



DRAFT
TOWN OF OKOTOKS
ENVIRONMENTAL
MASTER PLAN

Acknowledgments

An Environmental Master Plan (EMP) is created through the efforts of many key stakeholders and community members. People from across the community of Okotoks, as well as the insights of Town of Okotoks staff, were instrumental in the development of the EMP.

The following individuals and groups were particularly influential in its creation:

- Town Council (2018)
 - Steering Committee members (2017/2018)
 - All EMP workshop participants (2017/2018)
 - All community members who contributed their ideas in person or online (2017/2018)
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CONTENTS

A Message from Town Council	05
Executive Summary	06
What is Environmental Sustainability	08
Why Do We Need an Environmental Master Plan	16
Engaging the Community	18
What We Heard	20
An Environmental Plan for Okotoks	22
Ecosystems & Agriculture	28
Land Use & Urban Design	34
Energy, Emissions & Air Quality	40
Waste Systems	48
Water Systems	54
Climate Adaptation & Resilience	60
Fostering a Green Economy	64
Implementing the Environmental Master Plan	66
Appendices	70



*THIS PLAN WILL HAVE A LASTING
IMPACT ON THE COMMUNITY TODAY
AND THE FUTURE GENERATIONS
OF TOMORROW*

A MESSAGE FROM TOWN COUNCIL



We are pleased to present the **Okotoks Environmental Master Plan (EMP)**, an important document that reflects our commitment to environmental excellence and will help guide the Town of Okotoks towards being the leader in environmental protection and preservation in Alberta.

The EMP is a living document that connects Okotoks' Community Sustainability Plan with the Town's long-term vision to develop our community and foster a culture of resiliency in the most holistic and sustainable manner possible.

This 20-year plan, developed in consultation with the community, reflects the connected nature of all aspects of a sustainable municipality, and identifies local strategies to help protect and enhance our environment. This plan reflects what we heard from the community – that Okotoks is a place that focuses on caring for our environment and creates strong community connections to nature.

The EMP recognizes that everything is connected – from the way we develop new land and create connected neighbourhoods to our river valley and the air we breathe. It addresses sustainable practices for energy, water, waste and construction, and creating accessible green spaces. It looks within and outside our borders – from the way we move in and around Okotoks, to attracting green businesses – anything that affects the natural world.

Town administration and all councils going forward will endeavour to lead by example and demonstrate innovation through their own operations, planning and policy making. This also means continuing to develop partnerships with the private sector and research institutions to ensure we remain on the leading edge of environmental initiatives and pioneering research.

Each of the actions in this plan will ultimately have a lasting impact on the community of today, and the community we are building for our children and grandchildren. It fosters respect for each other and the natural environment that will make Okotoks a wonderful home for many generations to come. We hope you'll join us in making this plan a reality – we encourage every citizen to embody sustainable practices into our local actions, big and small, and appreciate how even the smallest activity can have a global impact on our neighbours, our river, our community and our planet.

Okotoks Town Council

EXECUTIVE SUMMARY

The Town of **Okotoks Environmental Master Plan (EMP)** is a comprehensive plan designed to help Okotoks achieve its vision as a thriving, sustainable community. The EMP takes direction from the Town's historic Legacy Plan's criteria for sustainable development and growth, and outlines a set of strategies targeting climate change mitigation and adaptation, ecological protection and enhancement, urban landscape design, water conservation, waste reduction, and green economic growth. Together, these strategies will set Okotoks on a clear path towards becoming a leader in environmental excellence – not only in Alberta, but also as a leading example for municipalities across Canada.

The strategies contained in this plan were selected through an iterative process of identifying best practice strategies from municipalities across the globe, refining the selected strategies through community and expert consultation, and further narrowing down the strategies to a set that addresses the Town's unique context. Over the last year, members of the Okotoks community provided input to help create the Environmental Master Plan, and ensure that it reflects the context of the Town and the concerns of its residents. Each strategy has been tailored to the Town of Okotoks, and is designed to meet the needs of the Town while building on existing actions and opportunities.

The Plan is organized into seven major action areas:

1

Ecosystems & Agriculture: Enhancing and protecting local ecosystems and our connection to nature

5

Water Systems: Protect and enhance water quality and improve the efficiency of the water system

2

Land Use & Urban Design: Increase the diversity and liveability of our built environment while promoting ecosystem integrity and connectivity

6

Climate Adaptation & Resilience: Improve community resilience and the safety of vulnerable populations to extreme climate

3

Energy, Emissions & Air Quality: Creating an energy efficient and low-carbon environment to improve the health of our environment and wellbeing of our residents

7

Fostering a Green Economy: Support businesses in greening their practices and attract new environmental business

4

Waste Systems: Reduce, recover, recycle, and repurpose waste

With this plan, Council has approved the direction Okotoks will take to create a thriving, sustainable community and achieve the ambitious goal of establishing Okotoks as the leader in environmental excellence in the Province of Alberta. The strategies outlined in the Environmental Master Plan will direct the actions Town staff will take over the next 20 years to reach Okotoks' goals. Specific actions to achieve these goals will be reviewed on an annual basis by Town staff to ensure that actions remain in line with changing budgets, new technologies, shifting provincial or federal directives, and other external factors.

The success of the EMP will only be achieved with the combined effort of Town staff, community groups, businesses, developers, and individuals. It is imperative that Okotokians now, and in the future, continue to provide their input on environmental sustainability goals, and actively engage in sustainability actions in our community. Finally, identifying key performance metrics for each major action area will help the Town track progress towards each sustainability goal, which will both ensure the Town is on the right path toward its vision of a sustainable, resilient community, as well as showcase Okotoks' continued leadership in environmental performance.



The Sheep River is the heart of Okotoks.

What is Environmental Sustainability

At its core, environmental sustainability is about managing our use of the Earth's resources to meet our needs today, while preserving the ability and right for future generations to do the same. It reflects the need to protect the natural balance of our environment and reduce our impact on the complex cycles which allow life on Earth to flourish.

While responsible resource management is a foundation of environmental sustainability, the concept has evolved to encompass a growing number of emerging ideas that go beyond the conservation and protection of our resources. We must recognize that humans are part of the global ecological system, and consider the impact our actions and consumption of resources has on other species. As our global population grows and our societies continue to urbanize, our impacts on land, water and the atmosphere continue to escalate, resulting in global biodiversity loss.

Furthermore, greenhouse gas emissions (GHGs) produced by human activities are contributing to a warming and changing climate, which is, in turn, creating a number of unintended consequences on nature and human social systems. As a result, environmental sustainability also relates to the need to build our communities' resilience to withstand and adapt to the impacts of climatic and other forms of environmental change.

Many actions taken to improve environmental sustainability offer other economic and social benefits. Tackling these issues and striving for environmental sustainability can be an opportunity in disguise. For example, increasing a building's energy efficiency can also improve the comfort and safety of building occupants during heat waves and power outages, reduce utility costs, and in turn reduce GHGs. Improving our access to natural green spaces has been shown to have positive effects on both mental and physical health. Designing neighbourhoods that allow us to live and work in the same place helps to reduce both GHGs and commute times, affording us more time to spend with our families and to enjoy leisure activities. These are just a few of the many benefits that come with working towards environmental sustainability.



To be truly sustainable, a community must seek to improve all aspects of society including, economic, social, and environmental wellbeing.

While this plan focuses on how Okotoks can become a more environmentally sustainable community, the Town is also taking steps to holistically address other aspects of sustainability. For more on what Okotoks is doing to advance these other aspects, see the Okotoks Community Sustainability Plan.

Sustainability is about understanding the interconnected relationships among human and natural systems. It is about making decisions that provide benefit while avoiding negative impacts today and in the future.



Okotoks has committed to creating an environmentally sustainable future.

A Leader in Environmental Action

Both large and small urban centres are well-positioned to take a proactive role in the responsible stewardship of the environment, and Okotoks has risen to the challenge. The town has a long history of being a liveable, sustainable community that demonstrates environmental leadership.

With its adoption of the Legacy Plan in 1998, Okotoks became one of the first municipalities in the world to limit its growth based on the carrying capacity of the surrounding environment. Due to population growth and external development pressures, in 2012, the Town of Okotoks shifted from the limited growth model to a model of continued managed growth. Okotoks can now responsibly manage an increasing population in a manner that ensures continued environmental as well as economic, social, and fiscal responsibility. As we move into the future, Okotoks will continue to find ways to protect and enhance the environment in the face of ever-changing political, environmental, and demographic conditions.

One of the key frameworks guiding Okotoks towards a more sustainable and resilient future is the Okotoks Community Sustainability Plan. The Plan establishes Okotoks' Community Vision and six Guiding Principles that reinforce the community's commitment to sustainability, and help to direct the Town's development of strategies, goals, and policies:

The Town of Okotoks is resilient, where people, business, ideas and sense of community thrive. Grounded by the Sheep River valley and supported by thoughtful planning and design, a strong local economy and a vibrant civic culture, Okotoks offers exceptional quality of life at every stage of life. Respect for each other and the natural environment makes Okotoks home.

1 Livable Okotoks

4 Active Lifestyle

2 Vibrant Civic Culture & Heritage

5 Environmental Stewardship

3 Inclusive Neighbourhoods

6 Local Economy

All six of these guiding principles touch on environmental sustainability, either directly or indirectly.

1

In a Livable Okotoks, a thoughtful approach to land use and infrastructure provide the foundation for sustainable growth. Transportation options include environmentally-responsible and cost-effective ways to move people or goods around. Regional and local transit provide efficient transportation alternatives, reducing vehicle use.

2

In an Okotoks with a Vibrant Civic Culture and Heritage, residents enjoy a diversity of both cultural and natural resources, which motivates them to contribute to community building and economic development. A rich quality of life goes hand in hand with high levels of engagement in civic life and open dialogue.

3

In an Okotoks with Inclusive Neighbourhoods, careful neighbourhood design allows residents to live, work, and play in place, creating a strong sense of community. Housing is flexible and affordable, and meets the needs of all ages, income levels and family types. New communities are well-connected, allowing people to walk, cycle or take transit from place to place.

4

An Active Lifestyle in Okotoks is supported for people at every stage of life. Active transportation between neighbourhoods is supported by an extensive network of pedestrian and cyclist pathways. Residents participate in physical activities in a number of high quality facilities, parks and open spaces, which facilitate and strengthen a sense of community and belonging among residents.

5

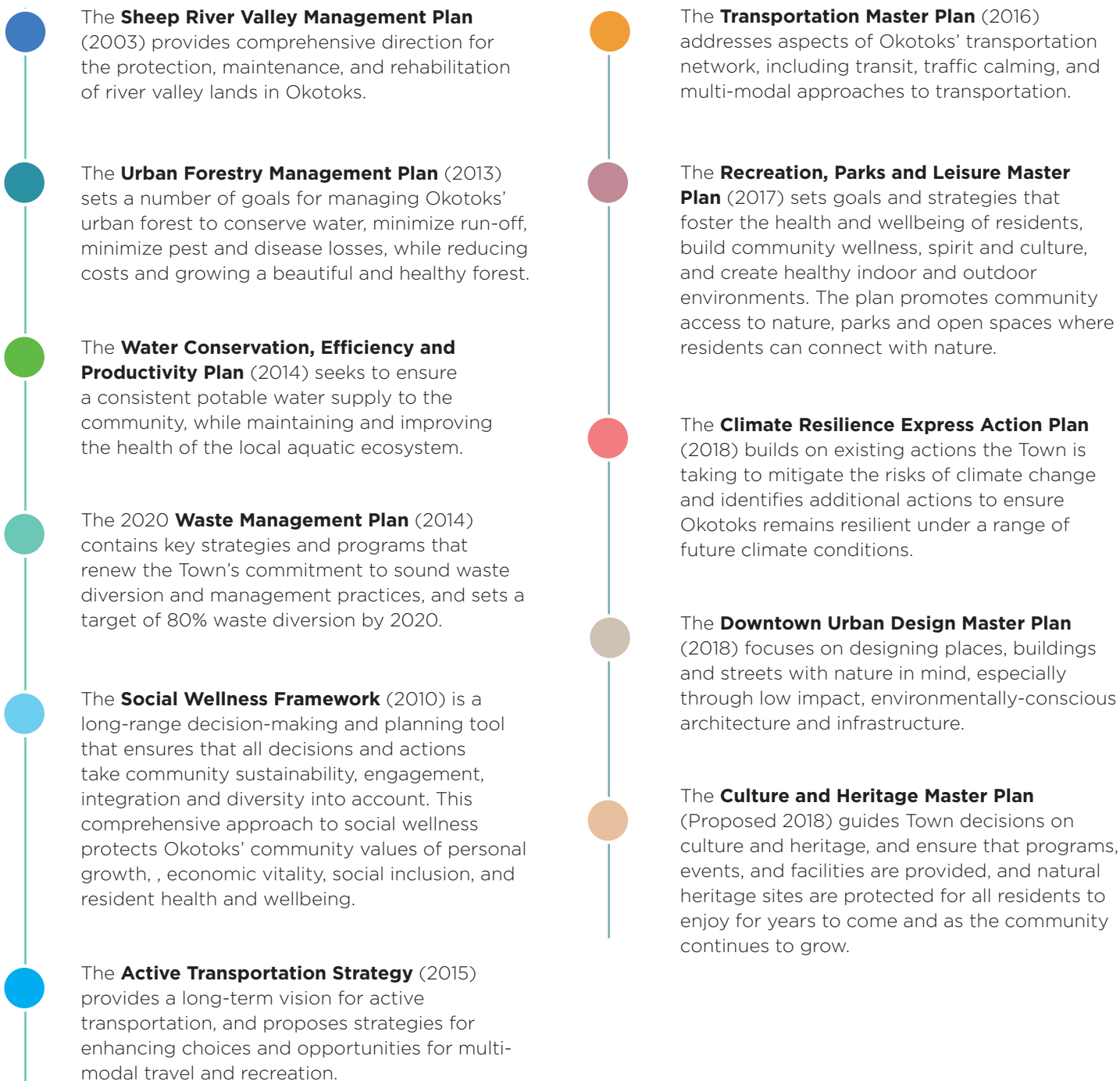
In an Okotoks that embodies Environmental Stewardship, the places and spaces that make up Okotoks are designed with the environment in mind. Care for the environment is integrated into all planning and development decisions, and a strong respect for nature supports leadership in environmental stewardship.

6

Finally, in an Okotoks that fosters a Local Economy, innovation is encouraged, attracting green businesses and industries. A thriving downtown supports economic development. Okotoks is a place where people can live, work, and play.

Achieving this vision of a sustainable, resilient Okotoks can't happen overnight. The key steps identified in the Community Sustainability Plan set Okotoks on the road towards this future, and have helped to guide the Town's programs and policies since the completion of the plan in 2016. They will continue to form the foundation for our activities and actions until 2019, when the plan will be revisited and reviewed.

In addition to the overarching framework the Community Sustainability Plan provides, other Town plans and strategies have more specific goals and actions to help Okotoks achieve its environmental sustainability goals, including:

- 
- The **Sheep River Valley Management Plan** (2003) provides comprehensive direction for the protection, maintenance, and rehabilitation of river valley lands in Okotoks.
- The **Urban Forestry Management Plan** (2013) sets a number of goals for managing Okotoks' urban forest to conserve water, minimize run-off, minimize pest and disease losses, while reducing costs and growing a beautiful and healthy forest.
- The **Water Conservation, Efficiency and Productivity Plan** (2014) seeks to ensure a consistent potable water supply to the community, while maintaining and improving the health of the local aquatic ecosystem.
- The 2020 **Waste Management Plan** (2014) contains key strategies and programs that renew the Town's commitment to sound waste diversion and management practices, and sets a target of 80% waste diversion by 2020.
- The **Social Wellness Framework** (2010) is a long-range decision-making and planning tool that ensures that all decisions and actions take community sustainability, engagement, integration and diversity into account. This comprehensive approach to social wellness protects Okotoks' community values of personal growth, , economic vitality, social inclusion, and resident health and wellbeing.
- The **Active Transportation Strategy** (2015) provides a long-term vision for active transportation, and proposes strategies for enhancing choices and opportunities for multi-modal travel and recreation.
- The **Transportation Master Plan** (2016) addresses aspects of Okotoks' transportation network, including transit, traffic calming, and multi-modal approaches to transportation.
- The **Recreation, Parks and Leisure Master Plan** (2017) sets goals and strategies that foster the health and wellbeing of residents, build community wellness, spirit and culture, and create healthy indoor and outdoor environments. The plan promotes community access to nature, parks and open spaces where residents can connect with nature.
- The **Climate Resilience Express Action Plan** (2018) builds on existing actions the Town is taking to mitigate the risks of climate change and identifies additional actions to ensure Okotoks remains resilient under a range of future climate conditions.
- The **Downtown Urban Design Master Plan** (2018) focuses on designing places, buildings and streets with nature in mind, especially through low impact, environmentally-conscious architecture and infrastructure.
- The **Culture and Heritage Master Plan** (Proposed 2018) guides Town decisions on culture and heritage, and ensure that programs, events, and facilities are provided, and natural heritage sites are protected for all residents to enjoy for years to come and as the community continues to grow.

Okotoks' commitment to environmental excellence has not gone unnoticed. The Town has received a number of awards for its work in environmental leadership, including the following:

- Federation of Canadian Municipalities Sustainable Communities Award (Water Category 2018 & 2015; Energy Category 2006)
 - 2011 Energy Globe World Award: Drake Landing Solar Community
 - 2011 Consulting Engineers of Alberta Showcase Award
 - 2011 CAMA Willis Merit Award for Innovation: Town of Okotoks Water Management Plan
 - 2010 Minister's Award for Municipal Excellence: Leader in Innovation
-



Okotoks has committed to creating an environmentally sustainable future.

The recent Town of Okotoks 2018–2021 Strategic Plan also outlines important strategic directions for the Town, including promoting environmental excellence, managing community growth, and strengthening the health and safety of the community. The Strategic Plan establishes the Town of Okotoks as the leader in environmental protection and preservation in Alberta. It commits the Town of Okotoks to creating communities that allow people to live, work, and play, strengthening the social fabric of Okotoks and enhancing the safety of its residents.

Critical Steps for 2016–2019:



Why Do We Need an Environmental Master Plan?

These and other policy documents, including area structure plans for different neighbourhoods and various overarching regional strategies, all support the community in achieving its sustainability objectives. Public participation in the creation of each plan ensures that the community's priorities and vision for Okotoks is captured and reflected. Together, they set the stage for environmental sustainability in Okotoks.

However, none of these plans provide a holistic suite of strategies that will enable Okotoks to achieve the environmentally sustainable future it desires. An overarching plan is needed to weave together these plans and strategies and provide a framework for future environmental actions. The Environmental Master Plan (EMP) addresses this gap by bringing together all of these plans under a single framework, setting an overarching vision, and positioning Okotoks as a leader.

The Environmental Master Plan provides the roadmap for Okotoks to achieve sustainable goals across a range of interconnected issues. It establishes the community's goals and targets for environmental sustainability, and includes a range of strategies that will guide the actions the Town will take to achieve these goals. The Plan sets this direction in six key areas:

1

**Ecosystems &
Agriculture**

2

**Land Use & Urban
Design**

3

**Energy, Emissions &
Air Quality**

4

**Waste
Systems**

5

**Water
Systems**

6

**Climate Adaptation &
Resilience**



The Environmental Master Plan takes the broad vision of sustainability from the Community Sustainability Plan and translates it into achievable strategies for environmental stewardship. It will also align with and influence the Municipal Development Plan (MDP), the town's statutory plan, which outlines the key criteria that the Town must meet in planning for strategic long-term growth and development. The MDP includes an overarching commitment to a sustainable future for the Okotoks community. It outlines key sustainability actions for implementation while also providing strategic direction that guides the actions in the Environmental Master Plan. This plan is one of Okotoks' core Master Plans that will both influence and be informed by the MDP. The Environmental Master Plan will serve as the overarching strategic plan and framework for any additional environmentally focused plans and strategies

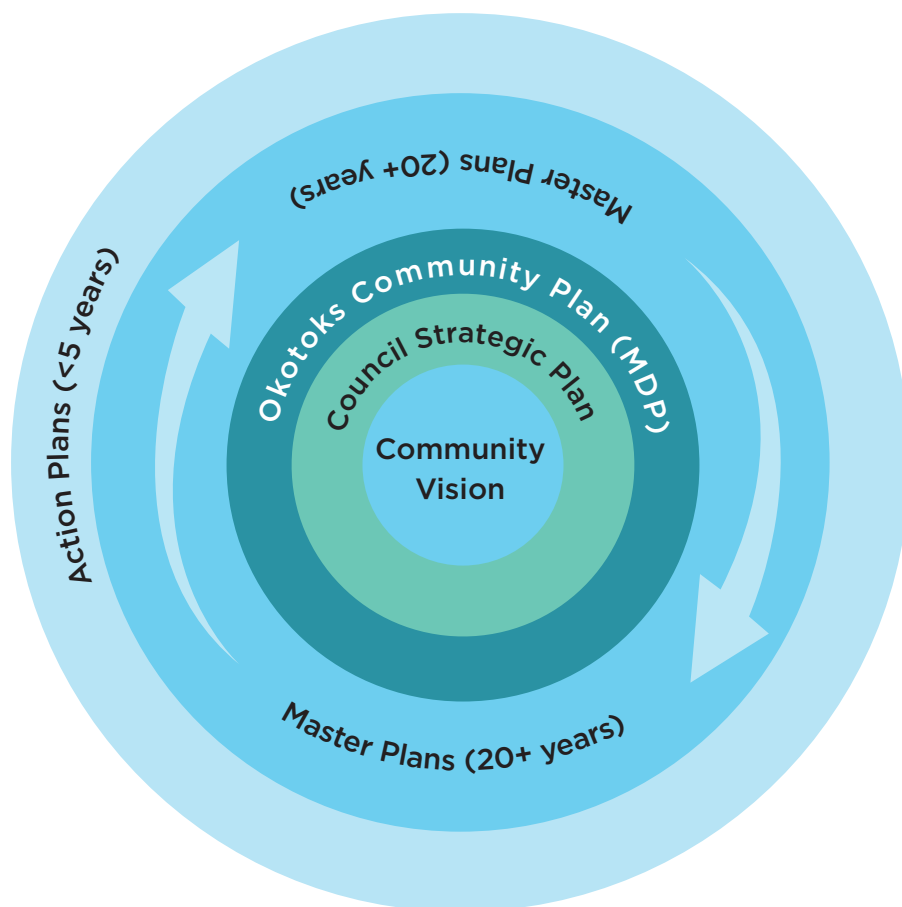


Figure 1: Okotoks' Plan progression.

Engaging the Community

The Environmental Master Plan is the product of a combined effort by Town staff, advisory committees, local stakeholders, and community members. Creating a plan that reflects the values of Okotoks requires broad community input throughout the development process. Over the course of five months, these diverse groups participated in a variety of ways to ensure the Plan would reflect the broad range of opinions and perspectives in the community. As the greatest results are achieved through people working together on a shared path, the success of this Plan will depend on continued collaboration between the Town and the many community groups, businesses, developers, and residents who live and work in Okotoks.

Town of Okotoks Steering Committee

A Steering Committee made up of key members of the Town's business centres helped to identify and refine the Plan's overarching vision, guiding principles, goals, targets and detailed action planning (Appendix A). The Steering Committee represents a wide range of perspectives and areas of expertise, and was convened during three separate workshops between November 2017 and March 2018. The Steering Committee will continue to review and revise the implementation of the actions within the Environmental Master Plan on an annual basis.

Town of Okotoks Staff

Town staff have a nuanced understanding of the actions that are necessary to reach Okotoks' goals, and will be responsible for their implementation. Staff participated in the early stages of the Plan to help guide its development, and again towards the end of the process to identify the resources and internal Town capacity necessary to implement it.

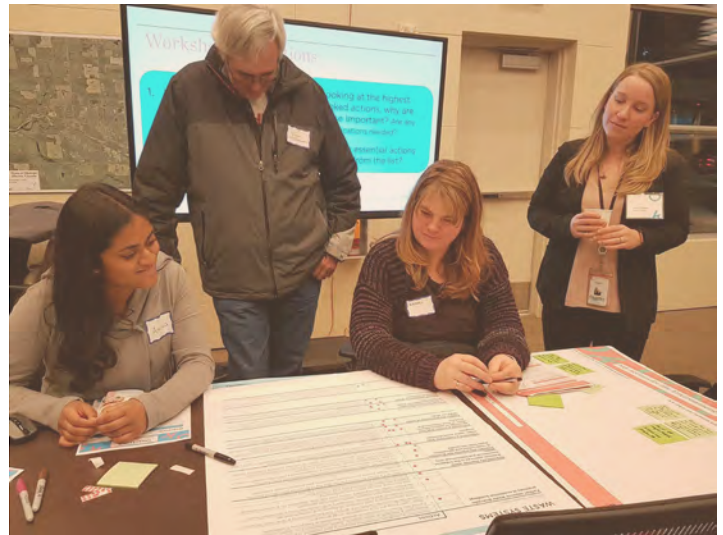
Local Stakeholders

Environmental organizations, community and neighbourhood associations, business owners, developers, educational institutions, service clubs, and other levels of government were all important stakeholders in the Plan's development. The Town heard their unique perspectives on Okotoks and its environment through a series of workshops designed to identify the key actions that should be incorporated into the Plan.

Community Members/Broader Public

Members of the public were invited to provide input from the visioning stage to the development of the draft Plan. The Town hosted an interactive drop-in community workshop and a pop-up event in November 2017 to solicit ideas for key directions. The Town also posted an interactive online survey for four weeks between February and March 2018, and created a text survey to gather community feedback on proposed directions and actions for the Plan. Pop-up boards were set up throughout town at key locations, including the public library, various high schools, the Health & Wellness Centre, the Recreation Centre, Pason Centennial Arenas, and a few local churches.

The Town of Okotoks is committed to engaging the community in environmental sustainability beyond the scope of the EMP. **Okotoks' Environmental Education Centre** opened in the fall of 2017, and provides educational information and visual presentations of Okotoks' natural ecosystems, with a current feature on Okotoks' watershed.



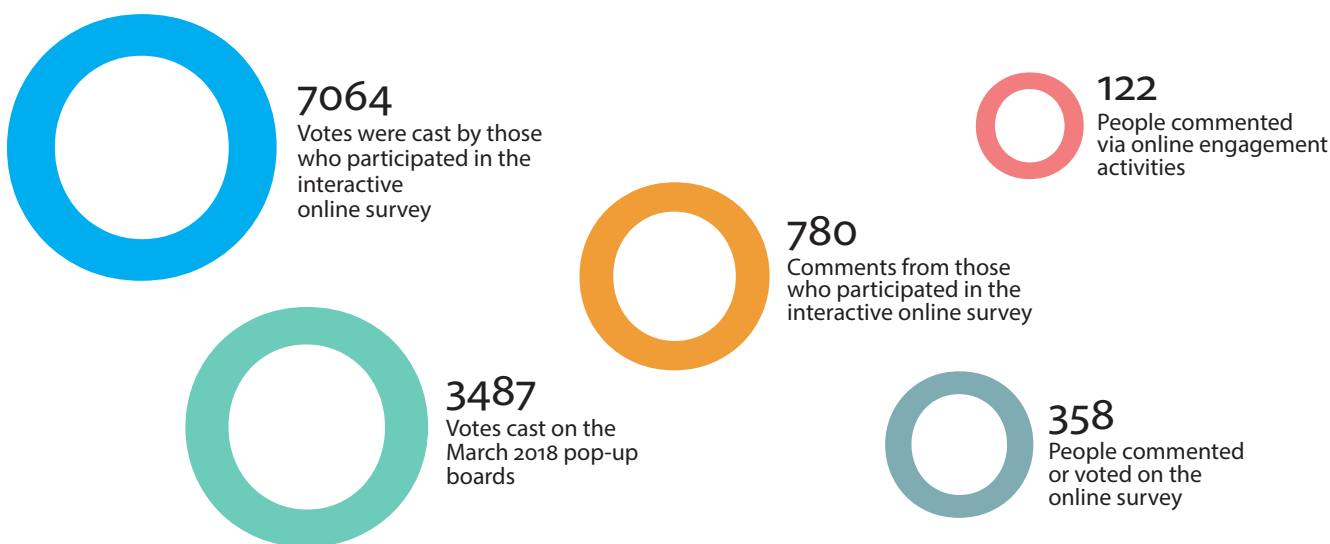
↑ Community members & stakeholders were central to the development of the Environmental Master Plan.

What We Heard

Okotokians young and old participated in the Plan's development to give their input on the direction of the Plan, and to tell the Town why we should care for and protect Okotoks' natural environment.

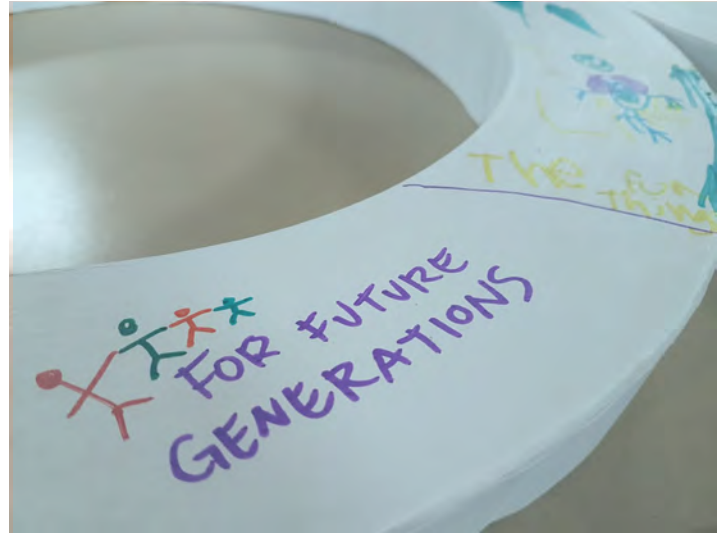
Members of the community emphasized the need to protect the natural environment so that it can be enjoyed both today and in the future. Residents of Okotoks love the town's natural beauty and want to see this natural heritage protected for generations to come. Community members also expressed the need to protect the environment for the sake of the other species that live here, recognizing the need to share this landscape we call home. Okotokians also appreciate the value of protecting the place where we live in order to protect our own future – from the air that we breathe to the food that we eat, all of our resources come from and go back to the land.

This high value that Okotokians place on their environment is what drives the Town of Okotoks' continued leadership in environmental action.



In addition to these broad values, other key themes we heard from our resident included the need to:

- Ensure decisions to protect the environment are fiscally responsible
- Find ways to encourage environmentally sustainable choices
- Encourage a variety of housing options that cater to a wide array of needs and incomes
- Provide transportation options that are affordable and cost-effective
- Continue to encourage efficient use of water
- Harness the abundance of solar energy available in Okotoks



- ↑ Okotoks residents expressed many reasons to strive for environmental sustainability, including the need to protect our own health, as well as the health of future generations.

An Environmental Master Plan for Okotoks

What will be the result of the successful implementation of the Environmental Master Plan in Okotoks? What are the elements that make Okotoks an environmental leader? What environmental practices are important to and supported by the community?

An environmental vision is important to help answer these questions and link the Plan to the core values of the town and its overarching Community Vision. The vision that guided the development of the Environmental Master Plan, its goals and its strategies was developed based on public input and refined by the Steering Committee. The vision was supported in principle by Okotoks Town Council in March 2018.

The Town of Okotoks is the leader in environmental excellence and resilience in Alberta and beyond. We use innovative solutions to integrate our urban systems and enhance the natural environment, all while achieving positive social and economic benefits. We create strong partnerships with our businesses, community members, and stakeholders to spearhead change across the region, eliciting the transformation to a more sustainable and resilient future.

The Town also developed a set of guiding principles to provide further direction on the kinds of strategies and actions that should be considered for inclusion into the Plan. The Environmental Master Plan and its strategies must:

1. Demonstrate real innovation and leadership in environmental excellence and share lessons learned across the region and beyond
2. Harness the future growth of our community as an opportunity to further our environmental goals
3. Engage the expertise of key partners and stakeholders to foster a broader sustainability transformation
4. Improve our resilience to changing social, environmental, and economic conditions
5. Realize improved health, happiness, and wellbeing for our community
6. Integrate environmental, social and economic considerations into all future Town decision making
7. Be scalable and adaptable to changing conditions over time
8. Ensure that progress towards specific goals and targets can be measured over time



THE TOWN OF OKOTOKS IS
A RECOGNIZED LEADER IN
SUSTAINABILITY.



Vision

The overarching outcome of the Plan that relates back to the core values of the Town and Community Vision



Principles

Key issues that the Plan's strategies and actions must address



Goals & Targets

Desired outcomes of the Plan in each of the six main action areas



Strategies & Actions

Strategic priorities and examples of the kinds of actions the Town can take to meet its goals

Goals

To create more defined measures of success, the environmental vision was refined into specific goals within each key action area. These overarching action areas and their associated goals emerged out of public and stakeholder consultation, and were finalized through an iterative consultation process with the Steering Committee. Each action area has a dedicated section in the Plan that outlines the strategies that will be taken to achieve these goals.

Targets

To help gauge progress towards achieving these environmental goals, the Town of Okotoks has set a number of aspirational targets. These have been established in comparison to other leading municipalities across North America, and will be useful in establishing an overarching intention with respect to the level of the town's ambition. Each key action area in the Environmental Master Plan outlines one or more key aspirational targets that will be refined as data is collected over time.

Strategies

To ensure the success of the Environmental Master Plan, the strategies outlined in this plan range from efforts to build public education and awareness, to the development of regulations, policies, plan, guidelines and incentive programs. They were designed using a process of research and engagement that involved the following components:

- Best practices in environmental action taken by other leading communities provided inspiration and ideas for ways of addressing the key challenges that Okotoks faces.
- Existing federal and provincial regulations and directives provided a framework that shaped what actions Okotoks is able or even required to do.
- Existing Town of Okotoks plans and strategies provided a foundation for future work by learning from past successes and identifying opportunities to improve the efficient use of resources.
- Public and stakeholder input into the strategies provided insights into the actions that Okotokians are keen to implement and those which have less public support. Public support was carefully balanced alongside the importance of each action for meeting the Town's environmental goals.


As the Town of Okotoks is a recognized leader in sustainability, it was also important to identify strategies which would build upon the successful work already being done by the Town. By building on these successes, the Town can continue to use its resources efficiently and effectively to continue to build momentum.

Actions

A set of detailed actions to support each strategy is listed in Appendix A of this report. These actions represent specific program, plans, or policies that the Town will explore as a way of implementing a given strategy and meeting an overarching goal. All actions in the EMP will be reviewed, revised and approved annually through the Town of Okotoks' business planning process. Key factors to consider in the review process include external political and market factors, emerging forms of technology and science, and changes in community social values over time.

In the EMP, references to the "Town" or "Town of Okotoks" refers to the municipal government organization, whereas the use of "town" or "Okotoks" denotes all members of the public (e.g. residents, businesses, non-profit organizations, place, etc.).



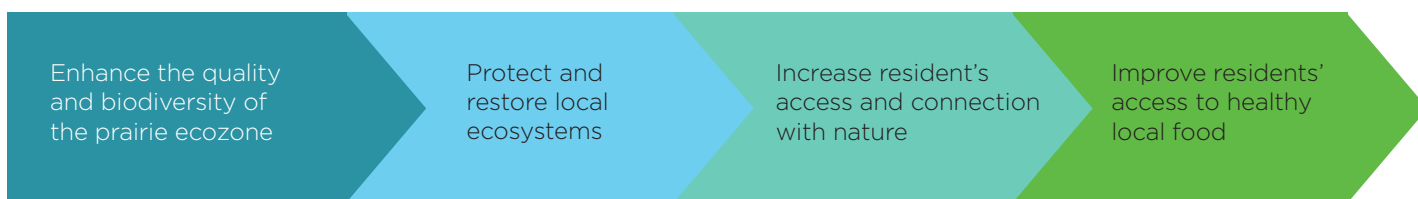


Ecosystems & Agriculture

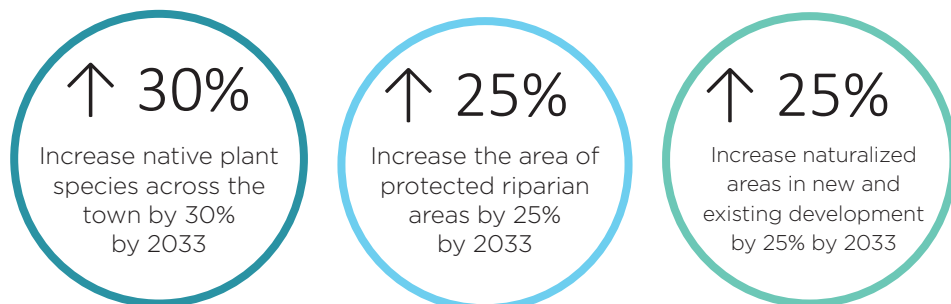
ECOSYSTEMS & AGRICULTURE

1

Goal 1: Prioritize and protect the connectivity and integrity of local ecosystems



Aspirational Targets



Okotoks sits within a rich and fertile area comprised of flat rolling plains and deep river valleys, dotted with a number of permanent and temporary wetlands. While a large portion of these lands have been converted into agricultural land, many native plant and animal species continue to comprise the ecosystem in and around Okotoks. The Sheep River and its watershed, as well as the many green spaces in and around the town, represent key ecological features that make Okotoks a unique and beautiful place to live.

Maintaining the balance and health of this ecosystem is crucial in ensuring that Okotoks remains a thriving and attractive place for residents and visitors alike. Beyond providing a scenic backdrop, these natural features provide a number of “ecosystem services,” that allow life to exist. Trees and other forms of vegetation help to remove pollutants from the air, improve the permeability of the ground, lower the risk of flooding during periods of intense rain or snowmelt, and enhance water quality. Healthy ecosystems also support important pollinator species, which allow local farms to flourish. These services help keep our water, land and air healthy and productive, while supporting the health and resiliency of our community. Because natural spaces also provide enhanced aesthetics in the urban environment, they can also increase property value.

Open spaces are areas that are unoccupied by buildings or other permanent structures and that are available for public use, such as sports fields, playgrounds, public plazas, and parks. All types of open space in Okotoks are recreation and leisure areas for residents to enjoy, help enhance the beauty of our community, and improve Okotokians' mental and physical wellbeing.

Green space is one type of open space, and refers to an area that is vegetated. Green spaces can simply be grassy areas, such as sports fields or park lawns. However, they can also represent either natural areas or naturalized areas.

Natural areas are places where Okotoks' naturally occurring ecosystems exist and provide a home to native plant and animal species. Naturalized areas are green spaces composed of vegetation that come from both natural regeneration and intentional planting, usually with native plant material. Both natural and naturalized spaces are largely left alone and are not intensely manicured.



Okotoks' local ecosystems are comprised of many different types of native plants and animal species, many of which are in need of protection. (Photo credit: Keigan Fisher)

The Town has already identified a number of measures to improve the quality of natural ecosystems, including two major plans.

- The Urban Forest Management Plan sets out 13 goals for the protection, enhancement and maintenance of Okotoks' urban forest.
- The Sheep River Valley Management Plan also includes many actions that seek to protect, maintain and rehabilitate the river valley lands in Okotoks including allowing natural processes to take place with a minimum amount of interference.

Key Strategies

1. Develop and implement a comprehensive Ecosystem and Biodiversity Strategy

To ensure that Okotoks' ecosystem continues to thrive for years to come, the Town will work to protect, preserve and strengthen both terrestrial and aquatic habitats in existing natural areas and Town naturalized areas, increase the system connectivity between these areas, and reduce the threat of invasive species. An Ecosystem and Biodiversity Strategy will help to support a robust and diverse ecosystem by creating an inventory of existing ecological assets within the town, protecting and enhancing these assets through policy, and offering comprehensive community education and conservation engagement.

2. Forge partnerships for ecological protection

In the pursuit of protecting ecosystems and natural areas we must acknowledge that natural systems do not conform to human-imposed jurisdictional boundaries. The Town needs to collaborate with multijurisdictional stakeholders to help ensure sound decision making, improve the efficiency and coordination of conservation efforts, and maximize our collective impact. The Town will investigate opportunities to work with other government agencies, land owners, researchers, and other stakeholders to collaborate on managing various parts of Okotoks' ecosystems, including biodiversity, wetlands and watersheds, and agriculture.

3. Develop and implement a town-wide green network strategy

Increasing the total area of naturalized green space strengthens the local ecosystem by providing additional habitat area for wildlife throughout the urban environment. Large swaths of green spaces also provide community members better access to nature. The Town will work with developers to ensure naturalized areas in addition to manicured green space are incorporated in all new developments, while adding green infrastructure in public spaces to connect ecosystems across the community. Education on the natural look of naturalized areas will help Okotokians understand how to appreciate and maintain "wild" spaces.

5. Foster a regional system of ecological areas and parks

As a whole, green spaces are stronger and healthier when they are connected across a broad and diverse landscape. The Town will work to protect the region's unique and cultural landscapes, such as the river valley, by designating them as natural heritage properties. Collaborations with the Municipal District and the Province will also form a basis for advocating for a regional park system master plan.

6. Encourage the naturalization of private properties

Residential and commercial properties are an excellent opportunity to further increase green space in Okotoks. Planting native species and climate appropriate vegetation can reduce the need for watering and use of pesticides, which can help conserve water and reduce pesticide use. The Town will provide education and support to residents and businesses to help transform these private spaces using appropriate plant species and xeriscaping principles.

7. Increase the community's understanding of and connection with nature

In today's increasingly urbanized world, it is more important than ever to nurture our connection to nature. Aside from reaping the health benefits associated with green space, gaining a better understanding of how humans rely on and influence ecology can support a conscious stewardship of the natural environment. The Town will work to increase businesses' and community members' engagement with the natural world by fostering the development of a citizen science program and installing interpretive signage on local environmental features throughout town.

8. Reduce light pollution

Reducing light pollution has several positive impacts on humans, wildlife and plant life. Darker night skies foster better sleep patterns in both humans and wildlife, minimize disruption to nocturnal animals, and reduce confusion in migratory animals. To protect the natural rhythms and processes of Okotoks' ecosystems, the Town will implement a dark sky policy to minimize and reduce the impacts of light pollution from buildings and other sources.

9. Encourage local food production

Growing food locally, either by individuals or at the community scale, can increase Okotoks' food security, reduce the use of unnecessary pesticides and fertilizers, and reduce greenhouse gas emissions. Communal garden spaces can also help create a stronger sense of community by providing people (all demographics) with a place to gather and spend time with their neighbours. The Town will support local food cultivation by encouraging agriculture on public and private residential land, and protecting prime agricultural lands in and outside the town.

10. Provide education and support for local and regional sustainable food choices and practices

Education plays a key role in enabling community members to make more sustainable food choices. The Town will increase local awareness of more sustainable food choices and practices by creating a sustainable food policy for its own facilities and events. The Town will also partner with local and regional food and garden clubs, schools, and other community groups to educate residents on the benefits of sustainable food practices and provide the skills necessary to implement them. In addition, the Town will foster connections between community food producers and social support organizations such as the Food Bank.



An aerial photograph of a landscape featuring a river, a forested area, and a suburban neighborhood. A large, semi-transparent white circle is centered over the image, containing the text "Land Use & Urban Design". The circle is bordered by a green and yellow arc. The background shows a mix of natural and developed land, with a river flowing through a forested area on the left and a suburban neighborhood with houses and streets on the right. A road and a railway line are visible in the foreground.

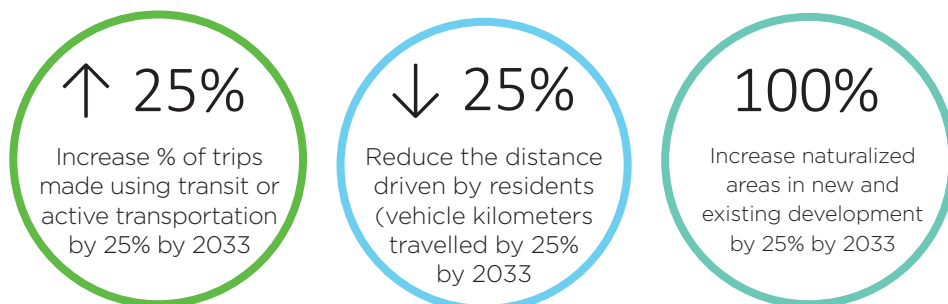
Land Use & Urban Design

LAND USE & URBAN DESIGN

2 Goal 2: Create compact, vibrant and inclusive communities that reduce our environmental impact and improve quality of life



Aspirational Targets



As populations increase, so does the need for new infrastructure and buildings to accommodate and service them. This development can put a significant strain on the natural environment and if designed poorly, can adversely affect human health and wellbeing.

Fortunately, new development also presents an opportunity to design and create inclusive, sustainable communities. Providing a mix of housing, retail, and other uses can strengthen social relationships and reduce the amount of time spent travelling between home, work or school. Communities that allow residents to live, work, shop and play allow us to more easily meet our daily needs closer to home, leaving more time to do the things we enjoy. Having a variety of amenities nearby also encourages people to walk, cycle or use public transportation more often. This increase in physical exercise and reduction in vehicle emissions helps to improve the health of all community members, as well as the health of the natural environment. They can also provide Okotoks with a more robust and varied market that can result in an increased demand for local businesses. All of these benefits can be achieved while strengthening the integrity of the local ecosystem and providing habitat for native plant and animal species.

Okotoks is already encouraging a greater diversity of land use and building form, supporting a vision of a sustainable Okotoks:

- The Municipal Development Plan outlines policies to encourage innovative developments that consider topography, tree cover, and sustainable design principles.
- The newly updated Downtown Urban Design Master Plan outlines eight 'big moves' or improvement projects that include developing sustainable mix-used buildings, mid-rise neighbourhoods, and incorporating plazas and open spaces into Downtown's structural landscape.
- The Active Transportation Strategy, prioritizes enhanced connectivity between existing and future pedestrian and cyclist pathways in support of an active transportation network.

Key Strategies

1. Implement holistic environmental requirements for new development

Requiring new development to be planned in a holistic and environmentally sustainable way can help ensure that future neighbourhoods protect local ecosystems, improve energy and water efficiency, and support community health and wellness. The Town is exploring a long-term strategy to establish guidelines that will assist new developments achieve best-in-class design principles for green neighbourhoods. The Town will build on the success of Drake Solar Landing by supporting the development of a new, 'net-zero' neighbourhood in Okotoks.

2. Ensure all new neighbourhoods are designed as complete and transit-oriented communities

Compact and transit-oriented neighbourhoods both reduce our impact on the environment and improve community health and wellness. To ensure these principles are incorporated into the design of new neighbourhoods, the Town will explore and set an appropriate density target for new development that encourages a mix of land uses and housing options. The Town will also identify the best ways to ensure new developments implement principles of active transportation to help encourage active transportation and increase common open space. The Town will map out all active transportation routes and identify any gaps or opportunities to increase active transportation in Okotoks. Over time, this information will be used to create a comprehensive strategic transportation plan.



A net-zero community is one that has achieved such a high level of energy efficiency that its remaining energy needs can be provided using on-site renewable energy sources. Net-zero can also refer to net zero water (where all water is treated and used on-site) or waste (where no landfill waste is generated).

Standards such as the Living Community Challenge, STAR Communities and the Leadership in Energy and Environmental Design (LEED) standard for Neighbourhood Development are broadly recognized sustainable neighbourhood certification programs, which can be modified to reflect the local needs, context and conditions of Okotoks.

3. Enhance local ecosystem integrity and biodiversity through the addition of green infrastructure in the urban environment

Green infrastructure is a way of mimicking and integrating the functions and processes of natural ecosystems into the urban built environment. Green infrastructure provides many benefits, from improving storm water management and reducing the risk of flooding, to providing space for wildlife and native plant species to thrive. The Town of Okotoks will support the integration of green infrastructure throughout the community by setting minimum requirements for highly functioning, naturalized spaces in new developments. Enhancing existing green infrastructure will also contribute to the integrity of local ecosystems. A new comprehensive ecosystem and biodiversity strategy will further help to prioritize and protect the connectivity of existing local and regional ecosystems.

4. Increase the number of diverse building forms and functions in new and existing neighbourhoods

To protect our valuable urban forest, the Town will continue to use best practices in tree selection, planting and protection. A downtown Green Main Street program that encourages green infrastructure and showcases the town's natural beauty will be explored as a means to demonstrate innovative low impact development best practices while attracting tourists and increasing business to local shops.

5. Increase green building requirements for new construction

In addition to creating 'complete communities' that improve sustainability at the neighbourhood scale, it is also important to consider the environmental performance of the buildings themselves. The Town of Okotoks will create a set of green building requirements for different building types that necessitate enhanced building performance in waste management, energy efficiency, renewable energy generation, ecological protection, and water conservation. Incentive programs that encourage higher levels of building performance can help create healthy competition between developers, as can recognition programs celebrating new buildings that embody excellent green building practices.



What We Heard: Tiny Homes

"A tiny home community in Okotoks would be amazing! The idea of not having a mortgage, lower property taxes, and living practically off-grid is appealing. These communities should become a showcase for thinking outside-the-box!"

- Okotoks resident, via online survey

What We Heard: Neighbourhood Types


Of the residents who voted on the urban design pop-up boards displayed around town,

- 89% supported more solar communities in Okotoks,
- 81% supported the construction of lower density sustainable neighbourhoods, where smaller homes are grouped around communal spaces.
- 72% supported more mixed-use, medium density communities.



The network of pathways throughout town encourages residents to choose active forms of transportation such as running, walking and cycling.





Energy, Emissions & Air Quality

ENERGY, EMISSIONS & AIR QUALITY

3

Goal 3: Minimize the generation of greenhouse gas emissions and air pollutants from all sources



Aspirational Targets

2050

Achieve carbon
neutrality by
2050

100%

Achieve 100%
renewable energy
generation
by 2050

Many of the sources of energy we depend on in Alberta come from fossil fuels. When burned to produce energy, these non-renewable fuel sources are highly carbon-intensive and are a main source of greenhouse gas emissions. Many also create harmful air pollutants that have detrimental impacts on human health.

Decreasing our dependence on fossil fuels is an important part of reducing our contribution to climate change, but also brings a number of benefits. For example, increasing the use of low-carbon, renewable sources of energy such as building- or community-scale solar not only reduces emissions, but also provides greater energy autonomy and increases the town's resilience in the face of extreme weather events and power outages. Improving the energy efficiency of our buildings by designing or upgrading them to use better insulation not only reduces energy costs, but also helps to keep us comfortable in both winter and summer. In the transportation sector, reducing the use of fossil-fueled vehicles can increase our use of bicycling, walking and public transit options, all of which help to support a healthy, active and more connected community.

Okotoks is home to the Drake Landing Solar Community, a pioneer in master-planned neighbourhoods. The solar community is heated by a district energy system designed to store solar power underground during the summer months for distribution to homes in the winter months. The first of its kind in the world, this solar-powered community gets 90% of each home's space heating from the sun's energy, drastically reducing the development's GHG footprint.



↑ The Drake Landing Solar Community located in Okotoks.

The Town of Okotoks has been active in promoting energy efficiency and renewable energy.

- DIY Home Energy Audit Kits provide 'Do-It-Yourselfers' with basic instructions and tools to conduct their own residential energy audit, and identify opportunities to upgrade their energy efficiency
- The Town supports alternative funding programs such as Property Assessed Clean Energy (PACE), which assist residents in affording major energy efficiency upgrades and the installation of renewable energy into their homes.
- The Active Transportation Plan outlines a number of strategies to encourage non-automotive forms of transportation and the construction of more active transportation parking facilities (i.e. bike racks). The Town has also installed eight electric vehicle (EV) charging stations around Okotoks, encouraging a shift away from gasoline-powered vehicles.

Key Strategies

1. Develop and implement a comprehensive Renewable Energy Strategy to encourage, support and implement new forms of renewable energy generation

The Town of Okotoks will support a transition towards the use of renewable energy through a comprehensive Renewable Energy Strategy. The Strategy will focus on renewable energy production at both the micro-scale (i.e. on individual buildings), and macro-scale (i.e. at the community and/or utility scale). As Okotoks has some of the best solar potential in all of Canada, the Strategy will focus on supporting the use of solar photovoltaic (PV) systems throughout the community. The Town will identify options to enhance resident access to financing that mitigates the up-front cost of purchasing a solar system, as well as any other additional incentives. For new construction projects, the Town will explore requirements for new buildings to, at minimum, be built "solar-ready", and/or to require a certain number of buildings within a new development to be equipped with solar PV panels. Larger scale options, such as community and utility-scaled solar systems, may also be considered in the future.

2. Explore the feasibility of alternative space heating fuels and technologies

Space heating makes up the greatest portion of energy used in a household, averaging 63% of total energy use in Canadian homes. Most buildings in Okotoks use natural gas for heating, which is a major source of greenhouse gas emissions. To foster a shift towards lower emission sources of heat and hot water, Okotoks will undertake a long-term feasibility study to explore alternative technologies and options for space heating. These can include low-carbon district energy systems that harness heat from renewable sources such as the sun, wastewater, or waste heat from other buildings, or make use of biofuels derived from decomposing waste in landfills. To encourage developers and residents to adopt low-carbon and renewable energy systems for space heating, the Town will explore a system of incentives that lowers the cost of these energy sources.

3. Improve access to energy and emissions performance of existing buildings

Finding ways to improve a building's energy performance begins with understanding how much energy it currently uses. By "benchmarking" a building's energy performance, it is possible to find areas for improvement, implement building upgrades, and track performance over time. Okotoks will partner with other local governments to encourage the adoption of a province-wide energy benchmarking regulation. In the meantime, Okotoks will work with building owners and other municipalities to explore ways of starting to benchmark local buildings. To support these efforts, the Town will also work with utilities to improve building owner and tenant access to energy use data, and explore a future requirement for energy audits and the release of energy performance data at point of sale.

4. Require higher levels of energy performance in new building construction

While the Alberta Building Code outlines minimum energy performance requirements for new developments, several municipalities want to go further. As a result, the Town of Okotoks will work with other local governments to encourage the Province to adopt higher standards for energy efficiency. In the meantime, the Town of Okotoks will explore the adoption of higher requirements for the energy performance of new construction. These can be crafted to suit individual building types, from single family homes, to larger institutional buildings.

5. Assist and incentivize the building industry and homeowners in meeting higher energy performance levels in new and existing buildings

Providing support to the building industry is an important part of improving its overall energy performance. The Town of Okotoks will work to find the right kinds of incentives and assistance to help the builders and homeowners meet higher levels of energy performance in both new and existing buildings. Working with other stakeholders to provide training to inspectors and industry professionals on new energy performance requirements for buildings is one way of providing this support. The Town will also explore alternative ways of financing building energy performance improvements. In the long-term, the Town will work to create a comprehensive building retrofit program that provides incentives and reduces barriers to energy efficiency upgrades.



What We Heard: Solar Panels

87% of residents who voted on the renewable energy pop-up boards want to see solar panels integrated into some or all public facilities, and 80% want to see solar panels integrated into some or all new homes

In both the pop-up boards polling and the online survey, residents indicated their preference for solar garden arrays over utility-scale solar farms.



The quality of indoor and outdoor air can have a significant impact on human health and wellness. Okotoks has been active in promoting energy efficiency and renewable energy.

6. Foster the use of non-automotive, active modes of transportation

Active modes of transportation in Okotoks include cycling, walking and any type of “human-powered” activity that allows for travel to a particular destination. This type of transportation requires no burning of fossil fuels and is a great way for residents to get physical exercise. To support the shift to active transportation, the Town will work to identify and provide the kinds of infrastructure necessary to ensure that pathways and roads are safe for users, can handle increased use, and are connected to nearby municipalities in the region. Given their popularity in other towns and cities, the Town will explore a community-wide bike share program to encourage cycling as a form of active transportation. Over time, these strategies will be incorporated into a Master Mobility Plan that will act as the overarching guiding document for all forms of transportation planning.

7. Improve access to public transit options, both within Okotoks and between neighbouring municipalities

Public transportation is an alternative to private vehicles that helps to reduce emissions and encourages more walking and cycling. Accessibility to transit systems and their ease of use are important factors to increase the number of people that use them. To address these factors, the Town will partner with provincial and regional authorities to identify gaps and implement improvements to the regional transit system, ensure the local transit system is accessible to both seniors and youth, and explore the feasibility of future mass public transit options to and from Calgary.

8. Support the uptake of low-emissions vehicles

Electric vehicles (EVs) produce fewer GHG emissions and harmful air pollutants than fossil fuel-powered vehicles, and are currently the most viable form of low-emission vehicles. While this industry is changing quickly, the Town will continue to explore opportunities to incentivize the purchase of EVs, expand the town’s existing network of EV charging infrastructure, and couple EV purchases with solar panels. As the low-emission vehicle industry makes advancements in technology, the Town will adjust its strategic approach as other types of low-emission vehicles emerge.

What We Heard: Public Transit

Residents who participated in the online survey were supportive of a local public transit system, including both buses and autonomous shuttles. Residents also wanted the Town to ensure these options would be affordable for all Okotokians, accessible, and appropriately sized for Okotoks.

What We Heard: Active Transportation

Results from our online survey showed a fairly even split in Okotokians’ support for separated bike or active transportation lanes.

Some residents felt that roads were not wide enough to support separated lanes and that Okotoks already has a great network of pathways, while others wanted to improve connectivity between existing pathways.

9. Support car and ride sharing

Car and ride-sharing options are becoming popular transportation choices in Canada, used by 9.5% of the population in 2016, or 1 in 10 people. This demand is an opportunity for Okotoks to expand its green economy by attracting businesses that provide car-sharing services, while also reducing its environmental footprint by reducing the number of cars in Okotoks. Okotoks will explore the potential for car and ride-share programs, contracting a third party to create and adopt a community-wide carpooling app, and for organizing a local car-share program.

10. Create pedestrian-friendly, emission-free environments

Okotoks is committed to creating pedestrian-friendly environments that encourage more walking and reduce the need for automobiles, particularly for short distances. However, there are many reasons why people don't choose walking as their primary way of getting around. The Town will work towards removing the barriers that prevent residents from walking, such as winter snow and high volumes of car traffic. Hosting closed-street downtown events, such as "Car Free" days, will also help to encourage foot traffic and community interaction, as well as support local businesses.

11. Develop and implement measures to improve indoor and outdoor air quality

The quality of indoor and outdoor air can have a significant impact on human health and wellness, affecting mental abilities, energy, and overall respiratory health. In order to maintain and enhance good air quality, the Town will continue to minimize vehicle idling, a major source of air pollutants, and will further implement an air-quality monitoring program. To further incentivize best practices in achieving good air quality, the Town will also work with other regional governments to encourage the private sector and other municipalities to observe air quality criteria and be proactive in managing air quality issues.



What We Heard: Car-Free Zones


"I love this idea, especially along Elizabeth Street or from the Municipal Centre to the town clock!" – Okotoks resident via online survey

"Businesses thrive in walking zones." – Okotoks resident, via online survey



↑ The Town will expand Okotoks' existing network of electric vehicle charging infrastructure to support a wider uptake of low-emissions vehicles.



A photograph of a suburban home with a brown roof and tan siding. A green lawn is in the foreground, and a blue recycling bin is on the left. A large, semi-transparent white circle with an orange border is centered over the image. Inside the circle, the text "Waste Systems" is written in a black, sans-serif font. A faint, thin white arc is also visible in the upper left quadrant of the circle.

Waste Systems

WASTE SYSTEMS

4

Goal 4: Dramatically reduce the amount of waste that is generated and disposed

Redefine waste as a resource rather than an expense

Reduce the amount of total waste that is generated by all activities within the community

Expand all community waste management programs to dramatically reduce the volume of waste going to the landfill

Aspirational Targets

95%

Recycle, reuse or compost 95% of waste by 2050

↓ 50%

Reduce amount of waste generated by 50% from community activities by 2050

What we consider “waste” is usually defined as something unusable or unwanted that we discard. Common waste items range from food and food containers, to shopping bags, clothing, furniture and even construction and demolition materials. If not managed carefully, these waste products end up in the landfill, where they can significantly impact the environment. The slowly decomposing materials in landfills produce and release methane, a powerful greenhouse gas that can trap up to 28 times more heat in the Earth’s atmosphere than carbon dioxide over a 100-year period.

Fortunately, there are increasingly more environmentally and economically beneficial ways to manage or reuse the growing amount of waste our society produces. Organic materials such as food and garden clippings can be composted and then used as fertilizer. Diverting organic waste also decreases the volume of methane emissions produced by decomposing materials, further reducing our contribution to climate change. Reusing clothes or furniture can help reduce costs for households and invigorate a market for product recovery and revitalization. Reusing materials can also reduce the need to extract, process and transport new materials, all of which have their own environmental impacts.

Waste from Okotoks and other nearby municipalities is sent to the Foothill Regional Landfill and Resource Recovery Centre, which processes materials destined for the landfill, as well as recyclable items such as cardboard, clean wood and scrap metals.

The Town of Okotoks also manages a residential organics program that collects food scraps and yard waste.

The Town of Okotoks' 2020 Waste Management Plan has set a target to divert 80% of waste from the landfill by 2020, and outlines several strategies to increase waste diversion, including:

- Evolving the Town's subscription-based Residential Recycling Collection (blue cart) Program to a universal residential-wide program;
- Implementing a universal, residential-wide Organic Waste Collection (green cart) Program, and;
- Implementing a bylaw for Multi-Family and the IC&I (Industrial, Commercial, & Institutional) Sector to provide on-site single source commingled recycling and organic waste collection services

While several of these strategies have already been achieved, there is still room to continuously reduce both the amount of waste that is diverted away from the landfill and into recycling or composting facilities, and the amount of waste generated in the first place.



Key Strategies

1. Encourage responsible waste reduction practices in business and manufacturing

Manufacturers can play a particularly important role in minimizing the materials that go into the packaging or making of a product. Alberta's Environment and Parks recently conducted a study into the feasibility of an Extended Producer Responsibility Program, where the expense of waste management or recycling after a product is used is placed on the producer. These kinds of programs encourage manufacturers to reduce the use of unnecessary materials, as well as the costs and impacts of waste and recycling management. Okotoks will work to encourage the provincial government to act on the Extended Producer Responsibility Program, while working with local businesses to develop a made-in-Okotoks waste reduction program.

2. Explore prohibiting select single use items

Single use items such as coffee cups and plastic bags create unnecessary waste that can be easily replaced by more environmentally friendly alternatives, such as reusable mugs and paper bags. The Town will encourage a transition to a low-waste society by phasing out polystyrene and non-recyclable containers and will explore the feasibility of phasing out plastic bags and straws. The Town will strive to ensure a smooth transition by taking into account residents' current lifestyles and businesses' purchasing orders to allow ample time for adjustment.

3. Encourage practices and opportunities to share or reuse materials and products

Using materials and products beyond their intended lifespan helps reduce the volume of waste going to the landfill. It can also create new business opportunities and a new market for industries working to repurpose or repair second-hand goods. Local reuse centers and community repair cafes can offer residents a less expensive option to purchasing or replacing goods such as household furniture, gardening tools and electronics. These are a few of the initiatives the Town will explore for implementation in Okotoks.

4. Provide continuous education to reduce waste production and improve waste diversion rates

Understanding why and how waste is produced, managed and recycled can help reduce its production, improve responsible and proper sorting, and increase diversion rates. Encouraging youth in particular to take a leadership role in environmental stewardship helps foster a sense of environmental and social responsibility and can prepare younger generations to take the lead in environmental excellence. The Town will collaborate with schools to develop waste initiatives such as a Youth Ambassador program, as well as broader community-wide educational campaigns.

5. Enhance the scale and efficiency of regional waste collection, processing and product delivery

Encouraging waste reduction means the waste collection and processing infrastructure available to residents has the capacity to support the Town's efforts and practices in increasing waste diversion. While the current Eco Centre accepts a wide range of materials that can be recycled including Styrofoam, textiles and electronics, there is a need to expand these services further. Okotoks will work with the Foothills Regional Services Commission to explore the creation of a regional facility that provides both recycling and safe disposal services.

6. Further waste diversion practices and services in the residential sector

Implementing a universal residential recycling and organic waste collection program for single family and multifamily residences will help streamline and integrate waste sorting and management across the entire sector. Providing additional cart sizes and adjusting the frequency of pickup, coupled with an associated tiered rate structure related to use, will encourage residents to reduce the amount of waste they divert from the landfill. The Town will also explore the need to reshape the existing waste management utility to charge fees based on a "pay-as-you-throw" basis.

7. Advance waste diversion practices in the industrial, commercial and institutional (ICI) sector

The Institutional, Commercial, and Industrial (ICI) sector presents a different set of challenges to waste management, because they produce large volumes of waste that may require special processing facilities. The Town will begin requiring ICI buildings to provide on-site, multi-stream recycling and organic waste collection services, while providing resources and incentives that support waste reduction practices. In the long-term, the Town will explore an eco-industrial waste pilot to help businesses find ways to collectively minimize waste production.

8. Dramatically improve the diversion of construction and demolition waste from the landfill

Another opportunity for diverting waste from landfill is in building construction and demolition. Construction and demolition waste is often not waste at all, as entire structures, select systems, or specific materials can be reused when constructing a new building. Okotoks will work in partnership with local businesses to adjust landfill rates to incentivize the building industry to increase waste diversion. In the longer term a building deconstruction program will facilitate the salvage of building materials for reuse.

9. Implement a community-wide public space and event waste diversion program

Reducing waste in community spaces helps to increase community interaction and cohesiveness and contributes to a vibrant townscape for tourists and visitors. To this end, the Town will create a community-wide public space and event waste diversion program to support community clean-up events, increase the capacity and ease of public access to recycling and organics collection bins in public places, and develop a waste diversion program for community events. Examples of community clean-up events include the volunteer-led Community Clean Up, and the Sheep River Valley Clean Up and tree planting.

10. Explore options for deriving energy from waste

A significant way to repurpose waste is to harness it as a resource for energy production, either in the form of heat or electricity. While some regions burn organic material and harness the heat energy produced in the process, newer, more environmentally-friendly waste-to-energy processes such as gasification and anaerobic digestion do not require combustion, reducing the release of hazardous particulate matter into the atmosphere. The Town will explore methods of generating energy from solid waste, wastewater, and operational waste heat to help reduce the total amount of waste going to landfill, as well as the need to extract non-renewable resources for energy.



What We Heard: Single Use Items

84% of residents who participated in the online survey supported a ban on Styrofoam take-out containers.

When businesses work together to reduce waste, they may find valuable partnerships that are beneficial to all parties involved.

For example, food waste from a restaurant requires proper management and is an operating cost to owners. This cost could be reduced if the food waste was instead collected and reused as fertilizer by a landscaping or gardening company. The landscaping/gardening company would save on the costs of purchasing synthetic fertilizer, creating a collaborative relationship that is profitable for both businesses.



K LOCAL
ATER.



EPCOR

Water Systems



WATER SYSTEMS

5 Goal 5: Reduce water demand, consumption of potable water and improve the water quality of our watershed

Enhance the efficiency of the water system by increasing the capture and reuse of rainwater, stormwater, treated effluent and grey water

Protect and improve water quality through riparian & wetland production and by reducing overland runoff and nutrient loads

Form regional partnerships to protect and manage the regional watershed

Aspirational Targets

↓ 20%

Achieve a 20% reduction in outdoor water use (summer daily peak) by 2030

↓ 5%

Achieve & maintain an annual potable water system loss rate of less than 5%

Achieve and maintain the lowest per capita gross water and residential water consumption rates in Canada

The Town of Okotoks is located on the banks of the lower reaches of the Sheep River – the source of all potable water for the community and a valuable and essential resource. High development rates and limited long-term sustained water supply from the Sheep River have created a need to secure a sustainable long-term water solution. Initial research and studies have shown that a supplemental regional water pipeline connected to the Bow River will be required to support growth.

In the interim, Okotoks must continue to take steps to continue to reduce the consumption of water and find innovative ways of reusing water in both new and existing development. This will help Okotokians maintain the security of water in the region and save money on the operation and delivery of the community's water utility. As the Town implements interim and long-term water servicing strategies, it will continue to be a steward of this precious resource into the future. This stewardship will also result in enhanced community resilience to our changing climate.

Fortunately, Okotoks has already demonstrated a long history of wise water use and management, and has achieved one of the lowest per capita water consumption rates in North America. Several plans and programs already in place have helped Okotoks lead the way in sustainably managing water:

- The 2014 Water Conservation, Efficiency and Productivity Plan outlines various tools the Town will use to help address the supply and demand of water in Okotoks
- The 2018 Water Shortage Response Management Plan formalizes tools the Town employs to manage water shortage response such as the water conservation schedule.
- The Town's annual Water Conservation Rebate Program offers rebates for residents who implement water reduction measures, including water efficient landscaping options such as rain barrels and drought tolerant plants.

Key Strategies

1. Implement an advanced water reuse strategy

Many of the things we use water for don't require water to be potable (i.e. drinkable), but can instead use water that has been "reclaimed" from other sources. These sources include treated wastewater, "grey" water from bathtubs, sinks, and washing machines, and collected rain and storm water. The Town will implement an advanced water reuse strategy to help identify opportunities to increase the use of reclaimed water, decreasing the overall consumption of potable water.

2. Develop an aggressive peak water demand program

Water demand during hot summer days is considerably higher than the average daily demand, and can result in higher utility costs and added distribution fees. To help reduce peak water demand and lower costs, the Town will implement a peak demand management program, including a Water Shortage Plan that manages the water supply during peak demand and extreme climate events. In addition, the program will include actions and tools to incentivize consumers to minimize their water use, such as increased utility rates during peak summer demand periods and access to advanced self-monitoring devices.

3. Increase water conservation strategies, requirements and incentives

Okotoks' residents, businesses and developers can contribute to water conservation by proactively monitoring their water use or by implementing water reuse and efficiency measures. The Town will support community members in their water conservation efforts by providing financial incentives for water efficient fixtures or equipment, increasing education and enforcement of water conservation measures, and requiring new developments to integrate water reuse strategies. The Town will explore a scaled water use rate for industrial, commercial and institutional customers to encourage careful and efficient water use, as well as a water efficiency certification program for new and existing residential and commercial buildings. Finally, water processing and distribution infrastructure will be monitored to identify and address leaks, increasing the overall resilience of water infrastructure.

4. Increase information and education on water use and opportunities for conservation

Educating community members on how to analyze their water consumption data and associated utility rates can empower residents to study their daily habits. For example, residents can identify activities that consume high volumes of water and take steps to lower their consumption and reduce water bills. The Town will provide residents and businesses access to their water consumption data through a universal water metering program and an online daily consumption reporting tool. Educational programs designed to engage community members in a fun and interactive way will support these efforts, such as a community-wide water reduction contest and a youth ambassador program.

5. Encourage and/or require low-water landscaping practices

A cost-effective and simple way to conserve potable water is to increase the use of xeriscaping, or selecting vegetation that requires low volumes of water to maintain. The Town will develop strategies such as a customized xeriscaping and low-water landscaping guide to support the conversion of traditional private and public lawns to biodiverse drought-tolerant landscapes. The Town will continue to require drought tolerant landscaping in all new community public spaces and over time, include

What We Heard: Green Infrastructure

91% of residents who voted on the green infrastructure pop-up boards wanted to see xeriscaping used in all neighbourhoods, wherever it is feasible to do so.

What We Heard: Bioswales

87% of residents who participated in the online survey supported bioswales in new developments.



xeriscaping measures in community guidelines for private front yards.

6. Collaborate regionally on source water enhancement and watershed protection

The Sheep River is nestled within the Bow River Basin, which is a sub-basin of various larger and interconnected watershed systems all the way to Hudson Bay. The interconnection of all these land areas requires regional collaboration between governments and local actors to protect and maintain water quality and supply. While Okotoks intends to continue its leadership in the protection of the Sheep River ecosystem, Okotoks' footprint represents less than 3% of the land area within the watershed. To support enhanced source water protection, the Town will work to increase regional collaboration and efforts, and explore the development of an optimized water management strategy in the region.

7. Decrease sources of contamination in the Sheep River

Point and non-point source loading refer to the two different types of contaminants that are released into the Sheep River. Point source loading refers to the contaminants that come from specific sources, such as sewage treatment plants or storm ponds, while non-point source loading refers to contaminants that come from water that simply flows over urban, agricultural, and other types of land. Okotoks will expand on its existing strategies designed to decrease loading and improve river quality by creating an integrated stormwater management plan. Some approaches that will be considered include enhancing community education, increasing green infrastructure to pre-treat stormwater, and encouraging the appropriate use of pesticides.

8. Enhance efficiency and quality of wastewater treatment processes

While Okotoks' Wastewater Treatment Plant is already a regional leader, the Town will continue to implement upgrades to improve its performance. These will include measures to reduce the impacts of pollutants from wastewater on human and ecosystem health by enhancing the efficiency and quality of its wastewater treatment process. It will also include a management strategy for the beneficial reuse of biosolids in the wastewater system. The Town will continue to research the development of alternative wastewater technologies, such as decentralized systems and source separated treatment methods.



What We Heard: Bioswales

"I think the Town should not only encourage bioswales, but make them a requirement in new developments. They can have a significant impact on our watersheds." - Okotoks resident via online survey



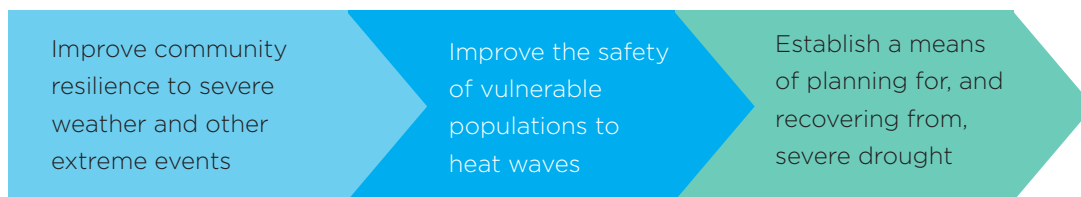
An aerial photograph showing a residential neighborhood with houses and green fields in the background. In the foreground, a large body of water, likely a river or lake, is overflowing its banks, flooding the surrounding land. A small bridge is visible on the left side of the flooded area. A large, semi-transparent white circle is overlaid on the center of the image, containing the text "Climate Adaptation & Resilience". The circle is bordered by a thick, multi-colored arc in shades of blue and green.

Climate Adaptation & Resilience

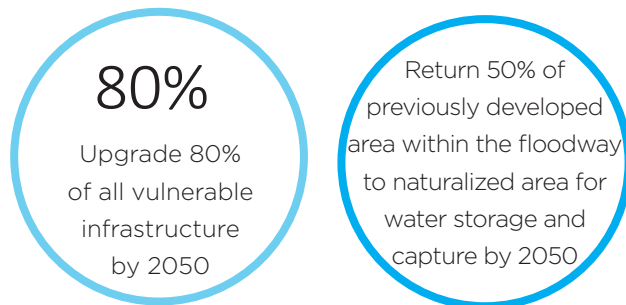
CLIMATE ADAPTATION & RESILIENCE

6

Goal 6: Improve Okotoks' ability to adapt to the impacts of climate change.



Aspirational Targets



As the climate warms, weather variability in Okotoks is projected to increase, with summers that will be hotter and drier, with less frequent but more intense rain events. Winters are projected to become warmer and wetter, which may result in ice storms that have been historically uncommon in the Okotoks' region. More intense storms result in more severe, unpredictable flooding, which will impact any infrastructure not built to withstand these previously unforeseen extreme events. During summer heat waves, risks range from dehydration and heat strokes, to widespread power outages and wildfires.

To ensure the community maintains its resilience to these changes, the Town must continue to carefully manage and protect key infrastructure and assets. Fortunately, these changes also provide Okotoks with the opportunity to become a more resilient community overall. Restoring natural areas and wetlands to reduce the effects of flooding also support local wildlife and ecosystems, beautify the surroundings, and provide a natural cooling effect in the summer. Upgrading electricity grid infrastructure can increase the system's resilience to withstand extreme storms and heat waves, and reduce the number of blackouts each year.

The Town has already started to take its first steps towards creating a more resilient community. In 2017, staff members representing different Town business centres participated in a one-day Climate Resilience Express workshop hosted by the Alberta Urban Municipalities Association (AUMA). The workshop began a process of identifying and prioritizing climate change risks and opportunities for Okotoks. The outcome of the workshop was a draft Climate Resilience Action Plan, published in March 2018. While 17 climate-related risks and six climate-related opportunities were identified within the Plan, managing water supply shortage, drought and river flooding were identified as priority risks.

Key Strategies

1. Develop a Town Climate Change Action Plan

During the creation of the Okotoks Climate Resilience Express Action Plan, the Town conducted an initial overview of projected climate impacts on Okotoks, and identified urgent actions that need to be taken. As a next step, the Town will expand current efforts to assess the vulnerability of the community's energy supply into a full assessment of all corporate and community assets. A key component of the Town's work will be to educate residents on the impacts of climate change and the benefits of becoming a more resilient town. Over the long term, the Town will identify vulnerable infrastructure and make strategic upgrades.

2. Mitigate the impact of flooding on community assets and infrastructure

A key way to reduce the impacts of river and overland urban stormwater flooding in Okotoks is to reduce the likelihood that homes and businesses will be exposed to floodwaters. To reduce this exposure, the Town will work to prevent future development from occurring in areas that experience the highest frequency and severity of flooding. The Town will update its Flood Plain Policy to prevent any new building development on undisturbed land within the Alberta Environment and Parks (AEP) identified 1:100 flood plain. To further reduce community risk, the Policy is to include a prohibition on residential development in the 1:100 flood fringe and require any future non-residential redevelopment within the flood fringe to incorporate measures to minimize the risk of flooding.

3. Enhance and protect existing eco-assets that provide buffering from climatic events

Natural areas provide many benefits for Okotoks, including acting as a natural buffer from the effects of flooding. Protecting wetlands, enhancing riparian health, integrating additional green infrastructure into communities, and slowly transforming the floodplain to a naturalized public space over the long-term, will protect the Town's infrastructure assets and improve community resilience to extreme climatic events.





FOSTERING A GREEN ECONOMY

There is a growing market of consumers who are becoming more conscious of their environmental footprint and choose to purchase goods and services that are environmentally sustainable. This is why, in addition to the six key action areas, the Town has made it a priority to be a leading municipality in the green economy.

In general, this involves two types of businesses. First, green companies focused on designing, producing and/or retailing innovative environmental products, ranging in scale from larger manufacturing companies creating solar panels to small home businesses making natural personal care products. The Town will work to attract these new environmentally-focused businesses to bring green jobs to the community, and expand the economy in response to the growing market of eco-minded consumers. Second, many traditional businesses are making efforts to reduce the impact of their products, services and operations on the environment. Greening a business' operations not only lowers its environmental footprint, but can also lower its operating costs.

The Town will encourage the proliferation of both business types by supporting businesses to improve the sustainability of their practices, and to foster an economic environment that attracts new innovative environmental businesses and allows them to thrive.

1. Explore incentives to attract environmental businesses (e.g. energy, construction, renovation)

Environmental businesses come in many forms, from building construction to product development, and bring a diversity of benefits. For example, the growing solar industry has created a wide variety of job opportunities, including manufacturing, system design, project development, installation and operations. Businesses that repair and/or repurpose items that would otherwise have been discarded reduce both costs to consumers and waste generated in the landfill. Attracting environmental businesses has the potential to boost Okotoks' economy and provide a number of new, local jobs. Okotoks will explore the feasibility of different types of incentives to attract environmental businesses, including funding programs, tax cuts, and reimbursements.

2. Pilot an eco-industrial network

An eco-industrial network is a web of social and professional relationships between organizations focused on environmentally sustainable economic development. Studies have shown that eco-industrial networks are instrumental in advancing environmental sustainability by developing symbiotic relationships between businesses and encouraging them to help each other reach similar goals. The Town will help local businesses realize the potential of sharing knowledge and materials through the pilot of an eco-industrial network.

3. Develop partnerships to improve the sustainability of existing businesses

Okotoks will look to develop partnerships with other local and regional actors to facilitate greening practices with existing businesses. Currently, Okotoks' Economic Development Strategic Plan outlines actions in support of regional economic development with the Calgary Metropolitan Region Board, Community Futures Highwood, and other related organizations. Okotoks will continue to engage these and other key organizations to help coordinate businesses' sustainability improvement efforts by providing educational resources and access to financial support, as well as connecting likeminded businesses and enabling collaboration.

Did you know?

Improving the energy efficiency of a building by installing ambient light sensors and controls can help save electricity by using lighting only when the building is occupied. Ambient light controls can also mimic shifts in natural lighting and help to improve employee attentiveness and happiness and increase productivity.



The growing solar industry has created a wide variety of job opportunities, including manufacturing.

IMPLEMENTING THE ENVIRONMENTAL MASTER PLAN

Tracking Progress

The Environmental Master Plan has been designed to set out the broad vision, goals, and strategies necessary to achieve an environmentally sustainable future for Okotoks. However, precise actions will be identified on an ongoing basis to reflect the community's evolving progress and any opportunities that may arise. Changing information, technologies, and even priorities will influence the nature and number of actions that should be taken. As such, actions will be reviewed on an annual basis to determine their priority.

Monitoring key performance indicators is an important part of any plan, as indicators provide a benchmark of the current state of a given sector, area or ecosystem, against which progress can be measured over time. The Town is already tracking a number of performance indicators as part its existing plans and strategies (See Appendix A), and will work to identify any other necessary metrics that may be required to share yearly progress on the implementation of the Plan in a regular and transparent manner.

To track the advancement of the Plan's implementation, the Town will provide an EMP progress update to the community annually. In 2028, the Town will bring the EMP back to the community for review and to address the numerous external and internal environmental, social, economic, and political forces that will affect the Plan over the next decade.

Demonstrating Leadership

The achievement of the strategies outlined in this Environmental Master Plan will depend on the contributions and participation of all members of the Okotoks community, including the Town of Okotoks itself. In creating this Plan, Okotoks Town Council has established their commitment to leading the way in environmental sustainability – and this leadership begins with the Town's own internal operations. The Town will take specific, measurable actions to continually improve the sustainability of its operations, with the understanding that Okotoks will always be improving upon, striving for, and moving towards a state of environmental sustainability.

In 2010, the Town developed a Corporate Environmental Stewardship Plan (CESP) to target, develop, assess and report on broader environmental initiatives within the Town itself. Policies developed under the CESP included the creation of:

- A Town of Okotoks Sustainable Municipal Construction Guideline
- A waste reduction strategy for all Town buildings, facilities and events
- A phased audit and retrofit strategy for all Town buildings and facilities
- A policy to maintain and enhance ecosystems on all public lands



↑ The EMP has been designed to set out the broad vision, goals, and strategies necessary to achieve an environmentally sustainable future for Okotoks.

The CESP is now integrated into the EMP, which includes several other actions to increase the Town's efforts to improve the environmental sustainability of its facilities and practices. As a part of the Environmental Master Plan, the Town has committed to the following strategies to improve its own environmental performance:

Energy and Emissions

Enhance the energy efficiency of Town infrastructure, facilities and buildings through energy efficiency upgrades and develop a more stringent green building standard

Increase the use of renewable energy in Town buildings and infrastructure, including solar PV and potential energy co-generation or district heating

Replace conventional vehicles in the fleet and Town equipment with low-emissions options (i.e. electric or biodiesel)

Encourage the use of low-emissions, active modes of transportation by Town staff

Encourage alternative work and meeting options that reduce staff travel to and from work

Waste

Reduce and divert waste generated by the Town through the development of a three-stream waste diversion program for all Town-run events and public interfacing facilities and spaces

Reduce material waste in Town processes and projects by prohibiting Styrofoam and other products that can't be recycled, and creating a waste management and diversion policy for the construction and demolition of Town projects

Water

Reduce the volume of water consumed by Town facilities and services by increasing the area of drought-tolerant landscaping, and performing an audit and retrofit strategy for all Town water and wastewater infrastructure

Explore and adopt measures to reuse water from swimming pools, water treatment filter backwash and rain and stormwater for use in Town facilities and auxiliary services, such as street cleaning and landscape maintenance

Reduce contaminants from entering the water system from Town operations and practices, such as road salting and sanding and enhancing the Town's stormwater infrastructure and maintenance programs

Ecosystems and Agriculture

Enhance the ecological integrity of Town lands by including drought tolerant vegetation into landscaping, enhancing native ecosystems, and reducing unnecessary pesticide use

Introduce more naturalized landscapes on public land

Building Capacity

A crucial step in ensuring the Environmental Master Plan will be implemented successfully is the creation of a business centre for Environment and Sustainability. This kind of dedicated business centre is a key feature among local governments that have shown leadership in environmental action, and was identified by staff and stakeholders as an important need in the Town of Okotoks.

The Environment and Sustainability business centre will offer both a symbol of the importance of environmental sustainability to the Town, as well as a central point of coordination for all major environmental plans, policies and projects. The Centre will be responsible for ensuring that environmental considerations are prioritized in all future decision making. It will inspire commitment and collaboration across the community by designing, piloting, and promoting environmental initiatives.

However, this responsibility must be shared across all business centres and streamlined into actions and decisions across the whole Town. While a coordinating function will remain with the Environment & Sustainability business centre, all centres must integrate environmental considerations into their plans, policies, and projects. To this end, the Environment and Sustainability function will support a clear understanding of the goals, actions and expectations across the organization. It will ensure that the appropriate resources are allocated to execute the plan successfully, and require each business centre to report back on their progress.

Integrated Decision Making

Creating an environmentally sustainable Okotoks also means that all decisions moving forward have to take into account all three aspects of sustainability: a strong economy, a healthy environment, and a flourishing community.

The use of this “triple-bottom-line” approach will require Town staff to evaluate each project or plan for its benefits and costs to Okotoks’ environment, economy, and community using a set of predetermined criteria. For example, criteria for ensuring environmental health may include the extent to which a particular project reduces greenhouse gas emissions, improves air quality, or protects natural areas. Particular criteria will be determined by staff using a collaborative process to ensure the many facets of each area are reflected in the development of the evaluation tool.

Environment

- Reduces energy consumption
- Reduces greenhouse gas emissions
- Protects natural areas
- Improves air quality
- Increases biodiversity

Economy

- Supports local businesses
- Attracts green businesses
- Reduces maintenance and operating costs
- Ensures Town actions are fiscally responsible
- Manages taxpayer dollars responsibly

Community

- Increases human connectivity
- Increased human health
- Engages community and local organizations
- Provides safe active transportation options
- Increases community diversity



The Okotoks EMP has been designed to realize the goals of the community: to protect the land we depend on, for both current and future generations.

The Environment and Sustainability business centre will design an appropriate triple-bottom-line evaluation tool for Okotoks to encourage collaboration across the organization, engage Town staff in integrating triple-bottom-line thinking, and align all future action with the goals of the Environmental Master Plan. It will help to reveal policies and projects in need of additional evaluation, and help staff improve and refine both existing and future policies. The triple-bottom-line evaluation tool will ultimately help to build the Town's capacity to integrate sustainability thinking into all areas of work. The tool will help the Town achieve environmental sustainability and community wellbeing, while maintaining fiscal responsibility and encouraging green economic growth.

Partnerships for Innovation and Leadership

Working towards the achievement of an environmentally responsible and resilient Okotoks requires the cooperation and collaboration of several actors and sectors. Okotoks will continue to build partnerships with businesses, community organizations, advocacy groups, and other stakeholders across the region to ensure the impact and effectiveness of any actions are maximized. Working with other local governments in particular will be important to identify synergies, lower costs, and improve the efficient delivery of EMP actions. The Town will continue to work with local, regional, and provincial levels of government to share resources and lessons learned, and to refine and evolve sustainability strategies. Partnerships with academic institutions and innovative businesses or industries will also present an opportunity to pilot leading edge technologies and strategies in environmental sustainability.

Working with the Community

Ultimately, the Environmental Master Plan has been designed to realize the goals of the community: to protect the land we depend on, for both current and future generations. To successfully implement the strategies of the Environmental Master Plan, the Town will depend on the continued engagement and participation of individuals, schools, businesses, and community groups in Okotoks.

Okotokians will be directly involved in the implementation of the Plan through a comprehensive Environmental Outreach Strategy, designed to educate residents about their role in creating a more environmentally sustainable community, and inform them of opportunities for environmental actions they can take to help meet the goals of the Plan. The Town will provide information and resource on topics including:

- Energy efficiency and conservation
- Low carbon energy alternatives
- Water conservation, including sustainable landscaping, xeriscaping, and naturalization practices
- Waste diversion and product reuse
- Protecting and enhancing ecological assets
- Climate change and resilience

The Town will expand the focus of existing programs and explore engaging youth through special research projects that would help forward the Town's sustainability goals. The Town will also partner with local schools to involve students through youth ambassador programs, and continue to explore other methods of engaging residents, including educational workshops, online resources and print materials. The new Environment and Sustainability business centre will act as a central coordinator for all programs. Overall, these actions will help Okotokians in their efforts to make environmentally sustainable choices, and support community members in becoming leaders and advocates for sustainability in their own right.



Appendices

APPENDIX A: COMMUNITY ACTIONS IMPLEMENTATION DETAILS

This appendix presents the suite of actions that will move Okotoks toward achieving its vision of environmental excellence. The actions listed below represent those that are necessary in order to improve the environmental sustainability of Okotoks as a whole community, including its residents, businesses, and visitors.

It should be noted that the time line, level of impact, and magnitude of cost assigned to each action represent estimates only, but have been included to assist with prioritization and implementation. Sources of funding such as provincial and federal grants will be explored as a way to reduce the financial impact of higher-cost actions.

Timeline

Ongoing
Immediate (1-2 years)
Short-term (3-5 years)
Long-term (5+ years)

Level of Impact

1 – Low
2 – Medium
3 – High
4 – Very High

Magnitude of Cost

\$ = <\$50K
\$\$ = \$50 - \$100K
\$\$\$ = \$100K - \$500K
\$\$\$\$ = >\$500K

Actions	Timeline	Impact	Cost
ECOSYSTEMS & AGRICULTURE			
Strategy 1: Develop and implement a comprehensive Ecosystem and Biodiversity Strategy			
Facilitate community involvement, education, and protection in both public and private urban forest expansion	Ongoing	1	N/A
Continue to educate on the proper management and mitigation of invasive species, problem wildlife and pests	Ongoing	1	\$
Revise and update the existing urban forest database	Ongoing	1	N/A
Develop and implement a river valley protection & enhancement policy	Immediate	3	N/A
Develop policy direction that requires the connection of all new and existing green spaces with existing functional natural ecosystems	Immediate	2	\$
Incorporate "Adaptive Management Plans" into the Urban Forest Management Plan to allow flexibility in managing invasive, threatening insects and diseases	Immediate	3	N/A
Create clear Okotoks' definitions and policy around Conservation Reserves and Environmental Reserves for the protection of valuable ecosystems	Immediate	2	N/A
Develop a Town wetlands policy that will bolster flood mitigation and provide ecosystem services	Immediate	3	\$
Identify new and enforce wider riparian and environmentally significant areas setbacks	Immediate	3	N/A
Create a Conservation Reserves Policy and build a reserve fund for the protection of valuable ecosystems	Immediate	4	\$\$\$\$

<i>Actions</i>	<i>Timeline</i>	<i>Impract</i>	<i>Cost</i>
Identify and map out existing environmental inventory, including existing green spaces, areas that support species at risk and pollinators, wetlands, riparian zones and areas of critical habitat as Environmentally Significant Areas (ESA)/ Natural Environment designation. To also include a broad desktop level Ecosystem Service Assessment and natural capital valuation.	Immediate, short-term	4	\$\$-\$\$\$\$
Creation of a reserve fund to pay for unforeseen situations that threaten the health of the Town's urban forest and naturalized spaces	Short-term	3	\$\$\$
Strategy 2: Forge partnerships for ecological protection			
Work with other government agencies, land owners, NGOs, and the research community to manage risks associated with invasive species	Ongoing, immediate	3	N/A
Work with regional governments to develop a Species at Risk protection strategy in alignment with provincial and federal biodiversity strategies	Ongoing, immediate	3	\$
Lobby provincial and federal governments to reduce pesticide use on agricultural lands for biodiversity and watershed protection	Immediate, short-term	2	N/A
Partner with local school boards to implement a school yard naturalization program	Immediate, short-term	2	N/A
Partner with Ducks Unlimited or the Nature Conservancy for wetland management and protection	Immediate, short-term	3	N/A
Strategy 3: Develop and implement a town-wide green network strategy			
Establish naturalized open space and green infrastructure targets for all new neighbourhood developments	Immediate	4	N/A
Explore and implement alternative funding arrangement for the inclusion of naturalized green spaces in new developments (e.g. development charges)	Immediate, short-term	3	N/A
Explore green roof and wall targets and incentives for existing buildings	Short-term	3	N/A
Create a green infrastructure network that connects green amenities across the town	Short-term, long-term	3	\$\$\$
Strategy 4: Foster a regional system of ecological parks and areas			
Designate applicable parks, naturalized spaces, and view sheds as municipal heritage properties (including cultural landscapes and unique landscape features)	Ongoing	2	\$\$
Advocate and work with the MD and the Province to create a regional park system or „green belt” master plan with an emphasis on an active transportation corridor that connects to Calgary, Black Diamond, Turner Valley, Aldersyde and High River.	Immediate, short-term, long-term	4	\$
Strategy 5: Encourage the naturalization of private properties			
Promote and provide education on nature-scaping and habitat creation practices on residential properties	Ongoing, immediate	1	N/A
Prevent or encourage limited use of pesticide spraying	Ongoing, immediate	2	N/A
Encourage reduced use of fertilizers to prevent substance loading in storm water (i.e. Phosphorus)	Immediate	2	N/A
Create incentives for residents who plant native vegetation and shift away from traditional lawns	Immediate	2	\$\$
Encourage resident and commercial use of compost to improve soil fertility	Immediate	1	\$

<i>Actions</i>	<i>Timeline</i>	<i>Impact</i>	<i>Cost</i>
Strategy 6: Increase the community's understanding of and connection with nature			
Enhance opportunities for public outdoor activities and connection (e.g. pathways, ponds, sitting areas, etc.)	Ongoing	2	\$\$
Increase number and type of interpretive signs to educate visitors on various environmental features of the Town	Ongoing	1	N/A
Promote awareness and education on importance of biodiversity and habitat protection	Immediate	1	\$
Implement and/or partner on a citizen science program to assist with monitoring local biodiversity trends	Short-term	1	\$\$
Strategy 7: Reduce light pollution			
Implement a dark sky policy to minimize the impact of lighting and buildings on wildlife	immediate	2	\$
Strategy 8: Encourage local food production			
Construct additional community garden plots on public lands, e.g. in the floodplain	Immediate	2	\$\$\$
Encourage residents to have personal household gardens that are integrated into landscape	Immediate	1	N/A
Create a sun and shade policy for growing food in denser communities	Immediate	1	N/A
Allow and encourage co-op multifamily local gardens in R3 development	Immediate	2	N/A
Implement a visible pilot project to demonstrate the benefits of composting to soil fertility	Immediate	1	\$\$
Create a local food forest	Immediate, short-term	2	\$\$\$
Explore the potential for the construction of hydroponic/indoor community gardens for winter food production	Immediate, short-term	2	\$\$ - \$\$\$
As part of the ecological asset inventory, identify prime agricultural lands and explore the implementation of a 'greenbelt' or agricultural protection zone.	Short-term	3	N/A
Encourage the installation of community gardens on restaurant rooftops	Long-term	2	N/A
Strategy 9: Provide education and support for local and regional sustainable food choices and practices			
Create a Sustainable Food Charter or policy for Town facilities and events (e.g. 100 mile radius)	Immediate	2	\$
Partner with local food and garden clubs to provide education on the benefits of local and sustainable food and agriculture practices (gardening, canning, storage, homesteading skills etc.)	Immediate, short-term	1	N/A
Create a community kitchen	Short-term	1	\$\$

Actions	Timeline	Impact	Cost
LAND USE & URBAN DESIGN			
Strategy 1: Implement holistic environmental requirements for new development			
Develop a Town of Okotoks Sustainable Development Program/Guidelines for new neighbourhood development modelled off of LEED ND but Okotoks customized	Immediate, short-term	4	\$\$
Require all new neighbourhoods to implement conservation design principles that allow for higher percentage of land to remain protected through conservation easements, land trusts, environmental reserves and/or municipal reserves	Immediate, short-term	4	\$\$\$\$
Utilize the ecological assessment of sites to guide use and development of open space land: Use the RFMP recreation outdoor amenity matrix to prioritize compatible site uses while preserving ecological integrity and achieving balance between recreational programming and environmental conservation	Short-term, long-term	3	\$
Require the next new development in Okotoks to achieve levels of environmental performance on par with LEED ND or similar green neighbourhood certification program	Short-term, long-term	4	\$\$\$\$
Work with the Provincial and Federal governments to identify support for a future net-zero community (e.g. Drake Landing 2.0)	Short-term, long-term	4	\$\$\$\$
Encourage the development of an Eco-Business Park	Long-term	3	\$\$\$\$
Strategy 2: Ensure all new neighbourhoods are designed as complete, transit-oriented communities			
Continue to implement the Active Transportation Strategy	Ongoing	3	\$\$\$
Require all new neighbourhoods to implement active transportation strategies to meet daily needs (i.e. „complete communities“)	Immediate	4	N/A
Identify and require increased density targets for new neighbourhood development, including targets for mixed use design and multifamily housing	Immediate	4	N/A
Establish a % footprint reduction target for parking areas and introduce shared parking concepts	Immediate	3	N/A
Map out current active transportation routes (e.g. sidewalks, paths, bike trails) to identify opportunities to increase AT	Short-term	2	\$
Develop a Master Mobility Plan that includes all forms of transportation including roadways, public transit, active transportation, rail etc.	Short-term, long-term	3	\$\$
Strategy 3: Enhance local ecosystem integrity and biodiversity through the addition of green infrastructure in the urban environment			
Require a minimum percentage of vegetated area and permeable surfaces in all new commercial and mixed-use development	Immediate	3	N/A
Identify & require best management practices for the protection and enhancement of urban trees (i.e. tree trenches, Silva Cells etc.)	Short-term	2	\$\$
Develop a Green Main Street program in the Downtown to promote economic development & tourism	Short-term, long-term	3	\$\$\$
Explore a private tree protection bylaw and/or incentive program for retaining mature privately-owned trees	Long-term	2	N/A

<i>Actions</i>	<i>Timeline</i>	<i>Impact</i>	<i>Cost</i>
Strategy 4: Increase the number of diverse building forms and functions in new and existing neighbourhoods			
Require a wider diversity of housing types (e.g. tiny homes, secondary suites, accessory dwellings) in new and existing neighbourhoods	Immediate	3	N/A
Require a wider diversity of commercial building types (e.g. small/mini units, work/live units) in new and existing developments	Immediate	3	N/A
Strategy 5: Increase green building requirements for new construction			
Create a set of Okotoks required baseline green building guidelines/checklist for different building types (including construction & operational waste management, energy efficiency, renewable energy generation, green space conservation, active transportation, and water conservation) - potential to alternatively require achievement of a third-party certification program	Immediate, short-term	3	\$
Identify and implement appropriate incentivizes for the achievement of higher levels of sustainability performance on new commercial / multi-family residential buildings	Short-term	2	\$
Create a recognition program to promote advanced green building efforts	Short-term	1	\$
ENERGY, EMISSIONS & AIR QUALITY			
Strategy 1: Develop and implement a comprehensive Renewable Energy Strategy to encourage, support and implement new forms of renewable energy generation			
Adapt the rezoning and permitting process/LUB to include requirements for all new homes to be built to a minimum of „solar ready”	Immediate	2	N/A
Explore the feasibility of requiring a % of buildings / units in a new development to be built with solar PV systems	Immediate	3	N/A
Work with the Province to identify ways of increasing the ease with which residents can apply to install solar panels on their home, including increasing availability to existing programs (i.e. PACE)	Immediate, short-term	3	N/A
Identify and potentially partner with other organizations to explore alternative financing arrangements for solar PV systems (i.e. PACE and Banks)	Immediate, short-term	2	\$\$
Explore the development of a sustainable solar farm in partnership with Fortis and other industry and research partners	Immediate, short-term	4	\$\$\$\$
Coordinate discounted bulk purchases of product to reduce the cost of renewable energy technologies	Short-term, long-term	2	N/A
Explore and provide support and incentives for on- and off-site renewable energy for commercial and residential buildings	Short-term, long-term	2	\$\$-\$\$\$
Work with the local utility to identify ways of allowing feed-in-tariffs (enhance return to customer from tariff rates?)	Short-term, long-term	2	N/A
Explore appetite for a community solar garden or community co-op program, into which residents can „sponsor” part of the infrastructure and procure local green energy	Short-term, long-term	3	\$\$\$
Strategy 2: Explore the feasibility of alternative space heating fuels and technologies			
Create a reward system that encourages land developers and individuals to adopt low-carbon renewable energy systems for space heating	Short-term	2	\$\$
Explore options for deriving energy from waste (including solid waste, wastewater, and operational waste heat)	Short-term, long-term	3	\$\$

<i>Actions</i>	<i>Timeline</i>	<i>Impact</i>	<i>Cost</i>
Conduct a feasibility analysis of low-carbon district energy heating and cooling systems for new builds, including wastewater systems	Long-term	4	\$\$
Strategy 3: Improve access to energy and emissions performance of existing buildings			
Benchmark energy footprint and GHGs of existing community building inventory	Ongoing	2	\$\$-\$
Partner with other local governments and the AUMA to lobby the Province for the adoption of a province-wide energy benchmarking regulation	Immediate	2	N/A
Work with utilities to improve building owner and tenant access to energy consumption data to encourage energy use reductions	Short-term	1	\$
Work with local building owners and other municipalities to implement a voluntary energy benchmarking program	Short-term	2	\$
Require energy audit and EnerGuide labelling at point of sale	Long-term	2	N/A
Strategy 4: Require higher levels of energy performance in new building construction			
Lobby the Province for the adoption of an energy step code or other advanced minimum energy performance criteria	Immediate	4	N/A
Explore and adopt a „better than code“ level of building performance requirement for new construction specific to each building type (e.g. R-2000, EnerGuide)	Immediate	4	\$\$
Strategy 5: Assist and incentivize the building industry and homeowners in meeting higher energy performance levels in new and existing buildings			
Revise existing Okotoks policy and programs to increase the ease of energy efficiency improvements and renewable energy installation in existing buildings	Ongoing, immediate	3	N/A
Work with province, other local governments and other organizations to provide training to inspectors and industry professionals on new building energy performance requirements	Immediate, short-term	2-3	\$
Research and adapt existing resources and requirements (e.g. design guidelines) to promote key strategies for achieving energy efficient, low carbon buildings	Immediate, short-term	1	\$
Implement an incentive program for the building industry to meet specified higher levels of new construction building standards that those required within each sector (e.g. Passive House)	Immediate, short-term	3	\$\$\$
Identify and partner with other organizations to explore alternative financing arrangements to improve the performance of new and existing buildings	Short-term	2-3	N/A
Design and implement a retrofit program for existing building that explores: <ul style="list-style-type: none"> • Grants, rebates, or refunds on retrofit products and materials (in alignment with Energy Efficiency Alberta's Programs) • Programs that allow homeowners to finance their retrofits through the Town and repay the loan through their property tax bill • Time of sale energy audits • Buying down the high interest rates that energy efficiency upgrade loans often have in order to make them more accessible • Bulk buying renewable energy or retrofit products to reduce cost, and • Creating a youth training program for energy retrofits 	Short-term, long-term	3	\$\$\$
Strategy 6: Foster the use of non-automotive, active modes of transportation			
Continue to implement the Active Transportation Strategy	Ongoing	3	\$\$\$
Partner with a private company to host town-wide bike share program	Immediate	2	\$\$

<i>Actions</i>	<i>Timeline</i>	<i>Impact</i>	<i>Cost</i>
Map out current active transportation routes (e.g. sidewalks, paths, bike trails) and rates of usage to identify opportunities to increase AT	Immediate	2	\$
Identify and undertake necessary safety upgrades (e.g.. lighting, barrier removal) to increase the percentage of people using AT	Immediate, short-term	2	\$\$
Develop a Master Mobility Plan that includes all forms of transportation ,including roadways, public transit, active transportation, rail etc.	Short-term	2	\$\$
Explore the implementation of low impact recreation trail design	Short-term, long-term	3	\$\$\$
Explore and implement opportunities to create a more pedestrian/bicycle-friendly downtown core through the implementation of separated sidewalk / pathways	Short-term, long-term	3	\$\$\$
Build a pedestrian crossing on the west side of the river	Long-term	1	\$\$\$-\$\$\$\$
Work with regional municipalities to develop a dedicated active transportation lane or pathway between Millarville, Turner Valley, Black Diamond, Okotoks, and Aldersyde	Long-term	2	\$\$\$
Work with regional governments to fund and construct a regional bike path to Calgary	Long-term	2	\$\$\$
Strategy 7: Improve access to public transit options, both within Okotoks and between neighbouring municipalities			
Partner with provincial and regional authorities to identify and implement improvements to the regional transit program	Ongoing, immediate	4	N/A
Create a local transit system that includes feasible options for both seniors and youth	Immediate	4	\$\$\$-\$\$\$\$
Explore the feasibility of an LRT/heavy rail route between Calgary	Long-term	4	\$\$\$\$
Strategy 8: Support the uptake of low-emissions vehicles			
Implement and/or partner with the private sector to promote/incent electric vehicles and implement supporting infrastructure (i.e. EV charging stations)	Ongoing, immediate	2	\$
Lobby the province for the provision of incentives for EVs	Immediate	2	N/A
Explore a requirement for including EV charging stations at all new multi-unit residential buildings and in commercial parking lots	Immediate	3	N/A
Continue to expand the town's network of charging stations for EVs in key locations	Short-term, long-term	3	\$\$
Explore financing opportunities to support the purchase of EVs	Long-term	2	\$\$
Once EV penetration has increased, explore renewable energy options (e.g. solar arrays) for charging electric units (e.g. electric vehicles)	Long-term	1	\$\$
Strategy 9: Support car and ride sharing			
Partner with a third party to create and adopt a community-wide carpooling app	Immediate	2	\$
Strategy 10: Create pedestrian-friendly, emission free environments			
Host a local car share program (e.g. car2go)	Immediate	2	\$
Host closed-street downtown events, such as Car Free days	Immediate	1	\$
Explore opportunities to increase ease of walking in winter months, including prioritizing snow removal on pathways at the same level as for roads	Short-term	2	\$

<i>Actions</i>	<i>Timeline</i>	<i>Impract</i>	<i>Cost</i>
Progress sections of downtown into a car-free zones	Short-term, long-term	1	\$\$\$
Progressively close off more and more ,high' streets to cars	Long-term	2	\$\$
Continue to restrict vehicle idling and explore means to enhance education and compliance to current bylaw	Ongoing	3	N/A
Develop incentives for the private sector to adhere to advanced indoor air quality criteria for buildings	Short-term	2	\$\$
Work with regional governments to encourage industry and other municipalities to be proactive in addressing air quality issues through voluntary programs and initiatives	Short-term, long-term	2	N/A
Implement an Okotoks based air quality monitoring program in partnership with provincial government and/or through citizen science	Short-term, long-term	1	\$\$
WASTE SYSTEMS			
Strategy 1: Encourage responsible waste reduction practices in business and manufacturing			
Lobby the provincial government for action on AESRD's Extended Producer Responsibility Program	Ongoing, immediate	3	N/A
Develop a waste reduction program with local businesses in partnership with AESRD's Extended Producer Responsibility Program	Short-term	3	N/A
Strategy 2: Explore prohibiting single use items			
Implement a polystyrene and non-recyclable container phase-out/prohibition	Immediate	2	N/A
Consider the phase out of store plastic bags and straws	Short-term	2	N/A
Strategy 3: Encourage practices and opportunities to share or reuse materials and products			
Partner with local community groups to create or support a local reuse center in Okotoks (adapt Eco Centre idea)	Ongoing	1	\$\$-\$
Host or partner with a community group to implement community repair cafés	Immediate	2	\$
Encourage restaurants and grocery stores to reduce the price or donate leftover food products	Long-term	1	N/A
Strategy 4: Provide continuous education to reduce waste production and improve waste diversion rates			
Create municipal partnership with schools to develop waste initiatives (i.e. Youth Ambassador program)	Immediate	2	\$
Implement targeted educational programs with a focus on removing perceived barriers to waste diversion, promoting its benefits, and building personal commitment to it	Immediate	1	\$
Implement an education program on the benefits of reuse/freecycling	Immediate	1	\$
Strategy 5: Enhance the scale and efficiency of regional waste collection, processing and product delivery			
Work with the Foothills Regional Services Commission to create a regional Materials Recovery Facility (MRF) and supporting shared collection system	Ongoing, immediate	3	\$\$\$\$
Evolve the Recycling Centre into a regional Eco Centre, providing a 'one stop' location for the recycling and safe disposal of excess and niche materials.	Ongoing	2	N/A

<i>Actions</i>	<i>Timeline</i>	<i>Impact</i>	<i>Cost</i>
Strategy 6: Further waste diversion practices and services within residential sector			
Implement a universal residential (single family) recycling and organic waste collection program	Ongoing	4	\$\$\$
Implement bylaw requirements and assist residents and building managers with implementing a universal multi-family recycling and organic waste collection program	Ongoing	2	N/A
Increase the size of green bins or frequency of pickup	Ongoing	1	N/A
Pilot and explore the implementation of bi-weekly garbage (black cart) collection	Ongoing	2	N/A
Explore the need to increase the size of blue bins or frequency of pickup	Immediate	1	N/A
Assess opportunities to increase auditing, regulation, and compliance to the Town's existing waste bylaw	Short-term	2	\$
Reshape waste management utility into one that operates on a frequency or volume based rate structure, 'pay as you throw philosophy'	Short-term	4	N/A
Strategy 7: Advance waste diversion practices in the industrial, commercial and institutional (ICI) sector			
Implement bylaw requirements and assist the IC&I Sector facilities to provide on-site single source commingled recycling and organic waste collection services.	Ongoing	4	N/A
Require multi-stream waste collection stations in commercial and institutional settings / public interface	Ongoing, immediate	3	N/A
Provide resources to assist businesses in waste reduction	Ongoing, immediate	2	\$
Partner with local businesses and other regional governments to develop an eco-industrial waste pilot	Long-term	2	\$
Create incentives for businesses to stock bulk products with no packaging and/or incentives for consumers to buy in bulk or use their own containers	Long-term	2	\$\$
Strategy 8: Dramatically improve the diversion of construction and demolition waste from the landfill			
Adjust landfill rates to incent construction and demolition waste diversion	Immediate	3	N/A
Partner with a local builder to pilot and C&D waste diversion project	Immediate	2	N/A
Progress C&D waste management initiatives in alignment with Alberta Environment and Sustainable Resource Development's (AESRD) implementation of their Extended Producer Responsibility Program	Short-term	3	N/A
Develop a building deconstruction program to salvage building materials rather than use traditional demolition methods	Short-term	2	N/A
Strategy 9: Implement a community-wide public space and event waste diversion program			
Provide support to community clean-up events	Ongoing, immediate	1	\$
Provide increased opportunities for sidewalk and park recycling disposal	Immediate	1	\$
Make compostable dog waste bags and compost stations available in parks and green spaces	Immediate	1	\$
Implement a downtown street waste diversion program (permeant three tier waste stations)	Immediate, short-term	2	\$\$

<i>Actions</i>	<i>Timeline</i>	<i>Impract</i>	<i>Cost</i>
Develop a three stream waste diversion program for external community events	Immediate, short-term	2	\$\$
Implement a town-wide park space waste diversion program (permeant three tier waste stations)	Short-term, long-term	2	\$\$\$
WATER SYSTEMS			
Strategy 1: Implement an advanced water reuse strategy			
Lobby the Province to update their water reuse policies to allow for storm water and greywater reuse	Ongoing	1	N/A
Increase interim raw water capacity and use	Ongoing	2	\$
Utilize treated wastewater effluent from wastewater treatment plant and/or process wastewater (water treatment backwash) bulk water fill	Immediate	2	\$
Explore water reuse opportunities, especially grey water systems for residential and commercial applications and storm water reuse for irrigation and construction practices	Immediate, short-term	4	\$-\$\$
Lobby the province to provide incentives for new buildings to install grey water systems and rainwater/storm water reuse systems	Short-term	2	N/A
Incentivize or require dual plumbing for use of recycled water for new development and construction	Short-term	4	\$\$\$
Strategy 2: Develop an aggressive peak water demand program			
Implement a Water Shortage Plan to manage water supply during extreme climatic events	Ongoing	2	N/A
Modify outdoor water schedule to reduce peak demand periods	Immediate	2	N/A
Increase the cost per m ³ of water in the third consumption tier of the residential utility rates	Immediate	2	N/A
Explore higher utility rates for peak summer demand periods	Short-term	2-3	N/A
Strategy 3: Increase water conservation requirements and incentives			
Expand incentives/rebates to homeowners to make purchases that contribute to water efficiency and conservation	Ongoing	1	\$-\$\$
Increase compliance to watering schedules and other water conservation requirements	Immediate	2	\$
Implement a scaled water use rate for commercial, industrial, and institutional customers	Immediate	3	N/A
Implement an incentive/rebate program for commercial, industrial, and institutional customers to make purchases that contribute to water efficiency and conservation	Short-term	2	\$\$
Require new developments to implement water reuse and/or non-potable water strategies	Short-term, Long-term	4	N/A
Use the latest technology to effectively monitor, prevent, and address leaks in water processing and distribution infrastructure to increase overall system resilience and efficiency.	Ongoing	3	\$\$

<i>Actions</i>	<i>Timeline</i>	<i>Impact</i>	<i>Cost</i>
Strategy 4: Increase information and education on water use and opportunities for conservation			
Implement a universal water metering program and daily consumption reporting tool for all commercial and residential customers	Ongoing	3	\$
Enhance ability to implement and analyse data on water availability and consumption of major users	Ongoing	1	N/A
Educate residents on the benefits of changing landscaping practices and shifting mindsets away from the need for a green lawn	Ongoing, immediate	1	\$
Partner with local schools to create a youth ambassador program around water conservation and xeriscaping	Immediate	1	\$
Create a community-wide water reduction contest	Immediate	1	\$
Require water efficiency audits at point of sale for commercial and residential properties	Long-term	3	N/A
Strategy 5: Encourage and/or require low-water landscaping practices			
Require drought tolerant landscaping in new communities' public spaces	Ongoing	3	N/A
Implement a lawn buy-back program for residents who convert sod or grass to drought-tolerant landscaping	Immediate	1	\$\$
Partner with developer and/or home builders to create a new home xeriscaping program/option	Immediate	1	N/A
Include xeriscaping in new community guidelines for front yards	Short-term	2	N/A
Strategy 6: Collaborate regionally on source water enhancement and watershed protection			
Enhance regional collaboration and efforts on sourcewater protection and water consumption	Immediate	2	N/A
Develop an optimized water management strategy and/or system in the region	Long-term	3	N/A
Strategy 7: Decrease sources of contamination in the Sheep River			
Enhance community education on clean storm drain bylaw practices	Ongoing	1	N/A
Develop an integrated storm water management plan that identifies a comprehensive approach to mitigating impacts of pollutants on Sheep River	Immediate	3	\$\$\$
Research the potential for a variable storm water utility rate based on site's impermeable surface area	Short-term	2	N/A
Require the inclusion and integration of green infrastructure in new developments to slow and pre-treat storm water	Short-term	3	\$\$
Limit pesticide use in landscaped areas and agricultural land (*see Ecosystems & Agriculture section)	Short-term	N/A	N/A
Strategy 8: Enhance efficiency and quality of wastewater treatment process			
Implement the first phase of Wastewater Treatment Plant upgrade (upgrade of headworks, pumps and screening)	Short-term	3	\$\$\$
Implement flow meters & alarming for wastewater collection system to prevent system leakage and enhance system resilience	Short-term	3	\$\$
Improve wastewater effluent quality to meet future AEP regulations	Long-term	3	\$\$\$\$

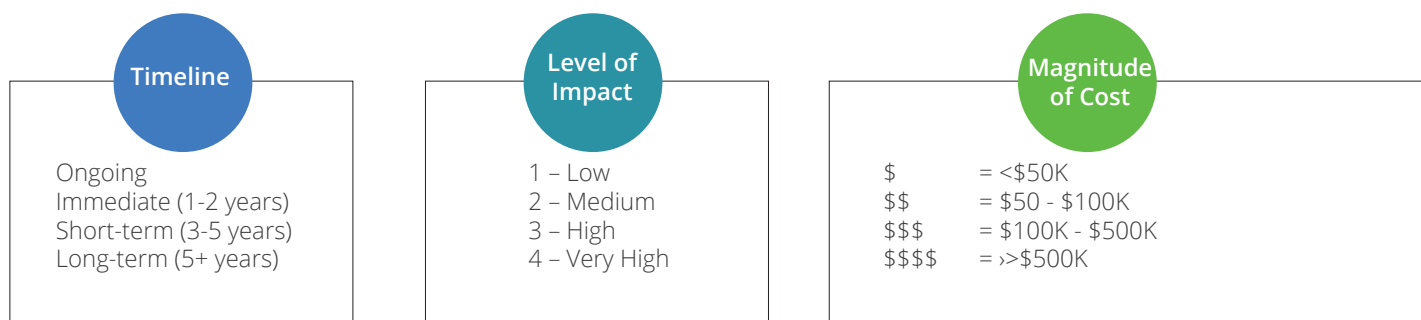
<i>Actions</i>	<i>Timeline</i>	<i>Impract</i>	<i>Cost</i>
CLIMATE ADAPTATION & RESILIENCE			
Strategy 1: Develop a Town Climate Change Action Plan			
Conduct an initial overview of projected climate impacts on Okotoks and Identify and prioritize urgent required action measures	Ongoing	4	\$
Complete a corporate and community GHG baseline and develop mitigation measures to reduce GHGs	Ongoing, immediate	2	\$
Conduct a vulnerability and impact assessment of community energy and water supplies and identify and develop corporate and community resiliency and adaptation measures	Ongoing, immediate	3	\$
Conduct a full vulnerability and impact assessment on all areas of corporate and community assets	Immediate	3	\$
Identify and plan for at risk populations during extreme climatic events (e.g. heat waves, ice storms, floods etc.)	Immediate	3	\$
Develop and implement a community-based marketing campaign to educate people on climate change and the benefits of developing community resilience	Immediate	2	N/A
Identify and upgrade infrastructure that may be affected by climate change impacts	Short-term, long-term	3	\$\$\$\$
Strategy 2: Mitigate the impact of flooding on community assets and infrastructure			
Implement a prohibition on a new development within the 1:100 floodway including the Flood Fringe.	Immediate	4	N/A
Develop a measured & balanced approach to redevelopment within the 1:100 flood fringe that is based on risk minimization, the precautionary principle and minimization of social and economic detriments	Immediate	3	N/A
Incorporate measures in future land-use planning to mitigate impact of flooding, including prioritization of future park siting	Immediate	3	N/A
Increase flood level construction requirements and other measures to protect new and existing developments in the floodplain	Immediate	3	N/A
Protect and enhance the health of existing eco-assets that buffer the impacts of river flooding and overland urban storm water flooding	Immediate, short-term	4	\$\$\$\$
Investigate feasibility of cold weather permeable pavements	Short-term	1	\$
Strategy 3: Enhance and protect existing eco-assets that provide buffering from climatic events			
Protect 1:100 Floodway & Flood Fringe areas for natural storm water filtration, water quality protection, riparian and aquatic ecosystem health and to protect development from major climatic events	Immediate, short-term	3	N/A
Integrate green infrastructure into urban fabric to minimize the impact of flooding e.g. incorporate bioswales to filter and absorb runoff water, require the use of permeable paving materials, limit the area paved over within the community	Short-term, long-term	2	\$\$\$
Overtime, convert existing residential development within the floodplain to naturalized municipal or provincial lands	Long-term	3	\$\$\$

APPENDIX B:

CORPORATE ACTIONS IMPLEMENTATION DETAILS

This appendix presents the suite of actions that will be taken by the Town of Okotoks' municipal government organization to improve the sustainability of its internal operations and practices.

It should be noted that the timeline, level of impact, and magnitude of cost assigned to each action represent estimates only, but have been included to help to prioritize and implement each action. Sources of funding such as provincial and federal grants will be explored as a way to reduce the financial impact of higher-cost actions.



Actions	Timeline	Impact	Cost
ENERGY & EMISSIONS			
Strategy 1: Enhance the energy efficiency of Town infrastructure, facilities and building through energy efficiency upgrades and the development of a more stringent green building standard			
Convert all existing street lights to LED technology	Ongoing	2	\$\$\$
Convert all traffic and pedestrian lights to LED technology	Ongoing	2	\$
Create and implement a Town of Okotoks Sustainable Municipal Construction Guidelines(s) (i.e. consider energy, waste, water etc. when constructing and renovating Town Buildings) or implement a policy that requires all new facility construction and major renovation projects to meet a third party green building certification program (i.e. LEED Gold, BOMA etc.)	Immediate	3	N/A
Create an energy management guideline for Town of Okotoks baseline energy performance requirements including an analysis of optimal efficiency of each building and development of a energy rating standard	Immediate	3	\$
Conduct a comprehensive energy audit of all Town buildings to identify opportunities for energy savings. To include be not limited to: <ul style="list-style-type: none"> • A comprehensive review of the Town's energy portfolio, investigating energy and cost savings related to facility and equipment operation and utility rates (including power factors, power distribution blocks, power demand, peak flow, etc.) • Review of each facilities electricity and space heating demand and investigate alternative energy sources (i.e. energy reuse and co-generation) • Installation and/or improvement of motion sensor lights in all Town buildings • Installation efficient hand dryers in Town buildings • Conversion of all town facility lighting (indoor and outdoor) to LED technology 	Immediate, short-term	4	\$\$\$

<i>Actions</i>	<i>Timeline</i>	<i>Impact</i>	<i>Cost</i>
Strategy 2: Increase the use of renewable energy in Town buildings and infrastructure including solar PV and potential energy co-generation or district heating			
Increase the production of renewable energy through the installation of more solar PV systems on all Town buildings and facilities	Ongoing, immediate	3	\$\$\$\$-\$\$\$\$
Develop a long-term renewable energy strategy for the corporation that includes mechanisms for short term and long range financing	Immediate	3	N/A
Ensure optimal operation of existing & future facility solar systems through the implementation of a comprehensive staff training and annual maintenance program	Immediate	2	\$
Purchase and/or generate renewable power for 100% of energy use in Town buildings	Immediate	4	\$\$\$\$-\$\$\$\$
Research opportunities for energy co-generation and/or district heating in existing and future facilities and operations	Immediate	3	\$
Use solar power to light Town pathways	Long-term	1	\$\$\$
Strategy 3: Replace conventional vehicles in the fleet and Town equipment with low-emissions options (i.e. electric or biodiesel)			
Evolve the Town's sustainable purchasing guideline to include a phased program for the replacement of Town fleet with low-emissions vehicles	Ongoing, immediate	3	\$\$
Research the viability of alternative low-emission equipment and implement measures where feasible	Ongoing, immediate	2	\$
Explore alternative public transit vehicles, e.g. electric, biodiesel and biogas-powered	Immediate	3	\$\$
Implement a zero emissions and/or renewable fuel standard for the Town fleet	Long-term	2	\$\$
Strategy 4: Encourage the use of low-emissions, active modes of transportation by Town staff			
Implement free EV charging stations at municipal facilities that can be utilized by staff for EV charging	Ongoing	1	\$
Develop a campaign to encourage staff to carpool to meetings	Immediate	1	N/A
Creative incentives or rewards for Town employees who walk or bike to work	Immediate	1	\$
Purchase a Town account in the community bike share program for use by Town staff	Short-term	2	\$
Strategy 5: Encourage alternative work and meeting options that reduce staff travel to and from work			
Develop a campaign to encourage staff to utilize video & teleconference meeting software to reduce the travel between Town facilities for meetings (virtual meeting infrastructure)	Immediate	1	N/A
Determine the conditions under which staff can/should work from home, and design an appropriate package of resources, incentives, and IT infrastructure (virtual desktop infrastructure)	Immediate	1	N/A

Actions	Timeline	Impact	Cost
WASTE			
Strategy 1: Reduce and divert waste generated by the Town through the development of a three-stream waste diversion program for all Town-run events and public interfacing facilities and spaces			
Design and implement a waste reduction strategy for all Town buildings and facilities	Ongoing	2	\$\$
Implement a three-stream waste diversion program for all Town run community events	Ongoing	2	\$\$
Require vendors to comply to regulations that require the use of compostable products at all Town events and facilities	Ongoing	2	N/A
Implement and/or enhance waste management strategy/program at all public interfacing facilities and spaces to include three diversion streams (downtown, parks, etc.)	Ongoing, immediate	3	\$\$\$
Strategy 2: Reduce material waste in Town processes and projects by prohibiting Styrofoam and other products that can't be recycled, and creating a waste management and diversion policy for the construction and demolition of Town projects			
Review and enhance Sustainable Purchasing/Procurement Guideline for Town supplies, vendors, meetings, and events	Ongoing	2	N/A
Prohibit Styrofoam and other products that can't be recycled from Town events, meetings and services	Immediate	2	N/A
Explore the potential for recycling sweeper sand	Short-term	1	\$
Implement a construction and demolition waste policy for Town construction projects	Short-term	3	\$\$
WATER			
Strategy 1: Reduce the volume of water consumed by Town facilities and services by increasing the area of drought-tolerant landscaping, and performing an audit and retrofit strategy for all Town water and wastewater infrastructure			
Increase xeriscaped areas in public spaces	Ongoing	2	N/A
Implement a phased audit and retrofit strategy for all Town buildings and facilities	Immediate	3	\$\$
Audit the Town's water and wastewater pumps and motors to optimize efficiency	Immediate	3	\$\$
Conduct an audit on all irrigation infrastructure	Immediate	3	N/A
Strategy 2: Explore and adopt measures to reuse water from swimming pools, water treatment filter backwash and rain and stormwater for use in Town facilities and auxiliary services, such as street cleaning and landscape maintenance			
Convert all water distributing vehicles such as street sweepers and tree-watering tankers to use reclaimed and/or non-potable water	Ongoing	2	\$\$\$
Increase interim raw water capacity and use	Ongoing	2	\$\$
Implement a strategy to effectively and efficiency reuse pool water for parks watering or construction dust abatement	Ongoing	1	\$
Utilize wastewater effluent from wastewater treatment plant and/or process wastewater (water treatment backwash) for town irrigation and bulk water fill	Immediate	3	\$\$-\$
Explore the use of rainwater/storm water reuse for Town irrigation	Immediate	3	\$\$
Implement a water reuse system pilot project in a municipal facility	Short-term	2	N/A

<i>Actions</i>	<i>Timeline</i>	<i>Impact</i>	<i>Cost</i>
Strategy 3: Reduce contaminants from entering the water system from Town operations and practices, such as road salting and sanding and enhancing the Town's stormwater infrastructure and maintenance programs			
Prohibit the use of traffic paint that includes micro-plastics.	Immediate	2	\$
Enhance the Town's road and catch basin maintenance and cleaning practices	Immediate	2	\$
Reduce the utilization of road salts and sands through the research and trial alternative products	Ongoing	3	\$
ECOSYSTEMS			
Strategy 1: Enhance ecological integrity of Town lands by including drought tolerant vegetation into landscaping, enhancing native ecosystems, and reducing unnecessary pesticide use			
Develop an implementation plan for more xeriscape and/or native planting demonstration projects on Town-owned land	Ongoing	2	\$\$-\$\$\$
Naturalize more areas of turf on public lands with local, drought-tolerant vegetation (ongoing in new developments)	Ongoing, Long-term	2	\$
Create policy to avoid conversion of public lands to maintain and enhance native ecosystems (grasslands, riparian zones etc.)	Immediate	3	N/A
Further reduce pesticide use for cosmetic purposes on Town lands	Immediate	2	N/A
Strategy 2: Introduce more naturalized landscapes on public land			
Implement a green infrastructure demonstration project: bioretention system	Ongoing	2	\$\$-\$\$\$
Implement a green infrastructure demonstration project: green roof	Short-term	2	\$\$ - \$\$\$

APPENDIX C:

ENVIRONMENTAL INDICATORS

The Town of Okotoks has already been monitoring its environmental performance over the last several years by tracking the key indicators listed below. These will also be used to help the Town of Okotoks gauge community progress toward the EMP's goals, targets, and overarching vision of sustainability. While many of these indicators have been identified in other Town of Okotoks plans and strategies, the Town will continue to review the indicators and data it tracks ensure future data collection is streamlined and efficient in tracking progress towards Okotoks' new and evolving environmental goals.

URBAN FORESTRY MANAGEMENT PLAN

- Plant establishment period (length) – through different planting methods and plant size (b & B 5 years; Potted stock 3 years)
- Use of non-potable water
- # of tree/sidewalk and tree/street clearance conflicts (captured through pruning requests and location pruning)
- # hazard trees and clearance issues (captured through Level 1 tree risk assessment and performed annually)
- Inventory (tree species, age, number, state of health, tree value, appreciation, location)
- Tree canopy coverage
- % of urban forest pruned every year
- Decrease in tree diseases
- Mortality rate of trees
- Replanting rate
- # of community members engaged
- Cost of replacement of trees (damaged, disturbed)
- # of mulch beds
- Existence/prevalence of pests/disease
- Existence/prevalence of nuisance, noxious, restricted weeds
- Amount of native/hardy non-invasive plant material
- % diversity of tree species (potential additional metric)
- Maintenance of hazardous and invasive plants

DOWNTOWN URBAN DESIGN MASTER PLAN

- # of heritage buildings protected and celebrated
- # of sustainable elements featured in 'green streets'
- # of 'fine-grained' pattern of shops that are built with a contemporary palette of warm natural materials (e.g. a high frequency of building entrances indicates a 'fine-grained' pattern of storefronts)
- # of developments with green roofs, green spaces, and gardens
- # of developments integrating energy-efficient solar technologies
- # of developments incorporating natural habitats and landscape elements such as native trees and plants
- # of protected bike lanes
- # of developments maximizing sunlight and natural ventilation
- The connectivity of public spaces
- Variability of uses for a development
- # of spaces provided for interaction between residents and neighbours
- # of bioswales and rainwater infiltration trenches in neighbourhoods
- # of open spaces in developments
- # of 'green initiatives' around parking areas
- Availability of bicycle racks and posts
- # of permeable concrete pavers
- Existence of open space concept in conjunction with architectural concept for new developments
- # of flood mitigation measures in new developments

ACTIVE TRANSPORTATION PLAN

- % of different modes of transport
- % of residents using active transportation, frequency
- % of residents using active transportation as a leisure activity
- % of children using active transportation
- Traffic through different routes
- Counter data - # of people using active modes of transportation (from 9 sites, counters cannot detect whether 1 person or a group), tracked changes in traffic due to weather events
- # of safe routes
- # of schools in close proximity to safe routes
- # of pathways cleared from snow
- # of pedestrian bridges/pathways

COMMUNITY SUSTAINABILITY PLAN

- Ridership of new transit line
- User feedback/experience of new transit line
- Updated road standards
- New development scorecard established
- New policies for housing diversification
- New standards and policies to create unique built language for Okotoks
- # of households participating in different energy efficiency programs
- GHG emissions saved through organic waste cart collection program, renewable energy program
- Dollars saved in utility bills by participating households
- Sufficient peak water treatment, wastewater collection system to meet growth demands
- Complete long-term infrastructure strategies for distribution, collection, treatment
- # of patios and parklets

2020 WASTE MANAGEMENT PLAN

- Tonnes diverted per waste sector
- Amount of organic waste collected per waste sector

WATER CONSERVATION, EFFICIENCY AND PRODUCTIVITY PLAN

- Per capita water consumption
- Raw water quality
- Quality and quantity of treated effluent
- Effluent water temperature
- Natural in-stream flow of Sheep River
- Return flow compensation
- Aquatic health of Sheep River
- # of floods
- Participation in Water Consumption Rebate Programs
- # of leaks detected
- # of participants in the Residential Water Conservation Rebate Program, # of conservation items purchased
- Expansion of Water Conservation Rebate Programs to commercial, industrial, institutional customers
- Amount of water reused
- Amount of rainwater harvested and used
- # of households engaged in conservation education programs
- # of students engaged in conservation education programs

STORMWATER MASTER PLAN AND FLOOD MITIGATION PLAN

- Impervious area and pervious area for different land uses

CLIMATE RESILIENCE PLAN

- mean annual temperature, changes in temperature
- mean annual precipitation, changes in precipitation
- Sheep river floodplain data
- Structural/non-structural flood mitigation infrastructure
- Risk for extreme events (heat waves, flooding, water shortage, etc.)
- Opportunities that come with climate change

