging supporting nature education with our conservation partners
- 🌱 Establish an interdepartmental strategy to ensure consistent messaging and eliminate duplication of services
- 🌱 Incentives (including, but not limited to, market-based instruments) to encourage wetland retention when landowners are considering site grading and other developments
- 🌱 Jane Goodall Institute of Canada Roots & Shoots
- 🌱 Lake Stewardship communities
- 🌱 Partner with land conservation agencies
- 🌱 Edmonton and Area Land Trust's Regional Conservation Plan
- 🌱 Partner with nature-based organizations to create, promote and provide nature education
- 🌱 Share conservation knowledge within and between Strathcona County administration and the public
- 🌱 Wetland education materials to provide landowners inquiring about and applying for developments and site grading that may impact wetlands on their property

09.



# Biodiversity

**2020 REFLECTION:** Implemented conservation policies in Strathcona County

**Biological diversity** (biodiversity) is the variability among living organisms – animals, plants, their habitats and their genes – from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part (International Union on the Conservation of Nature).

**Ecosystems** are the complex of living organisms, their physical environment, and all their interrelationships in a unit of space. An ecosystem model is built on the interconnectedness between abiotic (minerals, climate, soil, water, light, and air) and biotic (living) parts. The abiotic and biotic parts are linked through energy flows and nutrient cycling. Even small changes to a single aspect of the model can cause regulation disruption in these flows and cycles.

This framework follows the ecosystem model, focusing abiotic (air, water, land) and biotic (biodiversity) goals with energy and waste goals. The network of relationships will be defined and built across all boundaries, specifically County departments, government agencies, non-governmental organizations, and our citizens.

**2021 LOOKING FORWARD:** Improve biodiversity and enhance conservation programs in Strathcona County

With environmental degradation occurring at local, regional, and global scales – community thresholds for environmental conditions are continually being lowered and expectations





are following. Marine biologist Daniel Pauly stated the theory “**shifting baselines**” to describe the inaccuracy of how we perceive nature over time (often generations). Due to short life-spans and errors in our memory, we have a poor context on how we have impacted the natural world. Our “baseline” of pristine natural ecosystems shifts gradually with every generation. Thus, in the absence of past historical information or experiential conditions, the next generation accepts the new normal, and measures against that. This psychological and sociological phenomenon is termed shifting baseline syndrome, which is increasingly recognized as one of the fundamental obstacles to addressing a wide range of today’s environmental issues (Papworth et al. 2009).

**Rewilding** is a comprehensive large-scale conservation method focussed on restoring biodiversity and ecosystem health and resiliency by protecting core wild areas, connecting core wild areas, and protecting (or reintroducing) keystone species. A keystone species is one that has a disproportionately large effect on the ecosystem relative to its population. Common keystone species are carnivores that drive the predator-prey relationship. Therefore, Rewilding is often summarized as the 3 C’s of conservation – cores, corridors, and carnivores. Continental-scale conservation efforts, such as the Yellowstone to Yukon Conservation Initiative (Y2Y), have seen significant success in protecting large wild core areas, protecting and restoring habitat corridors for wildlife movement, and restoring or sustaining large carnivores on the landscape. But Rewilding can occur at a variety of scales, including locally, wherever ecosystem function has been disturbed and there are opportunities for connecting core habitats and appropriate species exist on the landscape.

The **Conservation of Biological Diversity Policy SER-009-041** approved in 2020, confirmed that biological diversity is fundamental to sustaining life by supplying critical ecosystem services such as food provisioning, air and water purification, flood and drought control, nutrient cycling, and climate regulation. These services are essential to support our well-being and economic growth. Strathcona County values the biological diversity within the natural environment

and is committed to conserving a healthy, connected, and well managed ecological network. Therefore, Strathcona County has a responsibility to plan, protect, manage and restore the natural environment to ensure healthy, resilient ecosystems.

Strathcona County’s conservation goal is to protect the integrity of our natural resources while providing opportunities for appropriate forms of use that will benefit the community. Our conservation goal includes: (a) maintaining viable sustainable populations of native plants and wildlife in their natural habitats; (b) identifying a network of conservation areas to promote the sustainable use of natural resources to enhance quality of life for all; (c) restoring and rehabilitating degraded natural resources, where practical; (d) developing and implementing management plans to ensure long term viability of the natural resources; and (e) educating the public on conservation and sustainability.

**Alberta Biodiversity Monitoring Institute** (ABMI) is a leader in biodiversity monitoring across Alberta. Strathcona County is partnering with ABMI to implement a biodiversity monitoring program in the County. Remote cameras are deployed across the County to monitor biodiversity in key wildlife corridors, such as County reserve land. These cameras will capture photos of wildlife using the area and will be used for community education, engagement and research.



# 2021 OUTCOME: Biodiversity sustains healthy ecosystems and healthy citizens

## OBJECTIVE B.1: Plan for a healthy, connected ecological network to ensure conservation of biodiversity.

### Innovative Practices in Action

- Beaver Hills Biosphere
- Biodiversity Monitoring Program
  - Designated Industrial Zone (DIZ) Cluster Infrastructure
  - Financial Support/Sponsor to the Alberta Invasive Species Council
  - Partnerships with organizations
- committed to biodiversity conservation (ABMI, Friends of Elk Island Society) to monitor and report regularly

### Supportive Policies/Plans/Tools in Action

- Agriculture Land Use Development Strategy
  - Animal Control Bylaw 18-2011
- Apiculture Bylaw 43-2011
- Biophysical Assessment Directive
- Bremner Area Concept Plan
- Bremner Growth Management Strategy
- Conservation and Environmental Reserve Easement Directive
- Conservation of and Public Access to Water Bodies and Watercourses Directive (2021)
- Conservation of Biological Diversity Policy
- Design & Construction Standards
  - Indigenous Policy Analyst
  - Indigenous Working Group
- Integrated Weed Management Plan
- Land Inventory
- Land Use Bylaw 6-2015
- Legacy Land Directive
- Municipal Development Plan Bylaw 20-2017
- Municipal Land Framework
- Natural Area Management Plan
- Project Agreement with ABMI to guide the biodiversity monitoring protocol

- Rural Outreach
- Tree Conservation Directive
- Wetland Conservation Directive

### Strategic Initiatives to Consider

- Assist in animal disease control
- Bee City
- Biodiversity Conservation Plan
- Conservation Reserve Policy
- Consult with Indigenous communities to learn from their ancestral knowledge and practices of stewardship to ensure conservation of biodiversity.
  - Consult with the Indigenous Policy Analyst and Indigenous Working Group to ensure Indigenous values and perspectives are being considered.
- Coordinate with Elk Island National Park to map wildlife habitat connections
- Decrease manicured green space
- EcoRoof Initiative
- Ensure a diversity of native species and target pollinators in planting projects
- Identify species at risk, report and protect populations
- Increase use of native species and target xeriscaping design in planting projects
- Municipal Natural Assets Initiative (MNAI)
- Nature-based Solutions (NbS)
- Nature Canada's Nature-based Climate Solutions Program
- Open Space yardstick
- Targeted acquisition of land
- Update historic data sets (Prioritized Landscape Ecology Assessment, Prioritized Environmental Management Areas) and develop mapping applications
- Wildlife Connectivity Policy & Procedures
- Quiet Places Initiative

01.



## OBJECTIVE B.2: Protect a healthy connected ecological network to ensure conservation of biodiversity

### Innovative Practices in Action

- Beaver Hills Biosphere
  - Financial Support/Sponsor to the Alberta Invasive Species Council
- Partner with organizations committed to biodiversity conservation (ABMI, Friends of Elk Island Society) to monitor and report regularly
  - Rural Outreach
- Weed Inspection Program

### Supportive Policies/Plans/Tools in Action

- Animal Control Bylaw 18-2011
- Agriculture Land Use Development Strategy
- Apiculture Bylaw
- Biophysical Assessment Directive
- Bremner Area Concept Plan
- Bremner Growth Management Strategy
- Conservation Easement Program
- Conservation of and Public Access to Water Bodies and Watercourses Directive (2021)
- Conservation of Biological Diversity Policy
- Conservation and Environmental Reserve Easement Directive
- Land Inventory
- Land Use Bylaw 06-2015
- Legacy Land Directive
- Municipal Land Framework
  - Municipality Development Plan Bylaw 20-2017
- Natural Area Management Plan
- Project Agreement with ABMI to guide the biodiversity monitoring protocol
  - Responsible Livestock Ownership Bylaw (2021)
- Tree Conservation Directive
- Wetland Conservation Directive

### Strategic Initiatives to Consider

- Assist in animal disease control
- Bee City
- Biodiversity Sourcing Program to promote landscapes to Indigenous communities for accessing and gathering native plants

- Carbon sequestration opportunities
- Consult with Indigenous communities to learn from their ancestral knowledge and practices of stewardship to ensure conservation of biodiversity.
- Decrease manicured green spaces
- Encourage, undertake and support studies to investigate biodiversity conservation
- Ensure a diversity of native species and target pollinators in planting projects
- Identify species at risk, report and protect populations
- Increase use of native species and target xeriscaping design in planting projects
- Nature-based Solutions (NbS)
- Partner with organizations committed to sustainable agriculture
- Targeted acquisition of land
- Update historic data sets (Prioritized Landscape Ecology Assessment, Prioritized Environmental Management Areas) and develop mapping applications

## OBJECTIVE B.3: Manage a healthy connected ecological network to ensure conservation of biodiversity.

### Innovative Practices in Action

- Beaver Hills Biosphere
- Biodiversity Monitoring Program
- CommuniTEA Pond Parties
- Integrated Pest Management – non-chemical measures (mowing, digging, grazing, hand pulling)
- Partner with organizations committed to biodiversity conservation (Nature Conservatory Canada, Ducks Unlimited, WILDNorth) to manage sustainably
- Provide biodiversity management to our citizens
- Target prohibited noxious and noxious invasive species, not undesirable species (“weeds”)
- Turf Management Program
- Volunteer in Parks (VIP)
- Weed Inspection Program

#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for Stormwater Management Facilities
- Climate Resilience Exchange – Managing Invasive Species and Pests in a Changing Environment
- Climate Resilience Exchange – Urban Forest Management in a Changing Climate
- Conservation Easement Program
- Conservation of Biological Diversity Policy
- Dark Sky Preserves
- Design & Construction Standards
- Erosion and Sediment Control Guidelines
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Open Space Planning Revitalization
- Responsible Livestock Ownership Bylaw (2021)
- Stormwater Quality Monitoring Program
- Tree Conservation Directive
- Weed and Pest Control Policy
- Wetland Conservation Directive

#### Strategic Initiatives to Consider

- Assessment or Tracking Tool to identify successful application of Design and Construction Standards
- Bee City
- Biodiversity Monitoring
- Community Garden Program
- Conserve biodiversity in nature at all levels, giving rare, threatened, and endangered species special management attention.
- Consult with Indigenous communities to learn from their ancestral knowledge and practices of stewardship to ensure conservation of biodiversity
- Drain Clean Dry Program
- Encourage, undertake and support studies to investigate biodiversity management
- Enhance habitat value of parks by incorporating native plant species into park design, implementing invasive species removal and restore as needed
- Focus protection of significant creeks, wetlands and uplands within the watershed

- Integrate species diversity into Community Garden program
- Invasive species management (aquatic and terrestrial)
- Partner with provincial regulators to develop and implement biodiversity management plans
- Partner with provincial regulators to achieve biodiversity management goals
- Re-initiate Good Growing Neighbors
- Show leadership in cooperation and coordination with other conservation agencies and the public to conserve and manage lands with natural values
- Utilize parks and open spaces to complement and enhance biodiversity

03.

### **OBJECTIVE B.4 Restore degraded habitats within a healthy connected ecological network to ensure conservation of biodiversity.**

#### Innovative Practices in Action

- Arbor Day
- Beaver Hills Biosphere
- CommuniTEA Pond Parties
- Partner with organizations committed to restoring habitat and biodiversity (NCC, DUC, Tree Canada)
- Provide restoration opportunities to our citizens (Conservation Easement Program, reclamation guidance, weed control guidance)

#### Supportive Policies/Plans/Tools in Action

- Best Management Practices for Stormwater Management Facilities
- Biophysical Assessment Directive
- Conservation Easement Program
- Design & Construction Standards
- Green infrastructure
- Invasive species management (aquatic and terrestrial)
- Stormwater Quality Monitoring Program
- Tree Conservation Directive



- Wetland Conservation Directive
- Wetland Replacement Program

#### Strategic Initiatives to Consider

- Alternative Land Use Services (ALUS)
- Encourage, undertake and support studies to investigate habitat restoration
- Facilitate community tree planting opportunities
- Naturalization Pilot Project (medians/boulevards/parks)
- Nature-based Solutions (NbS)
- Partner with provincial regulators to develop and implement habitat restoration plans
- Partner with provincial regulators to achieve habitat restoration goals
- Seek out grant opportunities to support restoration actions
- Reuse and recycle vegetation, rocks and soil in design
- Rewilding

04.

### OBJECTIVE B.5 Educate and engage with citizens to encourage stewardship behaviours that support biodiversity conservation on public and private land.

#### Innovative Practices in Action

- Alberta Biodiversity Monitoring Institute (ABMI) monitoring on public and private lands
- Arbor Day
- Beaver Hills Biosphere
  - Bioblitz events at the Strathcona Wilderness Centre
- Biodiversity Monitoring Program
- Centennial Park Pollinator Garden and Bee Motels
- Clean and Green Program
- CommuniTEA Pond Parties
- Communities in Bloom
- Strathcona in Bloom
  - Community Clean Up

- Financial Support/Sponsor to the Alberta Invasive Species Council
- Garden Day
- Interpretive Signage Program
- Nature Hot Spots and NatureLynx
- Partner with organizations committed to biodiversity stewardship (Friends of Elk Island Society, Nature Conservancy Canada, Ducks Unlimited Canada)
- Pitch In Program
- Provide stewardship opportunities to our citizens (Conservation Easement Program)
- Volunteer in Parks (VIP)
- Weed Inspection Program
- WildTrax

#### Supportive Policies/Plans/Tools in Action

- Apiculture Bylaw
- Community Connection and Community Change Grant
- Community Gardens Policy
- Conservation Easement Program
- Conservation of Biological Diversity Policy
- Dark Sky Preserves
- Indigenous Policy Analyst
- Indigenous Working Group
- Municipal Development Plan Bylaw 20-2017
- Recreation & Culture Strategy
- Responsible Livestock Ownership Bylaw
  - Social Framework
  - Social Framework Community Grant
- Tourism Strategy and Implementation Plan
- Urban Agriculture Strategy
- Weed Inspection Program

#### Strategic Initiatives to Consider

- Alternative Land Use Services (ALUS)
- Aquatic invasive species targets
- Backyard Birding
- Backyard Diversity
- Bee City
- Celebrate Pesticide Free Residential Landscapes
- Communities in Bloom

- Conservation, Heritage and Recreation Awareness and Education Program
- Consult with Indigenous communities to learn from their ancestral knowledge and practices of stewardship to ensure conservation of biodiversity
- Eco Tours
- Ecoscaping Program
- Educational programs specific to home place/space conservation
- Enhance interpretive signage on public land
- Enhance stormwater management facility buffers by decreased mowing and naturalization
- Identify mowing hazards for naturalization projects
- Incentives (including, but not limited to, market-based instruments) to encourage wetland retention when landowners are considering site grading and other developments
- Jane Goodall Institute of Canada Roots & Shoots
- Native Bees Program
- Naturalist Program
- Naturalization Pilot Project (medians/boulevards/parks)
- Naturalization Program
- Nature Canada's Nature-based Climate Solutions Program
- No Spray Program
- Rewilding
- School yard naturalization
- Support to School Programs
- Wetland education materials to provide landowners inquiring about and applying for developments and site grading that may impact wetlands on their property
- Wildlife management alignment with neighbours
- Wilderness Centre Enrichment Guide
- Wilderness Centre Nature Program

05.











# Waste

## 2009 GUIDING STATEMENT:

Strathcona County uses leading procurement and waste management practices, which result in reduced and responsible use of resources and materials.

## 2009 CORPORATE GOAL:

Net zero waste in Strathcona County facilities.

## 2020 REFLECTION: Increased waste management programs in Strathcona County

When Strathcona County initiated the **Green Routine** residential program in 2008, it was leading the way in terms of residential services and diversion from landfill. Although participation in the curbside and community diversion programs have been successful, the County's diversion rate has been relatively stagnant with no significant increase since the inception of the Green Routine program. On average the program has achieved a 58% - 60% diversion rate over the last decade\* and has been unable to achieve the originally stated target of 70% diversion that was set to be achieved by 2018.

In addition, it is also important to note that industry shifts in 2018 resulted in changes to the program. **Green Routine 2.0** was launched with modifications to the recycling stream, which not only impacted performance indicators for the program, but resulted in a need to reconsider methodologies for how waste programs are evaluated.

To accompany the Green Routine program for residential services, Strathcona County also monitors and assesses the County's internal waste management program related to its own operations. The system and approach differs from the residential program, however it is estimated that about 50% of waste materials generated by the County is being diverted from landfill.

Monitoring, measurement and new targets are all being reviewed as part of the Waste Management Roadmap (2021).

*\* Excludes data from 2020, as COVID-19 resulted in distorted data as a result of impacts to household and community behaviours, as well as impact to service delivery.*



## 2021 LOOKING FORWARD:

### Reduce waste and consumption in Strathcona County

Waste refers to unwanted material discarded by a community. It is generated as a result of economic activity and consumption patterns driven by lifestyle choices. Environmental impacts include greenhouse gas emissions, land for disposal, leachate management, resources for collecting, processing and diverting. The only way to decrease the impact is to prevent and reduce waste, reuse and recycle materials, and coupling disposal with energy recovery.

A **Waste Management** system is complex, encompassing many areas such as environmental protection, government regulation, collection of waste, waste reduction, reuse and recycling, management of materials, public education, and performance monitoring. In addition, the generation of waste in a community crosses a number of sectors – residential, commercial, institutional, construction/demolition and industrial – which amplifies the complexity of addressing the entire system.

Strathcona County continues to be a leader in diversion with respect to reuse and recycling services and initiatives offered in the community, however the primary focus has traditionally been on the residential sector. Although participation in the curbside and community diversion programs have been successful, the County's diversion rate has been relatively stagnant (58% in 2018) with no significant increase since the inception of the Green Routine program in 2008. Furthermore, the waste management industry across North America has recently been unpredictable with recycling markets and processing capacity being unreliable.

After 10 years, the County's Green Routine program and complimentary community recycling initiatives require a long term review. The development of a Waste Management

Roadmap would set clear direction for reducing waste across the community over the next 10 years. Through the development of a **Waste Management Roadmap**, Strathcona County will undertake a process of creating a high-level strategy that will identify the community's philosophy, priorities and approach to Strathcona County's waste management system. It will help guide future decisions and investments related to solid waste and will provide a framework to continue the work and success of waste diversion services and initiatives in the County. The objectives are to: (a) provide direction for the County's waste management system, (b) identify the community's values and vision for managing waste throughout the County, (c) make progress towards further reduction of waste to landfill, and (d) address service delivery needs and processing capacity for the next 10 years.

A **Circular Economy** is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems (Ellen MacArthur Foundation). It is an alternative to the traditional linear economy – make, use, dispose. Strathcona County is currently exploring these principles in order to incorporate into our Waste Management Roadmap. A Circular Economy keeps products and materials circulating within the economy at their highest utility and value, through waste prevention, improved design, reuse, recycling, remanufacturing, and innovative business models

The Recycling Council of Alberta is working with five communities across Alberta on a Circular Cities project to create unique roadmaps for how communities can design out waste and conserve resources to transition to a Circular Economy. The communities include Strathcona County, City of Edmonton, City of Calgary, City of Lethbridge, and the Town of Banff. Each community is unique in location, economy, and diversity, so the first step in the project involved consulting members of the community to determine unique attributes and opportunities. This engagement took place over a focused half-day workshop (February 2020).

## 7 KEY ELEMENTS OF THE CIRCULAR ECONOMY



**Prioritise**  
regenerative  
resources



**Design**  
for the  
future



**Preserve**  
& extend what's  
already made



**Rethink**  
the business  
model



**Incorporate**  
digital  
technology



**Use**  
waste as  
a resource



**Collaborate**  
to create  
joint value

A roadmap was built on this workshop and represents the second step in the process, with the goal to give communities an idea of projects and areas for exploration and growth. After communities view their roadmaps, they will choose how and what projects to implement. To assist in this process, communities will also be connected with partner cities in Europe that have a similar focus and initiatives. This sister city or “small giants” connection will give the communities additional resources to tackle and resolve common challenges. Building on the European Innovation Partnership on Smart Cities and Communities initiative, they are called small giants because, although the communities may be small, they are “giant” in their ambition and what can be achieved through collaboration.



# 2021 OUTCOME: Waste management protects healthy ecosystems and healthy citizens

## OBJECTIVE WM.1: Monitor waste collection to ensure healthy ecosystems and healthy citizens.

### Innovative Practices in Action

- Capital Region Solid Waste Task Force
- Diversion program for County buildings and facilities
- Green Routine - Pay As You Throw
- Monitor landfill diversion
- Provide comprehensive waste collection data to our citizens
- Staff audits of residential waste carts and recycling

### Supportive Policies/Plans/Tools in Action

- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Waste Management Bylaw 39-2014
- Waste Management Roadmap (2021-2031)

### Strategic Initiatives to Consider

- CDP and Local Government and Sustainability (ICLEI) Unified Reporting System
- Decrease consumables programs, including single use plastic reduction and school programs
- Polluter Pays Program (Pay As You Throw)
- Reduction and Reuse Programs, including HodgePodge Lodge expansion, Food Waste Reduction and Textile Strategy
- Rollout Carts Replacement Program

01.

## OBJECTIVE WM.2: Manage waste collection to ensure healthy ecosystems and healthy citizens.

### Innovative Practices in Action

- Ardrossan Recycle Station for recycling and household hazardous waste
- Broadview Enviroservice Station for recycling and household hazardous waste
- Capital Region Solid Waste Task Force
- Hydro-Vac Waste Plan
- Multi-Family Recycling and Compost Collection
- Outdoor waste disposal by Recreation, Parks & Culture

### Supportive Policies/Plans/Tools in Action

- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Waste Management Bylaw 39-2014
- Waste Management Roadmap (2021-2031)

### Strategic Initiatives to Consider

- Decrease consumables programs, including single use plastic reduction and school programs
- Polluter Pays Program (Pay As You Throw)
- Reduction and Reuse Programs, including HodgePodge Lodge expansion, Food Waste Reduction and Textile Strategy
- Rollout Carts Replacement Program

02.

## OBJECTIVE WM.3 Reduce waste to ensure healthy ecosystems and healthy citizens.

### Innovative Practices in Action

- Ardrossan Recycle Station for recycling and household hazardous waste
- Broadview Enviroservice Station for recycling and household hazardous waste
- Green Routine - Pay As You Throw
- Hodge Podge Lodge for materials exchange
- Partner with non-governmental organizations (Intelligent Futures, Recycling Council of Alberta) to develop and implement circular economy guidelines
- Residential educational events (TRASHfest, Poop-A-Palooza, Waste Reduction Week)
- School partnerships and outreach for waste management improvements

### Supportive Policies/Plans/Tools in Action

- Circular Communities Roadmap for Strathcona County (2020)
- Design & Construction Standards
- Land Use Bylaw 6-2015
- Municipal Development Plan Bylaw 20-2017
- Municipal Sustainable Buildings Policy
- Regional Solid Waste Collaborative
- Waste Management Bylaw 39-2014
- Waste Management Roadmap (2021/31)

### Strategic Initiatives to Consider

- Advocate for Extended Producer Responsibility policies, including encouraging government and industry to reduce packaging and support design of products that reduce packaging
- Commercial sector waste management program
- Decrease consumables programs, including single use plastic reduction and school programs
- E-cycling

- Expand waste diversion program for County indoor facilities to outdoor facilities
- Freecycle
- Grasscycling
- Green Procurement Directives
- Industrial ecology to close the loop on industrial waste
- Information technology efficiency assessments
  - Investigate partnerships to reduce non-residential waste
- Investigate the Plastics Research in Action (PRIA) program offered at Northern Alberta Institute of Technology
- Life Cycle Replacement refresh
  - Metric for waste diversion refresh
- Partner with the Edmonton Waste Management Centre of Excellence to support research and technology projects in context of circular economy principles
- Partner with Repair Cafes
- Pre-cycling
- Recycling and/or salvaging bylaws
- Reduction and Reuse Programs, including HodgePodge Lodge expansion, Food Waste Reduction and Textile Strategy
- School recycling programs
- Take Back Program
- Zero Waste Municipality

03.



## **OBJECTIVE WM.4: Educate and engage with citizens to encourage consumption behaviours that reduce waste to ensure healthy ecosystems and healthy citizens.**

### **Innovative Practices in Action**

- 🌱 Hodge Podge Lodge for materials exchange
- 🌱 Residential educational events (TRASHfest, Poop-A-Palooza, Waste Reduction Week)
- 🌱 School partnerships and outreach for waste management improvements

### **Supportive Policies/Plans/Tools in Action**

- 🌱 Land Use Bylaw 6-2015
- 🌱 Municipal Development Plan Bylaw 20-2017
- 🌱 Waste Management Roadmap (2020/21)

### **Strategic Initiatives to Consider**

- 🌱 Circular Economy Project built on the 2020 Circular Communities Roadmap for Strathcona County
- 🌱 Enviro-Preferable Purchasing for employee or employer consumables
- 🌱 Freecycle
  - Grasscycling
- 🌱 Incentives and partnerships to reduce non-residential waste
  - Materials exchange opportunities for residential and commercial sectors (full time or pop-up)
- 🌱 Mow and Go
- 🌱 Partner with Repair Cafes
- 🌱 Partner with private sector to process waste into reusable products
- 🌱 Pre-cycling
- 🌱 Recycling and/or Salvaging Bylaw
- 🌱 Right to Repair Policy
- 🌱 School recycling programs
  - Sister Cities Partnerships built on the 2020 Circular Communities Roadmap for Strathcona County
- 🌱 Sports Equipment Library
- 🌱 Take Back Program
- 🌱 Tool Library
- 🌱 Truck Share

04.



# Energy

## 2009 GUIDING STATEMENT:

Strathcona County employs advanced technology and sound management practices in its continuous efforts to improve energy efficiency.

## 2009 CORPORATE GOAL:

Decrease the kilowatt hours per square foot per year.

## 2020 REFLECTION: Implemented energy conservation plans and policies in Strathcona County

Approved by Council in 2010, the **Municipal Sustainable Building Policy SER-004-006** set the policy statement specific to the design, construction and operation of municipal buildings. In order to further our commitment to sustainability, Strathcona County will be a leader in sustainable building practices by:

- Meeting all requirements of either the Strathcona County Sustainable Building Protocol or a LEED standard for the construction of all new County facilities that are over 500 m<sup>2</sup> or for major renovations (as defined) of County facilities;
- Requiring owners of Buildings on County-owned land to meet the requirements of either the Strathcona County Sustainable Building Protocol or a LEED standard for the construction of all new Buildings on County-owned land that are over 500 m<sup>2</sup> or for major renovations of Buildings on County-owned land;
- Favouring strategies of regional significance, such as water conservation, in developing the Strathcona County Sustainable Building Protocol;
- Striving for on-going improvement in the sustainable maintenance and operation of County facilities;
- Undertaking regular monitoring and reporting on the sustainability of all County facilities;
- Adhering to the Canadian Model National Energy Code for Buildings and
- Achieving official green building certification from official certifying organizations as deemed appropriate.



The **Municipal Development Plan Bylaw 20-2017 (MDP) “Forwarding our Future; Together” 2017** is our plan for the future. It sets out a clear vision for how Strathcona County will grow and develop over the next 20 years and beyond. The MDP provides a comprehensive long-term land use policy framework within which present and projected growth and development may take place. It also guides Council decisions on key issues like conservation of the natural environment and investment in infrastructure and services.

1. Economic Development Goal: Strathcona County will increase and diversify its economy.
2. Economic Development Objectives: Strathcona County will ensure; 1) A strong, diversified and sustainable economy; and 2) Opportunities for petrochemical cluster development.
3. Transportation Goal: Strathcona County will maintain safe, reliable and efficient transportation systems.
4. Transportation Objectives: Strathcona County will ensure; 1) Safe, reliable and efficient multi-modal transportation systems; 2) Opportunities for active transportation; 3) Customer-focused, accessible and affordable public transportation; and 4) The viability of aviation transportation systems.
5. Utility Systems Goal: Strathcona County will maintain safe, reliable and efficient utility systems.
6. Utility Systems Objectives: Strathcona County will ensure: 1) Safe, reliable and efficient service delivery; 2) Increased access to communication networks; and 3) Integrity of utility and pipeline corridors.

**2021 LOOKING FORWARD:** Increase energy conservation in Strathcona County

Fleet Services provides departments with 820 high-quality, safe and effective vehicles and equipment at the lowest possible cost, including fire trucks, utility vehicles, transit buses, snow plows, mowers and graders. Fleet

Services administers the corporation’s annual **Capital Fleet Replacement Program** jointly with each department. Fleet Services plans, directs, and recommends capital acquisitions and replacements based on life-cycle analysis, specifically life cycle costing and condition-based assessments to ensure the most economical cost for fleet units. Emphasis is placed on right-sizing vehicles to match their intended functions, ensure energy efficiency, and limit environmental impact.

Fleet Services administers the technology and activities required to effectively manage the corporate fleet, including vehicle financing, telematics (tracking and diagnostics), reporting and maintenance, health and safety, managing driver behaviour and fuel. The department minimizes risk tied to investment, improves fleet productivity, reduces costs and ensures compliance with government legislation.

**Fleet Management Software** creates new opportunities to excel at timely preventative maintenance that results in optimal safety and reliability, solving resource and troubleshooting issues related to fleet scheduling and analytics, vehicle maintenance, fuel and expense tracking, and driver safety. This program, coupled with GPS capabilities, improves fuel usage and reduces the impact of fleet on Strathcona County’s carbon footprint.

Fleet Services administers the **Replace Recycled Fleet Program** focusing on older units and those past their optimal life cycle. These units may have increased maintenance costs, greenhouse gas emissions, down-time, and decreased productivity and efficiency.

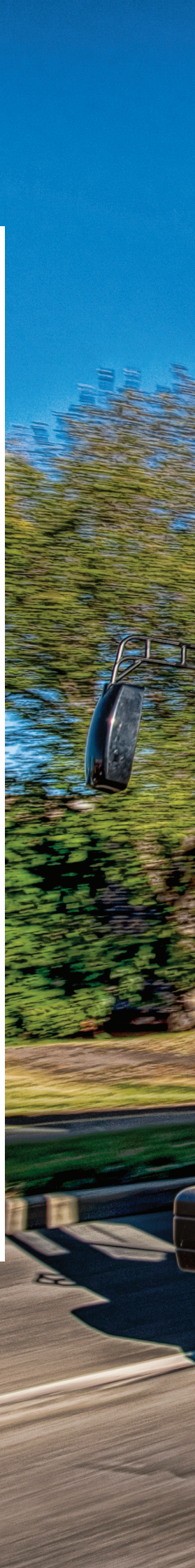
Fleet Services is also researching alternative fuel opportunities and will define 1) alternative fuel options and costs, 2) the benefits and disadvantages of alternative fuels, 3) the potential to reduce fuel costs and emissions, and 4) the capacity to improve air quality and resident quality of life. Currently, Fleet Services measures the impact of fleet on Strathcona County’s carbon footprint by measuring total fuel consumed. Fleet Services will continue to 1) develop tools to measure Strathcona County’s carbon footprint resulting from vehicle and equipment selection, 2) reduce emissions through frequent and appropriate vehicle

maintenance, and 3) maximize Fleet Management Software capabilities to monitor fuel and vehicle usage. The department will also prepare to 1) develop a fleet policy in partnership with a corporate emissions target, and 2) invest in more fuel efficient vehicles and technologies.

Facility Services is responsible for planning, building, maintaining and improving Strathcona County facilities in a sustainable manner that supports direct service delivery, safety and comfort to employees and the public while reflecting our community pride. The **Facility Capital Lifecycle Program** supports the long-term care of our facilities by matching funding for facility system and equipment replacements to address age, condition or performance to ensure the building assets achieve the longest useful life possible. Asset management principles, routine building condition assessments and condition validation are used to forecast future building needs and project funding requirements. This allows for a stable and sustainable approach to the long-term care of County-owned facilities.

A **Facility Master Plan and Space Management Program** will provide a long-range view of municipal facility needs. This will incorporate municipal growth projections and changes occurring at the municipal department level for space utilization. These changes will allow for different working space relationships, and provide a building space inventory, with condition and age data to develop a 5, 10 and 25 year forecast of what major changes or new facilities may be required.

A **Strategic Energy Master Plan** (to be completed in 2022) will amend facility design standards to align with facility use energy targets and incorporate alternative energy systems or efficient technologies where appropriate. This will include new energy performance targets that will guide changes to operating procedures, equipment and adoption of newer technologies; this will reduce our overall energy demands. Training of operations staff in energy efficiency operations, procedures and advance technologies will help support the goal of creating high-performing facilities. On July 7, 2020 Council approved a greenhouse gas reduction target of 15% from 2018 levels by 2030.









**2021 OUTCOME:** Reducing energy use, committing to energy efficiency, and embracing renewable energy sources protects healthy ecosystems and healthy citizens.

**OBJECTIVE E.1: Reduce energy use within municipal buildings through energy efficiency to ensure healthy ecosystems and healthy citizens**

**Innovative Practices in Action**

- 🌱 Energy Efficiency Audits
- 🌱 Greenhouse Gas Emissions Inventory (2021)
- 🌱 Life Cycle Replacement Programs focus on efficient and cost effective actions
  - Municipal Energy Manager
- 🌱 Municipal Sustainable Building Protocol
- 🌱 Smart Meters

**Supportive Policies/Plans/Tools in Action**

- 🌱 Climate Resilience Exchange – Climate Resilient Home
- 🌱 Design & Construction Standards
- 🌱 Facility Capital Lifecycle Program
- 🌱 Facility Master Plan
- 🌱 Greenhouse Gas Reduction Target 15% (2018 – 2030)
- 🌱 Land Use Bylaw 6-2015
- 🌱 Light Efficient Community Policy
- 🌱 Municipal Sustainable Building Policy
- 🌱 Space Management Program
- 🌱 Strategic Energy Master Plan (2022)
- 🌱 Water Conservation, Efficiency and Productivity Plan

**Strategic Initiatives to Consider**

- 🌱 Adaptive lighting for buildings
- 🌱 Assess Electric Vehicle (EV) charging stations in Public Parkade and other opportunities
- 🌱 Building display energy use/carbon footprint/Greenhouse Gas emissions
- 🌱 CDP and Local Governments for Sustainability (ICLEI) Unified Reporting System

- 🌱 Conduct a daylight harvesting and LED lighting project
- 🌱 Determine energy/person/day (natural gas, electricity)
- 🌱 Document, celebrate and share green building successes
- 🌱 Eco Roof Initiative
- 🌱 Encourage, undertake and support energy efficient standard review and updates at the provincial regulatory level
- 🌱 Encourage the Province to update the construction codes to ensure high energy efficiency standards – National Model Construction Codes
- 🌱 Encourage and support tactics that will reduce energy use in existing homes (Green Renovation Program)
- 🌱 Encourage high energy efficiency standards in large buildings (Green Building Checklist, Green Construction Checklist)
- 🌱 EnerGuide Rating 80 or higher
- 🌱 EnerGuide Rating for buildings
- 🌱 Establish an energy education program for building operation stakeholders who are responsible for influencing energy consumption
- 🌱 Green Energy Procurement Policy
- 🌱 Green ratings systems – Built Green, LEED, Passive House, R-2000, Energy Star for New Homes, Energy Guide for New Homes, Novoclima, GoGreen Plus, National Energy Code (25% better)
- 🌱 Higher efficiency mechanical and electrical facility systems, resolve structural deficiencies that cause thermal leakage
- 🌱 Microgeneration technology



- 🌱 Municipal Climate Change Action Centre (MCCAC) Grant Program
  - Parking design standards
- 🌱 Partners for Climate Protection offered through the Federation of Canadian Municipalities
  - Partner with Canadian Homes Builders Association and the Real Estate Board to establish an energy labelling program for new homes (EnerGuide labelling)
  - Urban CO<sub>2</sub> reduction plan (International Council for Local Environmental Initiatives)

01.

## OBJECTIVE E.2: Reduce energy use within municipal operations through energy efficiency to ensure healthy ecosystems and healthy citizens

### Innovative Practices in Action

- Asphalt Trails Rehabilitation Program
- Best Management Practices for winter road maintenance
- 🌱 Bike Share Program at County Hall
- 🌱 Energy Efficiency Audits
- 🌱 Fleet Alternative Fuel options/research
- 🌱 Fleet Anti-Idling Procedure
- 🌱 Fleet GPS Telematics System
- 🌱 Fleet Management Software
- 🌱 Follow-you Printing Program
- 🌱 Green Machine sensor for tail pipe emissions to target maintenance
- 🌱 Greenhouse Gas Emissions Inventory (2021)
- 🌱 Parks Infrastructure Replacement Program
- 🌱 Recreation Equipment Replacement Program
- 🌱 Replace Recycled Fleet Program
- 🌱 Road Maintenance GPS Telematics System
- 🌱 Rural Roads Rehabilitation Program

- 🌱 Smart Fare/Smart Bus Technology Improvements
- 🌱 Smart Meters
- 🌱 Urban Roads Rehabilitation Program

### Supportive Policies/Plans/Tools in Action

- 🌱 Design & Construction Standards
- 🌱 Fleet Master Plan
- 🌱 Integrated Transportation Master Plan
- 🌱 Light Efficient Community Policy
- 🌱 Municipal Sustainable Building Policy
- 🌱 Open Space Master Plan (2022)
  - Recreation & Culture Strategy
- 🌱 Road Salt Management Guidelines (2021)
- 🌱 Street Lighting Policy
- 🌱 Transit Master Plan
- 🌱 Transit Route Design
- 🌱 Water Conservation, Efficiency and Productivity Plan

### Strategic Initiatives to Consider

- 🌱 Accelerate the retirement of less fuel efficient on-road heavy duty vehicles and light duty trucks and passenger vehicles
- 🌱 Adaptive lighting for street lights and signage
- 🌱 Alberta Zero Emissions Hydrogen Transit (AZEHT) Project
- 🌱 Best Management Practices for Information Technology
- 🌱 Bike share program
- 🌱 Carpooling
- 🌱 CDP and Local Governments for Sustainability (ICLEI) Unified Reporting System
- 🌱 Cities for Climate Change Protection Campaign (International Council for Local Environmental Initiatives)
- 🌱 Community Energy Plan to become an Energy Wise Canadian Community – conserve and improve efficiency, develop local wind generation, geothermal, solar hot water, hybrid and alternative fuel vehicles
- 🌱 Determine energy/person/day (vehicle fuel, natural gas, electricity)
- 🌱 Exchange parking space for a transit pass
- 🌱 Fleet Anti-Idling Policy
- 🌱 Fleet Reduction Strategy
- 🌱 Green Energy Procurement Policy

- 🌱 Green Fleet Procedure
- 🌱 Green Fleet Strategy (2021)
- 🌱 Internal Transit Route Planning to provide more efficient service (2022)
- 🌱 LED Street Light Conversion Program
- 🌱 Light Pollution Policy
- 🌱 Monitor driver behaviours including speeding and idling
- 🌱 Monitor and assess the applicability of Electric Vehicles
- 🌱 Municipal Fuel Sense Program
- 🌱 MCCAC grant programs
- 🌱 Promote transit for the workforce
- 🌱 Reduce employee commuting by single occupancy vehicles
- 🌱 Road construction and maintenance – use methods and materials that minimize the amount of energy used and emissions
- 🌱 Shift to renewable energy through installation of solar panels on roadway infrastructure
- 🌱 Transit Greenhouse Gas Management Plan
- 🌱 Transit On Demand (2022)
- 🌱 Urban CO<sub>2</sub> reduction plan (International Council for Local Environmental Initiatives)
- 🌱 Utilize land space to install wind and solar generation

02.

### OBJECTIVE E.3: Increase energy efficiency via land use and transportation planning decisions to ensure healthy ecosystems and healthy citizens

#### Innovative Practices in Action

- 🌱 Clean Air Day
- 🌱 Energy Efficiency Audits
- 🌱 Mobility Bus Rural Weekend Services
  - Municipal Energy Manager
- 🌱 Sidewalk Missing Links Program
- 🌱 Signalized intersections upgraded to roundabouts
- 🌱 Smart Meters
- 🌱 Strategic Energy Management Plan
- 🌱 Greenhouse Gas Emissions Inventory

- 🌱 Sustainable Urban Neighborhood Design (SUN Design)

#### Supportive Policies/Plans/Tools in Action

- 🌱 Bremner Area Concept Plan
- 🌱 Bremner Growth Management Strategy
- 🌱 Design & Construction Standards
- 🌱 Edmonton Metropolitan Region Board
- 🌱 Fleet Master Plan
- 🌱 Integrated Transportation Master Plan
- 🌱 Land Use Bylaw 6-2015
- 🌱 Light Efficient Community Policy
- 🌱 Mature Neighborhood Strategy/Residential infill
- 🌱 Municipal Development Plan Bylaw 20-2017
- 🌱 Municipal Sustainable Building Policy
  - Recreation & Culture Strategy
- 🌱 Street Lighting Policy
- 🌱 Trails Strategy
- 🌱 Transit Master Plan
- 🌱 Traffic and Pedestrian Safety Improvements
- 🌱 Traffic Calming Policy
- 🌱 Traffic Signal/Intersection Replacements
- 🌱 Water Conservation, Efficiency and Productivity Plan

#### Strategic Initiatives to Consider

- 🌱 Bike share program
- 🌱 Carbon sequestration opportunities
- 🌱 Determine how to prepare for EVs in the community – infrastructure and supporting bylaws
- 🌱 Encourage mode shift from single occupancy vehicles
- 🌱 Engage with bike groups to discuss infrastructure needs
- 🌱 Expand on-street biking for safety and convenience
- 🌱 Mixed use developments to accommodate growth in mature areas
- 🌱 Partner with Urban Development Institute (UDI) and development stakeholders to identify and evaluate development-related innovations that can reduce energy use
- 🌱 Paths for People – local group advocates for multimodal
- 🌱 Support Eco-industrial development – design and develop industrial areas to achieve high standards in energy efficient



- 🌱 Transit oriented development to accommodate growth in existing neighborhoods
- 🌱 Walkscore.com

03.

### OBJECTIVE E.4: Increase renewable and alternative energy sources (solar, wind, geothermal) to ensure healthy ecosystems and healthy citizens

#### Innovative Practices in Action

- 🌱 Community Energy Strategy
- 🌱 Community Energy System
- 🌱 Fleet Alternative Fuel
- 🌱 Parks Compound solar photovoltaic (PV) installation

#### Supportive Policies/Plans/Tools in Action

- 🌱 Alberta's Industrial Heartland Association (AIHA) – Transition Accelerator
- 🌱 Design & Construction Standards
- 🌱 Hydrogen Sector Opportunity Program
- 🌱 Land Use Bylaw 6-2015
- 🌱 Light Efficient Community Policy
- 🌱 Municipal Development Plan Bylaw 20-2017
- 🌱 Municipal Sustainable Building Policy
- 🌱 Strategic Energy Master Plan (2022)
- 🌱 Sustainable Urban Neighborhood Design (SUN Design)

#### Strategic Initiatives to Consider

- 🌱 Alternative Energy Policy
- 🌱 Attract solar PV farm installation to industrial or agricultural sectors
- 🌱 CDP and ICLEI Unified Reporting System
- 🌱 Determine feasibility of expanding Community Energy System
- 🌱 Develop local wind generation
- 🌱 Eco Roof Initiative
- 🌱 Encourage, undertake and support alternative energy sourcing
- 🌱 Install renewable energy technology on municipal buildings
- 🌱 Municipal Climate Change Action Centre (MCCAC) Grant Program

04.

### OBJECTIVE E.5: Evaluate procurement of goods and services to increase energy efficiency and increase renewable/alternative energy sources to ensure healthy ecosystems and healthy citizens

#### Innovative Practices in Action

- 🌱 Facility Capital Life Cycle Program
- 🌱 Municipal Energy Manager
  - Space Management Program

#### Supportive Policies/Plans/Tools in Action

- 🌱 Design & Construction Standards
- 🌱 Light Efficient Community Policy
- 🌱 Municipal Sustainable Building Policy
- 🌱 Procurement Policy Update (2021)
- 🌱 Strategic Energy Master Plan (2022)

#### Strategic Initiatives to Consider

- 🌱 Alternative Energy Policy
- 🌱 Green Procurement Directives

05.

**OBJECTIVE E.6: Educate and engage with citizens to encourage behaviours that support energy efficiency and the transition to renewable/alternative energy to ensure healthy ecosystems and healthy citizens**

**Innovative Practices in Action**

- 🌱 Clean Air Day
- 🌱 Integrated Transportation Master Plan
- 🌱 Transit Master Plan

**Supportive Policies/Plans/Tools in Action**

- 🌱 Climate Resilience Exchange – Climate Resilient Home
- 🌱 Community Connection and Community Change Grant
  - Social Framework
  - Social Framework Community Grant

**Strategic Initiatives to Consider**

- 🌱 Bike Share Program
- 🌱 Build awareness of Green Buildings and human health
- 🌱 Car Share Program
- 🌱 Commuter Options Program to help businesses encourage employees to commute sustainably
- 🌱 Create a communications plan promoting energy efficiency and green procurement
- 🌱 Define and award Energy Efficient Communities (FireSmart Communities)
- 🌱 Digital signage in municipal building displaying energy information
- 🌱 Eco Roof Initiative
- 🌱 Emergency Services distribution of residential energy efficiency information via Home Safety visits
- 🌱 Good Environmental Neighbor Handbook (Saskatoon)
- 🌱 Green Building Recognition Program
- 🌱 Highspeed network infrastructure (support work from home opportunities)
  - Identify or develop demonstration

- 🌱 programs to showcase energy efficiency
- 🌱 Investigate incentive and rebate programs
- 🌱 Municipal Climate Change Action Centre (MCCAC) Grant Program
- 🌱 Partner with energy and climate change focussed organizations to create, promote and provide education
- 🌱 Permitting, Inspections and Customer Service distribution of residential energy efficiency information
- 🌱 Support local industry, commercial businesses and institutions to be more energy efficient

06.





# RENEWING OUR FUTURE

# IMPLEMENTATION

The Environmental Framework's outcomes and objectives create a common reference for collaboration and alignment between stakeholders to work together towards a future where healthy ecosystems support a healthy community. Therefore, innovative and supportive programs/plans/policies and strategic initiatives should be embedded in the administrative and operational decision-making of Strathcona County.

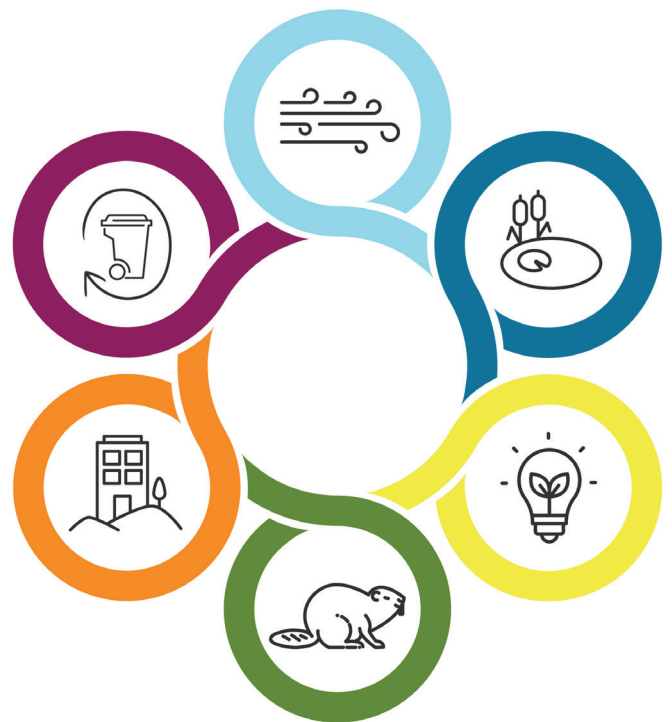
Internal implementation will be directed through the actions of an Environmental Framework Integration Team (EFIT).

Internal implementation commitments:

- Invest resources to an Environmental Framework Integration Team (EFIT) representing the diversity of departments across the organization
- Continue to document successful innovative and supportive programs/plans/policies across the organization and within department annual business plans;
- Invest resources to an Environmental Framework Communications Strategy (EFCS)
- Actively identify strategic initiatives and garner commitment by investing resources dedicated to accomplishing an objective, and include a scope, budget and timeline;
- Facilitate administrative workshops and meetings to enable the outcomes and objectives within day to day business activities and decision-making;
- Actively seek out and endeavor for grant opportunities that align with the outcomes and objectives;
- Administer an Environmental Framework Grant Program to support partnerships within our community to realize our objectives; and
- Report a least annually to Council on challenges and opportunities achieving the outcomes.

External implementation commitment:

- Share the Environmental Framework with stakeholders and the community;
- Showcase the outcomes and objectives to build awareness of our renewed future;
- Showcase innovative and supportive programs/plans/policies to educate and motivate the community;
- Provide opportunities for the community, such as task forces, to actively identify strategic initiatives that support the outcomes and objectives; and
- Ensure diversity and inclusion when prioritizing strategic initiatives to address barriers that our citizens may face when participating in programs.



*"Man does not weave this web of life.  
He is merely a strand of it. Whatever he  
does to the web, he does to himself."*

- Chief Seattle



# RECOGNITION

## STAKEHOLDER

We would like to thank the members of Strathcona County administration, Strathcona County Council, representatives of Non-Governmental Organizations, municipal representatives from the Capital Region Municipal Sustainability Group, the Youth Advisory Committee, and Strathcona County Online Opinion Panel (SCOOP) Survey participants for providing valuable input. We can only hope that this collaboration will continue for the benefit not only of Strathcona County, its citizens and its landscape, but for the greater region and the collective environment that sustains us.

All photos taken within Strathcona County by staff

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