TOWN OF BLACKFALDS

ENVIRONMENTAL STEWARDSHIP STRATEGY

Approved
10/12/2021

BLACKFALDS
ALBERTA

ENVIRONMENTAL **VISION STATEMENT**

The Town of Blackfalds is committed to undertaking sustainability measures to ensure a healthy environment for current and future generations.

Environmental stewardship strategies will be incorporated into Town operations, organizational culture, development conditions, and policies and procedures where applicable, to conserve, protect and enhance the environment in balance with social and economic needs.

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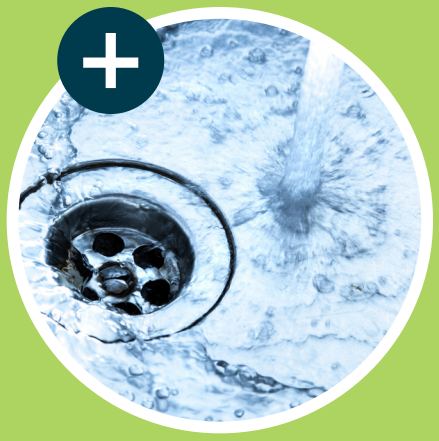


EXECUTIVE **SUMMARY**

The Town of Blackfalds Environmental Stewardship Strategy (ESS) is a comprehensive strategy to identify how the Town will manage the full extent of its environmental impacts. It highlights existing and proposed policy and bylaw direction, standards improvement, community education and awareness programs, and plans. By identifying these strategies, the Town as an organization, will be able to identify the most important actions to reduce environmental impacts. The Town will initiate community programs to engage our citizens in a collaborative manner in the pursuit of our goal of a healthy environment.

The purpose of the ESS is to integrate key documents such as plans, strategies, policies, bylaws into an overarching document that serves as the framework for environmental stewardship within the Town of Blackfalds. The ESS takes the broad vision for environmental stewardship from the Municipal Sustainability Plan (MSP).

The MSP is a comprehensive sustainability planning document that guides decision-making for the Town of Blackfalds. The ESS is organized into seven major focus areas:

WATER

How the Town manages water resources

STORMWATER

How the Town manages and treats stormwater

LAND

How the Town manages growth, natural spaces, and landscapes

ENERGY

How the Town manages energy use

BUILDINGS & INFRASTRUCTURE

How the Town builds and maintains these assets

SOLID WASTE

How the Town manages solid waste to increase waste diversion

AIR

How the Town manages emissions and improves air quality

Through this Strategy, Council has set the direction Blackfalds will take to create a growing, sustainable community committed to environmental stewardship.

The strategies outlined in the Environmental Stewardship Strategy will direct the actions Town staff, community members, and Council will take over the next 10 years to reach Blackfalds' key focus area goals. Specific actions to achieve these goals will be reviewed on an annual basis by Town staff to ensure that actions remain in line with changing budget, technologies, provincial and federal directives, and other internal and external factors.

The success of the ESS will only be achieved with the combined effort of Town staff, community groups, businesses, developers and individuals. It is imperative that the citizens of Blackfalds continue to provide their input on environmental stewardship goals, and actively engage in sustainability actions for our community now and in the future.

By identifying key performance metrics for each major focus area, the Town can track progress towards each goal. This will help the Town ensure it is on the right path toward its vision of a sustainable, resilient community, as well as showcase Blackfalds' continued leadership in environmental performance.

1 | WHAT IS **ENVIRONMENTAL STEWARDSHIP?**

Fundamentally, environmental stewardship is the sustainable management of Earth's resources to meet our needs today, and in the future. It is also the responsible use and protection of the natural environment through conservation and sustainable practices to enhance ecosystem resiliency and human well being. [1]

Stewardship action is defined as the activities, behaviours, decisions, and technologies that are used by stewards (individuals, groups, or network of actors). Collaboratively, these stewards are used to manage common-trust resources. Actions involved can vary based on scale and complexity of the issue at hand.

By employing environmentally conscious and sustainable corporate practices, the Town of Blackfalds can limit negative environmental impacts, and start to create positive impacts in our community, and on the Town's operational practices.

1 (https://www.noaa.gov/resource-collections/common-measures-definitions/stewardship-definitions)

2 | BLACKFALDS MUNICIPAL SUSTAINABILITY PLAN

The Municipal Sustainability Plan (MSP)[2] is a comprehensive statutory planning document that guides decision making by the Town of Blackfalds. The MSP identified five sustainability pillars and several critical moves and indicators to address these pillars. Of these five pillars, two of them pertain to environmental stewardship: Natural Environment and Infrastructure and Buildings.

SUSTAINABILITY PILLAR: NATURAL ENVIRONMENT

The Sustainability pillar "Natural Environment" is defined as "the natural environment contributes to a high quality of life in Blackfalds. We will continually seek opportunities to preserve and reclaim more natural space and build a culture to help promote community action to improve our environmental performance."

The following Natural Environment goals pertain to environmental sustainability:

- The community reflects a culture of conservation
- We continually reduce our residential, commercial, and industrial waste while innovatively dealing with existing waste
- Alternative energy sources are encouraged and facilitated by the Town
- Development guidelines preserve and respect natural areas
- The natural environment is improved through reclamation initiatives
- The Town adopts an Environmental Stewardship Strategy to guide meaningful environmental action
- Partnerships with surrounding municipalities are pursued for large-scaled environmental initiatives
- Develop an Environmental Awareness Program
- The Town's municipal documents support environmental policy
- Short and long-term improvements to Blackfalds' parks and greenspaces are a priority

2 www.blackfalds.ca/DownloadDocument?docId=18041b71-1938-4313-808e-a81fc084a75d

SUSTAINABILITY PILLAR: INFRASTRUCTURE AND BUILDINGS

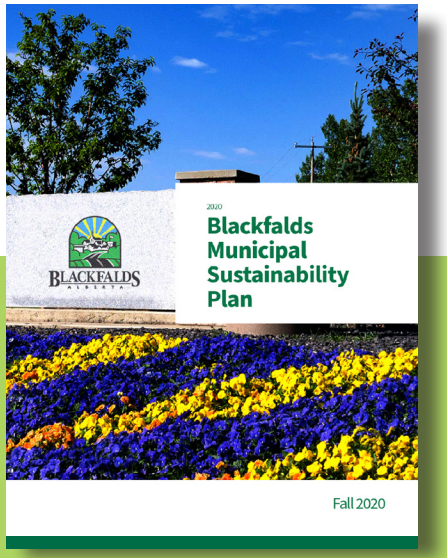
The Sustainability pillar of "Infrastructure and Buildings" is defined as "…. all of the built environment in Blackfalds."

This includes buildings that service a diverse population and are able to adapt as the community changes and grows.

Residents are able to choose from a variety of housing types and travel by bike, walking, ridesharing service or car. All of the built environment is to be maintained in a proactive manner.

The following Infrastructure and Buildings goals pertain to environmental sustainability:

- Buildings are of high-quality design and environmental performance
- Neighborhoods in Blackfalds are designed to encourage walkability
- Infrastructure projects are considered and negotiated among multiple levels of government



3 | EXISTING PLANS & STRATEGIES TO **ACHIEVE ENVIRONMENTAL STEWARDSHIP GOALS**

As part of the Town's long-term commitment to environmental stewardship, there are a number of existing bylaws, plans, strategies and policies to guide the Town's overall approach to environmental management and sustainability.

THE ENVIRONMENTAL MANAGEMENT POLICY IS AN OVERARCHING POLICY FOR THE TOWN OF BLACKFALDS THAT IDENTIFIES OBJECTIVES THAT NEED TO TAKE PLACE IN ORDER TO CONSERVE, PROTECT AND ENHANCE THE ENVIRONMENT FOR THE TOWN.

One of the outcomes of this policy is to "...integrate applicable environmental principles and performance objectives under the Environmental Stewardship Strategy (ESS) into relevant decision-making processes. Through Council reporting, meeting discussions and planning, these objectives will be integrated across all departments."

This policy will also help lead environmental mandates for the protection, conservation and enhancement of the environment through our local, provincial and regional partnerships.

In addition to the Environmental Management Policy, the following existing plans and strategies outline the key policy framework in which the ESS is integrated.

Some of these key documents include information applicable to numerous focus areas and have been referenced to its (numerous) focus area to aid in the development of the Blackfalds' ESS.

WATER

- Charter for Protecting Source Water Quality in the Red Deer River Watershed (2018)
- Design Guidelines (2011)
- Environmental Management Policy (2020)
- Potable Water Management Policy (2020)
- Utility Bylaw (2020)
- Wastewater Master Plan (2015)
- Water Model Update (2016)

STORMWATER (BASIN MANAGEMENT)

- Charter for Protecting Source Water Quality in the Red Deer River Watershed (2018)
- Design Guidelines (2011)
- Environmental Management Policy (2020)
- Land Use Bylaw (2021)
- Master Drainage Plan for the Wolf Creek and Whelp Brook Watersheds (2014)
- Utility Bylaw (2020)
- Various Community Developer Stormwater Management Plans

LAND

- Community Standards Bylaw (2018)
- Design Guidelines (2011)
- Downtown Revitalization Plan (2011)
- Land Use Bylaw (2021)
- Municipal Development Plan (2009)
- Municipal Sustainability Plan (2020)
- Recreation, Culture and Parks Needs Assessment and Master Plan (2016)
- Transportation Master Plan (2015)

ENERGY

- Land Use Bylaw (2021)
- Recreation, Culture and Parks Needs Assessment and Master Plan (2016)

BUILDINGS AND INFRASTRUCTURE

- Design Guidelines (2011)
- Land Use Bylaw (2021)
- Recreation, Culture and Parks Needs Assessment and Master Plan (2016)

SOLID WASTE

- Community Standards Bylaw (2018)
- Solid Waste Management Bylaw (2013)
- Waste Management Review (2013)

AIR

- Land Use Bylaw (2021)

4 | ENVIRONMENTAL AWARENESS PROGRAM

As identified in the ESS, the Town will implement an environmental awareness program. The purpose of this program is to build community knowledge of the environmental issues and impacts that can be influenced at the individual level.

Key elements of the program include:

- Regular environmental awareness communications and education to provide ongoing information and resources to reduce individual environmental impacts. A combination of information and clear direction for action (ie. how to get involved with municipal services and programs) can lead to improved results over time. These may be measured through program targets.
- Design environmental awareness signage for Town infrastructure. By including environmental awareness signage throughout the community, citizens are better informed, and the message of environmental stewardship is reinforced. Signage will be developed and placed at strategic locations throughout the community where environmental awareness is needed.

Each of the key focus areas of the ESS will have a community education and awareness goal. This will be achieved through a variety of methods including but not limited to, social media campaigns, education and community outreach programs to schools, community groups, businesses and residents in general, availability of incentives and rebates, and informational materials available to our residents on our website.

5 | PUBLIC **ENGAGEMENT**

This Environmental Stewardship Strategy is the result of collaboration between the community, Council, Town staff and Environmental Advisory Team (EAT).

Effective communication is critical to understanding what is needed to help protect the environment. It fosters a stronger commitment to environmental stewardship and helps influence positive change in behaviours. The Town believes that if internal and external stakeholders are kept informed of environmental work done locally, it will be easier for the Town to get help and obtain support to carry out the Town's environmental projects, initiatives and programs.

Between February 21, 2020 and April 30, 2020 an online public survey was published on the Town of Blackfalds website. Broader promotion of this survey included social media posts, in person promotion at the Red Deer Home Show, and direct personal invitations to participate was sent to several community associations and community developers. Due to COVID-19, in person public engagement events were cancelled.

In total, 177 people participated in the ESS survey. The survey asked a series of questions about:

- Environmental priorities and actions;
- Effectiveness of current programs, initiatives and services; and
- Willingness and barriers to taking personal actions to protect the environment.

A copy of the **Public Participation Report** can be found in Appendix 1.

As an outcome of the survey, the Town gained a better understanding of what environmental actions are important to its stakeholders. The strategies and actions identified as part of this ESS reflect that feedback.

6 | IMPLEMENTATION OF THE ENVIRONMENTAL STEWARDSHIP STRATEGY

The ESS was designed to outline the broad vision, goals, and strategies to achieve environmental stewardship for the Town of Blackfalds. The Town will commit to review and update the ESS every 10 years and will include community review to identify new external and internal conditions that may influence the current plan.

ANNUAL MONITORING & REPORTING TO THE COMMUNITY

To monitor the advancement of the ESS, key metrics of each of the seven focus areas will be reported to the community on an annual basis. Monitoring these metrics are important to establish baseline conditions, determine progress over time, and identify areas of opportunity for change.

Town Council will be engaged periodically as progress is made with the implementation of policies, programs, strategies, etc. as identified in each of the focus areas. This will ensure the transparency of the Town's progression towards environmental stewardship.

ENVIRONMENTAL ADVISORY TEAM

Within Town Administration, an Environmental Advisory Team (EAT) has been created to collaboratively identity and assess environmental initiatives for the Town. As the Town implements environmental initiatives identified as part of this ESS, the EAT will be responsible for identifying key programs, educational offerings, incentives/rebates, etc. that are best suited to the community. Selection of these programs will be based on what is realistic in terms of internal resource commitments, community needs and opportunities, budgetary constraints, availability of grant support, technological advancements, etc.

COMMUNITY ENGAGEMENT & REGIONAL COLLABORATION

Given its limited resources and economic sphere of influence, the Town of Blackfalds can't achieve environmental sustainability in isolation. Building relationships and partnerships with surrounding communities, community groups, schools, and other regional partners will be key to achieving the goals set out in the ESS.

This will mean supporting community connections through joint program development and implementation, use of environmentally sustainable solutions in the regional context, while respecting local service levels.

MEASURING PROGRESS

The purpose of monitoring metrics is to identify where and how progress is being made in relation to specific targets, and key focus area goals. Metrics provide a baseline for progress to be measured. These metrics will be published annually through a report to the community.

Within select focus areas, targets and metrics are carefully considered and selected based on industry standards, other municipalities' experiences, community specific environmental conditions, local service levels, and the wants and needs of the Blackfalds community. Targets will be defined for the life of the ESS (10 years, until 2031).

STRATEGIES & TARGETS

For each of the focus areas, strategies and actions are necessary in order to achieve the Blackfalds' ambitious goals towards environmental stewardship. Proposed actions are identified over a specified period of time from **immediate** (1-2 years), **short-term** (3-5 years) and **long-term** (6+ years). A level of effort (low, medium or high) and anticipated costs have been assigned for each strategy.

The magnitude of cost is determined as follows:

Internal	Internal Resources
Low	<$50k
Medium	$50 – $100k
High	$100+

Targets for each of the seven key focus areas were selected based on realistic ambitions in alignment with the Town's intention. The targets are selected for initial monitoring and will be refined over time as data is collected and baseline conditions are understood. This will allow the Town time to identify suitable targets with consideration for internal and external influences. Internal influences can include policies, bylaws, plans, and feasibility studies. External influences can include legislation, technological and scientific advancements, political views, economic and market factors, and changes in social or planning values.

ESS STAFF RESOURCES

The Town recognizes that in order to achieve its goals towards environmental stewardship as identified in this ESS, an additional staff member will be required. This dedicated resource will be instrumental in building community relationships, providing education and awareness programs, seeking grant funding opportunities, and baseline and annual metric collection and reporting. The resource will lead the many strategies in the ESS in order to accomplish its goals.

ASSET MANAGEMENT AND THE ENVIRONMENT

The Town of Blackfalds recognizes the need to incorporate principles of asset management across the organization. As outlined in Asset Management Policy 139.20, the goal towards achieving the medium to long term financial sustainability of the organization requires the promotion of asset management principles in all Town departments. Any impact to asset infrastructure, level of service, risk, or sustainability as an outcome of any commitment within this ESS (eg. Climate Change Adaptation and Resiliency Plan) will be conducted in accordance with Asset Management Policy 139.20 and included in established asset management practices.

7 | CRITICAL STEPS **TO ACHIEVE ENVIRONMENTAL STEWARDSHIP**

On its path to achieving environmental sustainability, the Town of Blackfalds will follow a hierarchical approach to meeting it goals. Each level within this hierarchy represents a critical step that must be taken in order to achieve the next higher step within the hierarchy.

The base of this hierarchy identifies the specific strategies and actions that must be taken in order to meet specific goals and targets for each key focus area. The accomplishment of those goals and targets is then required to meet the overarching vision for environmental stewardship within the Town of Blackfalds.

8 | KEY FOCUS AREA WATER

HOW THE TOWN MANAGES WATER RESOURCES

As a member of the North Red Deer Region Water Services Commission (NRDRWSC) since 2007, the Town of Blackfalds continues to work with its regional partners to achieve a long-term and sustainable supply of clean water that meets the needs of its community. With Blackfalds being one of Canada's fastest growing municipalities, the Town has experienced increased water usage demands due to corresponding high development rates. To meet regulatory requirements, the Town of Blackfalds is responsible for the repair and maintenance of water distribution facilities within the Town including both Broadway Avenue and East Railway water reservoirs and pump stations, water distribution mains, hydrants, valves and other water infrastructure. Through these measures, the Town ensures clean drinking water and fire flow protection are available for the community.

In 2018, the Town joined the North Red Deer Regional Wastewater System (NRDRWWSC) which is responsible for the transmission and treatment of wastewater from the Town of Blackfalds into the Red Deer Regional Wastewater Treatment Facility. The Town of Blackfalds is responsible for the operations and maintenance of the wastewater collection system within the Town. This includes lift stations, manholes, wastewater mains, and other wastewater infrastructure.

It is anticipated that the Blackfalds area will experience warmer temperatures, resulting in an increase rate of evaporation from vegetation and soils. There is also an anticipated decrease in precipitation during the warm summer months, resulting in moisture stress.[3]

3 https://www.okotoks.ca/sites/default/files/2021-03/Okotoks_Climate%20Action%20Plan%20Report_2021-03-23_FINAL.pdf

The Town has already started taking its first steps towards mitigating climate change impacts on potable water supply. Low water supply affecting potable water availability can cause water restrictions.

In 2020, the Town developed a Potable Water Management Policy. This policy identified environmental stewardship strategies to conserve, protect and enhance the environment in balance with social, infrastructure, and economic needs. The Town also has universal water metering and associated rates for the community ensuring residents and commercial/industrial customers are aware of their water usage and wastewater.

Fortunately, the Town of Blackfalds already has the following bylaws, policies and plans in place to guide the sustainable use of water in the community:

- Charter for Protecting Source Water Quality in the Red Deer River Watershed (2018)
- Design Guidelines (2011)
- Environmental Management Policy (2020)
- Potable Water Management Policy (2020)
- Utility Bylaw (2020)
- Wastewater Master Plan (2015)w
- Water Model Update (2016)

AVERAGE INDOOR HOUSEHOLD WATER USAGE

GOAL #1

Reduce water consumption and demand for drinking water by implementing conservation strategies, operational practices, incentives, and policies

STRATEGIES

1. Measure potable water consumption through municipal water supply

Understanding baseline potable water consumption is necessary to monitor changes in consumer behaviours with the implementation of conservation strategies. A reduction in consumption is interpreted as successful.

Timeline: Immediate **Effort:** Low **Cost:** Internal

Target: Year over year reduction in water consumption.

Metric (Annual): Litres per person per day (residential and industrial/commercial/institutional (ICI)

2. Monitor the efficiency of the water distribution infrastructure

Increase the overall efficiency of water infrastructure by identifying and addressing any leaks.

Timeline: Immediate **Effort:** Medium **Cost:** Internal

3. Require the use of low flow water fixtures and faucets on all new builds through the Utility Bylaw.

Installation of low flow water fixtures and faucets has been shown to reduce household water consumption levels. In addition to the National Plumbing Code, this requirement was included as part of the 2020 Utility Bylaw.

Timeline: Short-term **Effort:** Low **Cost:** Internal

4. Research and evaluate incentives and possible rebates for installation of low-flow toilets, rain sensors for sprinkler systems, water conserving landscaping materials.

By providing residents with incentives or rebates, it is anticipated that this will result in increased household participation in the installation of water conserving fixtures or materials.

Timeline: Short-term **Effort:** Medium **Cost:** Internal

5. Research options to re-use pool water, arena ice rink water, and other sources for use in outdoor rinks, parks watering, and water distributing vehicles (street sweepers, tree watering tanks).

Re-use of water from Town operations will align with provincial guidelines and requirements, and based on best management practices with comparable municipalities. Reusing greywater reduces the amount of fresh potable water required to maintain Town operations.

Timeline: Short-term **Effort:** Medium **Cost:** Medium

GOAL #2

Create or update existing policies, plans, bylaws, or guidelines that pertain to water

STRATEGY

1. Update the Design Guidelines (2011)

The Design Guidelines (2011) document is a comprehensive engineering manual that governs subdivision design, servicing standards, the design and construction approval process, and the as-construction drawing submission requirements.

Timeline: Short-term **Effort:** High **Cost:** High

GOAL #3

Community Education & Awareness

STRATEGY

The reduction of water consumption through education and awareness programs is necessary for the public to realize the economic and environmental benefits of water conservation.

Timeline: Immediate **Effort:** Medium **Cost:** Internal

9 | KEY FOCUS AREA STORMWATER

HOW THE TOWN HANDLES AND TREATS STORMWATER

The Town of Blackfalds is characterized by knob and kettle topography with numerous wet low areas and is located within both the Red Deer River and the Battle River watersheds. Basin management is achieved through the Town's Water Act approvals under Alberta Environment and Parks. Stormwater is managed through a system of stormwater ponds, artificial and natural wetlands, and other drainage amenities.

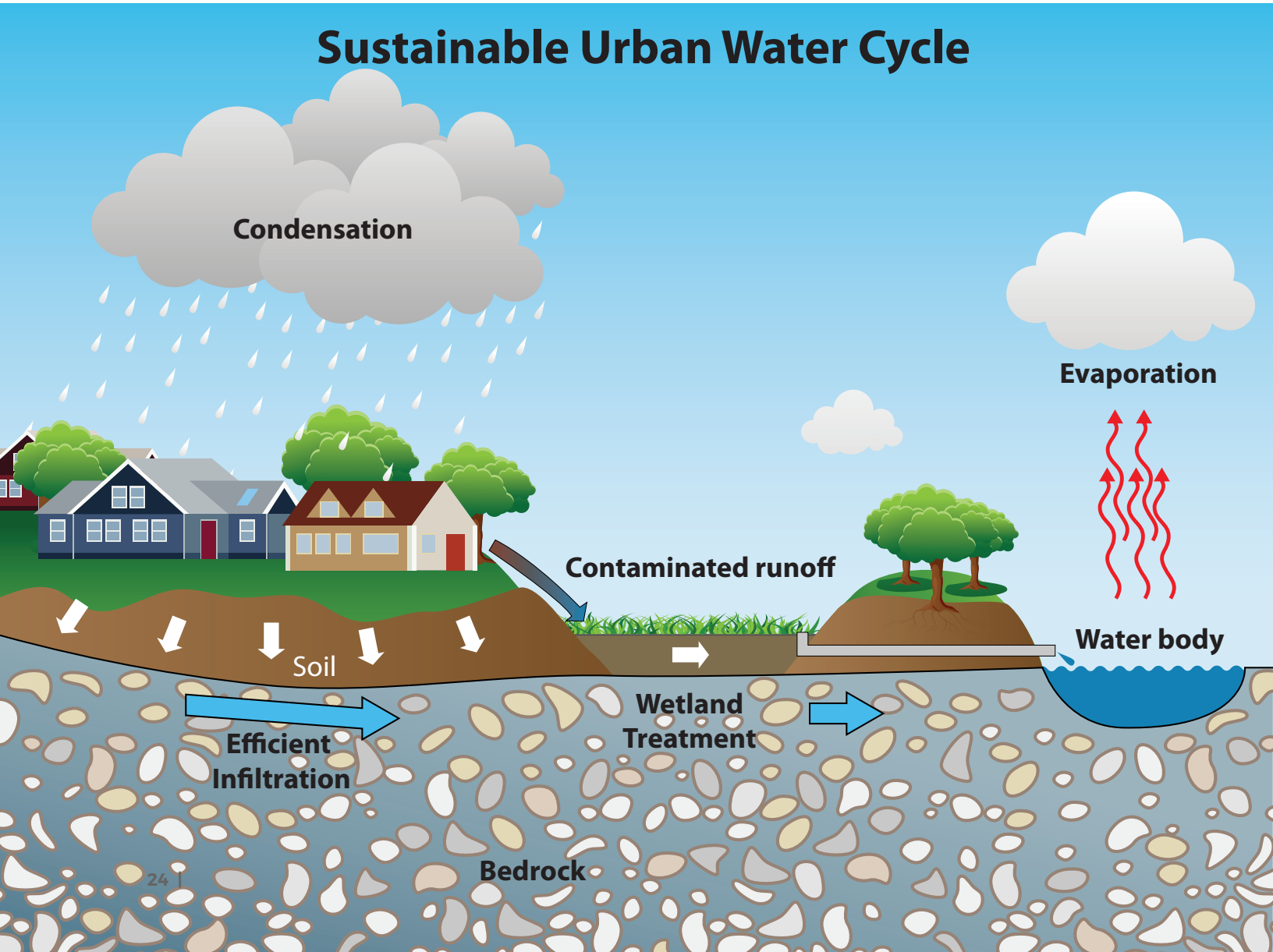
Adaptation and building resiliency into key infrastructure are critical components in the Town's approach to mitigating the affects of climate change.

As the climate warms, weather variability in Blackfalds is projected to increase. It is anticipated that there will be more intense storm events, warmer and wetter winters, and summer heat waves with less precipitation events.

The Town has already taken steps to implement long-term and sustainable stormwater quality and quantity management solutions to protect against climate change. Inadequate stormwater management and planning can result in significant community impacts including damage to infrastructure and property, increased insurance costs, reduced water quality in source river, potential impacts to health and safety (fatalities or injuries), lost productivity for businesses, etc.

Fortunately, the Town of Blackfalds already has the following policies and plans in place to guide the sustainable stormwater management in the community:

- Charter for Protecting Source Water Quality in the Red Deer River Watershed (2018)
- Design Guidelines (2011)
- East Area Master Stormwater Management Plan (2017)
- Environmental Management Policy (2020)
- Land Use Bylaw (2021)
- Master Drainage Plan for the Wolf Creek and Whelp Brook Watersheds (2014)
- Northwest Area Master Stormwater Management Plan (2018)
- Utility Bylaw (2020)
- Various community stormwater master plans



GOAL #1

Creation of, or update existing policies, plans, bylaws, or guidelines that pertain to stormwater

STRATEGIES

1. **Continue to participate in regional partnerships and community programs to protect and enhance stormwater quality, basin management, and infrastructure.**

   The Town is an active member of the Battle River Watershed Alliance, the Red Deer River Municipal Users Group and the Red Deer River Watershed Alliance and will continue to participate in these partnerships.

   Timeline: Immediate **Effort:** Low **Cost:** Low

2. **Completion of the Area Stormwater Management Plans and development of an overarching Town-wide Stormwater Management Plan**

   The Town has undertaken extensive stormwater management studies to ensure stormwater is managed sustainably and aligns with current and future developments.

   Timeline: Short-term **Effort:** High **Cost:** High

3. **Protection of stormwater as identified through Utility Bylaw provisions**

   As part of the Utility Bylaw update in 2020, stormwater protection was added. This will allow the Town to hold polluters accountable for direct or indirect costs, and enforce fines and penalties for activities that violate protection measures within the Bylaw.

   Timeline: Immediate **Effort:** Medium **Cost:** Low

4. **Develop a Climate Change Adaptation and Resiliency Plan (CCARP)**

   The development of a CCARP will identify and the impacts of climate change, and actions the municipality will take the address them as applicable for each key focus area of the ESS.

   Timeline: Short-term **Effort:** High **Cost:** High

5. **Develop an Erosion and Sediment Control Policy**

An Erosion and Sediment Control Policy is intended to help reduce the amount of sediment-laden water entering into the Town's stormwater drainage system and downstream waterbodies

Timeline: Short-term **Effort:** Medium **Cost:** Low

6. **Research and consider options to incorporate low-impact development (LID) within Town developments. This includes the development of a Rainwater Management Plan and updating the LUB to incorporate LID technologies (ie. Xeriscaping) into new developments.**

LID are systems and practices that mimic or use natural features or processes to protect the natural and urban environment. LID has been proven to increase stormwater quality and reduce quantities, resulting in cleaner water being discharged to the watershed.

Timeline: Short-term **Effort:** High **Cost:** Medium

GOAL #2

Improve basin management by reducing the quantity of stormwater runoff and improve the quality by implementing conservation strategies, operational practices, incentives, and policies

STRATEGIES

1. **Consider options to capture and use stormwater from Town facilities for use in Town operations (such as street sweepers, tree watering tanks, etc.)**

Research and evaluate capture and use of stormwater from Town facilities for use in Town operations as it aligns with the key focus area identified in the MSP.

Timeline: Short-term **Effort:** High **Cost:** Medium

2. **Explore alternatives to road & sidewalk salt and sand and implement a testing program for alternative products**

Road salt is a cost effective way to control ice issues, but has a negative impact on the aquatic ecosystems. Alternatives to salt will result in cleaner stormwater.

Timeline: Short-term **Effort:** High **Cost:** Medium

3. **Develop a Best Management Practice for stormwater facilities maintenance and operations**

A Best Management Practice will include measure to be taken to ensure effective operations and maintenance practices for stormwater infrastructure throughout Blackfalds.

Timeline: Immediate **Effort:** Medium **Cost:** Low

GOAL #3 Community Education & Awareness

STRATEGY

1. **Seek community support and provide education to emphasize the importance of Low Impact Design (LID) landscaping practices.**

In collaboration with the water key focus area , we will incorporate LID practices to improve water conservation practices.

Timeline: Immediate **Effort:** Medium **Cost:** Low

10 | KEY FOCUS AREA LAND

HOW THE TOWN MANAGES GROWTH, NATURAL SPACES AND THE LANDSCAPE

Blackfalds considers itself to be a sustainable community that is continually adjusting to meet the social and economic needs of its residents, businesses and visitors while respecting the environment. By taking a proactive approach to managing growth, it will prevent some of the challenges communities face when not properly addressed; this includes land use conflicts, inefficient utility servicing patterns, uncoordinated road networks and environmental degradation, all of which work against a positive environment for economic sustainability and the general liveability of the community.

A sustainable community uses its resources to meet current needs while ensuring that adequate resources are available for future generations. Focusing on balance and sustainable development, land use compatibility, the retention of environmental quality and the effective and efficient provision of municipal services are all important factors to ensuring Blackfalds is sustainable now, and for future generations.

Climate change impacts such as intense storm events, heat extremes, increased temperature and less precipitation during the warmer months have a direct impact on the land. Increased risk of grassfires, ecological pests, drought, ice storms, blizzards, and reduction in wetland and storm pond volumes, will have significant consequences for Blackfalds.

These risks have the potential to threaten property and infrastructure, increase the Town's operational costs, reduce air quality, increase insurance premiums, and economic impacts to the business community and Town. The consequence of climate change due to increased ecological pests include damage to natural assets, and impact on terrestrial and aquatic wildlife and ecosystems.

The Town is committed to provide public parks, recreation areas and related facilities, which meet the growing needs of the community, while retaining natural landscape features, whenever possible. Planning and environmental standards provide the framework to create an attractive, vibrant community where land impacted by growth will respect the environment and utilize natural features where feasible.

The Town of Blackfalds already has a number of bylaws and plans in place to guide the sustainable land management in the community:

- Blackfalds Intermunicipal Development Plan (2020)
- Community Standards Bylaw (2018)
- Design Guidelines (2011)
- Downtown Revitalization Plan (2011)
- Land Use Bylaw (2021)
- Municipal Development Plan (2009)
- Municipal Sustainability Plan (2020)
- Recreation, Culture and Parks Needs Assessment and Master Plan (2016)
- Transportation Master Plan (2015)

GOAL #1

Create or update existing policies, plans, bylaws, or guidelines that pertain to land

STRATEGIES

1. Develop a "Green" Purchasing Policy

The development of a Green purchasing policy will ensure that goods and services are procured with sustainability in mind. This will help the Town minimize its environmental impact to the environment.

Timeline: Immediate **Effort:** Medium **Cost:** Internal

2. Research options to develop a municipal noxious/nuisance weeds list

Weeds in Alberta are provincially regulated through the Weed Control Act and includes duties of municipalities to control them. Municipalities have the abilities to create a municipality specified noxious or nuisance weeds list to control weeds within the municipality not identified in the Weed Control Act. This will help ensure only desired vegetation species are in the community, and enhancing the aesthetics of the community.

Timeline: Long-term **Effort:** High **Cost:** Internal

3. Conduct research to develop an Integrated Pest Management (IPM) Plan

An IPM Plan is an environmentally friendly approach to pest management that reduces the use of chemicals for pest control. The IPM Plan will consider alternatives to pesticides to reduce environmental impacts on human and animal health, and the environment.

Timeline: Long-term **Effort:** High **Cost:** Medium

Target: Year over year reduction of pesticide usage for municipal operations.

Metric (Annual): Volume of toxic pest control product used per acre of municipal owned land (ml/acre)

4. Develop a Climate Change Adaptation and Resiliency Action Plan

Timeline: Short-term **Effort:** High **Cost:** High

GOAL #2 Land Development

1. Encourage developers to set aside a small portion of land beyond what's required through the Land Use Bylaw for community garden purposes

Community gardens contribute to healthy lifestyles through providing affordable and fresh produce. They promote increased physical and mental health through physical activity engagement with other community members, amongst a few things. During the ASP planning with developers, the Town will encourage developers to set aside additional land for community gardens, where feasible.

Timeline: Short-term **Effort:** Medium **Cost:** Internal

Target: Increase land devoted to community gardens and urban agriculture in an area (m2/capita)

2. Encourage developers to increase land within the Town's developed area devoted to natural features (parks, turf areas, shrub beds, naturalization areas, tree stands, wetlands, developed stormwater ponds, etc.)

Increasing opportunities for community members understanding and connection to nature plays a significant role in promotion of environmental stewardship in Blackfalds. As part of ASP planning with developers, the Town will work with developers to devote more lands to natural features.

Timeline: Short-term **Effort:** Medium **Cost:** Internal

STRATEGIES

3. Focus on increasing access to alternative transportation, healthy living through trail network. Includes multi-use trails (asphalt and concrete surface trails in parks and shared trails). Includes non-hard surfaces such as boardwalks, aggregate, woodchip and pedestrian only trails.

The Recreation, Culture and Parks Needs Assessment and Master Plan (2016) identifies the strategic long-term plan for the trail network within the community. Devoting land and infrastructure to alternative transportation methods increases environmental stewardship through reduction in GHG, as well as promoting healthy living.

Timeline: Immediate **Effort:** Medium **Cost:** Low

4. Plant more trees each year including on municipal lands, as well as encourage private landowners to plant trees.

Trees benefit the community through reducing temperatures, cleaner air and enhancing aesthetics. The When the municipality has to remove a tree, Town plant a new tree in another location. Community education and awareness will be done to promote the benefits of planting trees on private property as well.

Timeline: Immediate **Effort:** Medium **Cost:** Low

5. Explore developing a Municipal Urban Agricultural Action Plan (UAAP) that identifies more local food opportunities including farmers markets, community edible fruit trees, community gardens, etc. Work in collaboration with community groups and students to ensure food is harvested and used where required.

Urban agriculture improves community health and reduces health inequalities through growing of produce in public and private lands, and providing that opportunity to all community members, regarding of social or economic barriers. A UAAP will consider how this can best be incorporated into Blackfalds and with community members to ensure its success.

Timeline: Long-term **Effort:** High **Cost:** Medium

GOAL #3 Community Education & Awareness

STRATEGY

1. Provide community support and education surrounding importance of local and sustainable food choices and practices (ie. promotion of farmers markets, local buy & sell, etc.)

Timeline: Immediate **Effort:** Medium **Cost:** Low

11 | KEY FOCUS AREA ENERGY

HOW THE TOWN MANAGES ENERGY USE & INCREASED USE OF RENEWABLE ENERGY

The result of climate change on human health, the economy, and the environment is considered one of the greatest threats in history. It is widely believed that human activities are one of the primary drivers of this: burning fuel to power vehicles, greenhouse gas emissions from landfills, consuming energy to heat and cool our homes, and industrial processes, to name a few. There are numerous steps community members can take to implement technologies and resources to heat homes and buildings more efficiently. This can include the use of alternative renewable energy sources, upgrading to newer energy efficient heating systems, updating insulation and windows.

The impact of climate change will affect the Town's energy demands. It is anticipated that increased summer temperatures and extreme heat events will result in increased energy demands for indoor space cooling. This will increase greenhouse gas emissions, all the while costing the Town, businesses and residents more money.

Between 2016 and 2020, the Town conducted a third-party feasibility analysis for the installation of solar photovoltaic panels on all Town facilities, except for the Operation Center (acquired 2020) and the Eagle Builders Center, currently under construction (2021). In Spring 2020, the Town also conducted a feasibility assessment for the installation of LED lights in the Abbey Field House. Following up to the solar PV feasibility studies, in 2016 and 2018, solar panels were outfitted on the roof of the Civic Center and the Abbey Center. Electricity generated by the solar panels at the Abbey Center is 221 MWh/year and 50 MWh/ year at the Civic Center.

The following key documents are in place to guide the energy management in the community:

- Land Use Bylaw (2021)
- Recreation, Culture and Parks Needs Assessment and Master Plan (2016)

Create or update existing policies, plans, bylaws, or guidelines that pertain to the reduction of greenhouse gases created by Town facilities or operational practices

STRATEGIES

1. Develop a Community Renewable Energy Strategy (CRES)

A CRES is designed to inventory, analyze and prioritize renewable energy options for residential and commercial properties within Blackfalds. It will provide an understanding of feasibility, cost, and anticipated GHG reductions, and identify programs, incentives, rebates and opportunities for the community to participate.

Timeline: Short-term **Effort:** High **Cost:** Medium

2. Develop a Climate Change Adaptation and Resiliency Action Plan

Timeline: Short-term **Effort:** High **Cost:** High

3. Develop a "Green" Purchasing Policy

Timeline: Immediate **Effort:** Medium **Cost:** Internal

GOAL #2

Promote reduction of energy usage through the implementation of conservation strategies, incentives, and policies.

STRATEGY

1. **Research into possible partnerships to build and operate an electric vehicle charging station within Blackfalds**

   The installation of EV charging stations in the community encourages residents to switch from fossil fuel vehicles to electric, resulting in decreased in GHG emissions.

Timeline: Immediate **Effort:** Medium **Cost:** Low

GOAL #3

Community Education & Awareness

STRATEGY

1. **Research and create of community education programs to reduce energy usage**

Timeline: Immediate **Effort:** Medium **Cost:** Internal

12 | KEY FOCUS AREA BUILDINGS & INFRASTRUCTURE

HOW THE TOWN BUILDS AND MAINTAINS THESE ASSETS TO REDUCE ENVIRONMENTAL IMPACT

The incorporation of environmental sustainability into buildings and infrastructure requires consideration of historic and current building standards and practices, environmental sustainability goals, economic and social factors. Incorporation of sustainability measures into regulatory practices will ensure the Town has a solid foundation for the implementation of new practices. Ie. bylaws, policies, plans, etc.

Light pollution is considered the inappropriate or excessive use of artificial light and can have serious environmental consequences for human health, wildlife and climate. Much of the outdoor lighting used at night is inefficient, overly bright, poorly targeted, improperly shielded, and, in many cases, completely unnecessary. This light, and the electricity used to create it, is being wasted by spilling it into the sky, rather than focusing it on to the actual objects and areas that people want illuminated. Lack of building standards or municipal bylaws to require the utilization of dark sky compliant lighting enables this problem to continue.

The incorporation of sustainability measures to mitigate climate change impacts on buildings and infrastructure will be critical to reducing risk. Increased severe weather events such as windstorms, hail storms, blizzards, and ice storms, and an increase freeze/thaw cycles will have a negative impact on the community. These climate change events can result in surface and underground infrastructure damage, power outages, socio-economic impacts, and transportation disruption (vehicle accidents and local and regional travel conditions). The Town must investigate these impacts further.

The Town of Blackfalds utilizes an "on-demand" transit system for its local and regional commuter transport to the City of Red Deer. Public transportation is considered an environmentally sustainable for the following reasons:

Health – It promotes healthier and more active cities, cleaner air, and reduced accident risk.

Affordability – It is more affordable than owning a car including the costs of paying for insurance, and fuel.

Community – Moving people rather than cars provide more interactive public spaces and create opportunities for social interaction.

Economy – allows for increased mobility of residents to the City of Red Deer and businesses within Town limits.

Environment – personal vehicles are one of the largest sources of green house gases and other pollutants. Sustainable transportation allows us to reduce our carbon footprint, and lead towards a more stable climate future.

Fortunately, the Town of Blackfalds already has the following key documents in place to guide the sustainable building and infrastructure management in the community:

- Design Guidelines (2011)
- Land Use Bylaw (2021)
- Recreation, Culture and Parks Needs Assessment and Master Plan (2016)

GOAL #1

Create or update existing policies, plans, bylaws, or guidelines that pertain to buildings and infrastructure or Town operational practices

STRATEGY

1. Research the development of a Sustainable Building Strategy (SBS) for Town-owned infrastructure

An SBS includes the consideration of renewable energy, passive and active energy requirements, green building materials, native landscaping and LID stormwater management for Town owned infrastructure. Should an SBS be feasible for Blackfalds, the information and recommendations from existing feasibility studies will be re-visited.

Timeline: Long-term **Effort:** High **Cost:** High

2. Develop a "Green" Purchasing Policy

Timeline: Immediate **Effort:** Medium **Cost:** Internal

3. Implement a Dark Sky Policy to reduce light pollution and incorporate a Dark Sky Compliant Lighting requirements into the Land Use Bylaw

Light pollution has serious environmental consequences for wildlife, human, and the climate. As part of the 2021 LUB updates, installation of Dark Sky Compliant Lighting has been included for new construction and retrofitting projects.

Timeline: Short-term **Effort:** Medium **Cost:** Internal

4. Develop a Climate Change Adaptation and Resiliency Action Plan

Timeline: Short-term **Effort:** High **Cost:** Medium

GOAL #2 Increase Transit Ridership

STRATEGIES

1. **Continue to promote alternative transportation modes, including usage of BOLT transit system**

   BOLT Transit is an important transportation service for Blackfalds residents allowing them accessibility into the City of Red Deer. Promotion of BOLT Transit through community engagement activities such as Blackfalds Days, Clean Air Day, and other events, will be used to grow this service.

   Timeline: Immediate **Effort:** Medium **Cost:** Internal

   Target: Year over year increase in transit ridership

2. **Annual Proclamation of World Car Free Day in September. Offer free BOLT transit ridership for the day.**

   As part of the commitment to promoting alternative transportation in the community, the Town will offer free BOLT transit ridership to community members for the day. This is a great opportunity for residents who have not experienced BOLT before to try it for free.

   Timeline: Immediate **Effort:** Medium **Cost:** Internal

GOAL #3 Community Education & Awareness

STRATEGY

1. **Develop education programs surrounding benefit of public transit, active modes of transportation, indoor and outdoor air quality, benefits of Dark Sky Compliant Lighting, etc.**

   Timeline: Immediate **Effort:** Medium **Cost:** Internal

13 KEY FOCUS AREA SOLID WASTE

HOW THE TOWN MANAGES SOLID WASTE TO INCREASE WASTE DIVERSION

The issue of managing waste and alternatives to landfill disposal is becoming increasingly important. Municipal solid waste commonly includes textiles, food scraps, packaging, furniture, construction and demolition materials from the residential, industrial/commercial/institutional (ICI).

Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Recycling benefits the environment and the community by reducing waste volumes, reducing air pollution (from incineration), water pollution (from landfilling), reduce consumption of raw materials, greenhouse gas emissions and through redirecting waste output in the economic system.

The recyclability of materials is dependent on the type of material (paper, plastic, glass, etc.), material contamination, and market influences such as commodity markets for processing and reuse.

There are some ISO standards related to recycling, such as ISO 15270:2008 for plastics waste and ISO 14001:2015 for environmental management control of recycling practice.

In 2013, the Town conducted the Waste Management Review to identify current waste management practices, and areas for improvement. The Town has achieved many of the recommendations within that report but will commit to undertaking a new review as a commitment from this ESS. The Town currently disposes of its waste at the City of Red Deer landfill, recycling is taken to a materials reduction facility in Red Deer County, and compost material is taken to a compost facility in Red Deer County.

The Town already has the following in place to guide solid waste management in the community:

- Community Standards Bylaw (2018)
- Solid Waste Management Bylaw (2013)
- Waste Management Review (2013)

GOAL #1 Increase waste diversion from landfill

STRATEGIES

1. Reduce amount of waste contributing to landfill

There are many reasons why reducing waste to landfill is important. Taking a comprehensive and strategic approach to reducing landfill waste through increasing diversion and decreasing waste disposal.

Timeline: Immediate **Effort:** Medium **Cost:** Low

Target: Year over year reduction in landfill tonnage.

Metric (Annual): Waste diverted: % of waste diverted per year per tonnage of waste landfilled

Weight of solid waste: total weight of solid waste generated by single family residences (tonnes/capita/year)

2. Implement a residential organic waste collection program (Green Bin) with future program expansion to include apartments and condominiums

The Town currently operates a black bin (solid waste), blue bin (recycling), and seasonal yard waste program. At this time all household organic waste goes is incorporated with black bin materials. The implementation of a Green Bin program will help to keep waste out of the landfill by collecting and processing organics into material that can be used to create nutrient rich compost. It is anticipated this program will reduce the amount of waste going to landfill.

Timeline: Short-term **Effort:** High **Cost:** High

Metric (Annual): Amount of organic waste collected (tonnes/capita/year)

Weight of solid waste diverted per waste sector (ICI)

GOAL #2

Create or update existing policies, plans, bylaws, or guidelines that pertain to waste

STRATEGIES

1. Review and update the Waste Management Review (WMR) (2013)

The WMR is a long-term solid waste management plan aimed at improving solid waste management practices within Blackfalds. Updating the WRM will provide an opportunity to review existing practices, measures of success, community and industry partnerships, technological advances, and other feasible solid waste management initiatives and practices for the community.

Timeline: Short-term **Effort:** High **Cost:** Medium

2. Review and update the Solid Waste Management Bylaw 1167/13

The Solid Waste Management Bylaw 1167/13 regulates the handling, collection and disposal of solid waste in the Town of Blackfalds. This bylaw will be reviewed and updated as a commitment under the ESS.

Timeline: Short-term **Effort:** High **Cost:** Medium

GOAL #3

Increase waste diversion through the implementation of conservation strategies, Town operational practiceS, incentives, and policies

STRATEGIES

1. Research and consider participation in pilot programs to implement Circular Economy (CE) practices

The move towards a more CE has been widely regarded to its positive environmental benefits. Consideration to implementing programs with the key principals of CE will be researched as part of this initiative.

Timeline: Short-term **Effort:** Medium **Cost:** Internal

2. Increase number of residents participating in Spring and Fall Clean Up programs

Timeline: Immediate **Effort:** Medium **Cost:** Internal

Metric (Annual): Year over year increase in number of participants

3. Develop a "Green" Purchasing Policy

Timeline: Immediate **Effort:** Medium **Cost:** Internal

4. Continue to promote Town facilitated community programs including Community Garage Sale and Curbside Give Away

Timeline: Immediate **Effort:** Medium **Cost:** Internal

5. Investigate feasibility of recycling used cooking oils from Town facilities

Recycling of used cooking oils reduces waste, benefits local businesses, protects the environment and wastewater infrastructure, and can be recycled into biodiesel. The Town will investigate the feasibility of this initiative for Town facilities.

Timeline: Immediate **Effort:** Medium **Cost:** Internal

6. Continue to participate in waste and household hazardous waste diversion programs offered through Alberta Recycling Management Authority (ARMA)

The Town currently participates in ARMA programs for the collection of electronics, paints, tires, and used oil at the Transfer Station. The Town has already participated in a number of pilot projects with ARMA and will continue to do so as part of its commitment to environmental stewardship.

Timeline: Immediate **Effort:** High **Cost:** Internal

7. Research and consider Waste to Energy (WTE) solutions

Technological advancements in alternatives to traditional landfill solid waste disposal has been explored more frequently by municipalities.

Timeline: Short-term **Effort:** High **Cost:** Low

GOAL #4 Community Education & Awareness

STRATEGIES

1. Research and create community education programs, community re-use and re-purpose action plan (eg. Food waste, composting, textiles, kick it to the curb program, issues surrounding circular economy)

Timeline: Immediate **Effort:** Medium **Cost:** Internal

2. Create education and enforcement programs to keep recyclables out of the waste stream

Timeline: Short-term **Effort:** Medium **Cost:** Low

14 KEY FOCUS AREA AIR

HOW THE TOWN MANAGES EMISSIONS AND IMPROVES AIR QUALITY

In Canada, the primary sources of energy we rely on come from fossil fuels. When fossil fuels are burned, they release harmful air pollutants into the atmosphere. These fossil fuels have taken an enormous toll on human health and the environment. As climate change progresses, the Town of Blackfalds is more susceptible to grass and forest fires. Poor air quality in the community is mostly attributed to when smoke from forest fires in adjacent provinces drifts into the Town.

The Town of Blackfalds is committed to taking steps to improve local air quality through the implementation of policies and programs. The following document is in place to manage air quality within the Town:

- Land Use Bylaw (2021)

GOAL #1

Create or update existing policies, plans, bylaws, or guidelines that pertain to air quality

STRATEGIES

1. Create a new Anti-Idling Policy for Town operations

As part of the Town's commitment to reducing air pollution, an Anti-Idling Policy discouraging unnecessary idling of vehicles on Town owned property, and of Town fleet will be created. Exemptions will be considered for unique circumstances.

Timeline: Immediate **Effort:** Medium **Cost:** Internal

2. Develop a Clean Air Action Plan that includes creation of new signage, plant more trees, increase community education and awareness

Timeline: Short-term **Effort:** Medium **Cost:** Low

3. GHG emissions saved through seasonal yard waste collection program

When organic waste decomposes in landfills, it generates methane, a potent GHG. Composting organics collected through the seasonal yard waste program reduces methane emissions and creates compost material that is used for local agricultural purposes.

Timeline: Immediate **Effort:** Medium **Cost:** Internal

Metric (Annual): Tonnes of waste collected in seasonal yard waste program reported as tonnes of CO_2 emissions saved

4. GHG emissions saved through future organic waste cart collection program

Implementation of an organic waste cart or "Green Bin" program will allow for year-round diversion of organic wastes from the landfill. This will further reduce methane emissions from organics within the landfill.

Timeline: Short-term **Effort:** Medium **Cost:** Internal

Target: Year over year reduction in GHG through increased waste diversion

Metric (Annual): Tonnes of waste collected through future organic waste cart collection program reported as tonnes of CO_2 emissions saved

5. Develop a Climate Change Adaptation and Resiliency Action Plan

Timeline: Short-term **Effort:** High **Cost:** High

GOAL #2

Promote improvement of local air quality by implementing conservation strategies, Town operational practices, incentives, and policies

STRATEGIES

1. Participate in Parkland Air Management Zone (PAMZ)

In consultation with Council, consider participation in PAMZ. PAMZ participation will provide Blackfalds access to air quality resources and connections not available without membership.

Timeline: Immediate **Effort:** Medium **Cost:** Low

2. Develop a "Green" Purchasing Policy

Timeline: Immediate **Effort:** Medium **Cost:** Internal

3. Support of Canadian Environment week and Proclamation of Clean Air Day. Promotion of BOLT transit system

2020 was the first year Blackfalds participated in this initiative and will continue to do so as part of its commitment towards environmental stewardship.

Timeline: Immediate **Effort:** Low **Cost:** Internal

4. Research and create community education programs surrounding benefit of public transit, active modes of transportation, indoor and outdoor air quality

Timeline: Immediate **Effort:** Medium **Cost:** Internal

GOAL #3 Community Education & Awareness

STRATEGIES

1. **Create environmental awareness signage on impacts of air quality on human health and the environment**

Timeline: Short-term **Effort:** Medium **Cost:** Low

2. **Investigate possible partnerships with local school district to create school programs**

Timeline: Immediate **Effort:** Medium **Cost:** Low

MOVING FORWARD

The ESS was developed to move the Town of Blackfalds forward with its environmental stewardship goals through the identification of environmental principles and performance objectives. The integration of environmental stewardship strategies into Town operations, organizational culture, development conditions, and policies and procedures where applicable, will allow the Town to conserve, protect and enhance the environment in balance with social and economic needs. This includes considering the impacts of staff planning, capital project planning, budgetary planning, development planning and other cultural and organizational planning. The Town of Blackfalds recognizes that it cannot achieve its goals without the collaboration of multiple stakeholders including industry, government, residents, schools, businesses and other community groups. The Town values its local, regional and other funded partnerships, as environmental stewardship is a shared responsibility by all.

ACRONYMS & DEFINITIONS

Alternative Transportation – Includes all modes of travel other than a vehicle.

Alberta Recycling Management Authority (ARMA) – A not-for-profit that acts on behalf of the province to oversee end-of-life processing of tires, electronics, paint and used oils materials.

Area Structure Plan (ASP) - A Statutory Plan adopted by Council, prepared pursuant to the MGA, which addresses the future development of large areas of land at a conceptual level of detail.

Asset Management – The process of making decisions about the use and care of infrastructure to deliver in a way that considers current and future needs, manages risk and opportunities, and makes the best use of resources.

BOLT – Blackfalds On-demand Local Transit.

Circular Economy (CE) - Is based on the principals of designing out waste and pollution, keep products and materials in use and regenerate natural systems. It designs out negative impacts of economic activity that cause damage to human health and the environment.

Carbon Dioxide (CO_2) – Is a colourless gas having a faint sharp odour and a sour taste. It is one of the most important greenhouse gases linked to global warming, but it is a minor component of Earth's atmosphere, formed in combustion of carbon-containing materials, in fermentation, and in respiration of animals and employed by plants in the photosynthesis of carbohydrates.

Dark Sky Compliant Lighting – Outdoor fight fixtures that meet the requirements specified by the International Dark Sky Association meaning that they minimize glare while reducing light trespass and skyglow.

ESS – Environmental Stewardship Strategy.

EV – Electric Vehicle.

Greenhouse Gases (GHG) - Any gas that has the property of absorbing infrared radiation (net heat energy) emitted from Earth's surface and reradiating it back to Earth's surface, thus contributing to the greenhouse effect. Carbon dioxide, methane, and water vapour are the most important greenhouse gases.

Green Bin – Also known as an organic waste cart. A large green coloured container that is used for the collection of biodegradable, organic waste as a means to divert waste from landfills.

Green Purchasing Policy – Policy dedicated to the purchasing products or services, that advance the protection of the environment and support sustainable development.

Industrial/Commercial/Institutional (ICI) – ICI waste includes solid waste from all non-residential sources in a municipality including businesses, large industries and institutions such as hospitals and schools, and is excluded

from the residential waste stream.

Integrated Pest Management (IPM) – Is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. (https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles)

KWH/sqft – Kilowatt hours per square foot.

LED – Light-emitting diode.

Low Impact Development (LID) - An approach to land development that works with nature to manage stormwater runoff where it falls through preservation and recreation of natural landscape features, minimizing hard surfaces to create functional and appealing site drainage. Low impact development treats stormwater as a resource rather than a waste product.

Land Use Bylaw (LUB) - Establishes rules and regulations for land development as well as the process of making decisions for development permit applications within the Town of Blackfalds.

Municipal Sustainability Plan (MSP) - A comprehensive sustainability planning document that guides decision-making for the Town of Blackfalds and includes seven key focus areas (potable water, stormwater, waste, air, energy, land, and buildings and infrastructure).

MWh/year – Megawatt hours per year.

Naturalization – The establishment of native vegetation in an area where it has not previously existed.

Natural Features – physical characteristics of the landscape that are not man-made (e.g. soil type, geology, vegetation, surface water, slopes).

Parkland Airshed Management Zone (PAMZ) - PAMZ is a non-profit group who is responsible to identify air quality concerns within the zone and to implement management strategies to address those concerns.

Sustainable Building – A structure that reduces its environmental impact by being resource efficient and environmentally responsible over the course of its life-cycle.

Urban Agricultural Action Plan (UAAP) – An urban agricultural plan that identifies opportunities to grow food through intensive plant cultivation and animal husbandry in and around municipalies. It can also include the processing and distribution of food produced through urban agriculture activities.

Waste to Energy (WTE) – A Waste to Energy plant use different systems and technologies to convert municipal solid waste, otherwise destined for landfill, into a renewable energy source.

Xeriscaping – Landscaping, or gardening, that reduces or eliminates the need for irrigation.

APPENDICES

INTRODUCTION

The development and implementation of an Environmental Stewardship Strategy (ESS) was identified as a priority for the Town of Blackfalds. Two actions to build environmental performance and awareness were identified in the 2016 Municipal Sustainability Plan (MSP):

1. To develop and approve an ESS with a key focus on the areas of water, land, energy, buildings and infrastructure, waste, and air.
2. To develop an environmental awareness program, with key elements being the regular environmental awareness communications, and to design environmental awareness signage for Town infrastructure.

Effective communication is critical to understanding what is needed to improve the environment. It fosters stronger commitment to environmental stewardship and helps influence positive change in behaviors. If internal and external stakeholders are kept informed of environmental work done locally, it will be easier for the Town to get help and obtain support to carry out the Town's environmental projects.

Public Events

Due to COVID-19, in person public engagement events were cancelled, but the online survey event was extended.

SURVEY RESULTS

177 people provided their input via an online survey between February 21 and April 30, 2020. In addition to the broader promotion, a number of groups were sent a link to the website inviting them to participate, such as community associations.

The survey asked a series of questions about:

- Environment priorities and actions;
- Effectiveness of current programs, initiatives and services;
- And willingness and barriers to taking personal actions to protect the environment.

Public Survey Results

Q1. The Environmental Stewardship Strategy has six focus areas. Please rank the following focus areas in order of importance, with 1 being the area you believe is the most important for The Town to focus on and 6 the least important.

The following focus areas were ranked within the top 3 most frequently:

- Water (31%)
- Land (30%)
- Waste (19%)

Q2. What current programs, services, or initiatives do you think are making a difference in protecting or improving Blackfalds' environment? Please provide a comment as to why you think this.

This summary of actions are divided into each focus area and results reveal the following common themes:

A. Trail system/walkable communities

- Great trail system that promotes alternative transportation, healthy living/outdoor exercise, well maintained
- Increased sense of community
- Would like to see more trails
- Would like to see increased connectivity of trails
- Increased maintenance (grass cutting, garbage bins)
- Increased public awareness of trail system

B. Residential curbside recycling

- Good system and positive for the community
- Increased communications on what waste reduction programs, recycling programs,
- Expand the program to include composting/green bin program
- Considerations to federal and provincial recycling constraints, market conditions
- Find solutions for items not accepted (glass, certain plastics)

C. Yard waste collection

- Very helpful and good for community
- Implementation of a composting/green bin program
- Extension of time service is offered
- Increased communications and awareness of program

D. Compost and rain barrel program

- Unaware the Town offered composters and rain barrels at reduced cost.
- Increase communications and awareness of program
- Implementation of a green bin program
- Good for the environment and saves money
- Education and information on how to compost

E. Transfer Station (solid waste, e-waste, select hazardous waste)

- Good system and keeps community clean
- Friendly staff
- Keeps hazardous waste out of landfill and sanitary system
- Increased hours of operation
- Needs better access/ relocate facility

F. Community Gardens

- Good program and is positive for the community
- Would like to see more community garden plots
- Increased communications and awareness of program
- Education and information on how to garden
- Increased enforcement to prevent theft

G. Spring and Fall Clean Up

- Good program and assists residents with disposing larger items
- Keeps community clean
- Increased communications and awareness of program
- Creation of “kick it to the curb” program

H. BOLT Transit

- Do not utilize system/Underused
- Re-evaluate return on investment of the system
- Increase communications and awareness of program
- Good for the community and environment

I. Solar panel installation on Town owned facilities (Civic Centre and Abbey Centre)

- Good initiative/good for environment/add to more facilities (54%)
- Re-evaluate return on investment/no further solar developments (29%)
- Do not want to see further solar (17%)

Q3. What top 3 actions do you think The Town should take to protect or improve the environment?

The following focus areas were ranked within the top 3 most frequently:

- Waste (34%) – Conduct a waste management review of existing Town plans and programs, explore waste and plastic reduction strategies, Waste to Energy solutions, year-round organic collection program
- Water (25%) - Offer rebate programs (ie. Low flow toilets, rain barrel purchase program), update Water Conservation Policy and Water Restriction Policy)
- Land (18%) - Encourage reduction in herbicide usage and promotion of alternative weed control solutions, offer rebate programs for plant and mulch, composter purchase program, develop guidelines to preserve and protect natural areas

Q4. - Q19.: What action would you be willing to commit to protect or improve the environment?

Organized based on preferred actions:

Action	Yes (%)	Recommendation/Comment
Spend more time in parks and/or natural areas	89%	Increased connectivity of pathways
Collect rain water for watering outdoor and/or indoor plants	85%	Lack of space/multi-family dwelling Cost for materials
Install water and/or energy-efficient fixtures, equipment or appliances	73%	Home energy audit programs Incentives and rebates
Turn off your vehicle engine to reduce idling	73%	Weather constraints Anti-idling bylaw
Grow your own fruits and vegetables	72%	Already grow own fruits and vegetable Do not use herbicide/pesticide on personal property
Choose environmentally friendly products and control methods for your yard or garden rather than chemical products	65%	Remove chemicals from yard maintenance Community education and information

Compost at home on a regular basis	63%	Green cart program Composting program Community composting program
Conduct a home energy audit	59%	Programs on how to increase energy efficiency in home Community education and information
Add more insulation and/or more energy-efficient windows to your home	52%	Must new homes already have energy efficient appliances Rent homes so cannot complete upgrades
Walk or bike at least once a week as part of your regular commute	30%	Distance of travel creates challenge Require vehicle for work
Invest in renewable energy, such as solar panels	26%	Incentives and rebates Community education and information
Take the bus at least once a week as part of your regular commute	5%	Limited commuting options Transportation schedule Require vehicle for work/commute

Q20. What can the Town do to protect the environment? Some examples of what the Town currently does are outlined in Question 2.

This is a summary of actions that are divided into each focus area. Actions that are related to overall approaches are captured separate.

Overall Approaches

Increased community education, programming and information

A. Water

- Implement water restrictions
- Manage storm water quality

B. Land

- Increased connectivity of park pathway
- Increase green spaces
- Increased tree planting and green space
- Plant fruit bearing trees in public spaces

- Consider alternative weed and pest management
- Green burials

C. Air

- Implementation of an anti-idling bylaw

D. Energy

- LED in Town facilities, street lights
- Education and awareness campaigns on energy efficiency and reduction techniques
- Increased incentives and rebates for energy efficiency
- Use of solar panels
- Consider waste to energy programs
- Offer energy audit programs

E. Waste

- Implement a green cart program
- Implement a household composting program
- Expand recycling program
- Have waste bins along Broadway
- Education and awareness campaigns to reduce waste, compost
- Implement a free-cycle program
- Reduce service pick-ups to biweekly like Red Deer

F. Building and Infrastructure

- Stricter building codes
- Increased alternate modes of transportation
- Require developers to complete developments

TOWN OF BLACKFALDS
Civic Cultural Centre
Box 220, 5018 Waghorn St
Blackfalds, AB T0M 0J0
T: 403.885.4677

BLACKFALDS
ALBERTA