CITY OF MEDICINE HAT

Environmental Framework

June 2024

Medicine Hat

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A MESSAGE FROM COUNCIL

In Medicine Hat, we value the beauty of our rugged river valley, the brilliance of our wide-open blue, sunny sky, and the serenity of our natural wildlife. As guardians of this natural environment, we recognize the vital role we play in preserving its natural wonders for future generations. The Environmental Framework is a key priority in our 2023-2026 Strategic Plan and represents a culmination of our collective efforts to foster sustainability, protect biodiversity, and combat the challenges posed by climate change.

The Environmental Framework is a roadmap guiding us towards a more sustainable and resilient future. It sets out a strategic vision that aligns with global environmental goals while also considering our local context and unique challenges.

Public input was fundamental in helping to shape and guide our community's environmental priorities. The framework outlines the goals, targets and initiatives of five elements: water, energy and air, ecosystem and agriculture, recycling and waste management, and finally, community and land development.

The City of Medicine Hat has direct responsibility on behalf of our residents for many aspects of our local environment: waste management, water and wastewater, parks and green spaces, land development, and – unique among our municipal peers – energy. But we also play an important role in stewardship. Our commitment to this Framework demonstrates our dedication to ensuring our internal operations are conducted with environmental sustainability in mind. From efficient upgrades in City facilities to exploring new technology and innovation in the delivery of services, the Framework guides us in responsible progress.

Our Council thanks the many people who were involved in the development of this plan, including residents, staff and interested parties for their dedication and commitment.

Medicine Hat City Council

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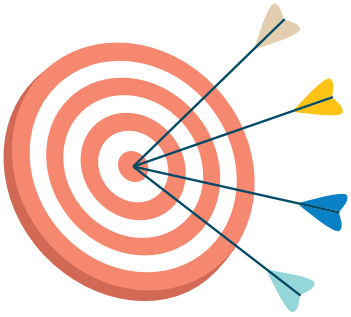
EXECUTIVE SUMMARY

As the City of Medicine Hat (here within referred to as City) continues to grow and evolve, we recognize the importance of a long-term view of our environmental impacts and plan for a resilient future. With this in mind, we have developed an Environmental Framework (Framework) with a 25-year long-term vision. The Framework is the result of research, community engagement, and collaboration with various stakeholders, and represents our commitment to creating a more environmentally sustainable, resilient and vibrant community for generations to come.

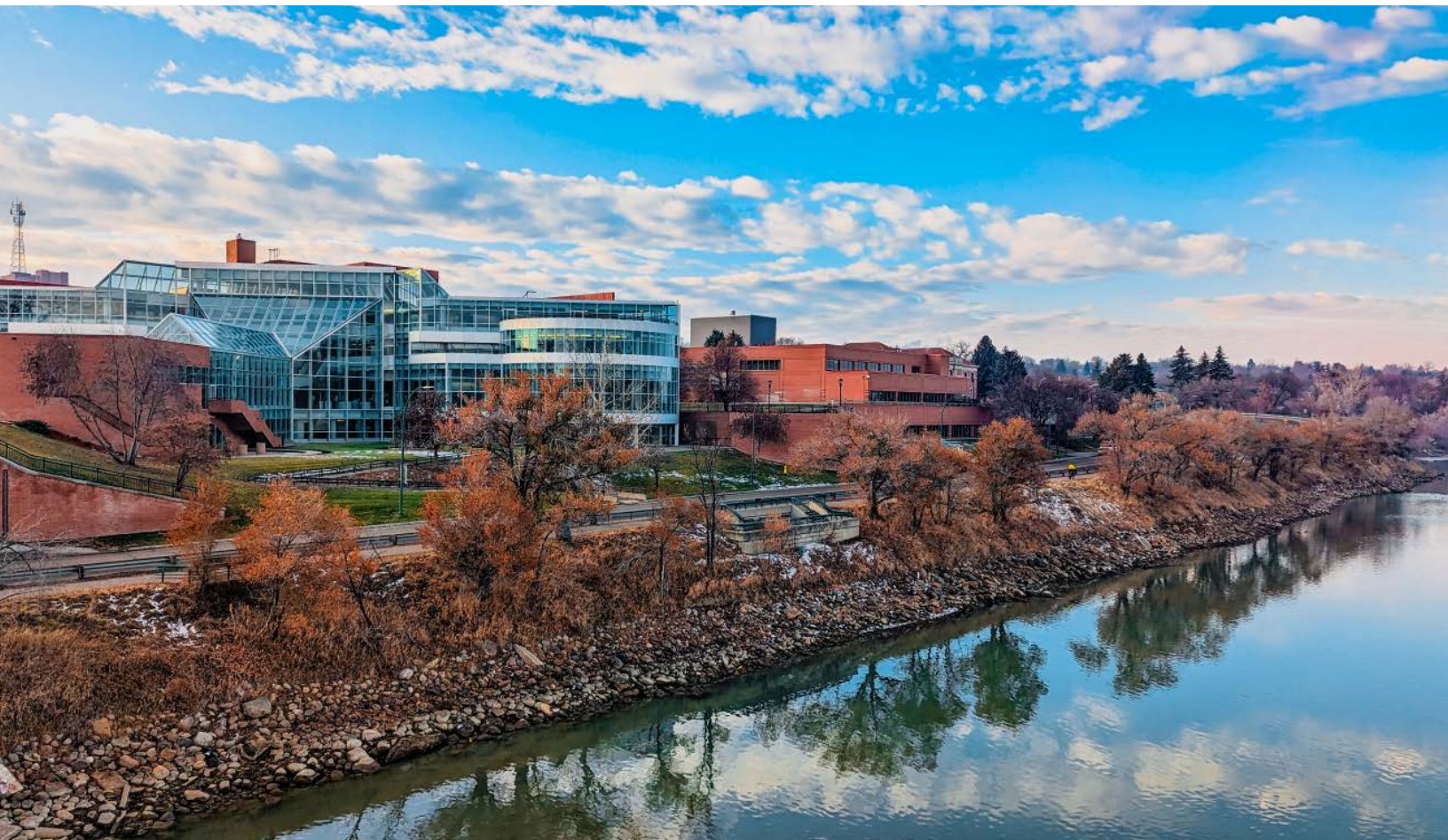


VISION:

"The City of Medicine Hat envisions a sustainable future where we demonstrate environmental stewardship, protect our natural resources and enhance the well-being of the community through partnerships and a shared responsibility."

The Framework is guided by a set of principles which focus on the following key themes: equitable, collaborative, innovative, forward-thinking, adaptable, realistic, accountable, viable and impactful. These guiding principles collectively create a foundation for the Framework that is able to adapt to our changing community and the environment. These principles emphasize the importance of setting goals and targets, and also taking a pragmatic approach to achieve them, involving the community and being accountable for results. These principles will support and ensure that sustainable initiatives are both effective and enduring.

Informed by *Medicine Hat City Council Strategic Plan (2023-2026)*[1] and *MyMH Municipal Development Master Plan*[2], the Framework is a cohesive document that captures and builds upon the City's current environmental priorities. The Framework will serve as the primary document to guide environmental policy direction and it is intended to adapt and evolve with the City, community and environment. The Framework sets out ambitious goals, targets and strategies focused on climate resilience, water conservation, community and land development, energy efficiency, ecological protection, and waste reduction. Climate resilience has been integrated across the Environmental Topics.



ENVIRONMENTAL TOPICS

The Framework goals, targets, strategies and actions are organized across the following five Environmental Topics:

WATER

Protect and responsibly manage water resources, enhance water quality, and improve the efficiency of water systems to support access to clean and safe water for all residents.

ENERGY & AIR

Encourage the efficient use of energy, transition to low-carbon and renewable energy uses, and reduce the presence of air contaminants to improve the health and well-being of residents.

ECOSYSTEM & AGRICULTURE

Protect, respect and maintain local ecosystems to promote ecological integrity and encourage local agriculture.

RECYCLING & WASTE MANAGEMENT

Responsibly manage solid waste and increase waste diversion opportunities to reduce the amount of waste sent to landfill.

COMMUNITY & LAND DEVELOPMENT

Support sustainable community development through inclusivity, increased access to active and alternative transportation, and enhanced connection to nature.

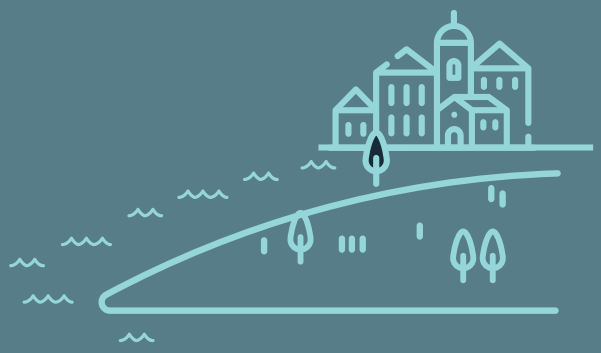
IMPLEMENTATION

Strategies and proposed actions outlined within the Framework generally fall under City Corporation control, which demonstrates our leadership to ultimately benefit and influence change within our community. Throughout the Framework document, 'the City' refers to City Corporation.

The Framework includes a set of proposed actions outlined in an action plan, which provides high-level direction to the City and community on how to implement the Framework. The implementation of an Environmental Framework is a complex process which requires ongoing technical expertise, evaluation, partnerships, resources and fundings. To support the complexities of implementation, the 25-year outlook was broken out to prioritized strategies and action as follows: high priority (1 – 5 years), medium priority (5 – 15 years) and low priority (15 – 25 years) actions.

The Framework is a living document that will adapt and grow with the shifting environmental and community needs. It delineates strategies and actions to uphold goals that will remain flexible and subject to ongoing evaluation and necessary change to align with the City and communities overall vision.

It is recognized that this long-term effort will require ongoing commitment and collaboration from all members of our community. The City is eager to continue on this expansive, ongoing journey with our community to build the future that we collectively strive to experience and enjoy.



INTRODUCTION

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1.0 INTRODUCTION

> *"Future Commitment to a Sustainable Community: Moving towards the middle of the 21st century, commitment to long-term sustainability is the City's top priority. This involves making bold choices in striving for environmental responsibility and thriving residents."*
>
> *MyMH Municipal Development Plan, Vision.*

1.1 WHY AN ENVIRONMENTAL FRAMEWORK?

The City of Medicine Hat and our community have a long-term vision for an environmentally sustainable future. The Environmental Framework provides a 25-year roadmap which will support Medicine Hat to realize and put into action our long-term vision.

The City of Medicine Hat is an abundant community, passionate about how we experience and continue to advance our city. Our sustainability journey has evolved through the past decades and is supported by several environmental sustainability initiatives. As with many Alberta communities, the City, elected officials and residents recognize the urgency to develop a cohesive overarching Environmental Framework that captures and clearly articulates commitments to support a sustainable future.

In February 2022, Medicine Hat City Council approved a corporate priority for the development of an Environmental Framework for our community. The main purpose of the Environmental Framework is to serve as a roadmap to guide city policy and the community to our desired future. The Environmental Framework has been developed through engagement with the Medicine Hat community, businesses and City departments; with the full support of a broad technical engineering and sustainability team. Strategies and actions have been selected that are within the control of the City corporation and will demonstrate our City's leadership to benefit and influence change within our community.

> *"Demonstrate that we value the important role our natural environment (including green infrastructure, ecosystem services, air quality, water quality and security and biodiversity) plays in our continued economic and community success, including by implementing an Environmental Framework with prioritized strategies and actions."*
>
> *Priority 6.5 within the Medicine Hat City Council 2023 –2026 Strategic Plan*

OBJECTIVES

The Environmental Framework captures, reflects, and builds on the City's current foundational environmental guidelines and objectives, while providing strategic direction for integrated environmental management and climate resilience. It builds upon the following objectives outlined within the *Medicine Hat City Council Strategic Plan (2023-2026)*[1] and *MyMH Municipal Development Master Plan*[2]:

- Demonstrate the City's leadership and commitment to our community and environment.
- Develop goals, targets, strategies and actions that are clear, compelling, relevant, implementable, and leading for inclusion in city redevelopment plans and policies guided by *MyMH Municipal Development Plan*[2].
- Conduct efficient and effective consultation and engagement with key stakeholders and the community for clarification of environmental objectives. Involving stakeholders throughout the process is critical to developing a framework that is supported and implementable.
- Support the exploration of funding sources for green incentive opportunities.

The Framework will act as a living document, delivering a flexible and adaptive 25-year long-range plan with emphasis on a series of short-term 5-10 year action plans.

See Baseline Review & Analysis Report **(Supporting Document A)** for more information on the City of Medicine Hat current foundational environmental guidelines and objectives reviewed as part of the early development of the Framework.

Resilience

"The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions."

IPCC, 2012

CLIMATE RESILIENCE

Medicine Hat has a responsibility to plan for and support the response to climate change impacts alongside efforts from global, federal, and provincial organizations, businesses, and individuals. By incorporating climate adaptation and resilience into our municipal plans, programs, and services we can contribute to the health and wellbeing of our local community, ecosystems, and economies. This Environmental Framework includes climate resilience, along with environmental sustainability goals to support climate change management and response; and the integration of adaptation measures within the City of Medicine Hat.[3] Climate resilience cannot be achieved through singular actions, but rather, is achieved through systemic implementation of adaption actions across all municipal focus areas.

During the development of this Framework, the City undertook a community-level climate risk assessment to understand how the climate is expected to change locally and identify how these changing patterns could impact the built, social, economic, and ecological systems of the community. This process involved collecting downscaled climate change projection data for the City to articulate expected changes in climate from now until the end of the century, brainstorming potential climate impacts, assessing the likelihood of climate events occurring and their expected consequences for the City. The output of this assessment was a prioritized list of climate risks that have been utilized to inform recommended actions throughout this framework. The results of the risk assessment process can be found in the Climate Assessment Report **(Supporting Document B)**.

Globally, projected future climate trends show a long-term rise in the Earth's average temperature. At a local scale in Medicine Hat, impacts vary and include shifts in temperature, precipitation, and other weather patterns, including severe storms. In recent years, Medicine Hat has experienced numerous climate- and weather-related challenges. Southern Alberta, experienced flooding in 2013[4], that led to evacuation of 8000 residents and affected 2,845 properties. Near-record temperatures and low precipitation amounts in the summer of 2023[5] prompted heat warnings and water shortage advisories[6]; and severe storms generated extreme winds in the summer of 2022[5], causing damage that is seeing recovery efforts continue over a year after the event. Presently, projections for 2024 indicate potential drought conditions within water basins in southern Alberta. Medicine Hat has been part of provincial planning for water sharing since at a local scale, water shortages across the province could impact the municipal services expected by the residents. The climate conditions that caused or are causing these events are projected to increase in intensity in the coming years and will impact infrastructure, services, programs, and resources along with the communities and economies they serve.

1.2 BENEFITS OF AN ENVIRONMENTAL FRAMEWORK

The Environmental Framework is a living document informed by stakeholder and community input, in addition to the *Medicine Hat City Council Strategic Plan (2023-2026)*[1] and *MyMH Municipal Development Master Plan*[2]. The Framework will serve as the primary document to align various city policies, regulations, and related initiatives towards common environmentally sustainable goals, ensuring that policies across different sectors work cohesively.

A well-structured Framework serves to inform and guide the decision-making process for integration of environmental sustainability into various aspects of community planning and governance. Providing clarity of goals and incorporating data and metrics to measure progress aligns decisions with priorities and enables decisions based on real performance. Overall, this approach empowers decision makers with the tools and information necessary to make decisions that are aligned with the City's 2050 vision and contributes to the long-term well-being of the community and environment.

As we are all aware, environmental sustainability is continuing to evolve; policy and regulations continue to change and as societal values unfold, sustainability priorities may shift. The Framework incorporates a process of ongoing improvement and assessment to ensure that the City remains agile and responsive to City departments, our community and environmental needs and changes.

> *"We are determined to adopt a 'Strong Towns' and 'Antifragile' approach and to champion an outcome focused, innovative organizational and community culture where our partnerships flourish, and people and businesses, are empowered to create, experiment, and take action for the betterment of our City."*
>
> *City Council Strategic Plan 2023-2026.*

ADDITIONAL BENEFITS

There are many benefits to the implementation of an Environmental Framework, outlined below are a list of key benefits that are relevant to the City of Medicine Hat.

Collective Environmental Sustainability Action: The City is currently participating in a two-year Strong *Towns Community Action Lab* initiative, which is a mentorship and engagement project offered through a non-profit group in Minnesota, US.[7] The City is one of four communities, and the only Canadian city selected to participate in this project. The goal of the *Strong Towns* project is to assist the City to build a stronger more resilient community – all with a focus on fiscal sustainability and overall community well-being.

Building on the Strong Towns Community Action Lab initiative, the community can apply this collective approach to environmental sustainability. The community will benefit and build on the following key themes;

- Place attachment, as individuals feel a strong connection and care for their local environment, this can influence their response towards environmental and climate actions.
- Collaborative problem solving fosters social learning, which promotes community sustainability as well as innovation.
- The discussions and challenges that arise during sustainability efforts enhance mutual understanding and contributes to raising overall awareness.[8] *Mutualism, which is defined by Rowlands (2011) as a "collective action, pooling resources and obtaining an outcome which is greater than the sum of the parts".*[9]

Social Well-being: *The Framework builds on the collective approach which also supports inclusivity and social equity. Ongoing community collaboration brings forward consideration for the needs of diverse populations and addressing different* socio-economic factors. This can lead to a stronger sense of community and enhanced overall quality of life. In addition, community social well-being is greatly benefited by the promotion of air quality, heritage, culture and enhanced green spaces.[10]

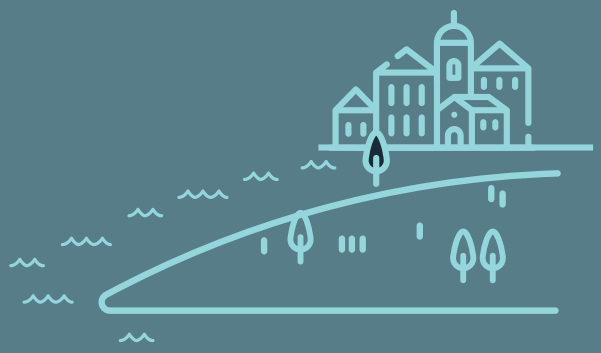
Cost Savings and Resources Efficiency: Implementing an Environmental Framework offers various cost-savings benefits, including[10]:

- Reduced reliance on costly resources by adopting environmentally sustainable practices, leading to decreased energy consumption and lower utility bills.
- The exploration and investment in appropriate renewable energy sources can also decrease dependence on fossil fuels and mitigate rising energy costs.
- Embracing sustainable transportation options reduces greenhouse gas emissions and associated cost of car ownership.
- Waste management strategies such as recycling and composting can reduce landfill costs.

Resilience & Preparedness: Environmental sustainability and resilience planning helps communities prepare for and adapt to the challenges posed by the changing climate and other potential risks. The Framework 25-year horizon offers the opportunity to build resilience into the development and planning process over the long-term, which is a cost effective way to address resilience. Proactive integration of appropriate resilience measures, such as disaster preparedness and climate adaptation strategies, ensures that communities can better withstand and recover from various shocks and stressors[10].

Environmental Protection: Implementation of an overarching community Environmental Framework helps to prioritize the protection of the environment by promoting responsible use of resources, reducing pollution, and preserving natural habitats. It encourages the exploration and adoption of renewable energy sources and fosters sustainable transportation systems[10].

The successful development and implementation of the Environmental Framework can not only make our community more resilient in the face of environmental uncertainty, but it can also be a catalyst for positive change both within our community and beyond. Prioritizing environmental sustainability, will also have economic benefits such as the opportunity to attract residents and investors, and to bolster tourism. As the City continues to lead by example, our community and other municipalities or organizations will be encouraged to follow suit, which in turn benefits everyone.



FOUNDATION

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2.1 UNIQUENESS OF THE CITY OF MEDICINE HAT

The City of Medicine Hat is located in Southern Alberta along the South Saskatchewan River where our residents enjoy the scenic views of coulees and rolling prairies. The community is serviced by two major transit lines; the TransCanada Highway #1 which passes through the City's limits and the Canadian Pacific Railway (CPR) Main Line which includes a Heritage Railway station that was built and has been in service since 1906.

Our City has a population of over 63,000+ residents and we takes pride in our historic downtown, which is rich in culture and charm blended with urban city amenities and convenience. Residents and visitors have close proximity to an abundance of wildlife and natural spaces; such as the South Saskatchewan River, coulee and creek system, four major parks, in addition to several community parks, riparian areas and many kilometres of trails to enjoy. Medicine Hat is a vibrant, sustainable, and enduring community and we understand the importance and interdependency of the success of our people, partnerships, environment, economy, and our organization to accomplish City Councils vision of being a 'Community of Choice'.

The southeastern region of Alberta has been the traditional home of First Nations Peoples, including Blackfoot, Cree, and Assiniboine, for over 8000 years[11]. Their rich history and vibrant culture have shaped the land and left a lasting impact on the area. Recognizing the significance of their heritage, the 36 hectare Saamis Archaeological Site[12] was designated as a provincial historic resource in 1984, ensuring its preservation. The City of Medicine Hat continues to undertake activities and initiatives to create better awareness and deeper understanding and appreciation of local Indigenous and Metis land, history and culture.

Medicine Hat is situated in a semi-arid environment, characterized by relatively mild winters and warmer summers compared to other Alberta communities. It is renowned for having an average of 330 days of sunshine every year[13], making it an ideal climate for our residents as well as agriculture and food production. In fact, Medicine Hat and the region are Alberta's largest greenhouse cluster and fourth largest in Canada. Additionally, Medicine Hat and the region are the leading producer of lentils and chickpeas in Alberta.

Similarly to other municipalities in Alberta, Medicine Hat offers the typical municipal services such as delivery of water, wastewater and stormwater utility services to residents and neighbouring communities, offering parks and recreation services and providing community wellbeing services for citizens. The City owns and operates a water treatment plant, a wastewater treatment plant, a landfill and compost facility, and a municipal airport. However, the City of Medicine Hat differs greatly from other municipalities in Alberta and Canada with owning and operating our own power generation and distribution utility, and our own gas production assets and gas distribution system. The City of Medicine Hat is unique to all other municipalities in Canada with the delivering, operating and maintaining of these vast and diverse services to our community. The offering of these extensive services to our residents and businesses also allows for many opportunities for our municipality to lead environmental sustainability through several different initiatives and lenses such as transitioning to more sustainable low-carbon and alternative energy sources, exploring opportunities in carbon capture and offering pilot programs for waste diversion and composting.

2.2 POLICY & LEGISLATIVE ALIGNMENT

The purpose of the Environmental Framework is to provide a clear, concise path forward to realize the City and our community's vision for 2050 while remaining in line with and enhancing the objectives of higher legislation, plans and initiatives. During the initial stage of developing the Framework **(Supporting Document C)**, a thorough review was performed to assess the conformity to federal, provincial and regional policies and legislation to ensure alignment with the goals and objectives of the Framework.

The Environmental Framework has been developed as a comprehensive document for continual alignment with the following key over-arching provincial and regional plans and serves as a guide for all city policies, plans and related initiatives throughout the community:

Alberta Municipal Government Act, 2000[14]: The purpose of the Municipal Government Act is to empower municipalities to shape their communities; the Act regulates how municipalities are funded and how as local governments they should govern and plan for growth.

South Saskatchewan Regional Plan, 2024, amended 2018[15]: The South Saskatchewan Regional Plan (SSRP) applies to an area located within southern Alberta, that includes the South Saskatchewan River Basin, the Milk River Basin, and the Alberta portion of Cypress Hills, as well as 15 municipal districts, one specialized municipality, two improvement districts, five cities, 29 towns, 23 villages, two summer villages, and seven First Nations.

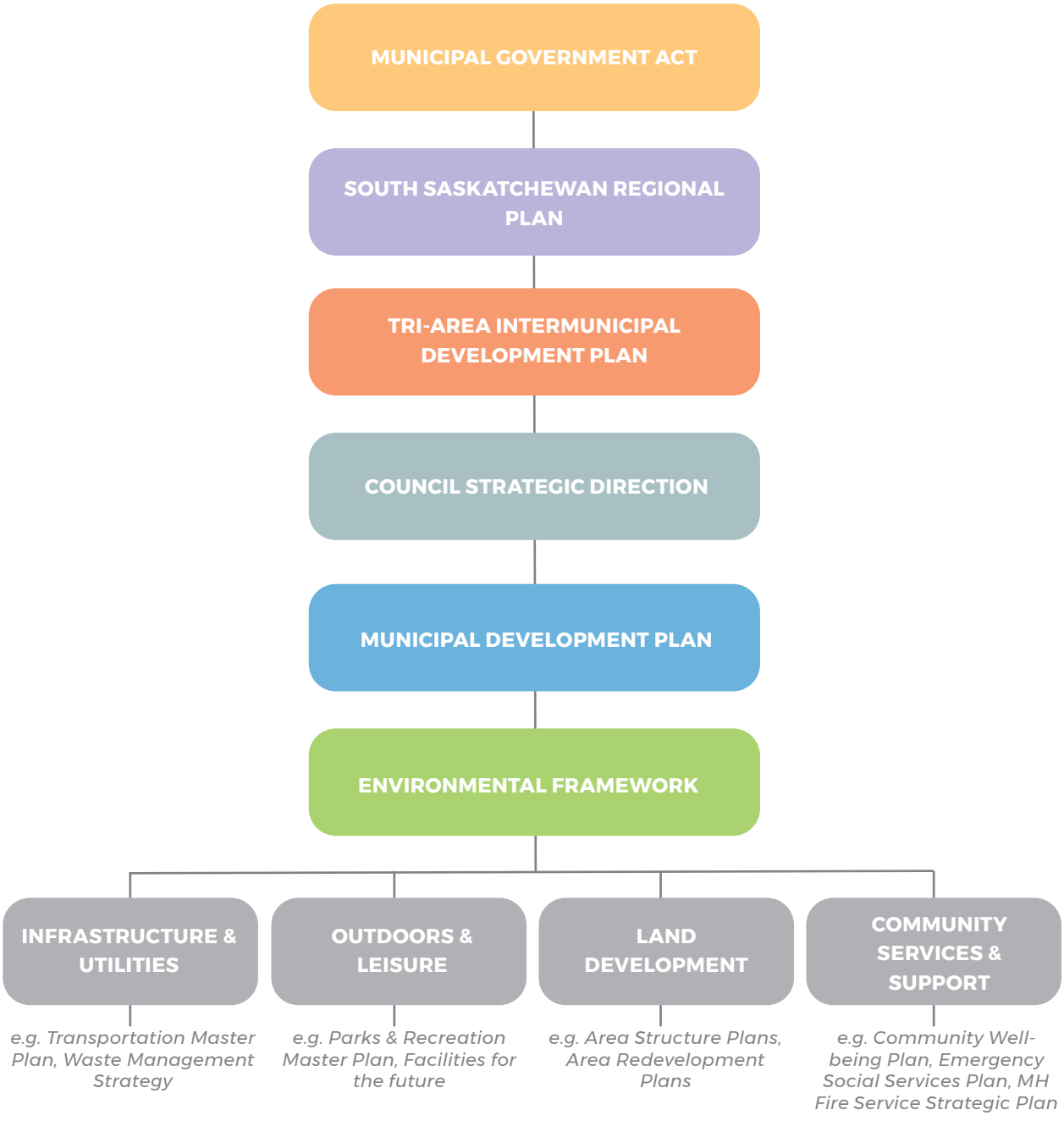
Tri-Area Intermunicipal Development Plan, 2020[16]: The purpose of the Tri-Area Intermunicipal Development Plan (IDP) is to establish a regional framework for attracting and coordinating economic opportunities and managing land use, subdivision, and development in the IDP area. The IDP area applies to a specific area that includes lands within the jurisdiction of the City of Medicine Hat, Cypress County, and the Town of Redcliff.

Council 2023 –2026 Strategic Plan[1]: The Strategic Plan outlines Council's strategic priorities and is intended to communicate Council's vision and goals to the community, and partners, and provide strategic direction to City Administration.

myMH Municipal Development Master Plan 2020-2050[2]: Is the 'blueprint' for Medicine Hat, which outlines a long-range vision for the future growth and development of the community. It is a high-level plan that provides a broad conceptual framework that serves as the foundation for more detailed City plans and guides City operations.

Additionally, the Framework compliments and synergizes with various other City documents and ongoing initiatives. In addition to the overarching framework provided within this document, other City plans and strategies have more specific goals and actions which are aligned with the Environment Framework vision, goals and strategies.

The following illustrates the Environmental Framework's consideration and integration into the development of the various community policies and plans:



2.3 ENGAGING THE COMMUNITY

A critical component of the Framework's development, as well as a consistent matter of importance throughout the project, was stakeholder engagement. The purpose of which was to ensure that the development of the Framework including its actions and strategies were clear, compelling, relevant, and implementable by the City, thereby leading the community.

The engagement and consultation process was initiated with the collaborative efforts of WSP and the City of Medicine Hat's project team to develop of the Community Engagement Strategy **(Supporting Document D)**. It was important that the strategy was grounded by engagement best practices and reflected a well-balanced approach that encouraged an open and transparent process of trust and sharing; pursued diversity; respected differences; and inspired dialogue. The engagement program, aligned with the City's Core Values, Code of Ethics, and IAP2 Spectrum of Public Participation from the International Association of Public Participation; and aimed to inform and gather frequent feedback on the project, ensuring alignment with Council, community and stakeholder objectives.

In addition, the following items were considered when drafting the consultation and engagement strategy wherever applicable:

- Justice, Equity, Diversity, and Inclusion (JEDI);
- Engagement objectives;
- Key considerations;
- Budget;
- Resources;
- Timelines; and
- Decisions to be influenced.

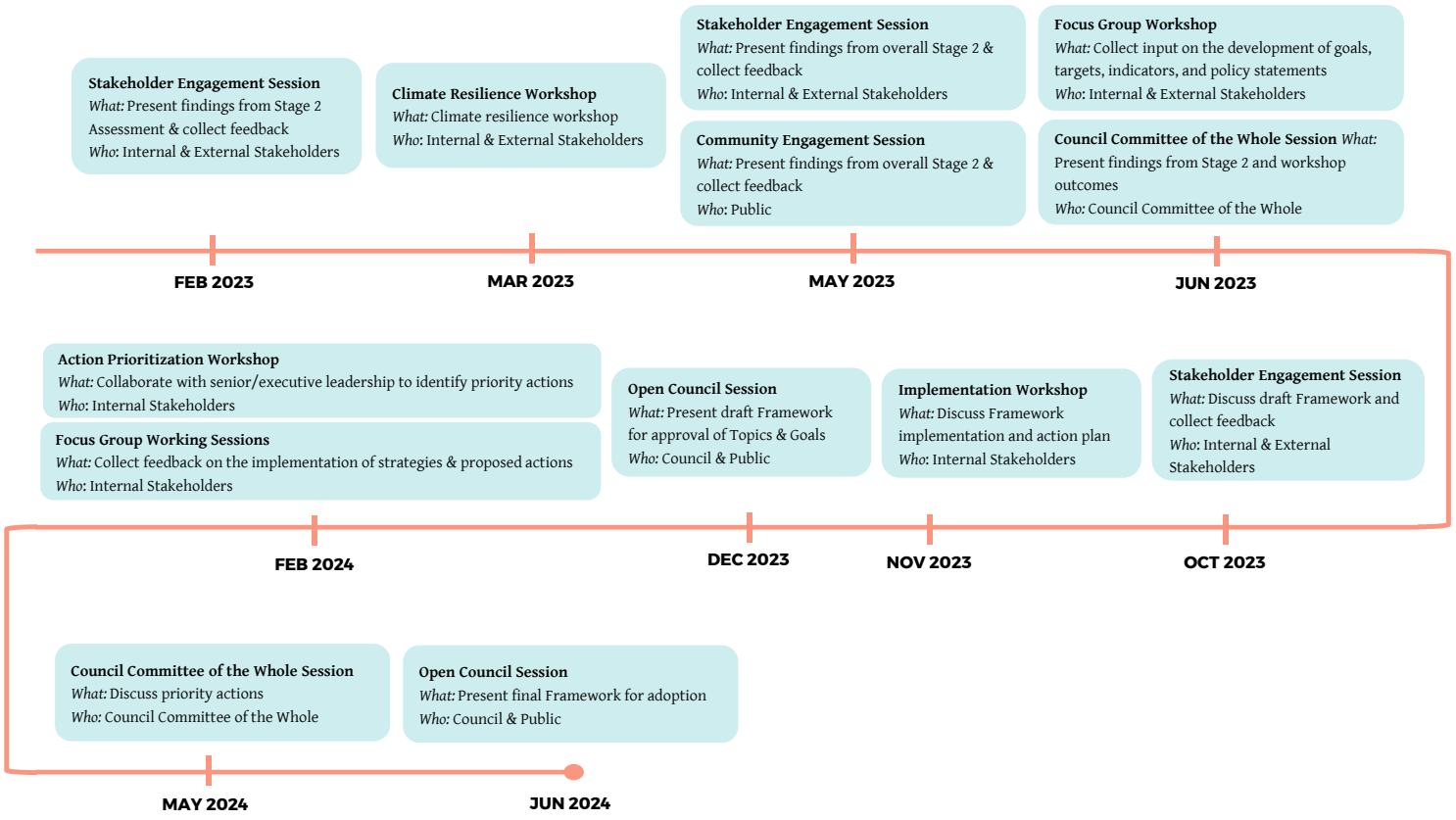
In implementing the first stage of the Community Engagement Strategy, a comprehensive list of stakeholders to be involved in the development of the Framework was established, based on their involvement and influence in the community and ability to provide the proper level of expertise, authority, and capacity of the subject matter. Efforts were also made to provide for appropriate representation from all relative departments and teams within the City to offer a complete spectrum of perspectives and understanding, as well as to foster a city-wide knowledge to support the final outcomes and recommendations.

Once the stakeholders were identified, they were categorized based on their direct relation to the project. Three 'tiers' were used to assist in the categorization of stakeholders, as follows:

- **Tier A:** Perspectives and investment are directly related to the project's outcomes and future implementation and are, essentially, the "must haves".
- **Tier B:** Perspectives and investment are indirectly related to the project's outcomes and future implementation and would be "beneficial".
- **Tier C:** Perspectives and investment are not affected by the project's outcomes and future implementation, although they may be "nice to have".

The Community Engagement Strategy **(Supporting Document D)** includes the comprehensive list of internal and external stakeholders and assigns a 'tier' to each of these stakeholder groups. For example, 'Tier A' included most of the City's internal departments, and external stakeholders such as Alberta Environment and Protected Areas, the Municipal Climate Change Action Centre, and the Southeast Alberta Watershed Alliance (SEAWA). The specific 'tier' categories were then used to help determine how each stakeholder group should be engaged / involved in the project.

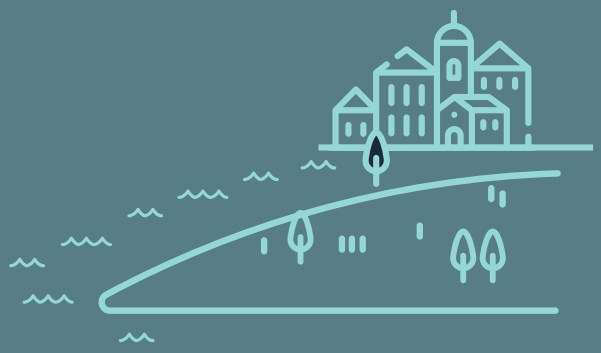
The figure on the next page identifies the extensive engagement activities and events that took place throughout each of the stages of the development of the Framework. The 'Tier A' and 'Tier B' internal and external stakeholders were asked to participate in the in-person sessions and the focus group workshop, as it was important that these stakeholders were provided with the opportunity to be 'involved' based on their connection to the project. 'Tier C' stakeholders were invited to attend the community engagement session and participate in the online survey.



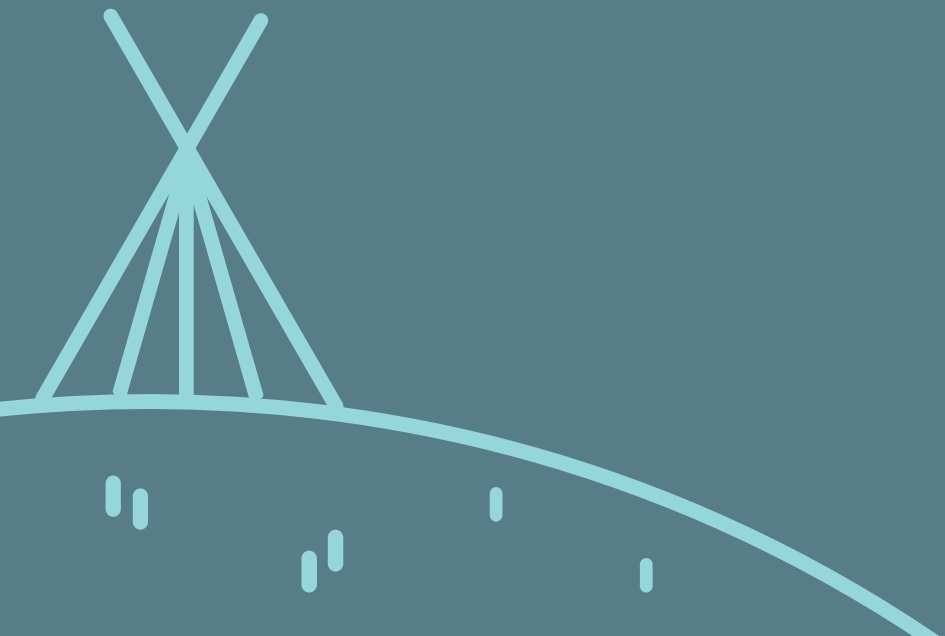
As illustrated in the figure, consultation and engagement activities consisted of meetings with City staff, stakeholder workshops (in-person and virtual), stakeholder interviews and surveys, a community open house, and various presentations to City staff and Council throughout the duration of the project. The engagement tools utilized were designed to collect general and technical information from a variety of stakeholders, whom all intentionally had varying connections to the project. The engagement process informed all elements of the project; including the initial Environmental Topics, development of goals and strategies, in addition to the next phase of implementation and subsequent next steps.

Throughout the project, the Shape Your City Environmental Framework project page has been regularly updated to keep the public informed of the project's process. This webpage has allowed for the submission of public comments and feedback which was subject to ongoing review as the project moved forward.

Reporting on the project engagement was conducted throughout the project and the results have been summarized in the What We Heard Reports **(Supporting Document E)** which provides additional, detailed feedback from a number of the aforementioned events.



FRAMEWORK STRUCTURE

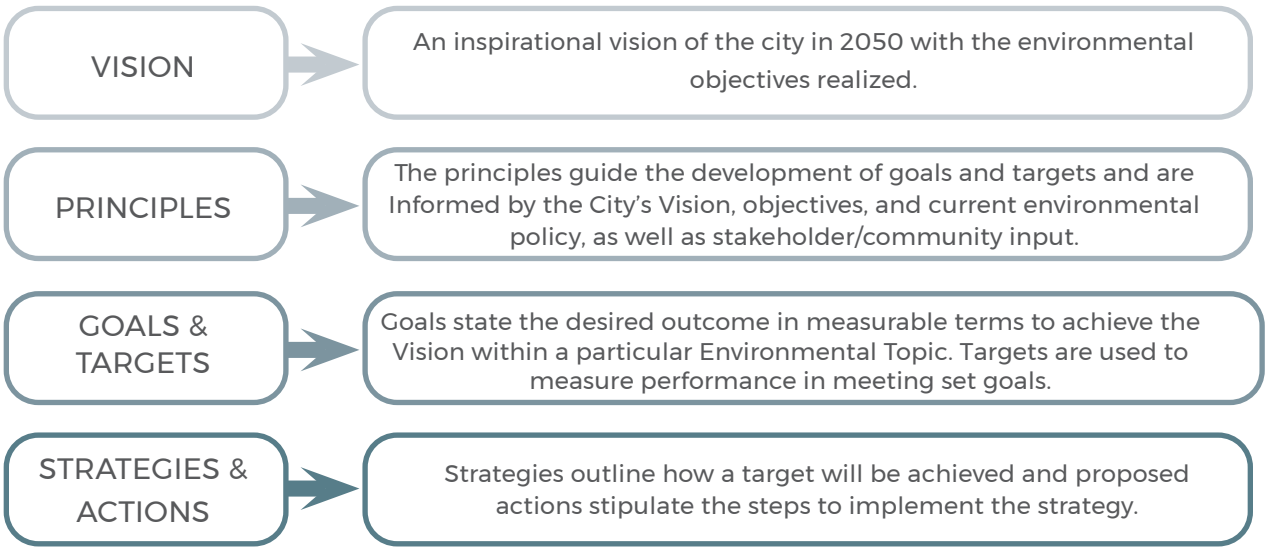


3


GLOBE CALGARY
MONAR

3.0 FRAMEWORK STRUCTURE

The Environmental Framework has been structured such that it begins with the clear vision statement for the City of Medicine Hat in 2050. Next a set of guiding principles act as the overarching influencing guidelines for the rest of the Framework. The **vision** and **principles** have been applied across a wide range of Environmental Topics to support the development of **goals** and **targets** within each Topic. Additionally, **strategies** and **proposed actions** have been developed to support the achievement of targets. This hierarchy, as shown below, is described in further detail in the Environmental Topics section below.



3.1 MEDICINE HAT IN 2050: FRAMEWORK VISION

The City of Medicine Hat envisions a sustainable future where we demonstrate environmental stewardship, protect our natural resources and enhance the well-being of the community through partnerships and a shared responsibility.

3.2 FRAMEWORK GUIDING PRINCIPLES

The following guiding principles have been developed and informed by key project elements including technical analysis, current city policy and feedback received throughout the project consultation and engagement process.

The *Medicine Hat City Council Strategic Plan (2023-2026)*[1] outlines six strategic priorities for the City of Medicine Hat. The guiding principles build upon these priorities in the context of the Environmental Framework. The *myMH Municipal Development Master Plan*[2] and the *Parks and Recreation Master Plan*[17] were also referenced to ensure alignment.

These guiding principles collectively create a foundation for the Framework that is comprehensive and able to adapt to our changing community and environment. These principles emphasize the importance of not only setting goals and targets, but also taking a pragmatic approach to achieve them, involving the community, and being accountable for results. These principles will support and ensure that environmentally sustainable initiatives are both effective and enduring.

GUIDING PRINCIPLES

1. Demonstrate **leadership** and **commitment** to the community and environment through a promise to be **accountable** and take action.

2. Provide a **cohesive overarching** framework that aligns with current guidelines, policies, and objectives and continues to support the City and community direction and encourages **innovation**.

3. Provide an **adaptable** approach that supports stakeholders, partners and the community with decision making processes and allows for flexibility in responding to changing circumstances.

4. Embraces a **forward-thinking** mindset, which considers the long-term implication and **relevant** approach to address and **prepare** the city and community for future climate change.

5. Outline **realistic** and **achievable** goals and targets, which consider constraints, resources, and limitations that may exist and take a practical approach to successful implementation that supports the long-term vision.

6. **Ongoing collaboration** with stakeholders, partners, and the community to foster a shared responsibility, collective understanding, and to encourage knowledge sharing.

7. Promote **equity** and **community well-being** by prioritizing the physical, mental, and social health of individuals and the communities. Provide equal access to resources, opportunities, and decision-making processes, to ensure all voices are heard.

8. Develop, promote, and provide the **support** necessary for **local business and industries** to thrive within the changing landscape, to create a resilient and viable economy that supports the long-term vision and quality of life for all community members.

3.3 ENVIRONMENTAL TOPICS

The following five Environmental Topics for inclusion into the Environmental Framework have been based on the City's proposed key action areas, a review of peer municipal environmental plans and refinement by stakeholder engagement:

WATER

Protect and responsibly manage water resources, enhance water quality, and improve the efficiency of water systems to support access to clean and safe water for all residents.

ENERGY & AIR

Encourage the efficient use of energy, transition to low-carbon and renewable energy uses, and reduce the presence of air contaminants to improve the health and well-being of residents.

ECOSYSTEM & AGRICULTURE

Protect, respect and maintain local ecosystems to promote ecological integrity and encourage local agriculture.

RECYCLING & WASTE MANAGEMENT

Responsibly manage solid waste and increase waste diversion opportunities to reduce the amount of waste sent to landfill.

COMMUNITY & LAND DEVELOPMENT

Support sustainable community development through inclusivity, increased access to active and alternative transportation, and enhanced connection to nature.

To advance the vision of the Environmental Framework, goals and targets are required across the range of Environmental Topics. Specific goals and targets for the City of Medicine Hat were developed followed by the refinement of corresponding strategies and proposed actions. Strategies and proposed actions outlined within the Framework were selected to fall under the control of the City Corporation, which would demonstrate our corporate leadership to benefit and influence change within our community.

The Framework is a living document that will adapt and grow with the shifting environmental and community needs. It delineates strategies and proposed actions to uphold goals that will remain flexible and be subject to ongoing evaluation and necessary change to align with the City and community's overall vision.

The Environmental Framework is organized by Topic and consists of the following sections under each Topic:

WHAT WE HEARD: A key element to the success of the Environmental Framework development and implementation was engagement and continued support and feedback from the corporation and community. The feedback obtained from internal and external stakeholders during the engagement sessions held throughout the development of the Environmental Framework is summarized under this section.

TARGET(S): Under each goal, a series of targets have been defined. Targets are generally aligned to support one of the listed goals however, in a few instances there may be more than one target to support a goal. There are also some targets that have not yet been defined and will be determined in the future once the appropriate proposed actions have been undertaken or baseline data has been gathered to set realistic targets.

GOAL(S): Under each Topic, a set of goals have been defined to support the desired outcome in measurable terms to achieve the Vision within each Topic.

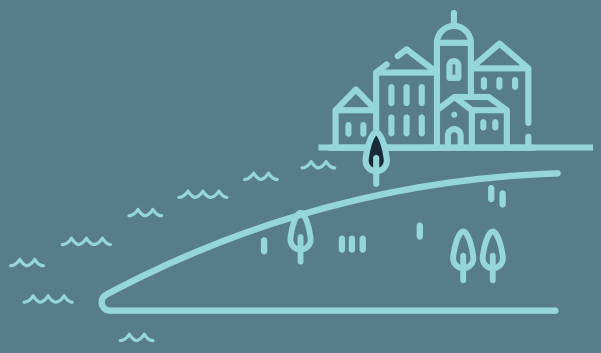
OVERVIEW: At the beginning of each Topic, the introductory section outlines how and why each environmental topic and related goals are important for the City and community to collectively support from a global or greater good perspective.

CONTEXT: This section provides context on the Topic from a federal, provincial and/or regional perspective (as appropriate) and outlines key priorities that support the importance of achieving the established goal(s).

CLIMATE RESILIENCE: Climate resilience has been integrated and highlighted across all Environmental Topics to outline related co-benefits that have been considered.

RELATED INITIATIVES: This section identifies key federal, provincial and/or regional initiatives and/or policies that build upon or have synergies with the goals, targets and strategies established within the Topic.

STRATEGIES & PROPOSED ACTIONS: To support the achievement of each target, a series of strategies and proposed actions have been defined. This section outlines all strategies and the corresponding proposed actions to be undertaken by the City to demonstrate our environmental leadership in the community. The full list of proposed actions can be found in the Action Plan **(Supporting Document F)**.



IMPLEMENTATION

4


CITY HALL

4.0 IMPLEMENTATION

The implementation of an Environmental Framework is a complex process which requires ongoing technical expertise, evaluation, resources and funding. To support the complexities of implementation, a 25-year outlook Action Plan **(Supporting Document F)** was developed. The Action Plan outlines proposed actions that can be undertaken by the City to support the achievement of the Environmental Framework goals, targets and strategies. All proposed actions have been categorized as high priority (1 – 5 years), medium priority (5 – 15 years) and low priority (15 – 25 years). The Action Plan will remain flexable and subject to ongoing evaluation and necessary change to align with the City and community's overall vision.

An important factor in the implementation of the Framework is understanding that there will likely be unknown constraints, challenges and lessons learned on the City's path forward within the implementation process. With this in mind, the implementation of the Environmental Framework will include a systematic and structured approach which includes a Plan-Do-Check-Act (PDCA) process foundation, developed by Walter A. Shewhart.[18] It is a systematic approach to implementation that includes a continuous cycle where each iteration builds upon the knowledge gained from previous cycles, aiming for ongoing improvements.[18]

By applying this iterative PDCA process, the City and community can continue to refine and improve environmentally sustainable goals. This approach leads to long-term environmentally sustainable outcomes, enabling the City and community to adapt to changing circumstances and continuously collaborate, share, and learn to enhance their sustainability practices.

In addition to the PDCA foundational approach, the Framework implementation will include the following fundamental activities:

DECISION-MAKING PROCESS

- Informed by the Action Plan **(Supporting Document F)**, define decision-making approach for evaluating and prioritizing associated strategies.
- Promote transparency and inclusivity in the decision-making process where applicable, by seeking input and feedback from additional City departments, external partners and the community.
- Implement a regular review and evaluation mechanism to assess the decision-making process that considers ongoing efforts, how effective is the process and what are lessons learnt, that may inform necessary adjustments.

RESOURCE ALLOCATION

- Assess current resources (financial, staffing, technology, partnerships) available to support each related sustainability strategy with City Council having the ultimate approval on budget requests.
- Assign and prioritise resource allocation based on high-priority, medium-priority and low-priority timelines outlined in the Action Plan **(Supporting Document F)**. Make adjustment as necessary to accommodate and realistically meet expectations.
- Explore external funding opportunities, grants, and partnerships to support and enhance resource allocation for related strategies.

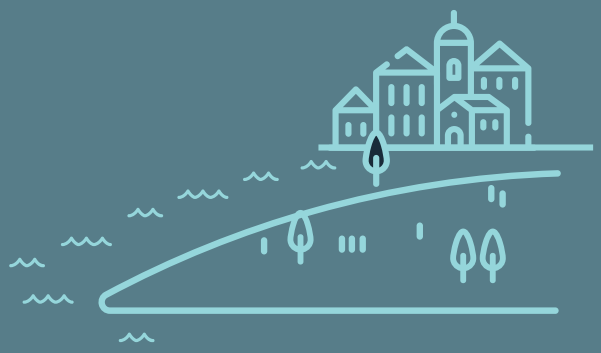
COORDINATION & COLLABORATION

- Establish clear lines of communication and collaboration between departments, ensuring that relevant information and updates are shared regularly.
- Encourage cross-functional collaboration by forming task forces to address ongoing sustainability challenges and/or issues.
- Foster partnerships and collaborations with external stakeholders, including the development sector, non-profit organizations, and the community to leverage expertise, resources, and knowledge.

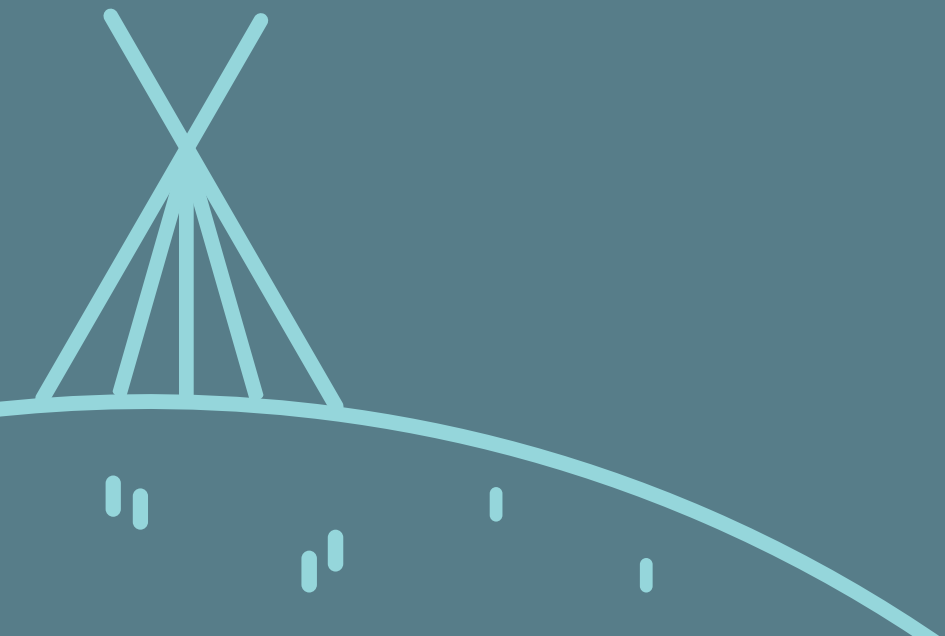
- Hold regular meetings, workshops, and training sessions, and website updates to promote knowledge sharing and synergy amongst individuals and teams working on different aspects of the environmental framework strategies and proposed actions.

CONTINUOUS IMPROVEMENT

- Develop and include a system for monitoring and evaluating progress of environmental sustainability strategies, and actions to support goals and targets.
- Encourage stakeholder and community engagement and feedback through surveys, suggestion boxes and open forums to gather insights for continuous improvement.
- Emphasize the importance of lessons learnt by sharing challenges and success across the departments, partners, and the community.
- Providing the community with transparency through progress reporting on a regular basis.



ENVIRONMENTAL TOPICS



5

WATER

Protect and responsibly manage water resources, enhance water quality, and improve the efficiency of water systems to support access to clean and safe water for all residents.

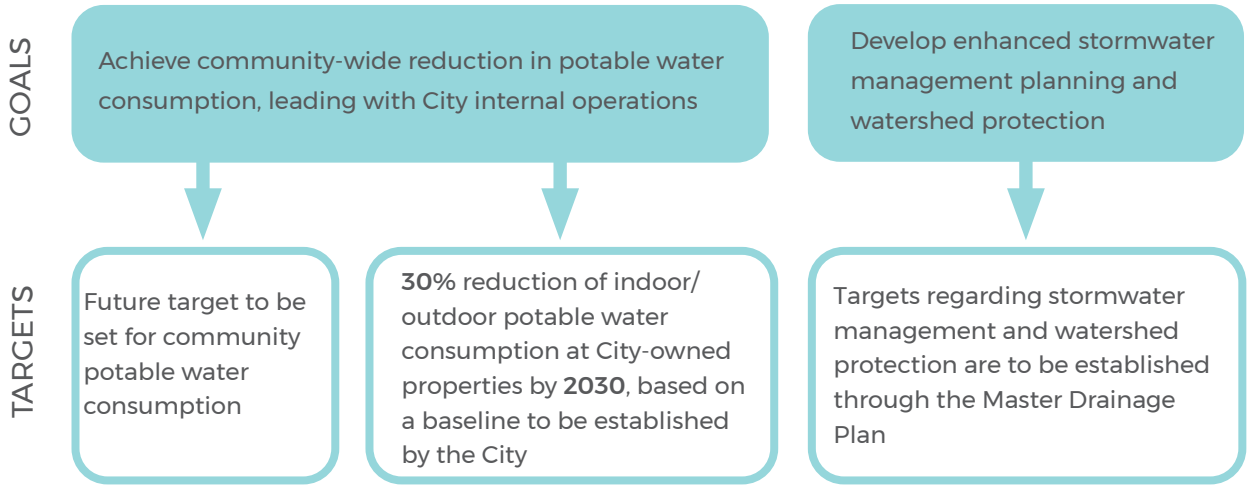
WHAT WE HEARD

Water security, water conservation, wastewater, stormwater, groundwater protection, and watershed management were the focus during engagement sessions with City staff, stakeholders, and the community of Medicine Hat. There was frequent mention of the community's collective and substantial use of domestic water resources compared with other municipalities, which has led to a desire to reduce water consumption, ensuring that residents continue to have access to healthy and safe drinking water and that there is sufficient water to support the future capacity needs of growth and industry. Through these discussions, several water conservation measures were discussed, such as: xeriscaping, grey water design and grant considerations, industrial water reclamation, public education and awareness, peak pricing, and more.

Source watershed protection and management was also frequently mentioned throughout the engagement process. In particular, there was an emphasis on protection of the watershed ecosystem and protection of source water for the health of the community, in addition to, ensuring stormwater management preparedness and property protection due to potential extreme weather events such as flooding.

Stakeholders expect this Framework will assist in the implementation of measures to help mitigate environmental and water security concerns that will maintain the health of the watershed, and continue to sustain residents and industry well into the future.

5.1 WATER



OVERVIEW

The Water Environmental Topic outlines a set of goals, targets and strategies that prioritize the protection and responsible management of water resources from the lens of water consumption and conservation, stormwater management and watershed protection.

Water is at the core of sustainable development - it is an essential precondition of socioeconomic development, energy and food production, healthy ecosystems and human life.[19] The security of water continues to be threatened by numerous factors including population increase, economic development, and shifting consumption patterns. Water security is made further vulnerable by the compounding effects of climate change and resulting impacts to reliability and quality, including (but not limited to), reduced self-purifying capacity based on the high water temperatures and reduced dissolved oxygen levels; shifts in seasonal availability; and potential water pollution or higher pollutant concentrations as a result of flooding or droughts.[20] Furthermore, existing resources and infrastructure are often insufficient to support the rapid global increase of population and resource-intensive economic development.

The United Nations defines water security as "*the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socioeconomic development, for ensuring protection against waterborne pollution and water-related disasters,*

and for preserving ecosystems in a climate of peace and political stability".[21] To better serve growing populations and to combat the effects of climate change, it is important to take an integrated and inclusive approach in managing all water resources, from potable water to stormwater. This approach includes treating water as a scarce resource and aligning water use patterns with the needs of all users, including both humans and the environment.

CONTEXT

Alberta's Water for Life strategy outlines the government's commitments to the management and safeguarding of the province's water resources, based on the following goals[22]:

- Providing safe, secure drinking water
- Maintaining healthy aquatic ecosystems
- Ensuring reliable, quality water supplies for a sustainable economy

In alignment with the goals of the *Water for Life* strategy, the City of Medicine Hat acknowledges that water conservation and management are essential to extend the life of our waterways and promote water security. Water security continues to be a significant challenge for municipalities due to increases in demand, decreases in system reliability over time, and a lack of new and readily available water sources.

> ***"More than 80% of Alberta's water supply is found in the northern part of the province, while 80% of the demand is in the south."***[23]
>
> Facts About Water in Alberta

Located within the South Saskatchewan Region, the City's main municipal water source is the South Saskatchewan River. As required under the Alberta Land-Use Framework, the *South Saskatchewan Regional Plan (2014-2024)*, which establishes a long-term vision or the Region to meet Alberta's economic, environmental and social goals, outlines various objectives and corresponding strategies that support the goal of advancing watershed management.[15] *The South Saskatchewan Regional Plan (*2014-2024) is used to guide the City of Medicine Hat's regional planning, as it pertains to land and water development, and other initiatives.[15]

The South Saskatchewan River has a history of concerns with low flow conditions, which is closely managed by Alberta Officials.[24] Under such circumstances, water conservation has become one of the most effective tools to manage water demand. To support this, the City of Medicine Hat has adopted a phased Water Shortage Management Plan which requests that the public reduce their water use in an effort to help protect the integrity of the potable water system to safeguard and preserve public health and safety, especially regarding domestic water use, sanitation and fire protection. Due to the City of Medicine Hat being located in a semi-arid climate, it is important to consider water conservation measures through both indoor and outdoor potable water consumption. The greatest impacts of water conservation efforts stem from changes to operational behaviors, such as conducting water audits, providing water meters, addressing water loss, and adopting water conservation and efficiency plans. Water security bylaws, financial incentives and education and outreach programs are additional strategies that can be effective in reducing demand.[25] This combination of water conservation efforts and sustainably managed and efficiently operated water systems results in an effective municipal water system.

Another key to an effective municipal water system is the management of stormwater systems. The City of Medicine Hat's existing stormwater system transports rainwater from communities back into the South Saskatchewan River and local creeks. The system consists of the following:

- over 300 km of storm mains/catch basin leads;
- nearly 11,000 catch basins/manholes;
- 23 storm ponds;
- almost 300 outlets/outfalls;
- concrete swales;
- curb and gutter pathway to catch basins; and
- trap lows.

A key challenge that the City experiences regarding stormwater management is severe weather events, especially those that are unpredictable. The existing system can become overwhelmed during severe weather events as a result of its limited capacity, causing rainwater to pool on roads. Additional rainwater pooling can be caused by debris impeding the flow of water in gutters and catch basins as a result of high winds and hail. The City has designed streets to include trap lows, areas where water is stored on the surface of the street until the storm pipes are able to drain water away, however, the City continues to seek new and innovative methods for addressing severe weather events.[26]

CLIMATE RESILIENCE

Water systems and water quality are expected to be impacted by extreme heat and drought, flooding, and severe storms.

Dry and hot conditions cause an increased demand for water for uses such as agriculture, industrial/commercial applications, recreation, and personal uses. These conditions also strain the water supply and reduce the availability and quality of water. Climate projections indicate an increase in average temperatures across all seasons, as well as longer periods of consecutive dry days and drought conditions in Medicine Hat.

Reducing potable water consumption will help to extend the availability of water during periods of extreme heat and drought. By reducing the consumption of water, the availability of water for other activities such as fire suppression will be increased. It will also reduce demand for water and wastewater treatment systems by reducing treatment volumes.

Increased precipitation intensity and volume will add strain to the stormwater management system and may lead to capacity exceedance, flooding, damage of assets, and interruption to municipal service delivery. Damage may also lead to interruptions to the delivery of goods and services that support the city's communities and economy. Projected increases in rainfall volume and intensity suggest that challenges managing stormwater and river flooding will remain a challenge for the City of Medicine Hat.

Improved stormwater management and watershed management contributes to enhanced resilience during large precipitation events. Flood resilience measures for both riverine and pluvial flood help protect the community and community assets from the impacts of flooding. Impacts of sedimentation, erosion, and inundation on local ecosystems may also be reduced at a local level. Critically, stormwater management supports emergency response by reducing the hazards of stormwater system overflows in roadways and around emergency service facilities, in turn, supporting continuity of service delivery that is imperative for community health and safety.

RELATED INITIATIVES

The following are key existing policies, plans and initiatives applicable to the City of Medicine Hat that overlap and/or are aligned with the goals, targets and strategies set out in the Water Environmental Topic:

PROVINCIAL

- Alberta adopted the ***Water for Life*** strategy in 2003 which outlines the government's commitments to the management and safeguarding of the province's water resources. The strategy was updated in 2008 with a supporting action plan, outlining the roadmap that the government and its partners would follow over the next 10 years.[22]

REGIONAL

- The ***South Saskatchewan Regional Plan (2014-2024)*** outlines two objectives that support the goal of advancing watershed management: 1) Surface Water Quality and 2) Efficient and Resilient Water Supply. The Plan identifies strategies to support these objectives, such as implementing the South Saskatchewan Region Surface Water Quality Management Framework, continuing to develop an optimized water management system and continuing to work towards the targets set within the Water for Life strategy with all sectors achieving overall water efficiency and productivity improvements by 30 per cent from 2005 levels by 2015; and continuing to develop approaches to address the climate variability found in the region.[15]
- **SEAWA** (South East Alberta Watershed Alliance), one of the eleven Watershed Planning and Advisory Councils (WPACs) in Alberta, supports the provincial government in achieving the goals outlined in the Water for Life. SEAWA is a key partner in conducting state of watershed assessments and reporting, planning, providing literacy and education, and collaborating.[27]

CITY OF MEDICINE HAT

- Based on water flow advisories of the South Saskatchewan River per the Alberta Environment and Protected Areas (EPA), the City of Medicine Hat has a phased **Water Shortage Management Plan** where, if enacted, the public is asked to reduce their water use in an effort to help protect the integrity of the potable water system to safeguard and preserve public health and safety, especially regarding domestic water use, sanitation and fire protection.[28]
- The City of Medicine Hat's Municipal Works department is currently in the process of investigating the adoption of a **Stormwater Management Policy and associated bylaw**, with the goal of outlining the level of service desired and to establish the funding model that would be required to sustain the storm water utility.
- To reduce corrosion build up in pipes and particles settling within the water system, the City conducts unidirectional flushing and hydrant inspections as a part of their **annual flushing program.**[29]
- The City of Medicine Hat has an **annual Storm Rehabilitation Program**, in which the City completes ongoing maintenance such as catch basin cleaning and pipe flushing, as well as repairs and rehabilitates damaged infrastructure.[26] The City continues to seek innovative ways to address severe weather situations (i.e., investigating the effectiveness of temporary holding ponds where storm water may be pumped and stored until a time when it can be released into the system) and undergoes annual consideration of increasing the capacity of the pipes and catch basins when existing infrastructure has reached the end of its useful life.

STRATEGIES & PROPOSED ACTIONS

The following strategies and proposed actions support the City of Medicine Hat to achieve the targets identified within the Water Environmental Topic.

- strategy with co-benefits for climate resilience

1 Develop a City-wide approach to water management

Proposed actions to support this strategy include:

- Conduct an assessment of the City's current and future water consumption, needs and resources; HIGH PRIORITY
- Conduct an assessment of the City's water and wastewater infrastructure identifying areas for improvement and upgrades; HIGH PRIORITY
- Develop a proactive and phased Water Management Strategy through collaboration with City departments that incorporates water source protection, municipal water utility operation and maintenance, the City's plans for economic development and growth, applicable legislation and response to climate-related events; and HIGH PRIORITY
- Conduct a legislative/regulatory review of water, wastewater and stormwater systems. MEDIUM PRIORITY

2 Implement measures to promote water conservation and efficiency within City operations

Proposed actions to support this strategy include:

- Create an awareness campaign for smart water use for internal City staff, covering topics such as changing levels of service, park naturalization, and more; HIGH PRIORITY
- Investigate incentives for water saving grants for the community; HIGH PRIORITY
- Develop a potable water consumption inventory for all City-owned properties (including buildings, parks, recreational facilities, and open spaces); HIGH PRIORITY
- Develop a rate calculation for water utilities that balances cost recovery and profitability and resource protection for inclusion in the Water Service Bylaw; and HIGH PRIORITY
- Investigate cost benefits of City-owned buildings undergoing retrofits (if inclusive of plumbing retrofits), major renovations or new construction to reduce indoor and outdoor water use based on baseline consumption data. MEDIUM PRIORITY

3 Develop a holistic approach to watershed protection and stormwater management

Proposed actions to support this strategy include:

- Conduct an inventory, inspection, and condition review of the existing stormwater system (including airport lands); HIGH PRIORITY
- Develop and adopt a level of service (LOS) for the stormwater service; HIGH PRIORITY
- Develop and adopt a stormwater bylaw to regulate drainage and stormwater quality protection; HIGH PRIORITY
- Develop a city-wide Master Drainage Plan that combines existing plans and evaluates outstanding areas to provide direction for management of the entire stormwater system; HIGH PRIORITY
- Evaluate and consider the establishment of a stormwater utility that balances cost recovery, infrastructure needs and environmental protection; and MEDIUM PRIORITY
- Expand existing collaboration with adjoining municipalities through intermunicipal development planning to include stormwater planning and watershed protection. MEDIUM PRIORITY

ENERGY & AIR

Encourage the efficient use of energy, transition to low-carbon and renewable energy uses, and reduce the presence of air contaminants to improve the health and well-being of residents.

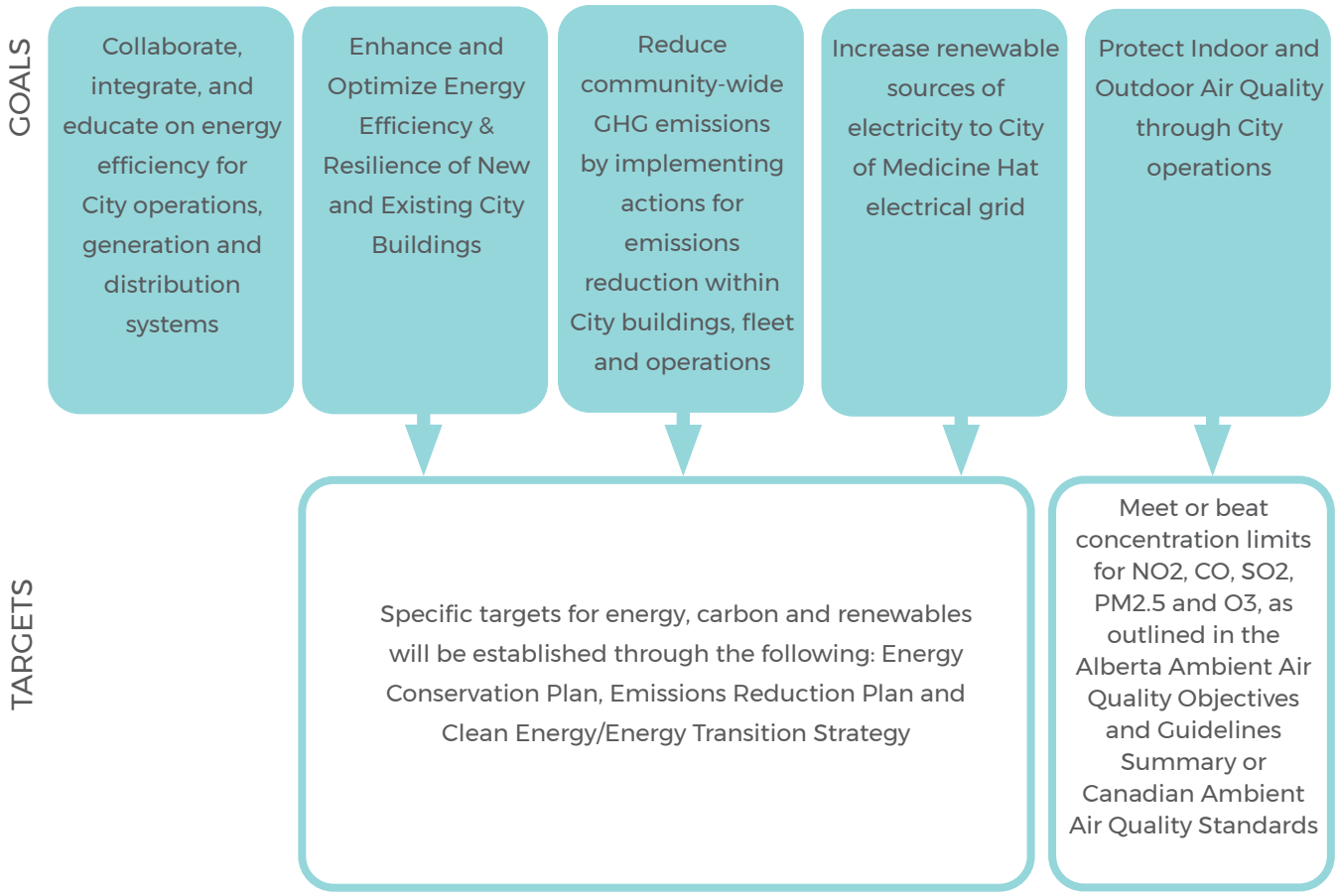
WHAT WE HEARD

Greenhouse gas (GHG) emissions, air quality, energy conservation, renewable energy, zero emission vehicles (ZEVs), and energy transition were key topics discussed with City staff, stakeholders, and the community of Medicine Hat. Opposing feedback was received through many discussions surrounding this Environmental Topic. Many stakeholders appeared to be in favour of exploring and investing in the transition to 'cleaner' sources of energy; however, this enthusiasm was met with hesitation regarding economic prosperity and long-term feasibility.

Discussions surrounding air quality generally received consistent feedback: that the community appreciates the quality of air in Medicine Hat and is one of the prominent factors that makes this community attractive and vital. The protection of air quality is a unifying factor that was evident to be important for all community members.

Despite this opposing feedback, it was mutually understood that awareness and education is an important first step to encourage community interest and knowledge, which then can be followed by the development of incentive programs, changes in community design approaches, and other small shifts that can have large impacts if adopted by the community.

5.2 ENERGY & AIR



OVERVIEW

The Energy & Air Environmental Topic outlines a set of goals, targets and strategies that promote energy efficiency and conservation, energy transition, reduced greenhouse gas emission and improved air quality to support the health of humans and the environment.

> **"2015 to 2022 were the warmest years on record, with annual global temperatures of at least 1˚C above pre-industrial levels."[30]**
>
> World Meteorological Organization

The release of greenhouse gases (GHGs) and their increasing concentration in the atmosphere are a leading contributor to climate change and air pollution.[31]

Reducing fossil fuel consumption is one of the most effective methods for reducing CO2 emissions[32]. This can be achieved through the exploration of energy efficiency opportunities, energy conservation measures, alternative modes of transportation, and fuel switching to alternative, renewable and increasingly cleaner energy sources.

Improved energy efficiency can be a cost effective way to lower energy consumption and also promote the prudent use of natural resources, leading to more sustainable and resilient energy system. Transitioning towards cleaner, renewable energy sources such as solar, wind, hydropower and geothermal energy can promote innovation and technological advancements in the energy sector while creating new job opportunities and driving economic growth.

In conclusion, prioritizing energy efficiency, embracing energy transition and promoting alternative energy sources are essential strategies to reduce carbon emissions and achieve environmental, economic and social benefits while safeguarding the planet's health and community well-being.

CONTEXT

Through the adoption of the 2023 Emissions Reduction Plan, the Government of Canada has committed to achieving a 40% reduction in greenhouse gas emissions (GHG) by 2030 (based on 2005 levels), ultimately reaching net-zero by 2050.[33] The plan is built upon reducing GHG emissions on a sector-by-sector basis, through themes including (but not limited to) increasing renewable energy generation, adopting clean energy technologies, investing in nature-based climate solutions, and empowering communities to take action. The adoption of the plan was required per the Canadian Net-Zero Emissions Accountability Act, which legally obligates Canada to set targets that support the achievement of net-zero emissions by 2050 and their internal commitments to climate change mitigation.[34]

The City of Medicine Hat has even greater influence as we own and operate our own gas and electric utility, which serves the residents and businesses across the City. The City of Medicine Hat is seeking energy transition initiatives that drive towards a low-carbon future for the region, balancing out a strong economy and healthy environment[35]. This has been further reflected through the Medicine Hat City Council Strategic Plan (2023-2026)[1], in which Goal 6.3 is to "optimize the value of the City's energy portfolio over the near and long term and implement an energy transition strategy". In alignment with federal and provincial levels of government and to support the *Medicine Hat City Council Strategic Plan (2023-2026)*[1], efforts to facilitate this transition have already begun within the City of Medicine Hat; from providing community incentives to encourage environmental and energy-conscious home upgrades through the HAT Smart program; to investigating the feasibility of hydrogen and carbon capture and storage.

CLIMATE RESILIENCE

Reducing emissions, improving energy efficiency in city buildings, and enhancing air quality are interconnected strategies that collectively contribute to bolstering climate resilience within urban environments. Energy-efficient buildings play a pivotal role by not only reducing greenhouse gas emissions, but also enhancing adaptive capacity. They minimize energy consumption for heating, cooling, and electricity, thus alleviating the strain on energy infrastructure during extreme weather events. Proper insulation and efficient HVAC systems within these buildings regulate indoor temperatures effectively, aiding occupants in weathering both heatwaves and cold spells. Furthermore, energy-efficient buildings are less vulnerable to energy price fluctuations, providing stability for occupants' energy costs, especially during crises.

Simultaneously, the reduction of GHG emissions by promoting energy efficiency helps slow the pace of global temperature rise. This deceleration in warming subsequently mitigates the severity of climate change impacts, including extreme weather events and shifts in precipitation patterns. A less intense climate change scenario affords ecosystems and communities more time to adapt and build resilience. Additionally, addressing climate change by improving air quality is vital. Climate change can degrade air quality through temperature increases, which lead to ground-level ozone formation, intensification of wildfires that emit harmful particulate matter, and alterations in precipitation patterns that influence pollutant dispersion. Enhanced air quality not only promotes community health but also alleviates pressure on healthcare systems, thereby fostering overall resilience and improving the quality of life for residents and visitors in the city.

RELATED INITIATIVES

CITY OF MEDICINE HAT

- The City of Medicine Hat is participating in **QUEST's Net-Zero Communities Accelerator Program** in 2023. The purpose of this program is to equip Canadian communities with the necessary knowledge to develop and implement community energy and emissions plans.
- City Operations and Facilities Management at the City of Medicine Hat have developed a ***Facility Design Guideline*** for construction and renovation projects at City-owned buildings to support sustainable facilities.
- The City of Medicine Hat is set to launch the residential **Clean Energy Improvement Program (CEIP)** in 2024. The CEIP provides an affordable, flexible, and streamlined approach to financing that supports the community in investing in energy efficiency and renewable energy upgrades for residential properties.[36]
- The City of Medicine Hat's existing **HAT Smart** program offers incentives to property owners and builders to support the use of environmental and energy-conscious upgrades in residential renovations and the construction of new homes. 2023 incentives include those for existing homes (such as insulation, windows and doors, tankless water heaters, heat- and energy-recovery ventilators, and solar PV), new homes (such as solar PV), EnerGuide Home Evaluations, as well as rebates to purchase and install smaller energy efficient and renewable energy items in homes through the Scratch & Win program.[37]
- The City of Medicine Hat continues to explore and evaluate the feasibility of becoming a carbon capture and storage (CCS) hub through **Project Clear Horizon**, which has the potential to mitigate up to three million tonnes of CO2 emissions annually and supports the achievement of Canada's target of having net-zero GHG emissions by 2050.[35]
- The City of Medicine Hat currently conducts **energy monitoring** at 9 key facilities within the Facilities Management portfolio. This includes the monitoring and reporting of electricity, natural gas and water consumption, with options for improvement considered in infrastructure replacement programs. The City of Medicine Hat utilizes grant funding from organizations such as the Municipal Climate Change Action Centre (MCCAC) to support the implementation of energy efficiency measures.

- CMH ***Transportation Master Plan*** (TMP) is currently underway and set to be complete in 2024. The TMP is a blueprint that plans the future transportation improvements in Medicine Hat, by framing policies for development of infrastructure for all travel choices; safe and efficient movement of people; and consideration of sustainable modes of transportation to support reduced transportation-related GHG emissions.

STRATEGIES & PROPOSED ACTIONS:

The following strategies and proposed actions support the City of Medicine Hat to achieve the targets identified within the Energy & Air Environmental Topic.

- strategy with co-benefits for climate resilience

1 Increase awareness and implement measures for energy efficiency throughout City operations

Proposed actions to support this strategy include:

- Develop and implement awareness campaigns regarding energy efficiency in City daily operations, including developing educational material about energy conservation practices; HIGH PRIORITY
- Complete an Energy Benchmark Assessment to identify gaps and opportunities for continual energy efficiency improvement; and HIGH PRIORITY
- Following the Energy Benchmark Assessment, implement energy efficiency actions. MEDIUM PRIORITY

2 Continue to identify and implement energy efficiency opportunities at City-owned facilities

Proposed actions to support this strategy include:

- Report and monitor energy consumption annually; HIGH PRIORITY
- Identify grant funding; HIGH PRIORITY
- Implement energy efficient building codes/standards for new City facilities and upgrades and explore setting targets for additional savings beyond code and include in design standard; and MEDIUM PRIORITY
- Develop an Energy Conservation Plan that outlines prescriptive and performance energy efficiency requirements for facilities. MEDIUM PRIORITY

3 Reduce GHG emissions from City buildings, fleet, and operations

Proposed actions to support this strategy include:

- Investigate financing and grant options; HIGH PRIORITY
- Develop a corporate baseline GHG inventory; HIGH PRIORITY
- Develop an internal educational program regarding the importance of emissions reduction for City buildings, fleet, and operations; MEDIUM PRIORITY
- Develop and implement an Emissions Reduction Plan for City-owned buildings, fleet, and operations; and MEDIUM PRIORITY
- Develop and implement a Methane Reduction Plan for the landfill by 2029. MEDIUM PRIORITY

4 Support the community in GHG emissions reduction

Proposed actions to support this strategy include:

- Investigate funding opportunities for the community to transition from fossil fuel heating. HIGH PRIORITY

5 Implement actions to enhance outdoor air quality

Proposed actions to support this strategy include:

- Investigate providing bike parking at City-owned buildings that is accessible by both staff and visitors. Explore secure parking and storage for both traditional bikes and e-bikes; HIGH PRIORITY
- Add conditions in the Parks rental agreements for restriction of bonfires during times of reduced outdoor air quality; and MEDIUM PRIORITY
- Adopt alternative fuel vehicles/equipment into City fleet. LOW PRIORITY

6 Prioritize indoor air quality at City-owned buildings and facilities

Proposed actions to support this strategy include:

- Develop specifications for renovation work at City-owned buildings prioritizing low-emitting materials; and HIGH PRIORITY
- Develop an Indoor Air Quality Management Plan for City operations and buildings. MEDIUM PRIORITY

7 Identify opportunities for adding clean and/or renewable sources to the energy grid

Proposed actions to support this strategy include:

- Develop and implement a Clean Energy/Energy Transition Strategy; HIGH PRIORITY
- Continue to pursue potential pilot projects underway, including Energy Innovation Challenge and Facilities Management Solar Generation; HIGH PRIORITY
- Develop an educational program for City staff and Council to understand the federal requirements that will impact the City energy generation and distribution operations; and HIGH PRIORITY
- Develop an educational program to build awareness and support various grant funding programs for the community. HIGH PRIORITY

ECOSYSTEM & AGRICULTURE

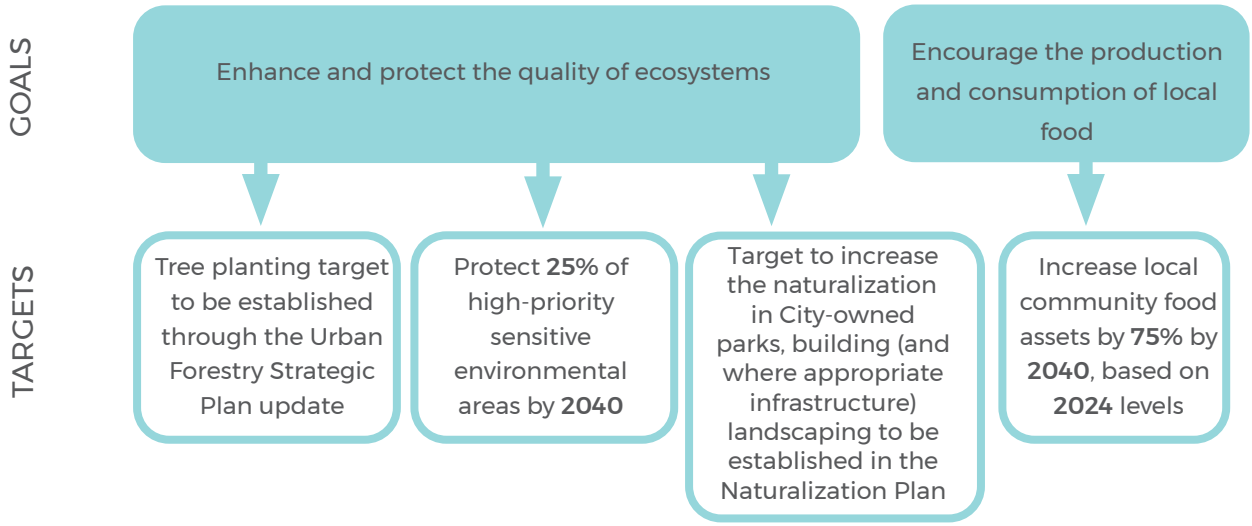
Protect, respect and maintain local ecosystems to promote ecological integrity and encourage local agriculture.

WHAT WE HEARD

The ecosystems within Medicine Hat were named as one of the City's 'roses'; a source of pride, attraction, and a significant factor in what makes Medicine Hat special and unique. It was understood that all City staff, stakeholders, and community members possess a duty to protect and preserve Medicine Hat's natural areas, for the health of the environment and for future generations. Furthermore, agriculture was described as an economic driver and a significant source of food security for the City. A key focus for the community was identified to be small scale agricultural food processes.

Ultimately, it was understood that land use efficiency in community design and infrastructure development should continue to be encouraged by the City to protect environmentally sensitive and agricultural lands and naturalized landscaping should be encouraged for drought protection, water conservation, and ecosystem preservation.

5.3 ECOSYSTEMS & AGRICULTURE



OVERVIEW

The Ecosystems and Agriculture Environmental Topic outlines a set of goals, targets and strategies that promote ecological integrity, from the sustainable management of ecosystems to enhanced connection to nature through the food that we eat.

Healthy communities are dependent on well-functioning ecosystems. They provide a wide range of services, including biodiversity and climate change adaptation and mitigation, which support our economies, health and security. However, the world's ecosystems are being damaged, degraded and destroyed at accelerating rates and at the hands of economic growth.[38] Between 2015 and 2020, approximately 10 million hectares of forests were lost per year.[39] Additionally, more than two thirds of our global ocean ecosystems are now damaged, degraded, or modified.[40]

An ecosystem refers to the geographic area where biological, physical and chemical components interact to form a community. Ecosystems come in various sizes and with different complexities. They are identified to have ecological integrity when their native components interact. Conserving ecological integrity is best addressed by protecting or restoring the diversity of the expected genes, species and communities.[41]

Within the context of the Environmental Framework, local agriculture is viewed as a source of food security. Changing economic and environmental conditions and industrialization have led to a physical and emotional disconnect between consumers and the food that they eat. The production of local foods increases the accessibility of healthy foods to communities. Additionally, it allows consumers to better understand how their food is made, raised and grown. Local food production and consumption supports the reconnection of consumers, communities and local food systems, positively impacting social and environmental health simultaneously.[42]

CONTEXT

> *"Alberta's parks and protected areas cover over 15% of the province."*
>
> *Alberta.ca*

Alberta has a rich and diverse natural landscape and biodiversity that the province aims to protect and conserve for future generations and in accordance with the social, economic and environmental values of Albertans. Home to more than 60,000 wild species, Alberta consists of the following six unique natural regions: grassland, parkland, foothills, boreal forest, Rocky Mountains and Canadian Shield.[43] With an abundance of land that is suitable for growing crops, a favorable climate and grassland water sources, Alberta has one of the strongest agriculture and agri-food sectors in North America, producing over 22.0 million metric tonnes of crops and forage in 2021 alone.[44]

The City of Medicine Hat has a typical prairie landscape and contains distinctive wildlife, resembling any grassland natural region.[17] The City's ecosystem is considered to be a sensitive prairie ecosystem. The City acknowledges that a healthy natural environment is necessary in order to have a flourishing community and a thriving economy.[2] As a result, the City aims to continuously prioritize mindfulness of our ecological footprint, through protection of sensitive environmental areas and enhancement of natural areas.

The City of Medicine Hat is Alberta's number one producer of lentils and chickpeas and home to 65% of Canada's irrigated land base.[45] The semi-arid desert environment, with milder winters and warmer summers, and the fact that the City receives the highest amount of sunlight in Canada, allows its' agriculture industry to thrive and enhances its' ability to generate solar power.

CLIMATE RESLIENCE

Climate resilience is essential for preserving Medicine Hat's ecosystem health and food security in the face of climate change. Rising temperatures and altered precipitation patterns threaten the region's ecosystems, leading to prolonged droughts, aquatic stress, proliferation of invasive species, and habitat destruction. Proactive conservation and adaptive management are vital for ecosystem health, as resilient ecosystems better withstand extreme climate conditions. This resilience extends to areas like stormwater management, agriculture, air quality, local food, recreation, and community wellness.

Climate change also poses a potential threat to urban food security in Medicine Hat. Longer droughts, increased pests, and diseases are impacting crop yields and quality. This can disrupt the local food supply chain, potentially leading to price spikes and reduced availability. Supporting local supply chains and grassroots food production enhances biodiversity, reduces reliance on global food supply, and equips the community to be self-sufficient in times of food shortages or climate impacts elsewhere. Climate resilience is key to ensuring continued food production and security in the region.

RELATED INITIATIVES

The following are key existing policies, plans and initiatives applicable to the City of Medicine Hat that overlap and/or are aligned with the goals, targets and strategies set out in the Ecosystems & Agriculture Environmental Topic:

PROVINCIAL

- The province of Alberta provides an **Agri-processing Investment Tax Credit** (12% non-refundable tax credit against eligible capital expenditures) to support corporations investing over $10 million to build or expand agri-processing facilities within the province.[45]

REGIONAL

- The Environmental Framework builds upon the goals set out in the ***South Saskatchewan Regional Plan (SSRP)***, which sets the stage for the growth of vibrant communities and a healthy environment within the region for 50 years.[46]

CITY OF MEDICINE HAT

- The Environmental Framework aligns with the policies regarding environmental stewardship, as specified in the ***City of Medicine Hat Parks and Recreation Master Plan.***[17]
- The City of Medicine Hat's Chamber of Commerce maintains a series of **resources to promote, expand and support the agriculture industry.** They provide resources for agri-businesses regarding key regulations, growing the workforce, and awareness of food sustainability and environmental footprint.[47]
- The ***Land Use Bylaw (LUB)*** outlines the rules and regulations for the development of land in Medicine Hat and implements the goals of the ***myMedicine Hat Master Plan*** to ensure that land and people are protected from conflicting land uses within the community.

STRATEGIES & PROPOSED ACTIONS:

The following strategies and proposed actions support the City of Medicine Hat to achieve the targets identified within the Ecosystems & Agriculture Environmental Topic.

- strategy with co-benefits for climate resilience

1 Develop a standard City operational program for dealing with invasive species, pests, and vegetation control

Proposed actions to support this strategy include:

- Develop and adopt levels of service for vegetation control within City parks and properties; HIGH PRIORITY
- Develop an Integrated Pest Management Plan; and HIGH PRIORITY
- Develop a City operations education program regarding weed control and invasive species. MEDIUM PRIORITY

2 Implement planting of trees and shrubs on City-owned properties and encourage community tree planting and maintenance

Proposed actions to support this strategy include:

- Update and implement the CMH Urban Forestry Strategic Plan; HIGH PRIORITY
- Update the list of trees and shrubs for landscaping of developments; and HIGH PRIORITY
- Encourage planting trees on private properties and City-owned properties through investigating incentives and reinstating the free tree program. MEDIUM PRIORITY

3 Encourage naturalization and promote protection of sensitive environmental areas

Proposed actions to support this strategy include:

- Conduct an inventory of City-owned properties, rights-of-ways, environmental reserves and parks to understand vegetation and maintenance requirements; HIGH PRIORITY
- Develop and adopt a Naturalization Plan for identified City-owned parks, building landscape, and infrastructure projects; HIGH PRIORITY
- Conduct a city-wide biophysical assessment; and HIGH PRIORITY

- Provide education and lunch and learns to internal City staff regarding conducting work, operations, and construction within species at risk habitats and migratory birds. MEDIUM PRIORITY

4 Implement a program that uses City park space or vacant lots and leases with organized groups for local food production

Proposed actions to support this strategy include:

- Develop an education program regarding growing local food and the key benefits; HIGH PRIORITY
- Investigate a strategy to use vacant City-owned land as potential locations for community gardens; and HIGH PRIORITY
- Investigate grant funding opportunities to support local food networks. MEDIUM PRIORITY

RECYCLING & WASTE MANAGMENT

Responsibly manage solid waste and increase waste diversion opportunities to reduce the amount of waste sent to landfill.

WHAT WE HEARD

Solid waste management, recycling, and composting were key discussion points with City staff, stakeholders, and community members. Education and awareness were identified as an important first step as it was deemed essential that the community and Council fully understand the benefits of recycling, composting and related technologies prior to being implemented. Additional strategies were discussed, such as, incentives for decreasing the frequency of municipal garbage pick-up, implementing a commercial food waste program to compliment the City's existing yard waste composing program, providing commercial incentives to sell items with less packaging, introducing technologies into solid waste programming such as methane extraction from landfills and the development of biodegradable plastics.

The feedback received indicated that there was a mutual understanding of the importance of safe waste management and waste diversion from the City's landfill, of which should be appropriately reflected as a part of the Framework.

5.4 RECYCLING & WASTE MANAGEMENT

GOALS

Increase opportunities for the reuse and recycling of waste and the total amount of waste diverted from landfill

TARGETS

Achieve a waste diversion rate for City operational waste of **75%** by **2035** and **90%** by **2040** (based on **2024** levels)

OVERVIEW

The Recycling and Waste Management Environmental Topic outlines a set of goals, targets and strategies that promote sustainable waste management and prevention, reduced waste-related greenhouse gas emissions, and improved health and well-being of humans and ecosystems.

> *"Every year, an estimated 11.2 billion tonnes of solid waste is collected worldwide, in which the decay of organic solid waste contributes to approximately 5% of global greenhouse gas emissions."*[48]
>
> *Facts and Figures, United Nations*

According to the World Health Organization, solid waste is "any type of garbage, trash, refuse or discarded material".[49] Waste is a universal and complex issue as almost all human activity generates some type of waste, such as municipal solid waste, hazardous waste, industrial non-hazardous waste, agricultural and animal waste, construction and demolition debris, sewage sludge and more. The amount of waste generated is largely dependent on economic activity, consumption, and population growth and proper management to protect against the negative health impacts to humans and the environment. A waste management system refers to the waste generation, collection, transport, treatment and disposal. Waste can be managed through different methods, including reuse, recycling, energy recovery and disposal, which largely vary across regions due to the local collection services and the management facilities that are available in each region.[50] Solid waste management is a key budget expenditure for many local governments and is essential for economic and social development. By regulating the proper management of waste,

governments are protecting the health of humans and ecosystems, as poor waste management can often lead to air pollution and water and soil contamination.[46]

A sustainably managed waste system looks at waste reduction first. This includes promoting better understanding and changing consumption behaviors to minimize the amount of waste being generated in the first place. If the generation of waste cannot be avoided, opportunities for reuse, repair, refurbishing, and recycling can be explored to promote circular economy principles, which encourage retaining as much value as possible from existing resources.[51] The wide variety of methods for managing waste that continue to be explored create opportunities that foster a green economy, including green jobs, renewable energy source and becoming more self-sufficient and circular.

Waste management requires action at all levels as it entails responsible production, consumption and disposal of waste, and involvement from governments, industries and communities.

CONTEXT

According to Alberta's Too Good to Waste strategy for waste reduction and management, waste generated in Alberta can be grouped into following five waste sectors:[52]

- Municipal solid waste
- Hazardous waste
- Oilfield waste
- Forestry residuals
- Agricultural residuals

Municipal solid waste refers to any recyclable and compostable material and garbage that is generated from households, businesses, institutions, as well as construction and demolition sites[53]. The need for responsible waste management practices stems from many social, economic and environmental factors, including:[52]

- Resources are becoming increasingly sparse and as a result, increasing in value.
- Enhanced technologies and methods for the re-use and recycling of materials are being created, including those with greater economic benefits, such as using one industry's waste as another's feedstock.
- Improper waste management contributes to increased pollution of land, air and water, as well as increased greenhouse gas emissions.

In 2002, Alberta diverted 19.3% of solid waste from landfills, the third lowest of provinces in Canada.[54] This was largely due to the fact that Alberta's initial strategy for waste disposal was primarily landfills. In 2018, Alberta's waste diversion rate decreased to 18.4%.[54] Alberta's current goal is to reverse the existing waste profile and ultimately work towards a Zero Waste Society, which the City of Medicine Hat plays a key role in achieving.

While provincial governments often establish waste reduction policies and programs, municipal governments are ultimately responsible for managing the collection, recycling, composting and disposal of municipal solid waste. For example, the City manages the following waste diversion programs:[55]

- Community Residential Recycling Program
- Yard Waste Collection and Composting Program
- Biosolids Compost Program Tree and Wood Recycling Program
- Commercial Fiber (paper and cardboard) Collection Program
- Metals Recycling Clean Fill Re-Use Program
- Construction Rubble Re-use Program

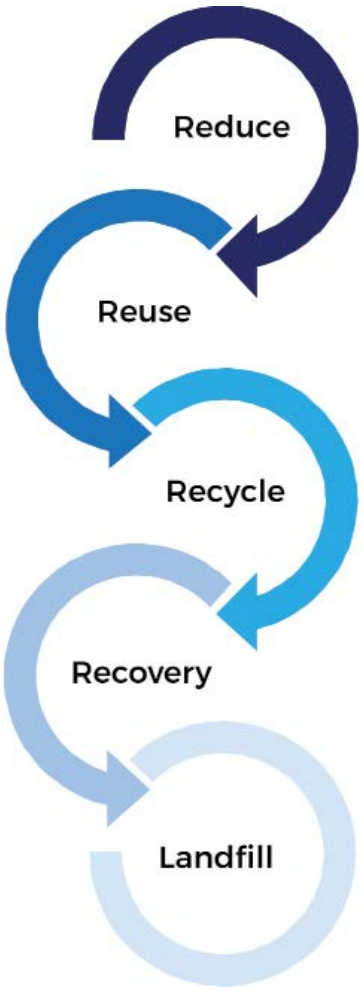


Figure -1

Between 2000 and 2010, the City achieved an annual average diversion rate of 36%. Despite the existing Federal, Provincial and City-managed waste diversion programs, it is evident that there remains room to continuously reduce the amount of waste generated and the amount of waste that is diverted from the landfill. In order to fill this gap, it is important that the waste management strategy be built upon the following principles:[55]

- Industry R's: reduce, reuse, recycle and recovery (see Figure 1).
- Triple Bottom Line: a balance of environmental, social, and cost factors.
- Diversion vs. Cost: reasonable waste diversion at a reasonable cost.

RELATED INITIATIVES

The following are key existing policies, plans and initiatives applicable to the City of Medicine Hat that overlap and/or are aligned with the goals, targets and strategies set out in the Recycling & Waste Management Environmental Topic:

CITY OF MEDICINE HAT

- The Environmental Framework builds and support initiatives outlined in the ***Waste Management Strategy Background Report (2023-2032).***[56]
- The City provides a range of **waste management services,** including garbage, yard waste and recycling curbside collection services, three recycling depots and a City-owned landfill.
- The City of Medicine Hat ***Waste Bylaw No. 1805*** provides guidance for the collection, removal, disposal of ashes, garbage, refuse, and waste material accumulated within collection areas of the corporate limits of the City of Medicine Hat.

STRATEGIES & PROPOSED ACTIONS:

The following strategies and proposed actions support the City of Medicine Hat to achieve the targets identified within the Recycling & Waste Management Environmental Topic.

- strategy with co-benefits for climate resilience

1 Encourage waste diversion within City operations

Proposed actions to support this strategy include:

- For priority City-Owned facilities conduct the following; waste audits to ensure proper waste diversion; audits of cleaning and waste management practices and addition of recycling and separation of waste requirements to City contracts; and HIGH PRIORITY
- Investigate requiring Waste Diversion Plans for the construction, major renovation and/or demolition of City-owned facilities and look to include standards in City construction/demolition contracts for sorting and diverting of waste materials. HIGH PRIORITY

2 Encourage better waste management and diversion for citizens and developers within the City of Medicine Hat

Proposed actions to support this strategy include:

- Implement and pilot a residential food waste composting program in accordance with the Waste Management Strategy; HIGH PRIORITY
- Adopt a full residential food waste composting program, contingent on the success of the pilot program; and MEDIUM PRIORITY
- Collaborate with the Development Sector to explore and support the implementation (where feasible) of opportunities that encourage developers to achieve construction and demolition waste diversion targets. MEDIUM PRIORITY

COMMUNITY & LAND DEVELOPMENT

Support sustainable community development through inclusivity, increased access to active and alternative transportation, and enhanced connection to nature.

WHAT WE HEARD

Urban design and planning, low impact development (LID), public and active transportation, land use efficiency, and healthy communities were key themes discussed with City staff, stakeholders and members of the community. All agreed that the development of heathy communities was important and meaningful to attract and retain residents, with 'healthy community' defined as a place where an individual's physical and mental health can thrive, connections are fostered, food options are plentiful, nature and natural resources are in close proximity, and living is affordable.

It was echoed that Medicine Hat exemplifies many of these characteristics that describe a healthy community; however, more can be done through current and future long-range planning to build a stronger and healthier community.

5.5 COMMUNITY & LAND DEVELOPMENT

GOALS

- Increase opportunities for public and active transportation to improve the health and well-being of its residents and the environment
- Promote healthy, sustainable and vibrant communities by efficient use of land, promoting compact communities and increased access to open space
- Foster a collaborative and inclusive community that celebrates heritage, promotes shared learning, and ensures equity in environmentally sustainable initiatives

TARGETS

- By **2030**, increase the number of trips made using sustainable modes of transportation by **15%** compared to **2024** levels

OVERVIEW

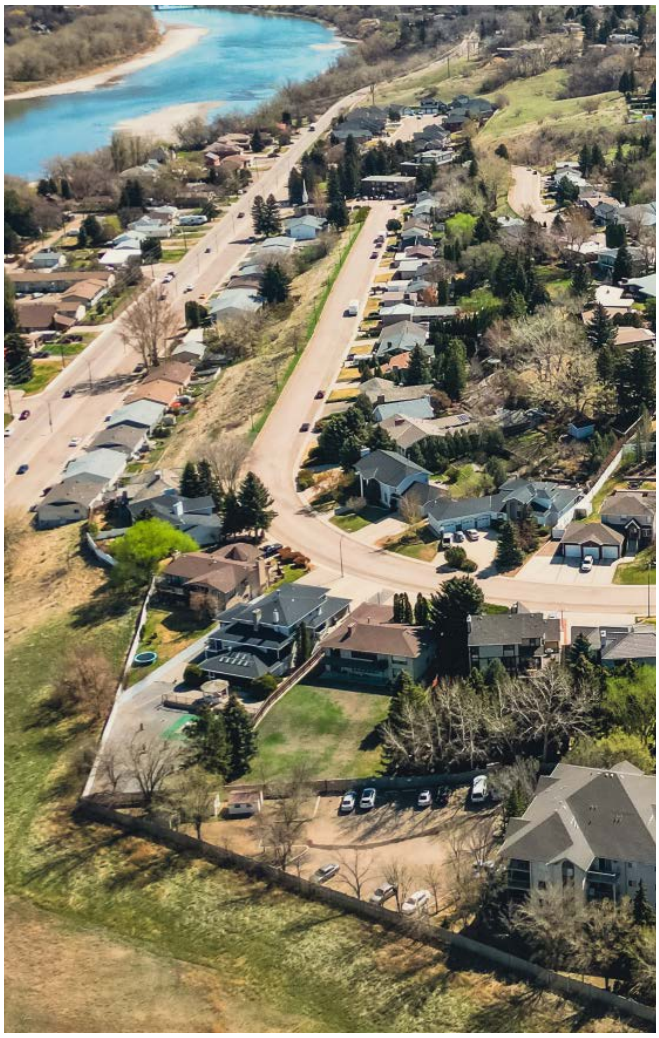
The Community and Land Development Environmental Topic outlines a set of goals, targets and strategies that prioritize land-use planning, active transit and community well-being, with emphasis on equity, celebration of heritage and culture, collaboration, shared learning and improved access to natural spaces.

> *"We all want to live in a vibrant, prosperous, and sustainable community, where we feel a sense of belonging"*[1]
>
> *CMH Strategic Plan 2023-2026*

There is a strong relationship between land use efficiency, transit systems and public health when viewed through the lens of sustainability. By integrating transportation systems with land use planning, we encourage the development of compact and interconnected cities. This in turn, promotes the use of active transit options, resulting in enhanced health outcomes and reduced emissions.[57]

Cities that prioritize public transportation are prioritizing equitable access to open space and nature. By enhancing the availability of transit options to parks and green spaces, cities are ensuring all residents, regardless of their economic status or physical ability, can enjoy the advantages of being in nature. Additionally, a holistic approach to land use planning and transit can support the creation of green corridors and urban forests, to promote biodiversity and improve ecosystems.[58]

To achieve the best outcomes in environmental sustainability, it is important to address social concerns alongside environmental and economic challenges. “The necessity of maintaining society confers social sustainability with intrinsic value”, involves considering aspects of social sustainability like social justice, equality, inclusivity, heritage, culture, collaboration and engagement in decision-making.[58]



Recognizing the interrelationships between social, environmental, and economic factors, it is important to incorporate social considerations into sustainable initiatives. This means considering the needs and perspectives of different social groups and striving for equitable outcomes. Shared learning and awareness are key in shaping the social dimensions of environmental sustainability. Ultimately, the community, individual and in collective will determine the long-term viability of economic, environmental, and social sustainability.[58]

It is important to note that the Framework does not focus on traditional planning related strategies as those strategies are well defined across other City of Medicine Hat plans. Two key City initiatives that will be leveraged to support goals within this Topic will be the *City’s Strong Town Community Action Lab and the Transportation Master Plan* (underway in 2024).

CLIMATE RESLIENCE

Resilience can be built into land use plans by restricting development along floodplains and at wildfire-urban interfaces, introducing water conservation strategies, protecting natural habitats and ecosystems, and densifying the municipality to improve access, transportation, and emergency response.

Safe, accessible, and reliable transportation networks introduce redundancy into the system so that all community members can move within the city before, during, and after severe weather and climate-related events. Reduced vehicular traffic will reduce congestion and make emergency response more efficient, particularly for localized events. Diverse transportation networks make safe, accessible, and reliable transportation more available to a larger portion of the population.

Access to healthy living spaces and resources will ensure that the community members are protected during extreme weather and climate events. This improves community wellness while also reducing pressure on emergency response and municipal services/facilities. Improved equity and health in the community reduces the exposure of vulnerable and at-risk populations to climate hazards by providing safe, accessible, and affordable resources, particularly in relation to climate hazards such as drought, extreme heat, flooding, or severe storms.

CONTEXT

In 2000, the Government of Alberta released the Municipal Government Act, which is intended to empower municipalities to shape their communities, regulate how municipalities are funded, and provide guidance for how local governments should govern and plan for growth.[58]

Subsequently, in 2008, Alberta adopted a Land-Use Framework (LUF) outlining a new approach to managing the land and natural resources that supports the achievement of the province's long-term economic, environmental and social goals. The LUF has identified seven land-use regions (based on the province's major watersheds) of which each require the development of a regional plan. The *South Saskatchewan Regional Plan*[15] is the land-use region that the City of Medicine Hat is required to meet. The purposed of the SSRP is to set the stage for the growth of vibrant communities and a healthy environment within the region in a 50 year horizon. The SSRP includes direction within the following areas that are relevant to this Environmental Topic:

- **Promote efficient use of land**: Build awareness and understanding of the efficient use of land principles and the application of land-use planning tools that reduce the footprint of the built environment; how they might be applied; and how their effectiveness would be measured over time by municipalities, land-use decision-makers and land users, on both public and private lands.
- **Transportation**: Contribute to a safe, efficient and cost effective transportation network and increase public transit.
- **Equity & inclusion**: As referenced in the SSRP, Alberta's Social Policy Framework' vision focuses on the creation of inclusive and welcoming communities, where every resident has opportunities to fulfill their potential and benefit from a thriving social, economic and cultural life.[59]
- **Outdoor recreation and historic resources:** Provide outdoor recreation and nature-based opportunities and preserve and promote the region's unique cultural and natural heritage.[15]
- **Consultation & Engagement:** Ongoing collaboration through consultation, engagement and relationship building across all Alberta communities.

- **Education & Awareness:** Delivery of programs to promote and raise awareness associated with responsible land use and water management. Continuing environmental literacy strategies intended to help build a culture of shared stewardship, for example shared resources: shared responsibility.[15]
- **Building Sustainable Communities:** Promote healthy and sustainable communities, providing access to nature which is essential for the physical and emotional health for all community residents.

The City of Medicine Hat has identified long-term sustainability as a top priority and is committed to making bold choices in striving for ongoing prosperity, appealing neighbourhoods, environmental responsibility and thriving residents.[2]

Population growth has important implications for society, and it is crucial to manage land resources efficiently. By 2050, the City of Medicine Hat is anticipated to have a population of approximately 80,000. This is a 0.78% annual increase from the 2016 population (63,260). As the population increases, so does the demand for new infrastructure and buildings, which can adversely affect the natural environment and human health and wellbeing if designed poorly. In addition to growth, the population in Canada is aging rapidly. By 2050, 33% of the residents in the City of Medicine Hat will be 65 or older. Such a change in age demographics requires the City to reconsider preceding approaches to urban development and shift to neighbourhood design, recreation and services that are age-friendly, in addition to meeting the needs of people with disabilities.

In July 2023, the City initiated the development of a *Transportation Management Plan* which is set for completion in 2024. The plan will set out a long-term 30 year vision for the City's transportation network. The plan will consider opportunities to expand and support active transit which will benefit the community in the following ways: healthier community well-being and positive impacts to community identity; social cohesion; increased accessibility opportunities; and generation of less air pollution and emissions compared to other forms of transit. A well designed network and infrastructure can help make these options safe for those choosing active transit.

The City of Medicine is one of four communities, and the only Canadian city, selected to participate in the *Strong Towns Community Action Lab* (CAL). The CAL is designed to transform the direction of applicant cities from one where development patterns, transportation design, and service delivery stress the local region – financially, environmentally, and socially – to a future where the municipality can financially sustain core services, improved quality of life, and keep the broader commitments to the community without external support.[7]

The CAL is structured around three goals:

- **Inform and Educate**: generate awareness and create new dialogue around the future of Medicine Hat.
- **Connect and Energize:** bring together community leaders and residents to inspire collective action.
- **Support and Guide:** maintain momentum and continual action in Medicine Hat to move toward the City's goals and vision.

Strong Towns outcome for City:

- Local leaders will gain knowledge and insight that will help them build a strong, resilient, and more prosperous city;
- Technical staff and key stakeholders will be trained in practical ways to apply Strong Towns thinking and approaches to the difficult problems they are presently facing in their communities; and
- The broader community will experience a shift in thinking that will increase their understanding of resiliency, long-term fiscal health, and their community's development approach while building capacity to support systematic change.

Building on the City's current direction and initiatives, and to continue to address the diverse needs and aspirations of the community, it is crucial to continue to prioritize land- use planning as a fundamental aspect of sustainable urban development. Investing in active transportation infrastructure, not only promotes physical activity and reduces carbon emissions, but also enhances accessibility for residents. Furthermore, in the continued quest for community well-being, it is imperative to strive for equity and acknowledge the importance of celebrating heritage and culture. Collaboration and shared learning provides a sense of belonging and will give the community equal opportunities to thrive. Finally, the City of Medicine Hat will continue to focus on providing access to their abundance of green spaces, parks, trails and natural areas, providing the community with opportunities for recreation, relaxation and connection with their natural environment.

RELATED INITIATIVES

The following are key existing policies, plans and initiatives applicable to the City of Medicine Hat that overlap and/or are aligned with the goals, targets and strategies set out in the Community & Land Development Environmental Topic:

CITY OF MEDICINE HAT

- When developing land within the City of Medicine Hat, the following planning and land-use guiding documents must be consulted and the development shall be in compliance with:
    - ***South Saskatchewan Regional Plan (SSRP)***[15]
    - ***Tri-Area Intermunicipal Development Plan (IDP)***[60]
    - ***myMH Master Plan***[2]
    - ***Area Structure Plan (ASP)***
    - ***Land-Use Bylaw***
- The City continues to implement initiatives regarding the six strategic priorities, including infrastructure renewal and community safety and vibrancy. Per the **2021 Annual Report**, the City expanded transit routes, specifically creating Route 64 which connects Medicine Hat College to the downtown core.[60]
- ***CMH Transportation Master Plan (TMP)*** currently underway and set to be complete in 2024. The TMP is a blueprint that plans the future transportation improvements in Medicine Hat, by framing policies for development of infrastructure for all travel choices, and safe and efficient movement of people. The TMP will create a long-term 30-year vision for the community's infrastructure.
- The goals and strategies outlined in the Environmental Framework build upon the ***Medicine Hat Downtown Redevelopment Plan***[61] and the ***Parks and Recreation Master Plan.***[17]
- The City of Medicine Hat continuously demonstrates commitment to exploring **alternative modes of transportation**, offering lower-carbon and more sustainable options to its community members. For example, in May 2022, City Council approved the implementation of a one-year electric scooter pilot program with Bird Canada. Through this program, shareable e-scooters were approved for use in certain areas of the city with the goal of assessing demand and viability. The second year of the shared electric scooter pilot program launched in 2023.

STRATEGIES & PROPOSED ACTIONS:

- strategy with co-benefits for climate resilience

The following strategies and proposed actions support the City of Medicine Hat to achieve the targets identified within the Community & Land Development Environmental Topic.

1 Increase demand for and use of the City's public transportation network

Proposed actions to support this strategy include:

- Complete a full review for transit demand, including all geographical area. Identify areas/routes that may need special consideration for scooters, bikes etc. to increase ridership and explore the feasibility of adding bike and scooter racks on buses (including both traditional bikes and e-bikes); and HIGH PRIORITY
- Investigate additional opportunities for public transportation during times of large scale community events at various City facilities and parks with consideration for adding park and ride locations. Ensure ample access to accessible transportation. Investigate existing issues regarding parking for mass events at Echo Dale Regional Park. HIGH PRIORITY

2 Encourage all new neighborhoods are designed as multi-modal communities

Proposed actions to support this strategy include:

- Review development policies for new communities, ensuring that there are minimum standards for amount and access to trails and pathways that are interconnected with the City's active transportation network; and HIGH PRIORITY
- Conduct an audit of new and existing (only if re-visited or analyzed) City playgrounds to determine connectivity / accessibility of playgrounds to trail system or accessible parking spaces. MEDIUM PRIORITY

3 Optimize the use of available land, reduce urban sprawl and create walkable neighbourhoods that encourage active lifestyles

Proposed actions to support this strategy include:

- Create an inventory of underutilized land; HIGH PRIORITY
- Develop a strategy to intensify existing commercial and residential zones and encourage mixed-use development at commercial nodes; and HIGH PRIORITY

- Develop and implement an Underutilized Land Strategy for all types of development, including residential, commercial and industrial. Enable accessible means of financing and tax incentives for underutilized land. Create possibilities for ensuring resources available to accelerate underutilized land required. MEDIUM PRIORITY

4 Promote ecosystem through a thoughtfully designed open space network, which could include the inclusion of more flora and fauna into landscape design, incorporation of natural and historical features and connections into open space design strategies, etc.

Proposed actions to support this strategy include:

- Review development policies for new communities, ensure that there are minimum standards for amount and access open space network; HIGH PRIORITY
- Review development and landscape policies to ensure there are minimum standards for natural landscaping and the incorporation of landscape features that balance connecting to the City's history and improving biodiversity; HIGH PRIORITY
- Further examine the allocation of City-owned open spaces to understand distribution and form and encourage purposeful design; and HIGH PRIORITY
- Review landscape policies to ensure that traditional Indigenous flora and fauna are celebrated, and the implementation of gardens and edible plants are encouraged. MEDIUM PRIORITY

5 Develop a community education and outreach program to support the Environmental Framework and associated initiatives

Proposed actions to support this strategy include:

- Leverage Strong Towns Community Action Lab to support this strategy, such as: HIGH PRIORITY
  - Creating guidelines for community-led volunteer experiences related to environment and landscape.
  - Ensuring proper planning occurs for activities that will occur. Engage with the community by creating volunteer opportunities and informing on how they can support the initiatives.

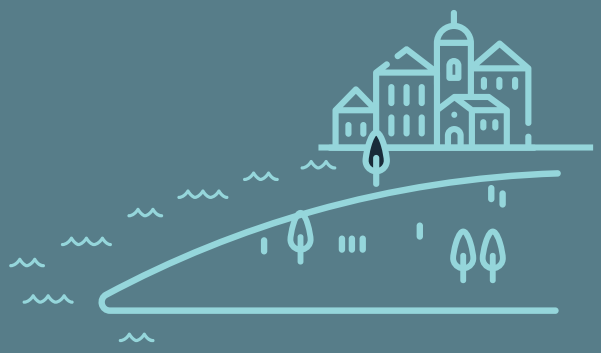
- The City will develop and implement a community education and outreach program that covers at least the following themes within the Environmental Framework: HIGH PRIORITY
    - ***Potable Water:*** encourage reduced residential potable water consumption and awareness of water management practices, covering topics such as efficient irrigation practices, xeriscaping, low-flow plumbing fixtures, etc.
    - ***Stormwater:*** covering topics related to stormwater, including what happens when it rains, storm ponds, actions that the community can take, etc.
    - ***Air Quality:*** covering topics related to the human and environmental health impacts of residential wood smoke in Parks and Campgrounds, and actions that can contribute to improved air quality (e.g., alternative transportation, planting trees, etc.)
    - ***Energy:*** support the understanding of the available programs under the CEIP (expected to launch in 2024) and HAT Smart, in addition to helping build community awareness regarding decarbonization and the value of transitioning to clean energy.
    - ***Ecosystems:*** covering topics such as how greenspaces can contribute to the health of the environment, biodiversity, weed control and invasive species, suitable trees/shrubs to plant according to local climate, and more.

The program will expand upon existing education efforts and will be built upon interdepartmental collaboration.

6 Enhance celebration of heritage and culture through knowledge, understanding, protection and communication

Proposed action to support this strategy include:

- Investigate heritage and culture background of Medicine Hat to further identify areas of significance for preservation. MEDIUM PRIORITY



CLOSING REMARKS

6

6.0 CLOSING REMARKS

Thank-you for taking the time to read our Environmental Framework document. The Framework presents a vision for the City and our community, marked by a practical approach that will continue to consider current challenges and future opportunities.

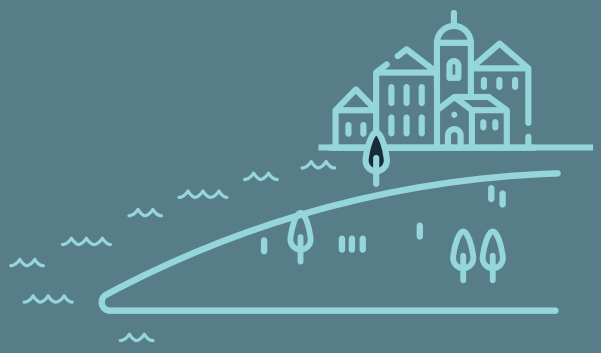
The Environmental Framework builds upon the following objectives outlined within the Medicine Hat City Council Strategic Plan (2023-2026)[1] and MyMH Municipal Development Master Plan[2]:

- Demonstrate the City's leadership and commitment to their community and environment.
- Develop goals, targets, strategies and actions that are clear, compelling, relevant, implementable, and leading for inclusion in city redevelopment plans and policies guided by MyMH Municipal Development Plan[2].
- Conduct efficient and effective consultation and engagement with key stakeholders and the community for clarification of environmental objectives. Involving stakeholders throughout the process is critical to developing a framework that is supported and implementable.
- Support the exploration of funding sources for green incentive opportunities.

The framework will act as a living document, delivering a flexible and adaptive 25-year long-range plan with emphasis on a series of short-term 5-10 year actions.

Looking ahead, an important factor in the implementation of the Framework is understanding that there will likely be unknown constraints, challenges and lessons learned on the City's path forward. Implementation will include a systematic and structured approach that includes a continuous process that builds upon the knowledge gained through the next phases of the framework implementation, with an aim for ongoing improvements and collaboration.

Overall, the City recognizes that this long-term effort will require ongoing commitment and collaboration from all members of our city departments and the community. The City is eager to continue on this expansive, journey with our community to build the future that we collectively strive to experience and enjoy.



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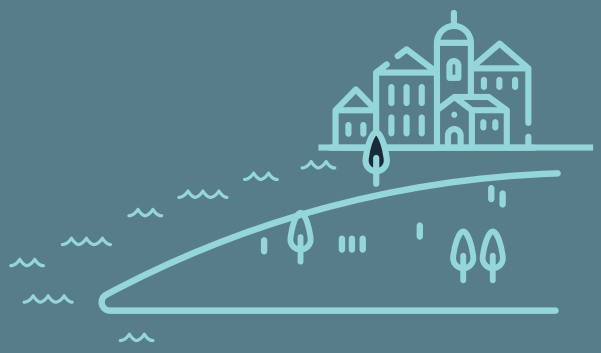


GLOSSARY

8

8.0 GLOSSARY

ACCESSIBLE – Designed in a manner that allows ease of reach or ability to participate in activities or opportunities, including access to goods, services, buildings, places and spaces.

ACTIVE TRANSPORTATION - Any mode of transportation by which people use their own energy to power their motion including walking, rolling, running, cycling, cross-country skiing, skateboarding, snow-shoeing and use of a manual wheelchair.

BIODIVERSITY - The variety of life on earth or in a particular habitat or ecosystem.

CARBON CAPTURE AND STORAGE - The permanent storing and trapping of carbon dioxide (CO^2) in an approved surface formation.

CITY OF MEDICINE HAT / CITY - Where capitalized as the "City of Medicine Hat" or the "City", refers to the City of Medicine Hat as a municipal government, or corporation. Where written in lower case as "the city" or as "Medicine Hat", refers to the physical area of the municipality.

CLEAN ENERGY - Energy from renewable resources.

CLIMATE ADAPTATION - Actions taken that reduce the negative impact of climate change, while taking advantage of potential new opportunities.

CLIMATE CHANGE IMPACTS - Changes to the environment, greater frequency of extreme weather events and rising sea levels due to climate change.

CLIMATE RISK MITIGATION - Reducing the flow of greenhouse gases into the atmosphere by reducing the source of gases or enhancing the sinks that accumulate and store gases.

COMMUNITY WELL-BEING - The combination of social, economic, environmental, cultural, and political conditions identified by the community as essential for them to flourish and fulfill their potential.

ECOLOGICAL FOOTPRINT - A measure of the human demand on natural capital, i.e., the quantity of nature it takes to support people and their economies.

ECOLOGICAL INTEGRITY - Protecting or restoring the diversity of the expected genes, species and communities.

ECOSYSTEM - A geographic area where plants, animals, and other organisms, as well as weather and landscapes, work together to form a bubble of life.

ENERGY TRANSITION - Energy initiatives to transition to a sustainable and low carbon future for the region.

ENVIRONMENTALLY SUSTAINABLE - Responsibly conserving natural resources and maintaining ecological balance to support health and wellbeing.

EXTREME WEATHER EVENTS - Occurrences of unusually severe weather or climate conditions that can cause devastating impacts on communities and agricultural and natural ecosystems.

GREENHOUSE GASES– A group of gases that trap heat in the atmosphere and contribute to global warming and climate change.

MUTUALISM - Collective action, pooling resources and obtaining an outcome which is greater than the sum of the parts.

NATURAL RESOURCES - Aspects of the natural environment from which goods and services can be obtained and produced.

NATURE-BASED CLIMATE SOLUTIONS - Strategies that utilizes natural elements in fighting climate change and biodiversity loss.

NET-ZERO - The state in which the greenhouse gases going into the atmosphere are balanced by removal out of atmosphere.

PLACE ATTACHMENT - A individual feeling a strong connection and care for their local environment.

RENEWABLE ENERGY - Energy that is collected from renewable resources, which are naturally replenished on a human timescale, such as sunlight, wind, rain, watercourse, and geothermal heat.

RESILIENCE - The ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate.

SOCIAL EQUITY - The fair, just and equitable management of all institutions serving the public directly or by contract, and the fair and equitable distribution of public services, and implementation of public policy, and the commitment to promote fairness, justice, and equity in the formation of public policy.

SOCIOECONOMIC DEVELOPMENT - The increase in the economic standard of living of a community.

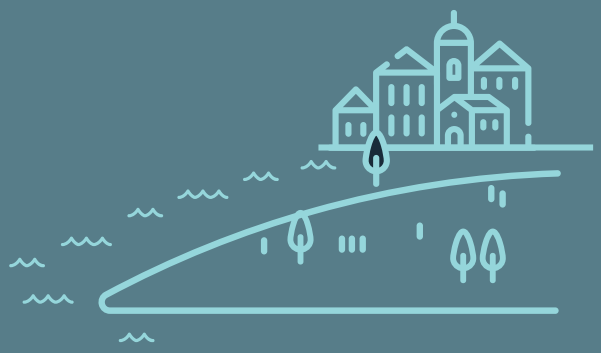
STAKEHOLDERS - Individuals or groups of people with a vested interest in a particular topic.

STEWARDSHIP - The job of supervising or taking care of something, such as an organization or property.

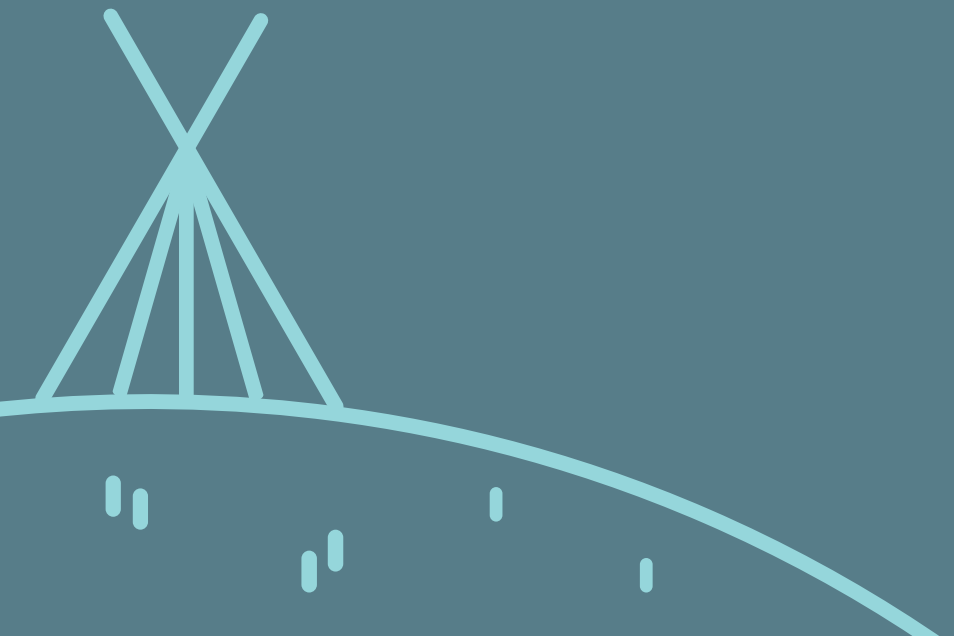
SUSTAINABILITY - An approach which focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. It is composed of the three pillars of economic, environmental, and social.

WATER SECURITY - The capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socioeconomic development, for ensuring protection against waterborne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.

WATERSHED - An area of land that drains rainfall and snowmelt into streams and rivers



ACKNOWLEDGEMENTS



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9.0 ACKNOWLEDGEMENTS

The Environmental Framework is a result of significant engagement and consultation with internal and external stakeholders and members of the community. The involvement, insight and feedback received from stakeholders and the community was instrumental to support the development of the Framework.

The following stakeholder groups are acknowledged for their efforts:

Internal Stakeholders (City of Medicine Hat)	**External Stakeholders**
City Council	*Alberta Environment and Protected Areas, Fish and Wildlife Stewardship*
Environment Land & Gas Production	*CanCarb*
Corporate Communications Engagement & Marketing	*CF Industries*
Facilities Management	*City Centre Development Agency*
Community Development	*Cypress County*
Electric Utility Distribution Systems	*Grassland Naturalists*
Electric Generation Power Plant	*Medicine Hat Chamber of Commerce*
Fire & Emergency Services	*Medicine Hat Community Housing*
Finance	*Medicine Hat College*
Environmental Utilities	*Methanex*
Fleet Services	*Metis heritage representative*
Gas Utility Distribution Systems	*Miywasin Friendship Centre*
Waste & Recycling Services	*Municipal Climate Change Action Centre*
Municipal Works	*resilient.SEA*
Parks & Recreation	*Southeast Alberta Watershed Alliance SEAWA*
Planning & Development Services	*Tourism Medicine Hat*
Transit Services	*Town of Redcliff*
Wastewater Treatment Plant	
Water Treatment Plant	
Airport	
Economic Development	
Corporate Planning & Performance	