

Town of Stony Plain Environmental Stewardship Strategy 2021



Land Acknowledgement

Stony Plain is located on Treaty 6 territory, the traditional meeting grounds, gathering space, and travel route of the Cree, Saulteaux, Blackfoot, Dene, and Nakota Sioux and the homeland of the Métis Nation.

The Town of Stony Plain respectfully acknowledges the many First Nations, Métis, and Inuit communities whose footsteps have marked this landscape since time immemorial.

We acknowledge the deeply rooted relationship between Indigenous heritage, culture, language, spirituality, and history to Stony Plain's land, water, and air. We thank the many past, present, and future Indigenous groups who have protected and thrived in this environment for millennia.

As Treaty people, we commit to ensuring the wellbeing of our environment by acknowledging this rich Indigenous cultural legacy through the Environmental Master Plan.

Acknowledgements

We would like to thank all the residents, business owners and operators, Councillors, developers, and Town staff who participated in the public participation opportunities for the EMP and ESS.

Thank you to the many environmental leaders throughout Canada who have assisted with the research process for the ESS by providing cost and logistical estimates for proposed initiatives.

Thank you to our Sustainability Scholars for developing the EMP and the Technical Report to guide the ESS.



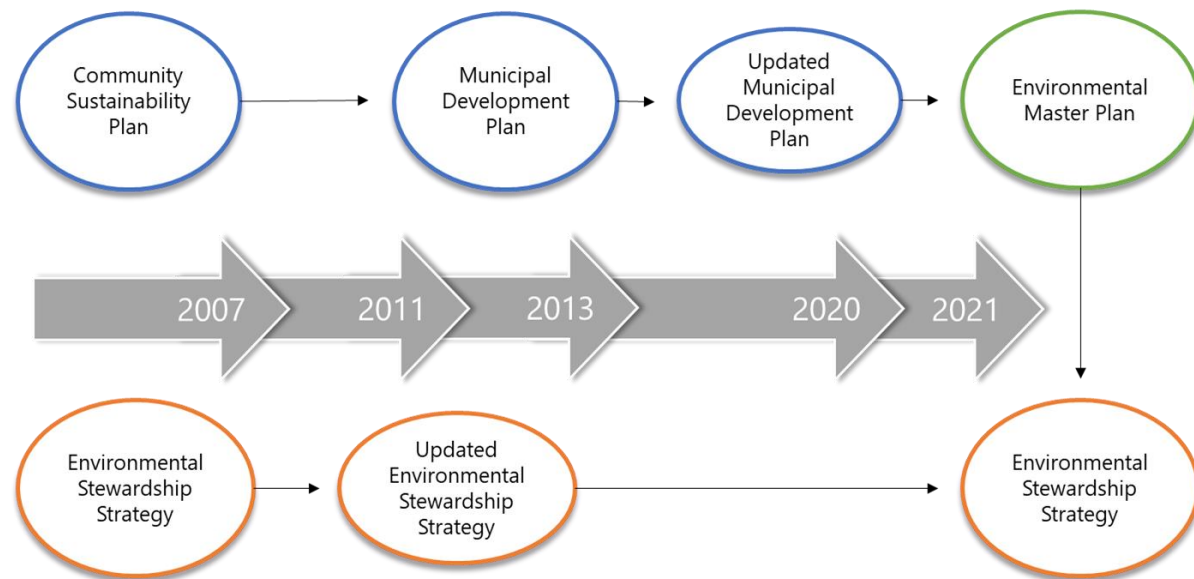
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Executive Summary

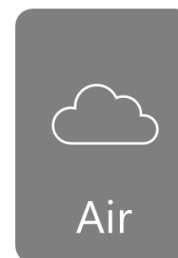
The Town of Stony Plain's Environmental Stewardship Strategy (ESS) guides future environmental initiatives, while meeting the Town's vision and goals related to improving the health of the natural environment. The ESS provides actionable initiatives for the Town to undertake in a detailed, phased approach, with guidance from the policy structure within the Environmental Master Plan (EMP). It also depicts the Town's Environmental Portfolio: every environmental initiative the Town is currently undertaking or plans to undertake, either independently or through partnerships as well as their related goals. And it identifies annual reporting requirements to monitor the progress of the Environmental Portfolio.

In 2020, Town Council and Administration recognized that the existing ESS (2007, 2011 update) required an update to understand the environmental context and priorities in Stony Plain in one cohesive policy-based document; this process started with the creation of the Environmental Master Plan (EMP). While the Municipal Development Plan (MDP) is Stony Plain's sustainable growth and development plan that



addresses the environment as an integral aspect of sustainability, the EMP summarizes the Town's distinct environmental context and outlines environmental priorities to be achieved through policies supported by the community. The ESS is a living document that supports the EMP and is subject to regular updates and reviews to ensure the community and Municipality are on-track to meet environmental goals. Together, both documents will set the path for Stony Plain's environmental future, ensuring that the health of our ecosystem and environment is sustained and conserved for the benefit of Stony Plain's community, now and for the future.

Part 1 of this document sets the context for the ESS by outlining the history of environmental stewardship in Stony Plain and providing a snapshot of **the Town's current environmental framework that includes the vision, principles, themes, and policies of the EMP, as well as the initiatives and goals of the ESS.** Part 1 also illustrates the documents and work that has led to the creation of the ESS, including the EMP Summary Report, Council workshop, two environmental awareness surveys, the ESS Technical Report, and the final versions of the EMP.



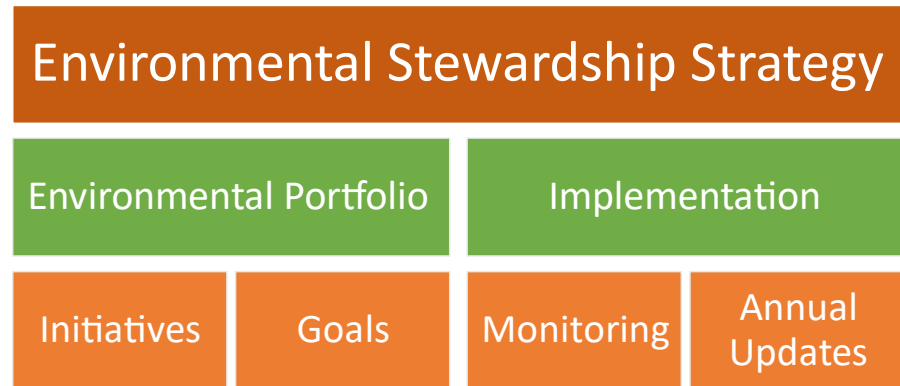
Part 2 of this document details how the ESS grew from the Technical Report, and the components of the ESS. These include the Environmental Portfolio, an acknowledgement of completed environmental initiatives, descriptions of Environmental Portfolio initiative categories, a breakdown of related initiatives and their goals, and how reporting and updates to the ESS will occur.

The EMP is a separate document and should be referenced for details about the vision, principles, five themes, and policies that the ESS is founded upon. The results of the environmental awareness surveys and Council workshop are compiled in the Environmental Awareness and Action in Stony Plain: Public Participation Strategy, Results, and Analysis Summary Report, included as an appendix to the EMP.

The ESS is based on extensive research of potential actions and associated factors such as costs and select constraints, along with suggestions from residents and stakeholders that were gathered through multiple public participation opportunities. The Technical Report summarizes these efforts and acts as a background document for the ESS that can be found in Appendix A of this document.



















The ESS:

1. Acknowledges completed environmental initiatives and establishes an Environmental Portfolio to define ongoing and future environmental initiatives;
2. Categorizes and prioritizes future initiatives to create a structured approach for completion;
3. Sets goals to be achieved by finishing ongoing and future actions; and
4. Creates an annual reporting requirement to track and monitor the progress of the Environmental Portfolio.



The Environmental Portfolio of the ESS grew from the work contained within Technical Report, and as such, Appendix B provides a translation table to highlight how each action of the Technical Report was considered for inclusion into the ESS.

There are twenty-one ongoing environmental initiatives at the foundation of the Environmental Portfolio with seventeen new environmental initiatives or actions contained in a five-phase Action Plan and five additional initiatives to be explored externally at a regional or federal level. There are also thirteen initiatives that represent actions to be explored beyond the Action Plan. Together, **these fifty-six ongoing and future initiatives support a set of fourteen practical and relevant community goals**. All initiatives within the Environmental Portfolio are described in Appendix C and linked with their related goals. Additionally, there are fourteen initiatives that are recognized within this document and excluded from the Town's Environmental Portfolio as they have already been completed.

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
	Gather Municipal Building Energy Consumption Data  Explore Solar Infrastructure on New Town Buildings	Town Vehicle Fuel Efficiency Policy Town Building Solar Energy Policy Trails Master Plan Update  Municipal Energy Manager Program 	Solar Feasibility Study 		
	Urban Forest Management Plan  Arbour Day Corporate Sponsorship	Environmentally Significant Area Study 	Tree Planting Program for Local Groups 	Willow Park Natural Area Revegetation 	
		Rotary Park Well for Skating Rinks and Watering		Explore New Water Meters 	Water Use Study 
	Create an Environmental Webpage and Online Brochure 				Develop a Rebate Strategy 
	 Sustainability Scholar Initiative		 Corporate Plan Initiative (cost estimate)		

Implementation and annual reporting on the status of Environmental Portfolio initiatives is essential to the ESS's success. **The ESS creates a requirement for the Town to update the Environmental Portfolio annually to review and report on implementation progress.** This review will also include incorporating new initiatives that arise year after year. By annually reporting on the status of initiatives, the Town has an opportunity to review progress and ensure that we are staying on track.

Part 1: Context Setting

Section 1.1 – Stony Plain’s Historic Environmental Strategy

The Town of Stony Plain has a demonstrated history of environmental stewardship; commencing most notably with the adoption of the Community Sustainability Plan (2007) that encouraged sustainable growth and development. One outcome of this was the creation of the Environmental Stewardship Strategy (2007) and subsequent renewal (2011), to provide a clear direction for environmental priorities. These documents outlined key themes and strategic actions, steering the Town towards environmental stewardship.

In 2013, the Community Sustainability Plan was integrated into the Municipal Development Plan (MDP). Since then, this unified document has guided sustainable development in the town based on five key policy areas: governance and partners, supportive infrastructure, economic opportunity, community development, and environmental responsibility. The last of which provides the highest order of municipal policy direction regarding the environment, acting as an anchor for the Town’s environmental strategy and framework. The MDP was updated in 2020 to strengthen key policy areas including economic development, environment and sustainability, housing, and agricultural lands. This update reinvigorated an interest in the environmental perspective that spurred the creation of the Environmental Master Plan (EMP) and renewed Environmental Stewardship Strategy (ESS). The EMP provides a unified direction to guide environmental progress, while the ESS is an actionable, living document that contains goals and actions to implement and achieve the vision of the EMP and MDP.

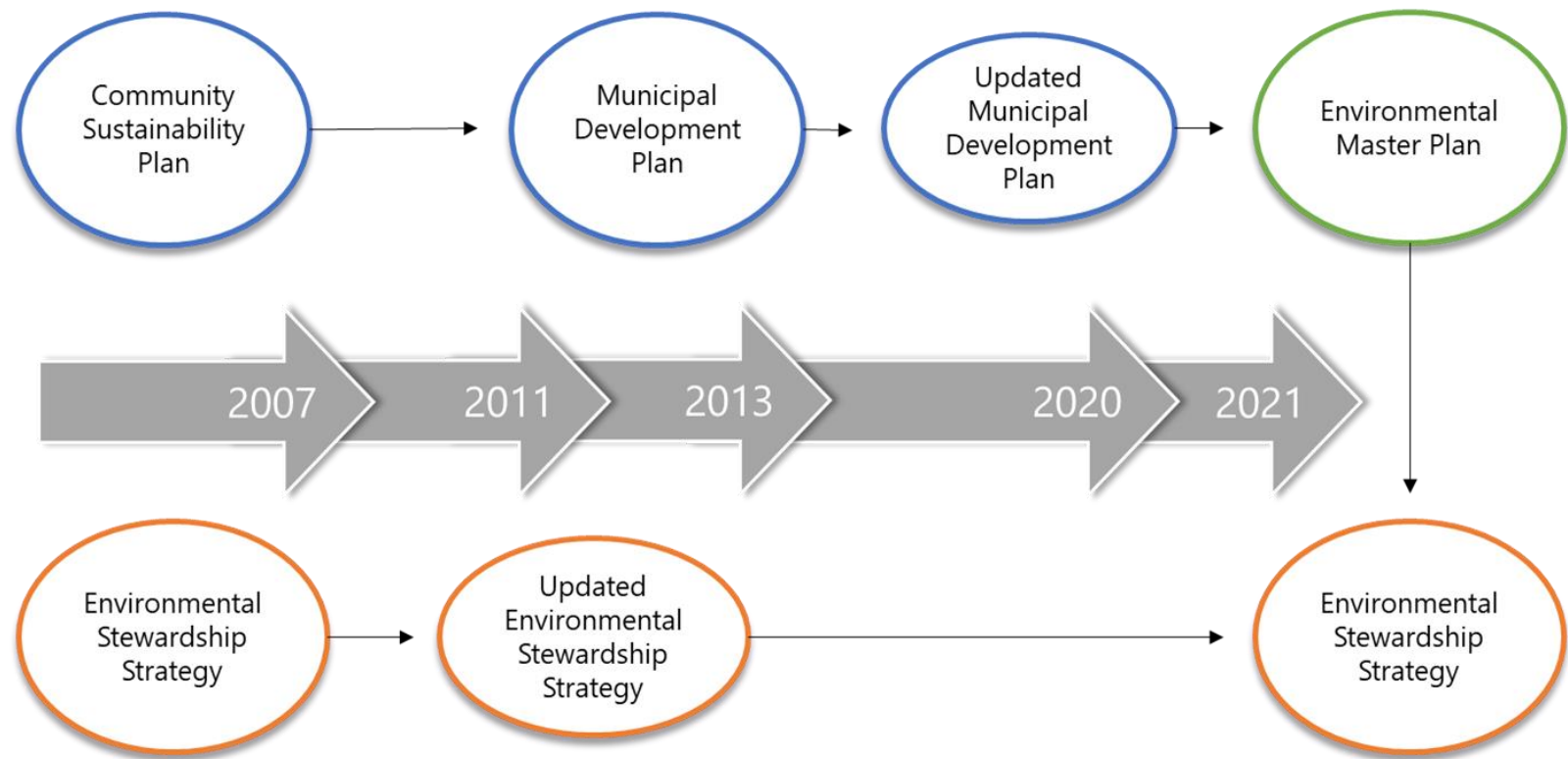


Figure 1 – Timeline of Stony Plain's Historic Environmental Strategy

Section 1.2 - Stony Plain's Environmental Framework

Stony Plain's environmental framework stems from the environmental responsibility theme of the Town's MDP and is the foundation that supported the creation of the EMP and ESS. The environmental framework structures how Stony Plain intends to identify and implement actions to achieve environmental goals. The framework is split into two elements: environmental policy related to the EMP, and environmental action contained in the ESS, which is visualized in Figure 1.

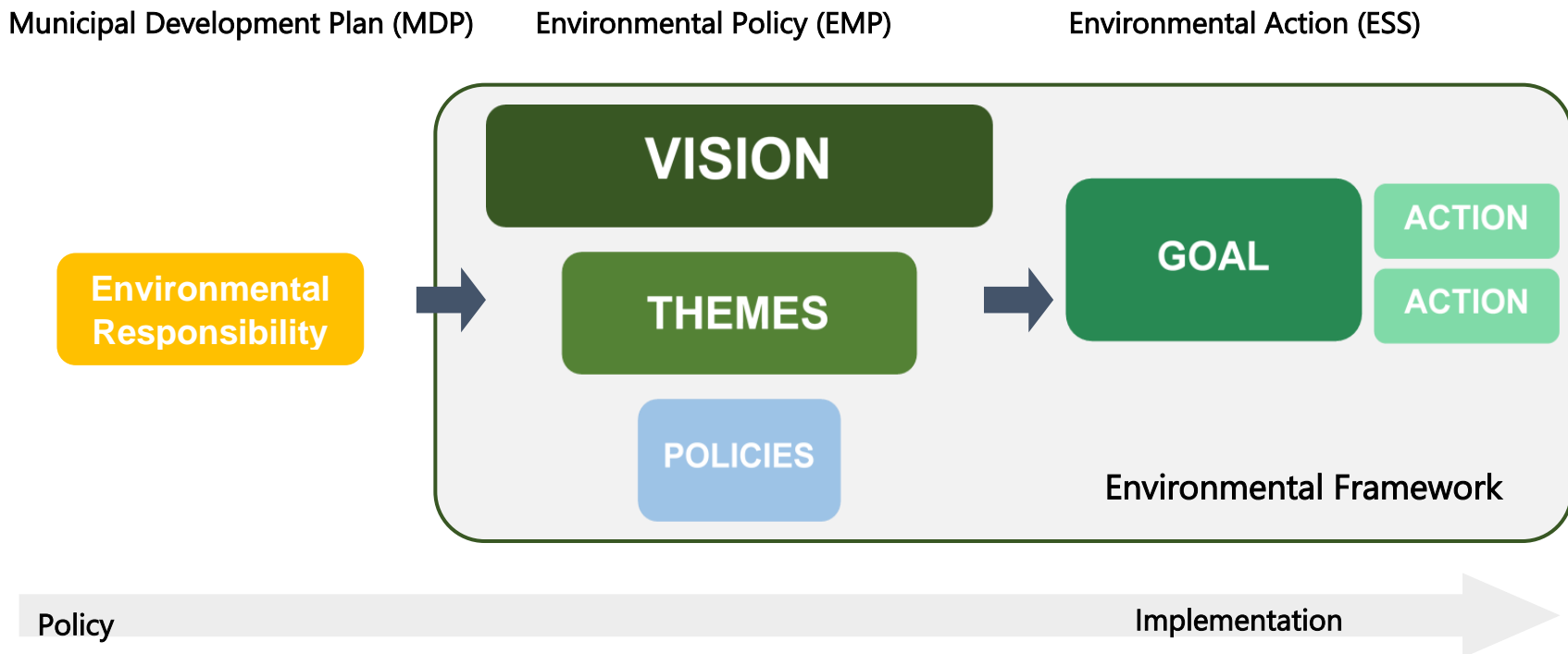


Figure 2. Stony Plain's Environmental Framework

Environmental Master Plan Vision

Stony Plain is a vibrant community that retains and integrates its unique character, rich culture, and natural heritage with new growth. As a community, we take responsibility for our environment and commit to ensuring it flourishes alongside the built environment. We strive to build a resilient community by fostering development that protects and enhances our environment for the benefit of current and future generations.

Environmental Master Plan Guiding Principles

The guiding principles reinforce the essence of the vision, while capturing Stony Plain's environmental values to achieve excellence in environmental governance, stewardship, and responsibility. The five guiding principles are shown in Figure 3; detailed descriptions of each can be found in the EMP.

Environmental Master Plan Themes

Stony Plain's environmental priorities have been categorized into five themes to simplify the complex components of the environment: energy, land, air, water, and waste. These themes represent the focus areas where environmental policies, goals, and action are placed. As with the guiding principles, we recognize and understand the interconnectedness of these five themes and that associated policies, goals, and actions may relate to more than one theme. These themes provide the link between elements of the EMP and ESS.



Figure 3. Five Guiding Principles of the Environmental Master Plan

Environmental Master Plan Policies

Stony Plain's environmental policies are outlined in the EMP and focus on specific areas of concern within each of the five themes. They encompass the community's environmental priorities and establish our intention to address various environmental issues and are shown in Figure 4.

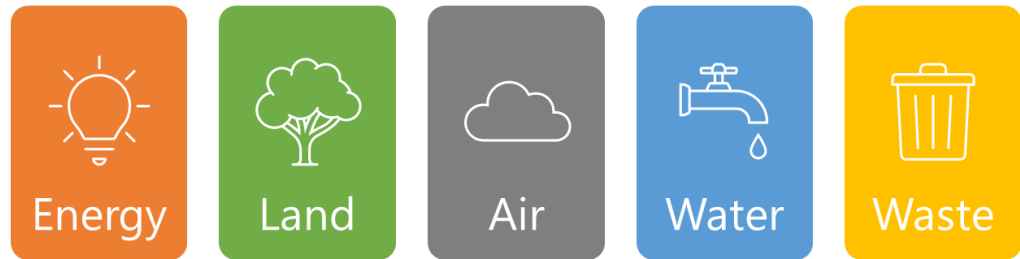


Figure 4. Five Themes of the Environmental Master Plan

Environmental Stewardship Strategy Goals

Goals that foster environmental stewardship are essential to achieve the vision and policies of the EMP. Goals aim to be specific and include quantitative or qualitative targets that we strive to meet in a set timeframe. The inclusion of measurable goals establishes accountability and necessitates regular reporting to review progress towards identified goals. As initiatives are undertaken and completed, their related goals will be realized over the short-, medium-, and long-terms.

Environmental Stewardship Strategy Actions

Environmental action sustains and enhances natural systems, while providing tangible benefits to human society. Human existence is contingent upon the natural environment and ecosystems as a source of food, water, air, recreation, culture, health, and wellness for human society. The ESS structures environmental action through specific initiatives and goals to realize the vision of the EMP. Implementation of initiatives is dependent on available corporate funding and priorities. Throughout the coming years, Stony Plain will strive to implement the Actions outlined in the ESS while searching for new actions to be added to subsequent versions of the document.

Section 1.3 – Creating the Environmental Framework

Crafting the EMP and ESS required an iterative process that involved several steps. This included research, compiling information, public and stakeholder participation, and drafting and finalizing documents. This process required collaboration between Town staff, sustainability scholars, Town Council, business owners, residents, and developers. This work originated from the Environmental Responsibility theme of the MDP and entailed working through the EMP Summary Report, Council workshop, two environmental awareness surveys, and the ESS Technical Report, all leading to the final versions of the EMP and ESS. Figure 5 shows these components and showcases the process undertaken to create the Environmental Framework.

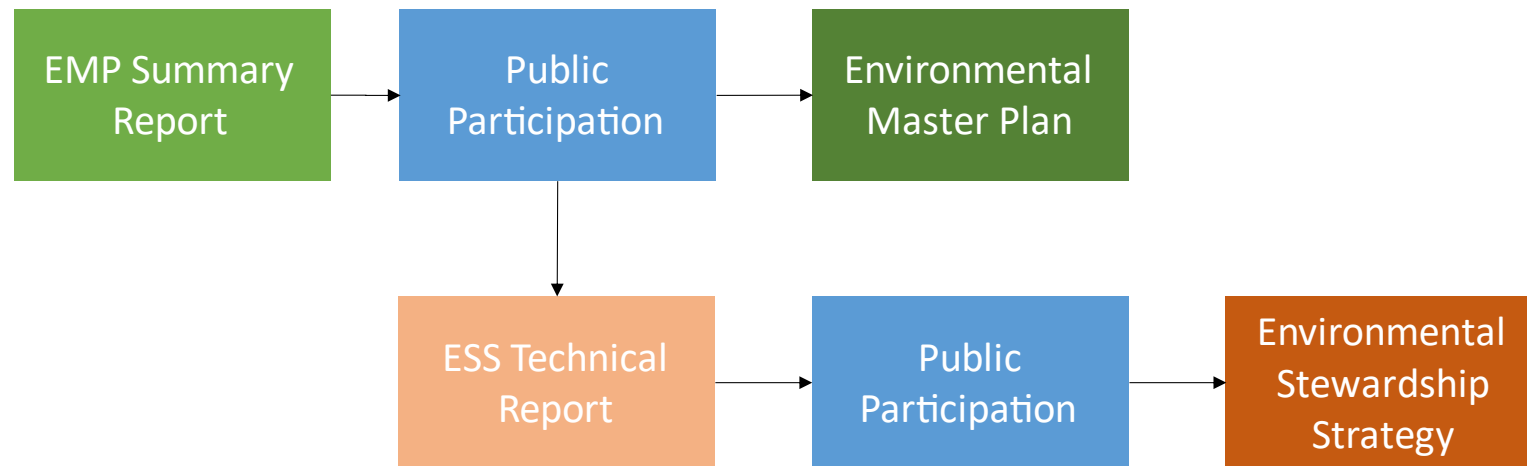


Figure 5. Environmental Framework Components and Process

Environmental Master Plan Summary Report

The first iteration of the EMP was developed by the Town's 2020 Sustainability Scholar, a University of Alberta's graduate student, and contained both policies and actions. It presented extensive research on the context of Stony Plain, covering its landscape, natural landforms, climate, vegetation, and wildlife, and included a detailed history of Stony Plain's environmental strategy. This Summary Report structured the EMP to include a vision, guiding principles, themes, goals, and strategies. The

initial five themes were climate resilience and energy, ecosystems, air, water systems, and waste management, and each one contained background information to supported related goals and strategies.

The EMP Summary Report was the result of substantial research of municipal documents and activities and an academic environmental literature. This approach created a baseline document to begin a holistic discussion on Stony Plain's environmental priorities. It set the stage for future work to incorporate feedback from relevant community stakeholders to further refine the future EMP and ESS, as it became clear that two separate documents were required: one for policy and one for action.

Engaging the Community

Public participation for this project began in 2020 through the Environmental Awareness in Stony Plain Survey and Council workshop. These initial public participation opportunities were undertaken to determine how residents value the environment in Stony Plain and identify environmental issues and opportunities in the community. The Environmental Action Survey in 2021 followed these opportunities to gather specific information from residents, Council, internal staff, the business community, and the land development industry on barriers to progress, and potential future actions based on the respondent's role within the community. For more information on the results of the public participation process, see the Environmental Awareness and Action in Stony Plain: Public Participation Strategy, Results, and Analysis Summary Report found in Appendix A of the EMP.

Environmental Master Plan

Following public participation, the Summary Report was refined to incorporate feedback from the community and stakeholder engagement by the Town's 2021 Sustainability Scholar, leading to the final version of the EMP. It encapsulates Stony Plain's environmental priorities through policies that will be achieved through the ESS and re-evaluates and unites previous environmental documents to provide a guided environmental framework.

While following the general structure of the Summary Report, the final EMP includes simplified themes of energy, land, air, water, and waste, a rewritten vision and set of guiding principles considering a more comprehensive perspective, and refined policies to better match simplified themes, while ensuring each one followed a consistent format and approach. This allowed for a clear and succinct document focused on the long-term vision that provides direction for future environmental decisions.

Environmental Stewardship Strategy Technical Report

In the first quarter of 2021, the Town's 2021 Sustainability Scholar created the ESS Technical Report by extracting the strategies from the Summary Report and refining them into sixty-one potential initiatives that fit the Town's environmental context. These initiatives were generated from previous environmental work and combined with suggestions received from the community through the public participation process. The extensive research conducted throughout the development of the Technical Report informed the classification of initiatives based on the themes in the EMP, determined their status (completed, ongoing, or future) and identified specific aspects of each initiative considered for it to be effectively implemented. The Technical Report considered the stakeholders, timeline, expected cost, priority, and measure of success for each initiative to review the Town's past environmental progress and understand where we are and where we would like to be.

The Technical Report provided the necessary background information required to establish the Town's Environmental Portfolio and support the creation of the renewed ESS. The sixty-one initiatives are detailed in the Technical Report found in Appendix A.

Part 2: Environmental Stewardship Strategy

Section 2.1 - Overview

The purpose of the ESS is to:

1. Acknowledge completed environmental initiatives and establish an Environmental Portfolio to define ongoing and future environmental initiatives;
2. Categorize and prioritize future initiatives to create a structured approach for completion;
3. Set goals to be achieved by finishing ongoing and future actions; and
4. Create an annual reporting requirement to track and monitor the progress of the Environmental Portfolio.

The ESS contains Stony Plain's Environmental Portfolio, outlining all ongoing and future initiatives the Town may pursue. Future initiatives are either incorporated into a five-phase Action Plan, noted to be undertaken by external groups or presented as beyond the Action Plan. The Action Plan provides a set of specific short-term initiatives to focus on over the next five-ten years based on funding, resources, and priorities. The external initiatives showcase environmental actions being pursued regionally, provincially, or nationally, where the Town is a partner or stakeholder. The remaining future initiatives represent meaningful environmental actions to explore once those with a higher priority are completed.

The ESS establishes goals that one or more initiatives seek to achieve. The ESS uses the five themes of the EMP (Energy, Land, Air, Water, Waste) to characterize initiatives and goals.

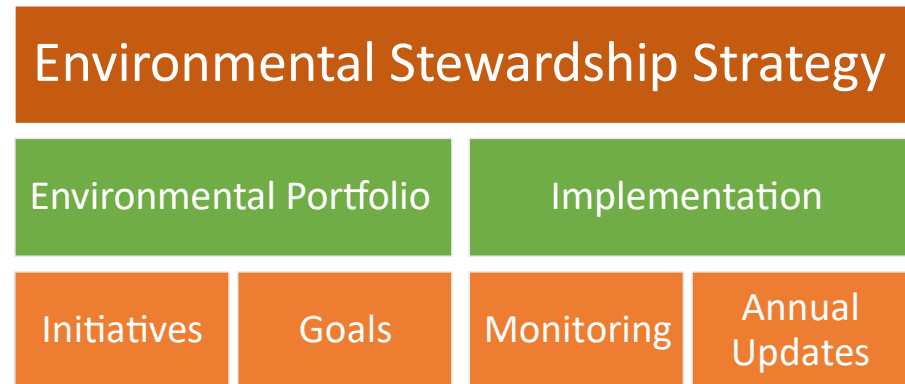


Figure 6. Components of the Environmental Stewardship Strategy

Through its annual reporting requirement, the ESS creates a new level of accountability and transparency for environmental initiatives and goals. The status of the initiatives and goals within the Environmental Portfolio will be presented each year to ensure the progress of the ESS is tracked and monitored. New initiatives and associated goals are expected to be identified as the ESS is implemented. As part of the annual reporting, these additional initiatives and goals will be introduced and integrated into the Environmental Portfolio, while completed initiatives and accomplished goals will be described and noted as removed from the Environmental Portfolio. The ESS is expected to be updated every three to five years as the Action Plan and external initiatives are substantially achieved, in consideration of new and shifting priorities, trends, and external circumstances. While an annual report update is focused on the status and progress of Environmental Portfolio initiatives, an ESS update will be more extensive to include a level of public participation, and re-evaluation of Action Plan initiatives, which among other aspects, may involve creating new reporting requirements or altering the structure or contents of the ESS.

Section 2.2 - Environmental Portfolio

The Environmental Portfolio was developed by refining the sixty-one Technical Report initiatives into a list of actions most suited to the Town's environmental vision. This was completed through an iterative consultation process with internal stakeholders, combined with incorporating additional initiatives that were not originally contemplated in the Technical Report. This process categorized the initiatives by their status (completed, ongoing, future), and sorted them based on level of importance, type of initiative, cost, and ease of execution.

This work separated the initiatives into two groups: initiatives that have already been completed by the Town, and remaining initiatives that are either ongoing, or proposed as future environmental initiatives. These remaining initiatives were categorized into the following four groups that comprise the Environmental Portfolio:

1. Ongoing – active initiatives that are intended to continue being pursued or undertaken;
2. Action Plan – short-term, high-priority initiatives that form a five-phase plan specifying priority, funding, and expectations for completion;
3. External – regional, provincial, or federal actions to be supported by the Town, or undertaken in partnership by the Town and external parties; and
4. Beyond – relevant actions that are not currently included in the Action Plan or proposed by external parties but are to be considered in the future subject to available resources.

These categories present the position that each initiative falls within and represent the layers of the Environmental Portfolio that is depicted in Figure 7.

To summarize how the Technical Report initiatives were refined, a Translation Table (Appendix B) was created to track which initiatives were identified as completed or ongoing, and if future initiatives would be addressed within or beyond the Action Plan, or by an external party. The table also specifies when Technical Report initiatives have been combined or rewritten and appear differently in the ESS. Initiatives proposed to be addressed beyond the Action Plan will be considered in future ESS updates or through other Town initiatives.

Completed initiatives are acknowledged in Section 2.3 to show environmental progress that has taken place over the past decade. These initiatives were part of the Environmental Portfolio and like other initiatives to be completed in the future, will be excluded from the Town's Environmental Portfolio as they are completed.

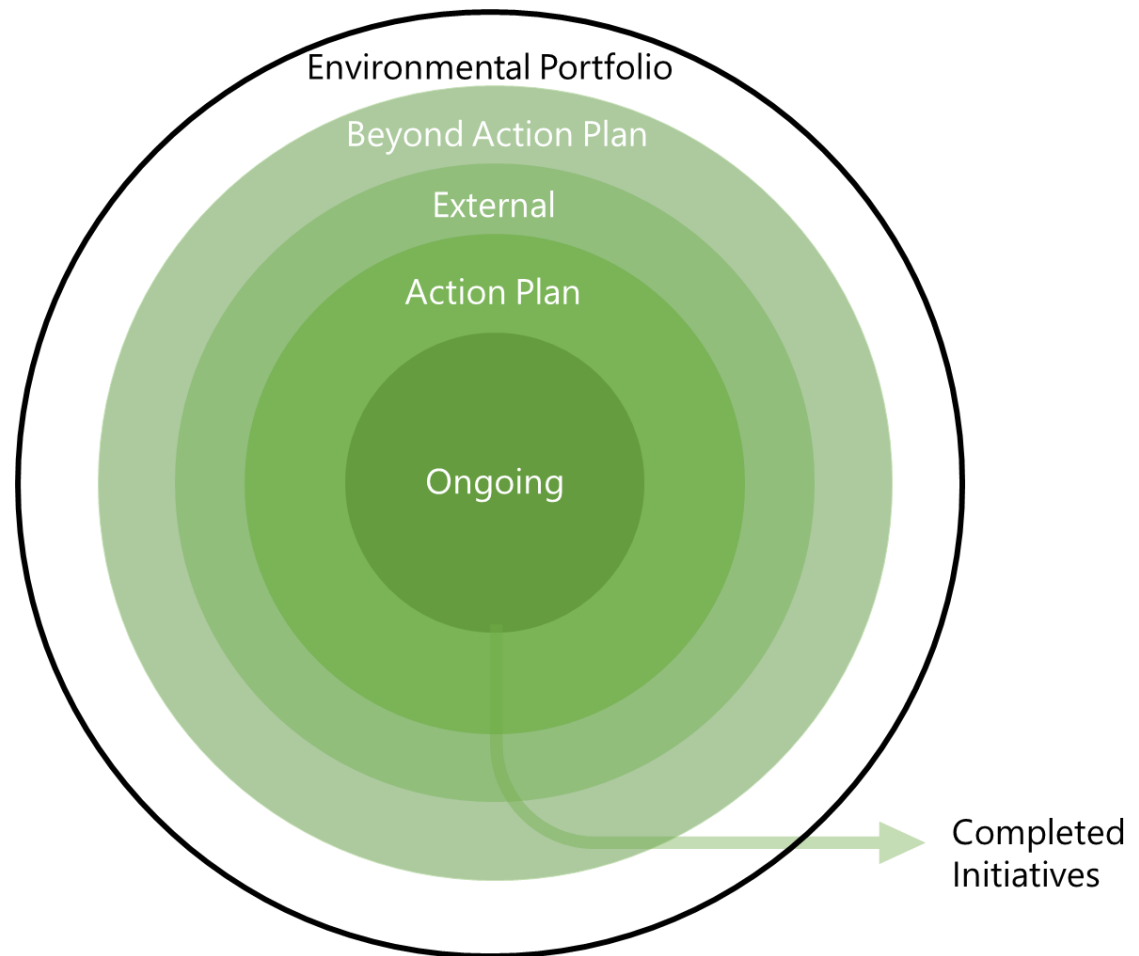


Figure 7. Components of the Environmental Portfolio

Each action is linked to a specific goal. Some of these goals have been refinements from the Technical Report goals. Where no applicable goal was found within the Technical Report, new goals have been formed specifically for the ESS. These goals are specified after the actions are described in Section 2.8 and will be reported on as part of annual environmental update.

The Stony Plain Environmental Portfolio Table (Appendix C) summarizes all the current and proposed environmental initiatives in the ESS. This includes a description of each initiative, its category (ongoing, Action Plan, external, or beyond), and the related goal for each initiative. Following the structure of the Technical Report, all initiatives have been categorized by theme to link them back to the EMP and have been arranged in the table by their initiative category. This approach illustrates the different types of environmental initiatives and provides a structure to track how each initiative progresses. Further details regarding Action Plan initiatives are provided in Section 2.6.

Figure 8 shows the number and percent breakdown of initiatives by EMP theme. The overall number of initiatives is shown in the outer circle, while the inner circle depicts the number of initiatives divided into ongoing initiatives (darker shade) and future initiatives (lighter shade). This approach demonstrates the proportion currently ongoing initiatives in each theme, to better understand what themes need more attention in the Action Plan.

The waste and energy themes contribute the highest number of initiatives to the Environmental Portfolio, while the air and land themes contribute the lowest number of initiatives; two initiatives involve multiple themes. When considering the breakdown of ongoing (twenty-one) versus future (thirty-five) initiatives, most of the ongoing initiatives fall within the themes of waste (ten), water (four), and air (three), leaving all but three ongoing initiatives in the remaining themes of energy (two) and land (two). Future initiatives are more evenly distributed with the order of highest to low of the themes being energy (nine), land (eight), water (six) and air and waste tied at the lowest (five). Two initiatives apply to multiple themes.

More details about the categories of initiatives in the Environmental Portfolio are found in Sections 2.4 (ongoing), 2.5 (external), 2.6 (Action Plan), and 2.7 (beyond).

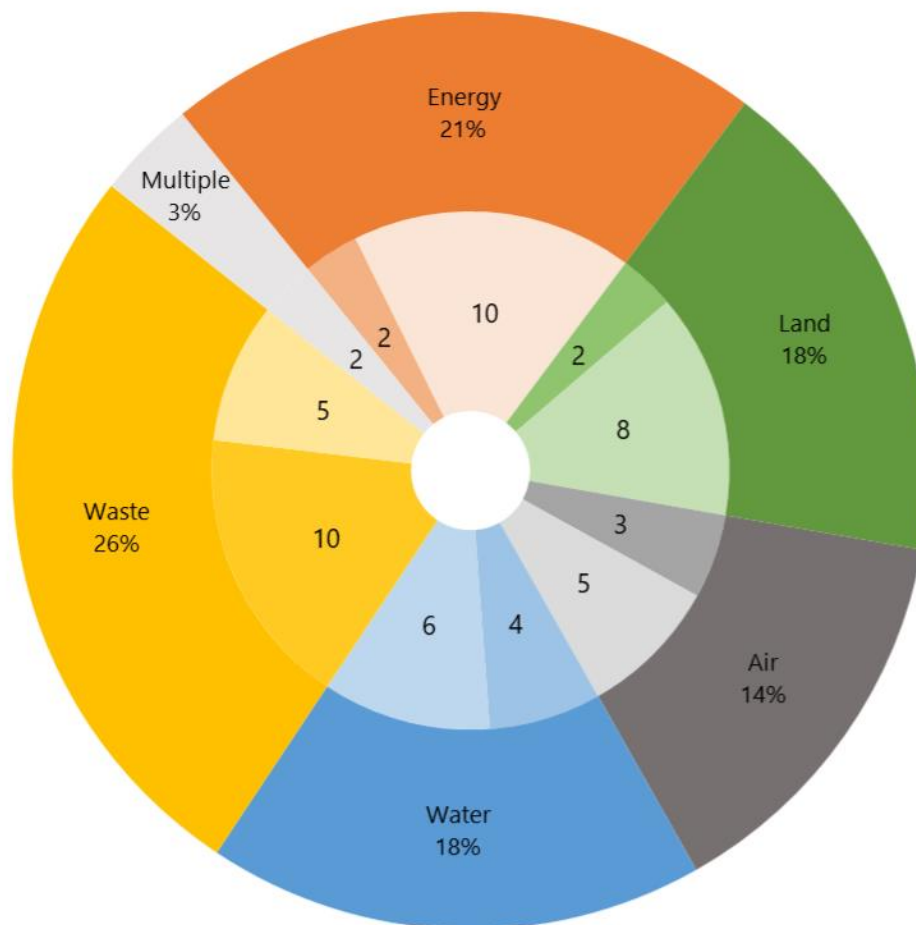


Figure 8. Environmental Portfolio Initiatives Classified by Theme and Initiative Type

Section 2.3 - Completed Initiatives

Initiatives identified as completed have been valuable contributions to Stony Plain's current environmental framework. For the ESS, these initiatives will not be included within the Environmental Portfolio or mentioned in subsequent updates or reports as they have been successfully executed. It is important to recognize the work that the Town has completed to date to inform future environmental progress.

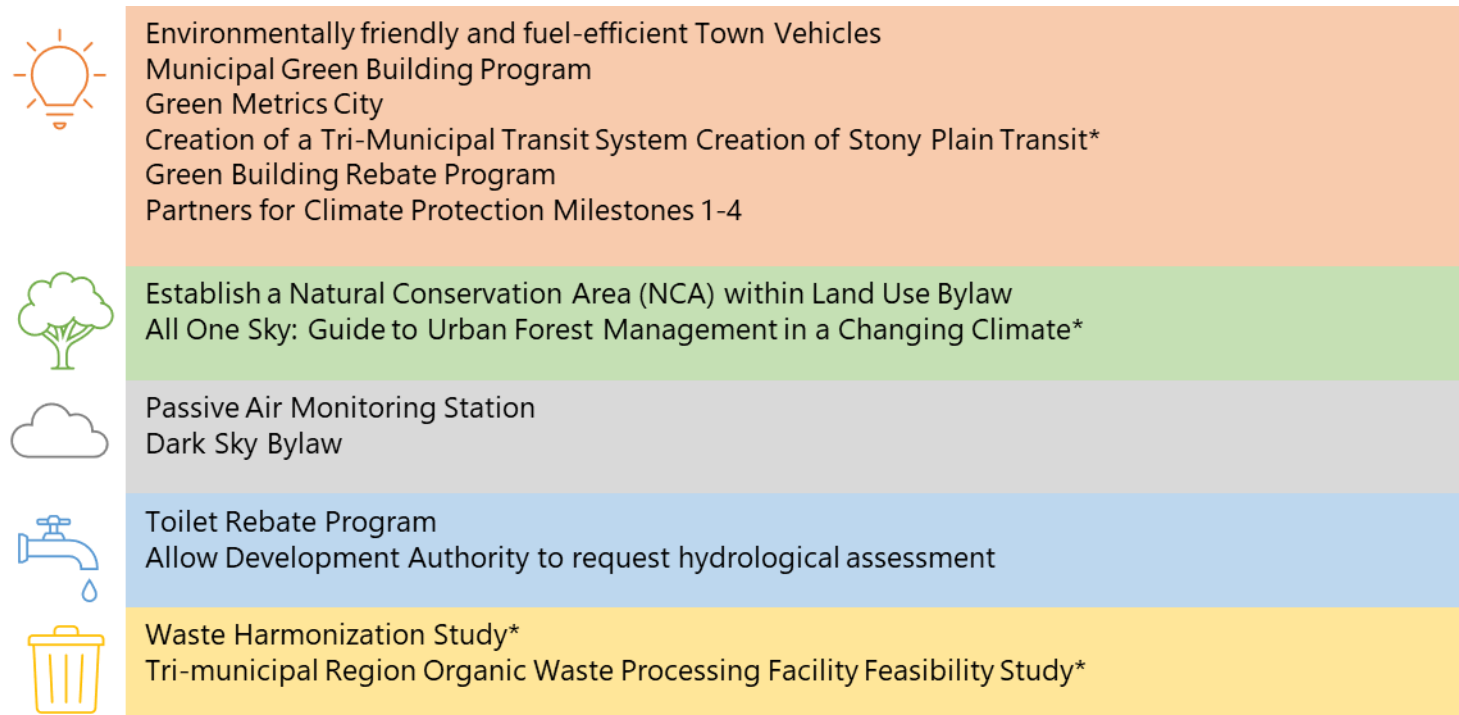


Figure 9. Completed Environmental Initiatives

*regional initiative

The fourteen environmental initiatives completed during the past decade covered all five themes, including four that were done in partnership with neighbouring municipalities. The six energy-based initiatives included purchasing a hybrid vehicle, conducting work on greenhouse gas emissions, supporting green buildings, and establishing a transit system. The two-air

themed initiatives established a passive air monitoring station and brought dark sky principles to the community, and the two-waste themed initiatives involved studies related to harmonizing waste and exploring a regional organic waste processing facility. The Town explored urban forest management in the capital region and created a natural conservation area in its Land Use Bylaw to address initiatives related to the land theme and provided toilet rebates to homeowners and established a process to request hydrological assessment from land developers to complete initiatives related to the water theme. For further details on many of these initiatives, refer to the ESS Technical Report in Appendix B.

Section 2.4 - Ongoing Initiatives

Ongoing initiatives serve as the foundation for the Environmental Portfolio and represent active and continuing environmental initiatives undertaken by the Town.

	Trail Solar Lighting LED Traffic Light Replacement Program
	Arbour Day Regional Agricultural Master Plan Implementation
	Limit Vehicle Idling Restrict Open Burning Air monitoring station
	Tri -Municipal Rain Barrel Sale Heritage Park pavilion Water Collection Safe Hydrant Flushing Groundwater Filled Skating Rinks
	Recycling and organics program Rotary Recycling Centre Annual Shred -It Event Recycle Coach App Christmas Tree Drop -Off Community Street Market Annual Treasure Hunt Pitch-In Week Expand the 'Don't Just Trash It' campaign Concrete Recycling

Historically, environmental initiatives have been focused on waste with forty-eight percent of ongoing initiatives related to this theme. Examples of initiatives include education, programming, and events regarding recycling and reusing, both generally and for specific items like Christmas trees, and ensuring waste is properly collected via PITCH-IN Week events. The remaining initiatives fall under the other four themes: two involving energy, two regarding land, three about air, and four concerning water. These include initiatives about solar and LED lighting; tree planting celebrations and regional agricultural plans; air monitoring stations and bylaws regarding anti-idling and open burning; and rain barrels, dichlorination pucks for hydrant flushing, and using groundwater for making skating rinks.



Many of these initiatives have been ongoing for many years and are expected to continue given their success, support, demand, and community participation. Over the years, most of these initiatives have become part of the Town's general operations, securing annual funding and incorporation into department workplans for successful completion.

Figure 10. Ongoing Environmental Initiatives

Section 2.5 - External Initiatives

Acknowledging that environmental concerns are not limited to single jurisdictions, environmental progress requires collaboration between all levels of government, regional groups, community members, and other stakeholders for successful action. Certain initiatives are better addressed at a regional level, such as being led the Edmonton Metropolitan Regional Board (EMRB) or jointly with adjacent neighbouring municipalities, whereas others require provincial or federal leadership. The ESS acknowledges these realities and notes which initiatives are initiated or led by higher levels of government or are being addressed through partnerships with other organizations. Stony Plain will play an active role in supporting the implementation of these initiatives; they are however not contained within the Action Plan because the Town is not directly leading their implementation.

External initiatives pertain to the energy and waste themes. The one energy-based initiative involves creating a metropolitan-wide transit system and is substantially underway with the creation of a provincial commission for this purpose. The four waste-based initiatives encompass creating a regional waste commission, conducting waste audits, investigating select forms of recycling, and banning or limiting single-use plastics.



Edmonton Metropolitan Region Transit System	Regional
Tri-Municipal Waste Commission	Regional
Residential Waste Audit	Regional
Investigate Options for the Recycling of Styrofoam and Glass	Regional
Adopt a Single-Use Plastics Bylaw	Federal

Figure 11. External Environmental Initiatives

Section 2.6 - Action Plan Initiatives

The Action Plan is Stony Plain's tailored approach to take on new environmental initiatives. It contains short-term, high-priority initiatives that together, form a five-phase plan specifying priority, funding, and expectations for completion.

Each initiative in the Action Plan has been chosen through careful consideration. When determining the Action Plan initiatives, actions from the Technical Report were ranked based on priority, cost, and ease of implementation, while consulting with internal stakeholders. This iterative process created a subclass of future initiatives that were most applicable and desirable. These initiatives were arranged into phases considering alignment with upcoming initiatives (based on other Town departments or external parties), resource allocation and funding requirements, and the sequential nature of related actions - creating the five-phase Action Plan.

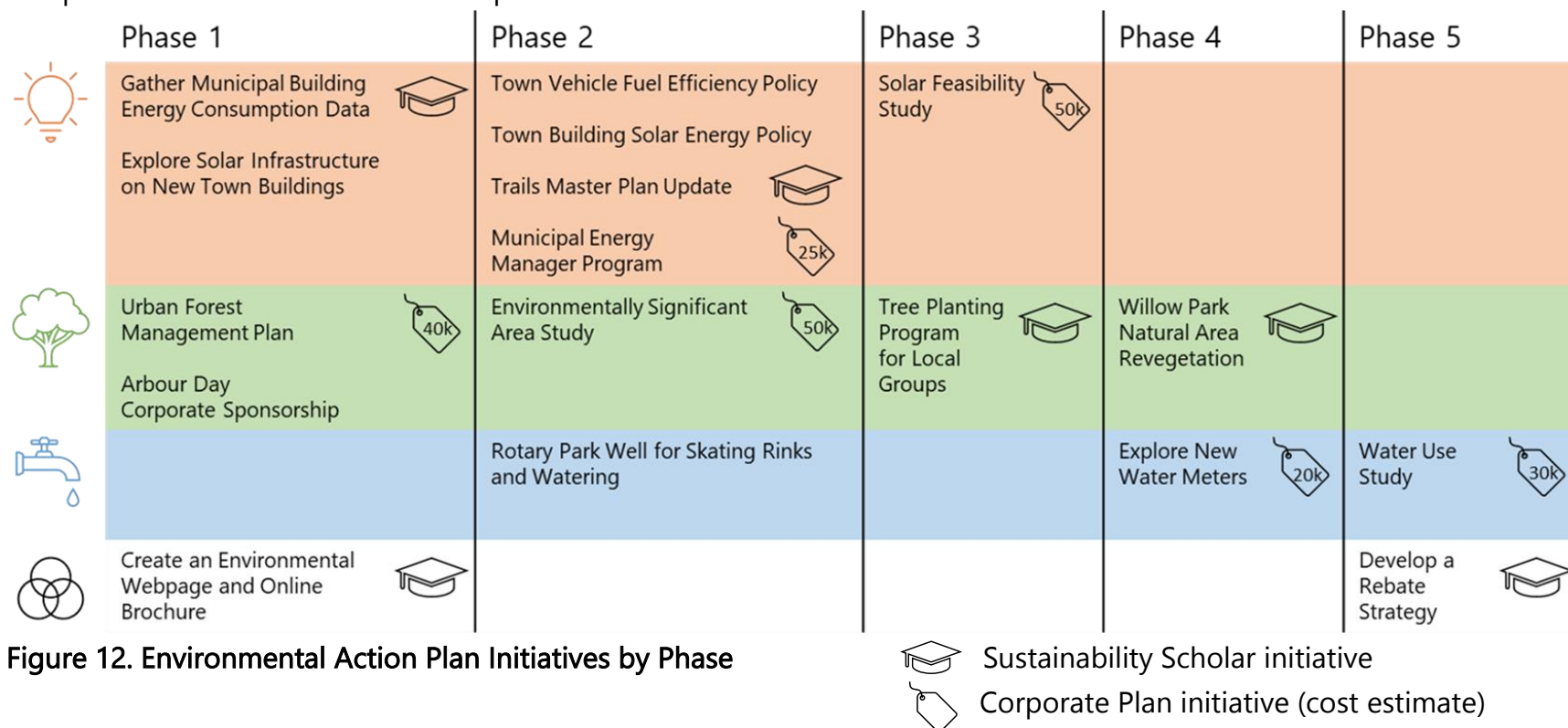
The Action Plan phases enable sets of initiatives to be undertaken together in a systematic order. This ensures related initiatives are done sequentially and that changes to funding and resource availability will alter the progress of the ESS. The phasing also makes tracking easier when reporting on the status of the Action Plan.

The Action Plan identifies initiatives that require substantial funding and would need to be planned as a Corporate Plan initiative, as well as initiatives that would be appropriate for a sustainability scholar to conduct. Sustainability scholars are graduate students who take part in the University of Alberta's Sustainability Scholar program, which provides professional work experience on sustainability-related projects. The EMP and ESS have been created through the help of two sustainability scholars, and the Town intends to continue partnering with the program to help progress the ESS, while supporting the development of graduate students.

By spreading Corporate Plan and sustainability scholar initiatives over the five phases and positioning initiatives without direct funding requirements in earlier phases, the Action Plan provides a balanced approach that is fiscally responsible. This also ensures that funding and resource allocation can be budgeted, and that some initiatives will proceed with the use of internal resources, even if funding is unavailable.

Initiatives without direct funding requirements will be undertaken directly by Administration in consideration of other ongoing priorities. The Action Plan intentionally places these initiatives in the earlier phases so that if operational

opportunities arise, these initiatives can be conducted immediately, knowing that if other priorities take precedence, they may be delayed and undertaken alongside initiatives from later phases. Another reason that there are less initiatives in the later phases is to accommodate new, high-priority initiatives that are expected to be recommended resulting from the completion of initiatives in the earlier phases.



Seventeen initiatives make up the Action Plan. There are seven energy themed, five land themed, three water themed, and two multiple themed initiatives. The lack of waste themed and air themed initiatives in the Action Plan stems from the low priority and number of air themed initiatives, and that there are a significant number of ongoing and external waste themed initiatives.

Phase 1

The first phase of the Action Plan lays the groundwork for future initiatives, ensuring the success of the ESS. This involves initiatives that are relatively simple to complete that make a big impact, initiatives developed to gather data to support related future initiatives, and initiatives that are based around priority and timing. Creating a webpage provides a space for continual updates and to educate the public on relevant

environmental topics and initiatives, which can be revisited as new environmental initiatives or information is needed to be provided. Arbour Day, a long-standing tree planting initiative in the Town, has the potential to be expanded through corporate sponsorships to improve the urban forest canopy. It is also important to understand the status of the urban forest within town, which is why an Urban Forest Management Plan will guide future Arbour Day planting sites, among other measures to increase our urban forest. To prepare for the Municipal Energy Manager in Phase two, research into municipal building energy consumption data will need to be recorded, laying the groundwork for the future work the Municipal Energy Manager will undertake. Lastly, the new Public Works building is set to start construction in the coming years, providing a great opportunity to encourage alternative energy production systems such as solar into the building.

Action 1: Create an Environmental Webpage and Online Brochure

Action 2: Gather Municipal Building Energy Consumption Data

Action 3: Urban Forest Management Plan

Action 4: Arbour Day Corporate Sponsorship

Action 5: Explore Solar Infrastructure on New Town Buildings

Phase 2

In the second phase of the Action Plan, most initiatives are focused on the theme of energy. Town policy will be shaped to promote sustainable practices, such as ensuring Town vehicles are fuel efficient, and that Town buildings will have direction to adopt solar energy capturing technology incorporated into the design of the building. The tracking and monitoring of energy consumption in phase one will allow for the Municipal Energy Manager to analyze the data and decide on an energy reduction strategy. Other initiatives, such as the groundwater well at Rotary Park, and the update of the Trails Master Plan, are simple to achieve and will provide great strides towards environmental goals. Conducting an ESA study will round out phase two, allowing the Town to take a proactive approach in protecting environmental sites in future development areas.

Action 6: Town Vehicle Fuel Efficiency Policy

Action 7: Town Building Solar Energy Policy

Action 8: Rotary Park Well for Skating Rinks and Watering

Action 9: Trails Master Plan Update

Action 10: Environmentally Significant Area Study

Action 11: Municipal Energy Manager Program

Phase 3

Phase three will include a solar feasibility study to better support the Town's solar energy policy, as described in phase two. The study will reveal where in the town would be most advantageous to promote solar infrastructure. The Town will also work with schools to allow students to get involved with sustainability and tree planting. Decisions on planting locations will be better informed with the information presented in the Urban Forest Management Plan.

Action 12: Solar Feasibility Study

Action 13: Tree Planting Program for Local Groups

Phase 4

In the fourth phase, the Urban Forest Management Plan will guide the revegetation of Willow Park Natural Area. This initiative will ensure that Willow Park Natural Area stays a healthy, naturalized part of the urban forest. This phase also addresses water conservation, with an expected roll out of new water meters. The new water meters will have technology to notify customers and Administration when there are abnormalities in water usage, which can help encourage water conservation by lowering water consumption.

Action 14: Explore New Water Meters

Action 15: Willow Park Natural Area Revegetation

Phase 5

Phase five, the final phase of the Action Plan, will wrap up everything from the former phases and look towards the future of the next Environmental Stewardship Strategy renewal, incorporating actions that have been deemed beyond the Action Plan. In this phase, a water use study and conservation strategy will be conducted following the installation of new water meters in phase four. A rebate strategy will also be completed, focusing on the energy and water themes. The rebate strategy will be able to utilize findings of the Water Use Study, the Municipal Energy Manager, and the corporate energy audit to determine the best rebates for the Town's needs.

Action 16: Water Use Study

Action 17: Develop a Rebate Strategy

Section 2.7 - Beyond the Action Plan Initiatives

Initiatives identified to be addressed beyond the five-phase Action Plan are relevant actions to be explored in the future subject to available resources and subsequent priorities. They often contain complex or challenging actions that require further research and cautious examination to determine their feasibility and likelihood of successful implementation. Although no specific process has been identified to address these initiatives, their implementation will involve collaboration between multiple stakeholders and require consultation with subject matter experts. Certain initiatives in this category require further consideration as part of other projects to determine their timing, relevance, and scope.






	Conduct Community Energy Audit
	Explore Enhanced Native and Edible Vegetation Planting Opportunities Explore urban agriculture feasibility <i>Urban Agriculture Plan</i> Expand community garden initiative <i>Urban Agriculture Plan</i>
	Join the Alberta Capital Airshed Establish a Fine Particulate Matter Sensor Station Launch an Anti -Idling Campaign Conduct Noise Acoustic Study Introduce Quantitative Noise Prohibitions
	Monitor for Total Suspended Solids (TSS) in Stormwater Discharge Conduct a Road Salt Study and Create a Salt Management Plan Increasing Vegetation Adjacent to Stormwater Management Systems
	Explore Salvageable Construction Scraps

Figure 13. Beyond the Environmental Action Plan Initiative

The thirteen initiatives in this category encompass all the themes of the ESS. There are three water and land themed initiatives, five air themed initiatives, one waste, and one energy themed. These initiatives cover a wide range of topics from a community energy audit and vehicle charging stations to noise studies and tracking air particulate matter to addressing road salt and suspended solids in stormwater discharge. Several of these future initiatives involve agriculture and are planned to be reviewed as part of an urban agricultural plan, which will be a result of the Edmonton Metropolitan Region Board's Regional Agricultural Master Plan to be completed in late 2021. These include exploring urban bees and chickens and expanding the community garden program.

Section 2.8 - Goals

The initiatives in the ESS are designed to support Stony Plain's environmental goals. These goals are centred around the EMP themes, each having between two and four goals depending on the specificity of the goal. All initiatives follow and support one or more goals and have been developed to ensure they are practical, relevant, and supported by the community and where possible, measurable.

The Technical Report suggested goals, organized them by theme, and linked each action to a goal. Some goals had multiple actions, while others only have one. These goals have been refined to align with the initiatives of the ESS. Like the Technical Report, each ESS initiative is linked to a goal. Some of the ESS goals are taken directly from the Technical Report or adapted from it; in certain cases, goals have been added or modified to better align with ESS initiatives.

The fourteen ESS goals are achieved through fifty-one ESS initiatives and are divided into the following themes: four related to energy, two related to land, three related to water, three related to air, and two related to waste.

Most goals are qualitative goals, as quantitative information is not available. Some goals are achieved by completing a specific task, such as establishing a certain measurable target, while others aim to achieve a certain state or condition, like regional food security. One goal requires a specific threshold to be reached by a certain duration, achieving seventy percent waste diversion from landfills by 2030; while other goals are more general and include promoting or encouraging awareness. Figure 14 lists all the goals by theme and indicates which categories of initiatives apply to each goal.

Ongoing initiatives support goals from every theme while initiatives from the other three categories only support some of the themes. Action Plan initiatives focus on energy, land, and water goals, while external initiatives address energy and waste goals. Initiatives beyond the Action Plan will work to achieve energy, land, air, and water goals.






Goal	Ongoing	Action Plan	External	Beyond Action Plan
	Establish the Town's corporate GHG emissions and determine an achievable emissions reduction target.	✓	✓	
	Establish the Town's community GHG emissions and determine an achievable emissions reduction target.			✓
	Promote and implement renewable energy.	✓	✓	
	Promote and implement alternative transportation modes.		✓	
	Promote the conservation and enhancement of natural ecosystems and urban forests.	✓	✓	✓
	Contribute to regional food security initiatives.	✓		✓
	Establish and maintain bylaws and monitoring systems to minimize air pollution.	✓		✓
	Educate the community on air quality issues.			✓
	Collect quantitative data on noise pollution and implement mitigative measures.			✓
	Establish municipal and community water consumption levels and determine an achievable water consumption reduction target.	✓	✓	
	Reduce stormwater runoff.	✓		
	Protect and improve stormwater quality.	✓		✓
	Achieve 70% waste diversion from landfills by 2030.	✓	✓	
	Encourage community awareness and action on waste management.	✓		

Figure 14. Environmental Portfolio Goals by Theme and Initiative Category

There are five Action Plan goals: three for the energy theme and one for both the land and water themes. The land goal is supported by initiatives within all five phases while the other goals are supported by initiatives within select phases: energy goals are not supported in phase four and the water goal in not supported in phase one.




Action Plan Goals		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
	Establish the Town's corporate GHG emissions and determine an achievable emissions reduction target.	✓	✓			
	Promote and implement renewable energy.	✓	✓	✓		✓
	Promote and implement alternative transportation modes.		✓			
	Promote the conservation and enhancement of natural ecosystems and urban forests.	✓	✓	✓	✓	✓
	Establish municipal and community water consumption levels and determine an achievable water consumption reduction target.		✓	✓	✓	✓

Figure 15. Action Plan Goals by Phase

Section 2.9 - Implementation

Implementation of the ESS involves two parts: ensuring that environmental initiatives continue to be undertaken and completed by the Town, and that efforts are tracked and reported to show progress of the Environmental Portfolio and guide updates to the ESS.

Planning, Conducting, and Completing Initiatives

The ESS is implemented by undertaking and completing initiatives in the Environmental Portfolio. It provides a detailed plan of environmental initiatives that have been selected for implementation considering department workplans and Council funding and priorities. Some initiatives can be completed with a limited budget, including utilizing staff time, while other initiatives require substantial funding for successful completion. Initiatives that require larger budgets have been spread over the five-year Action Plan to ensure their completion is fiscally feasible and responsible.

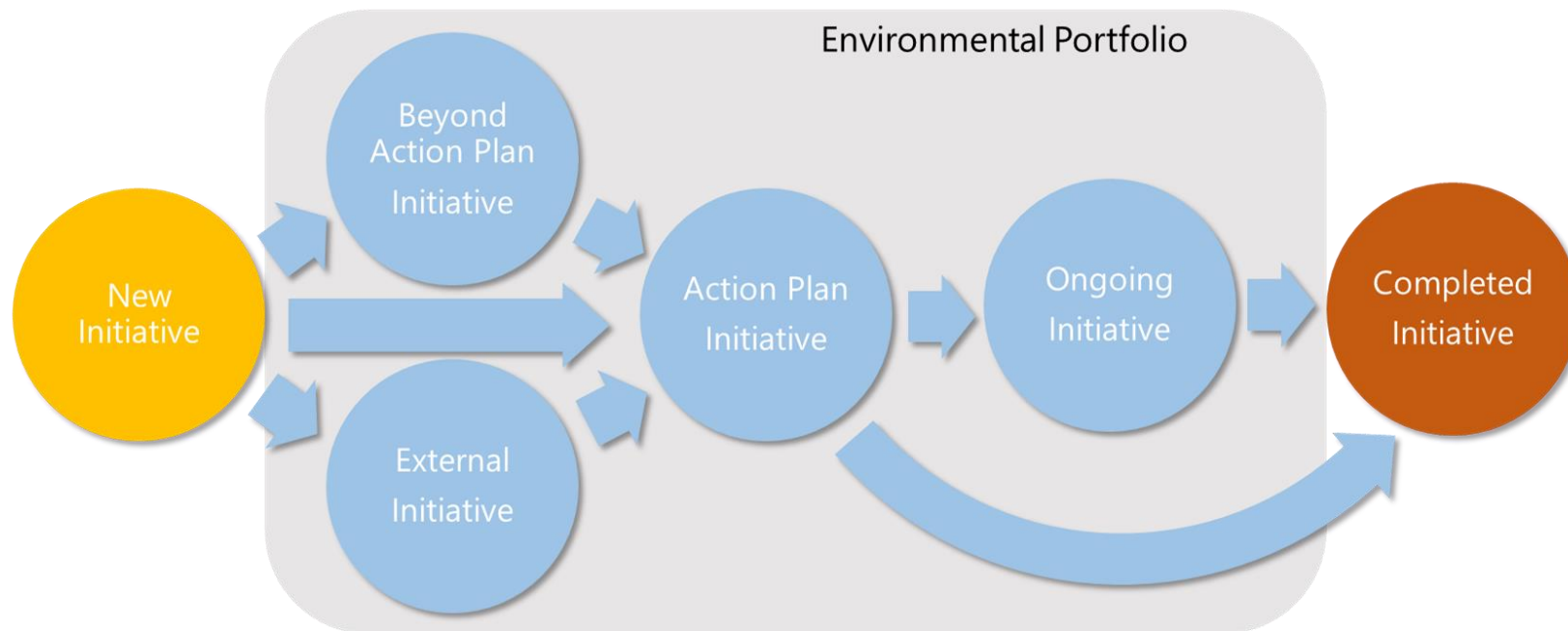


Figure 16. Initiative Cycle from New Initiative to Completed Initiative

The ESS sets priorities and expectations for continuing and completing initiatives broadly based on the category of the initiative. Ongoing initiatives will continue to be undertaken. External initiatives will be supported by the Town without any set priority or specific expectation in the ESS, as these initiatives will be undertaken by external groups. The Action Plan initiatives are integral to the success of the ESS; they represent distinct future actions to be undertaken directly by the Town. They are prioritized into phases, have estimated costs when requiring corporate funding, are assigned who will undertake the action, and are expected to be completed in the next five to ten years. Beyond the Action Plan initiatives are expected to be conducted after the Action Plan initiatives or through other initiatives, such as the Urban Agricultural Plan. The ESS does not provide any indication of when or who will undertake these initiatives but through their inclusion, signifies that they are considered a reasonable initiative to consider in the future or through other projects. It is also important to recognize the nature of each initiative, in that certain initiatives will have a defined timeframe, like a study, whereas others may create an ongoing operational obligation or commitment, like an annual event. The implementation of an initiative with a defined timeframe is limited and its purpose is generally to create or establish information, or review or assess a topic. These finite initiatives require a one-time increase in capacity and may require limited funding, which means that they will often be undertaken either in part or substantially by a consultant or sustainability scholar depending on the scope of work and expertise required. For initiatives that establish a new program, event or service, there may be an initial capacity or funding requirement to implement the initiative, but its future success and continuation requires operational funding and long-term capacity.

Ongoing initiatives are implemented through annually secured funding and department workplans. Any actions proposed to become new ongoing initiatives will require obtaining funding and identifying responsibility within the Town. Most of these initiatives within the Environmental Portfolio have been operationalized with secured continual funding in the Town's operations budget.

The initiatives of the Action Plan will require obtaining funding, identifying responsibility within the Town, and allocating resources for completion (staff time, workplan commitment, etc.) for successful implementation. Potential funding sources include the Town's general operating budget or specific capital project funding; external grants, including federal and provincial sources; internships and scholarship programs; and external sources, such as private donations and corporate sponsorships or programs. A combination of these sources may be used to fund certain initiatives. To secure Town funding,

initiatives may need to be incorporated into the Town's three-year Corporate Plan process. This requires diligent planning and insight prior to an initiative being undertaken and may delay certain initiatives, especially if substantial funding is required. Another consideration for the timing of initiatives is the availability and timelines for external funding sources, such as grants and programs. If an initiative requires both internal and external funding sources, careful planning is required to ensure funding can be secured from both sources prior to starting the initiative.

Implementation of external initiatives requires collaborating with external parties and supporting regional, provincial, and federal direction. In some cases, these initiatives may become involved with the Corporate Plan process or require grant funding from external parties. Many of the considerations for the Action Plan initiatives may apply to external initiatives if similar funding sources are required.

Like initiative updates, goals may occasionally be updated or revised to align with new or revised initiatives or address new or changed circumstances. As initiatives are completed, related goals may also be achieved and will be removed from the Environmental Portfolio, as necessary.

Annual Reporting and Future Updates

Each year, the Town will update the Environmental Portfolio to review and report on implementation progress. The status of the initiatives and goals in the ESS will be presented to show progress of the ESS as part of the Town's annual environmental update. Annual environmental updates are expected to be provided to Council during the first quarter of each year.

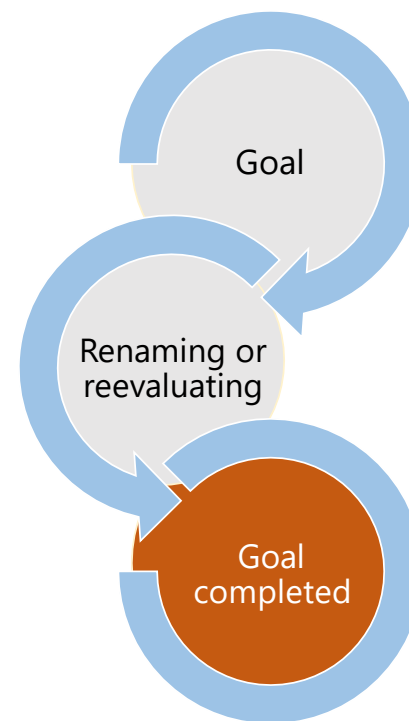


Figure 17. Goal Cycle



Figure 18. Environmental Stewardship Strategy Update and Environmental Portfolio Reporting Cycles

The annual update will specify new, ongoing, and future initiatives, and their related goals. New initiatives not specified in the ESS are expected to be integrated into the ESS during the coming years. The annual report will describe any new initiative, along with its origin, theme, category, related goal, and how it interacts with any associated initiatives to ensure clarity and purpose of the initiative. This may also include identifying funding sources, responsibility within the Town, and required resources for completion of the initiative, especially for new initiatives to be integrated into the Action Plan.

Besides new initiatives, the annual update will also note when initiatives move from one category to another. This is most likely to include initiatives moving from beyond the Action Plan to within the Action Plan, in which case additional details about the initiative would be included in the update.

All Environmental Portfolio initiatives that are completed each year will be detailed in the annual update to acknowledge their contributions to the progress of the ESS and will be removed from the Environmental Portfolio.

Annual updates are expected to grow and change from year to year as their contents are reflected upon from prior years. The baseline information provided in each update will include an updated Environmental Portfolio and highlights of progress on the initiatives and goals, including any new or re-categorized initiatives.

The ESS is expected to be updated every three to five years to complete a comprehensive reassessment of all environmental initiatives, particularly those in the Action Plan. This will ensure the living document is up to date and continues to be relevant for the future.

The extensive environmental initiatives listed in the ESS are ambitious and showcase Stony Plain's excellence in environmental responsibility. Through the implementation of the ESS, the Town commits to ensuring we are a resilient community that protects and enhances our environment for the benefit of current and future generations.

Appendix A – Environmental Stewardship Strategy Technical Report

Town of Stony Plain

Technical Report

for the 2021 Renewal of the

Environmental Stewardship Strategy







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Please note that this document is not intended to be the final Environmental Stewardship Strategy. It contains a summary of research, glossary of initiatives, and the synthesis of relevant sections pertaining to the Environmental Stewardship Strategy. This document is a technical report that will be used to finalize a draft of the 2021 version of the final document.

LAND ACKNOWLEDGEMENT



Stony Plain is located on Treaty 6 territory, the traditional meeting grounds, gathering space, and travel route of the Cree, Saulteaux, Blackfoot, Dene, and Nakota Sioux and the homeland of the Métis Nation.

The Town of Stony Plain respectfully acknowledges all the many First Nations, Métis, and Inuit communities whose footsteps have marked this landscape since time immemorial.

We acknowledge the deeply rooted relationship between Indigenous heritage, culture, language, spirituality, and history to Stony Plain's land, water, and air.

We thank the many past, present, and future Indigenous groups who have protected and thrived in this environment for millennia.

As Treaty people, we commit to ensuring the wellbeing of our environment by acknowledging this rich Indigenous cultural legacy through the Environmental Master Plan.



Acknowledgements

We would like to thank all the residents, business owners and operators, Councillors, developers, and Town staff who participated in the public participation opportunities for the EMP and ESS.

Thank you to the many environmental leaders throughout Canada who have assisted with the research process for the ESS by providing cost and logistical estimates for proposed initiatives.

Executive Summary

Stony Plain strives to become a leader in environmental stewardship by taking action for the benefit of future generations. As a result, the Town adopted the Community Sustainability Strategy in 2006, which set the path for Stony Plain to become a leader in the environmental, social, economic, and cultural aspects of sustainability. A product of the Community Sustainability Strategy was the first iteration of the Environmental Stewardship Strategy (ESS) in 2007. The ESS set short, intermediate, and long-term goals to enhance Stony Plain's environmental portfolio and minimize its ecological footprint. Between 2007-2011, the Town made extraordinary strides to achieve its environmental goals through progressive initiatives including increasing energy efficiency, improving water conservation, enhancing sustainable waste management procedures, and expanding our urban forest. The Environmental Stewardship Strategy was renewed in 2011 to reflect changing regional and global environmental contexts.

In 2020, Town Administration and Council recognized that the existing ESS required an update. Furthermore, the environmental context and priorities in Stony Plain needed to be understood in a cohesive format in the form of an Environmental Master Plan (EMP). While the Municipal Development Plan (MDP) is Stony Plain's sustainable growth and development document that addresses the environment as an integral aspect of sustainability, the EMP is a direct product of the MDP and focuses *specifically* on the environmental aspect of sustainability. It summarizes Stony Plain's distinct environmental context and outlines the environmental priorities of Stony Plain through forward-thinking policies, while addressing all aspects of environmental stewardship.



Through the study of Stony Plain's distinct environmental context and with feedback from the community, the EMP and ESS have been crafted to be unique to Stony Plain. The purpose of Stony Plain's environmental initiatives are intended to support global thinking through local action. While the EMP is the guiding document that outlines our environmental priorities, the ESS is the action-based document that will enact the vision and policies of the EMP. It is a living document, subject to regular updates and audits, to ensure the community and municipality are on-track to meet their environmental goals. Together, both documents will set the path for Stony Plain's environmental future, ensuring that our ecosystem and environment is sustained and conserved for the benefit of subsequent generations of Stony Plain residents.

The creation of the ESS required extensive research of potential actions and associated economic, social, and environmental costs and constraints. Suggestions from residents and stakeholders through the public participation opportunities provided an excellent foundation to begin compiling a list of feasible and realistic actions. To diversify our list of actions, we researched the environmental initiatives of neighbouring municipalities in the Edmonton Metropolitan Region, elsewhere in Alberta, and throughout Canada. Furthermore, we listed Stony Plain's previous and ongoing environmental actions to explore the opportunity for extension and enhancement. Parameters such as community desire, cost, feasibility, and positive environmental impact were weighed to prioritize actions that were found to be the most suitable for implementation, while optimizing our environmental contribution.

The ESS lists past, present, and future environmental actions. Our guiding principles exemplify the concept of connectivity, the idea of the past being connected to the present and future. Growing from past success while learning from mistakes is an important aspect of transparent environmental governance.

As a community, we take responsibility for our environment and commit to ensuring it flourishes alongside the built environment. We strive to build a resilient community by fostering development that protects and enhances our environment for the benefit of current and future generations.



How to Use the Environmental Stewardship Strategy

For the ESS to be successful, it is essential that the reader understands how the document is intended to be used. The ESS Technical Report is an extensive list of environmental initiatives the Town may pursue depending on the availability of resources. However, all members of our community may benefit from the educational nature of the ESS as described below.

Residents

Residents of Stony Plain have the great potential to achieve environmental action at the community scale. As a resident, please use the ESS as an educational tool to be informed of the past, present, and future environmental actions the municipality has or may consider pursuing. Furthermore, consider if the actions listed within the ESS are applicable to your household and consider steps that you can take to help Stony Plain achieve its environmental goals.

Council

As the elected officials of our community, members of Council have the greatest connection to the public and have the right to decide the budget and spending of the municipality, as mandated in the *Municipal Government Act*. As a member of Council, please use the ESS to inform the decision-making process. The ESS is intended to help Council prioritize initiatives and inform the subsequent allocation of budget when considering environmental actions.

Administration

While the ESS is a planning document, it outlines initiatives that require collaboration between all municipal business units to achieve the actions listed in the ESS. As a staff of the Town of Stony Plain, please use the ESS to familiarize yourself with environmental actions that your department can prioritize to help Stony Plain achieve its environmental vision.

Business Owners/Operators

Local businesses are integral to Stony Plain's identity and economy. As an owner or operator of a business, please use the ESS as an educational tool to learn about the Town's environmental action items. Furthermore, consider how your business



can contribute to Stony Plain's environmental goals through the implementation of environmental initiatives in your daily business operations.

Developers and Home Builders

The land development and construction community serve as an essential piece in Stony Plain's growing population, while attracting growth and investment to our municipality. As a developer or home builder, please use the ESS to gauge the environmental improvements our community is making to ensure that new development considers our vision for the environment. Furthermore, you may consider the addition of these actions into your development operations where possible.

Neighbouring Municipalities, Regional Stakeholders, and Senior Orders of Government

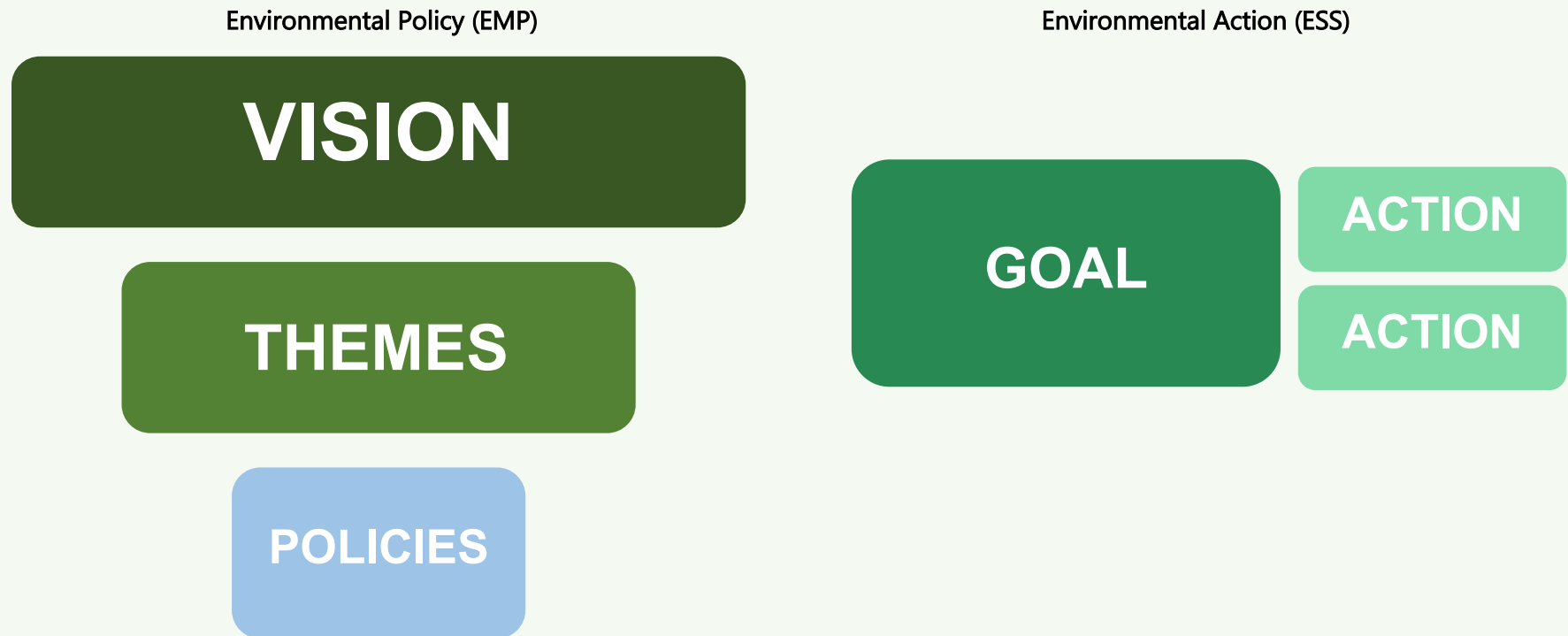
We recognize that ecosystems, wildlife, vegetation, waterways, and air are not confined to the municipal boundaries of a single jurisdiction. Furthermore, widespread innovation in waste management and energy systems cannot be achieved from a single municipality. As a result, we are committed to collaborating with our neighbours, regional stakeholders, and senior orders of government to protect and enhance our regional environment. As a regional collaborator, please use the ESS to learn about Stony Plain's environmental actions and find opportunities for collaborative partnerships.

Stony Plain's Environmental Framework

Stony Plain's environmental framework is the foundation by which the EMP and ESS were created. The environmental framework helps conceptualize the philosophical, theoretical, and practical structure by which Stony Plain intends to improve its environmental portfolio. The framework is split into two elements: frameworks for the EMP (environmental policy) and the ESS (environmental action), visualized in Figure 1 below.



Figure 1. Stony Plain's environmental framework



Vision

Stony Plain is a vibrant community that retains and integrates its unique character, rich culture, and natural heritage with new growth. As a community, we take responsibility for our environment and commit to ensuring it flourishes alongside the built environment. We strive to build a resilient community by fostering development that protects and enhances our environment for the benefit of current and future generations.



Guiding Principles

The guiding principles reinforce the essence of the vision, while capturing Stony Plain's environmental values to achieve excellence in environmental governance, stewardship, and responsibility.

Acknowledgement of Nature

We acknowledge our role within the natural environment and strive to become a leader in environmental stewardship. We recognize that our social, economic, political, and legal systems are the main drivers of ecosystem processes in the urban environment. It is our responsibility to protect, conserve, and enhance the natural environment through sustainable practices, while balancing the interests of society and the economy.

Governance

We recognize the importance of transparency, openness, and accountability in the decision-making process. We strive to achieve excellence in environmental leadership through governance practices that foster a collaborative approach to leadership. Furthermore, we recognize the importance of monitoring our environmental progress to inform future decision-making.

Connectivity

We recognize multi-faceted connectivity between individuals, communities, and ecosystems. We foster a collaborative approach to achieve environmental action in Stony Plain that requires partnerships with the community, stakeholders, regional partners, and senior orders of governments. We acknowledge the connection between the past, present, and future and recognize the decisions we make today will impact the community for generations. We strive to think globally while acting locally.



Liveable Communities

We recognize the importance of fostering a safe, secure, and supportive sense of place to meet the needs of our community and enhance the quality of life of community members through ecological land use planning. We strive to offer a healthy natural environment with ample social and recreational opportunities.

Education and Outreach

We recognize that the success of any environmental strategy is dependent on community understanding and support. Through creative communication, we strive to reach as many individuals as possible with environmentally relevant information. We are committed to achieving a high degree of community involvement and awareness in all circumstances.

Themes

To simplify the complexity of the environment, Stony Plain's environmental priorities have been categorized into five themes: **energy, land, air, water, and waste**. These themes represent focus areas within policies, goals, and action are placed. As outlined in our guiding principles, we recognize the connectivity of the environment so these five themes are highly interconnected. For example, by increasing the quantity of waste diverted from landfills, we are meeting our waste-reduction goals, but are also reducing greenhouse gas emissions and mitigating the ecological degradation associated with landfills. Hence, this goal falls within the domain of three themes. However, the theme-based approach to categorization ensures we address all focus areas requiring environmental action to achieve a multi-faceted and holistic environmental strategy.

Policies

Stony Plain's environmental policies are outlined in the EMP and focus on specific environmental areas of concern within each of the five themes. They encompass the community's environmental priorities and identify our intention to address various environmental issues. While policies are broad and overarching in nature, they have been crafted in a manner to ensure they remain relevant for the next 30 years. They provide a basis for goals and strategies to be set in the ESS to



specifically address each policy of the EMP over the next 30 years. Policies that are relevant to current goals will be mentioned within the ESS.

Goals

Goals that champion progress are essential in achieving the vision and policies of the EMP. Goals are specific and include quantitative and/or qualitative targets that we strive to achieve in an identified time frame. The adoption of goals requires us to frequently assess progress and adjust actions by which these goals may be achieved. Goals are categorized as short, medium, and long-term.

Environmental Action

What is environmental action?

Environmental action involves proactively becoming a steward of the environment by taking responsibility and ownership today. As stressed in our guiding principles, this begins with the recognition of our role within the ecosystem, the impacts that our actions have, and adoption of innovative ways for us to mitigate our impacts on the environment. It requires a fundamental change in conventional practices, behaviours, and attitudes to adjust for changing environmental stressors.

Why do we need environmental action?

Environmental action not only sustains and enhances natural systems, it also provides tangible benefits to human society. Human existence is contingent upon the natural environment and ecosystems as a source of food, water, air, recreation, culture, health, and wellness for human society. By taking actions such as enhancing our urban forest, preserving forests and wetlands, reducing our greenhouse gas emissions, limiting the emission of noxious pollutants, and reducing our reliance on landfills, we are actively securing a future for the next generation of Stony Plain residents who will benefit from proper land use planning, clean air and water, and a resilient community capable of withstanding the extremities of environmental stressors. From a strictly environmental conservation perspective, we must do our due diligence now to prevent the loss of



biodiversity, limit permanent alterations to topography, reverse the loss of ecosystem services, mitigate the effects of the global climate crisis, and take an adaptive approach to resilience planning.

Who should get involved?

Everyone! The duty to protect and enhance our environment is not the sole responsibility of governments. To achieve the environmental goals of the ESS, we are committed to collaborating with residents, businesses, developers, regional stakeholders, senior orders of government, academic institutions, and community groups to achieve a sustainable, resilient, and prosperous future for Stony Plain and the surrounding region.

How will environmental action be achieved in Stony Plain?

While the ESS outlines how environmental action will be implemented by the Town, as members of the community, please use the EMP and ESS as educational tools to learn about Stony Plain's distinct environmental context, notable environmental concerns within our community, and consider similar steps that can be taken at a household or business level to assist Stony Plain in achieving its environmental goals. Many action items identified for the municipality can be implemented by residents, business owners, and developers in the private realm.

Action in the context of the ESS

The ESS Technical Report highlights a total of 61 past, present, ongoing, and potential future actions for Stony Plain. Please note that future Actions are recommendations based on Stony Plain's current environmental, social, and economic context. Implementation of each proposed initiative is dependent on available resources. Throughout the coming years, Stony Plain will strive to implement the Actions outlined in the ESS while searching for new actions to be added to subsequent versions of the document.

Engaging the Community

Community participation and understanding is an integral part of building a resilient community and fostering environmental stewardship. As outlined in the guiding principles, Stony Plain attempts to foster community involvement in environmental action whenever and wherever possible. Our community engagement began in 2020 through the



Environmental Awareness in Stony Plain Survey and Council Workshop. This was followed by the Environmental Action Survey in 2021 that yielded engagement from residents, Council, internal staff, business owners and operators, and the land development community.

By hearing the unique perspectives of the community, we better understood the impacts of municipal decision-making on various groups within our society. Through our public participation strategy and a study of Stony Plain’s distinct environmental context, the ESS and EMP were shaped to be unique to Stony Plain and will help Stony Plain achieve its environmental goals. Below is a summary of the public participation that took place to guide the drafting of the two documents. The full report can be found in Appendix B of the EMP.

Environmental Awareness in Stony Plain

The Environmental Awareness in Stony Plain survey was targeted at residents and ran from October – December 2020, receiving 65 responses. This survey was designed to gauge the perceptions, desires, and needs of the community in relation to environmental challenges. The results of the survey showed most respondents regard the environment in Stony Plain to be a high priority and an important issue that needs to be addressed. The survey showed 86% of participants strongly or somewhat agreed that the environment is a priority for them (Figure 2) whereas 67% strongly or somewhat agreed that an Environmental Master Plan would improve the health of the environment (Figure 3).

Figure 2. I consider the health of the environment a priority in the Town of Stony Plain:

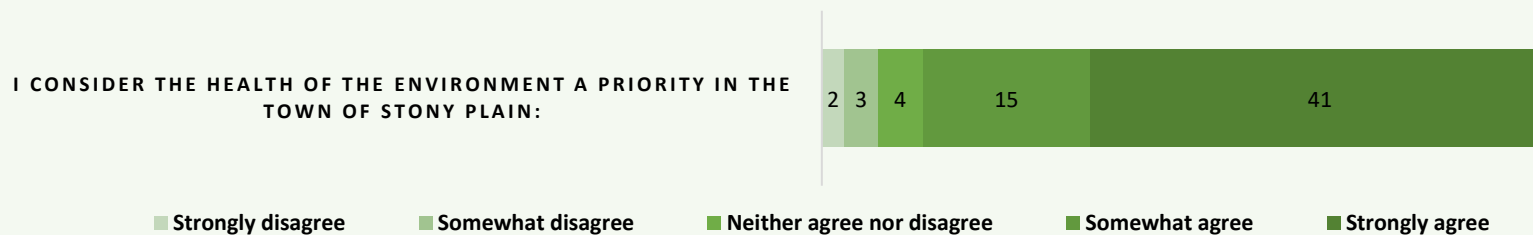
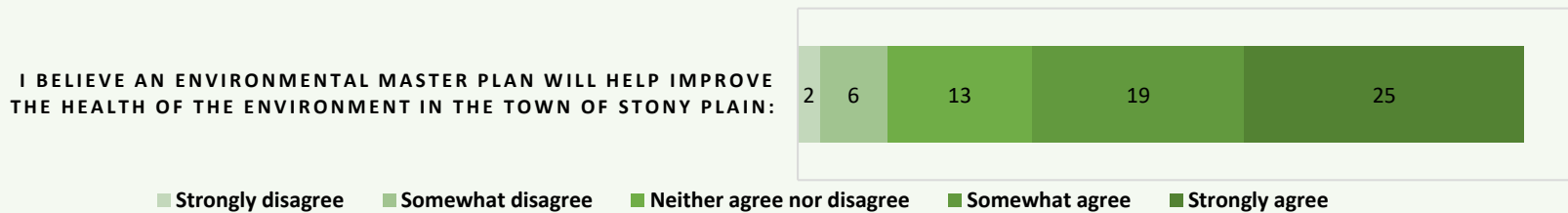


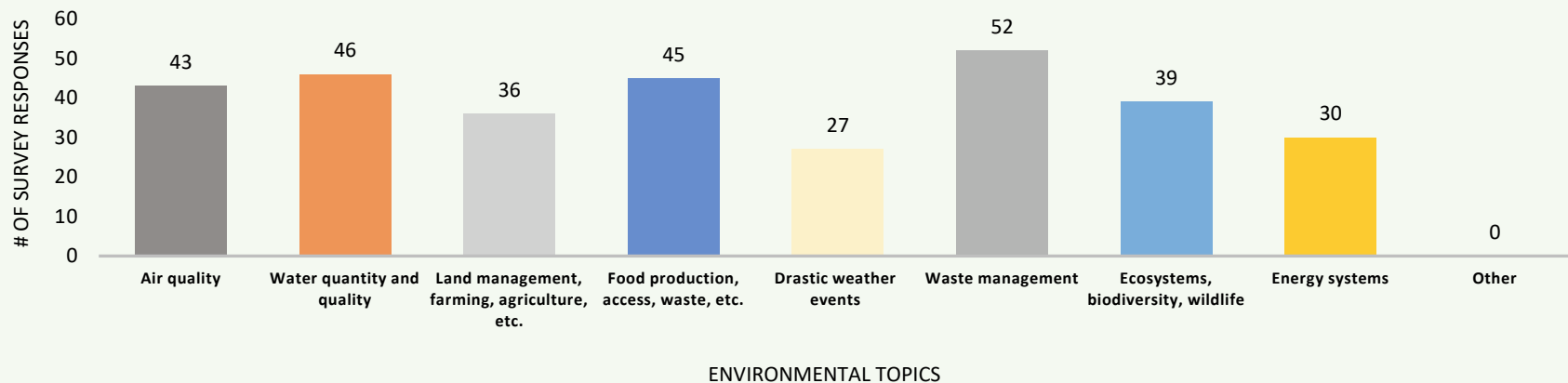


Figure 3. I believe an Environmental Master Plan will help improve the health of the environment in the Town of Stony Plain:



When asked to identify environmental areas of importance, waste management predominantly appeared as a key theme, but other areas were also notable (Figure 4).

Figure 4. In your opinion, which of the following environmental topics have the biggest impact on your daily life? Check all that apply:

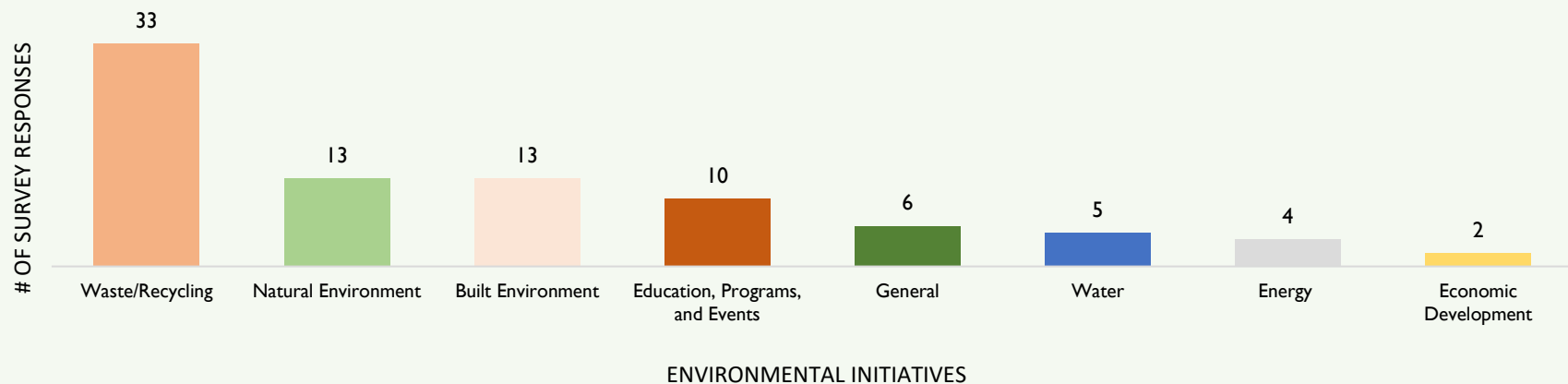


Most relevant for the ESS, participants were asked if they participate in environmental initiatives in the community. Approximately 62% of respondents indicated they participate with the most common initiatives being the



recycling/composting programs and Arbour Day. Participants were then asked if they have ideas for environmental initiatives that the Town could pursue. Nearly three-quarters of respondents (48) suggested a cumulative 86 ideas for potential environmental initiatives, categorized in Figure 5.

Figure 5. Suggestions for environmental initiatives by broad category.



Council Workshop

Engaging Town Council was integral to direct future environmental action. Council interacts with the public daily and therefore provided insight that cannot be captured as effectively as other participation techniques. Throughout the workshop, Council stressed the importance of public education and awareness for environmental initiatives to be successful. This feedback is mirrored in the public participation findings and has been incorporated into both the EMP and ESS. Furthermore, Council was able to identify barriers and limitations to environmental action in the Town that were then considered in the research phase of the ESS. Lastly, Council provided suggestions for environmental action, which strongly aligned with the public participation feedback received.



Environmental Action in Stony Plain Survey

The Environmental Action Survey included follow-up public survey available through the Town's website to confirm what we heard in Part 1 and the gathering of feedback on actionable items for the EMP and ESS from continued internal working group meetings. Furthermore, it included a targeted stakeholder engagement advertised through email and social media with the business and land development communities to guide final actionable items.

Among the 53 respondents, we received responses from 40 individuals who had not participated in the Environmental Awareness Survey. This includes 22 residents, 17 business owners, one member of Council, and one external stakeholder. This results in a unique participant sample size of 105 from the two surveys combined. However, due to the sample size of one for both Council and external stakeholders, it is difficult to make meaningful conclusions regarding these groups. Despite this, the feedback received from the one member of Council was informative in affirming the interpretation of the first round of engagements. Furthermore, feedback obtained from the external stakeholder provided unique perspective not captured in previous surveys.

The results of this round of public participation is described through the two stakeholder categories that received the number of responses (residents and business owners/operators). The Council and external stakeholder survey yielded one response each that provided invaluable feedback, but also making it difficult to generalize findings.

Resident Engagement

Participants indicated numerous factors inhibiting environmental progress in Stony Plain. Among these are financial limitations, lack of education/awareness, lack of willingness to accept change, trouble adapting to change, and trouble refining ideas into action. When asked what can be done to achieve environmental action in Stony Plain, 85% of respondents indicated that focusing on realistic projects that have a positive outcome on the community was the most successful approach. When asked the best method to reach residents with environmentally relevant information, 79% of respondents indicated social media, 24% the Town website, 18% the Stony Plain Reporter, 12% email newsletters, and 3% community bulletin boards.



When participants were given the opportunity to elaborate on waste management priorities, significant concerns expressed include the lack of weekly waste collection, increasing the ease of recycling non-collectable items, and increasing education on what can be recycled. Community-based approaches were also a prominent consideration. Furthermore, when given the opportunity to suggest additional initiatives, respondents generated 16 suggestions of which nine pertained to waste management. Nearly all initiative suggestions overlapped with suggestions provided in the Environmental Awareness Survey.

When respondents were asked what actions can be taken to increase participation in environmental initiatives, 63% of respondents who provided suggestions highlighted the importance of public education and community outreach. Financial incentives, making initiatives mandatory, and increasing the ease of waste management were other common suggestions received.

Business Owner Survey

The majority of business owners held positive views toward the prioritization of the environmental action. Among the 18 respondents, 13 (72%) somewhat or strongly agree that they consider the environment a priority in their daily business operations. Similarly, 13 (72%) of respondents either somewhat or strongly agree that they are in favour of taking environmental action as a business owner.

Energy systems repeatedly emerged as a key area of concern for business owners. When asked if the environment had an impact on their daily business operations, 61% of respondents acknowledged the specific environmental impacts on their businesses. Energy emerged as a dominant theme with a common concern being the environmental impacts of fossil fuels and the shift to renewable sources of energy. Financial constraints caused by environmental factors were also a common impact area. When asked how environmental policy has impacted their daily business operations, 57% of respondents who had been impacted by environmental policy indicated the financial consequences associated with regulations. The most noteworthy mention was the carbon tax that garnered both positive and negative feedback. When asked if barriers exist that impede environmental progress in the business realm, 13 respondents indicated there were no barriers impeding environmental progress. Of the respondents that did indicate barriers, financial limitations emerged as the common theme.



When asked if they have suggestions for environmental initiatives that may have a positive impact on the respondent's business, only one-third of respondents provided suggestions. Of these, most concerned the adoption of renewable resources and energy efficiency upgrades through financial incentives. However, when asked what the Town can do to help their business become more environmentally friendly, respondents generated a total of 17 suggestions. The predominant themes of these suggestions were energy-based and economic in nature. Some reoccurring suggestions were financial incentives for energy upgrades, lower taxes, and increased educational resources for businesses. Many of the initiatives suggested by business participants were new and had not been captured in previous resident surveys.

TECHNICAL REPORT

A summary of 61 initiatives is given below.

Energy

A greenhouse gas (GHG) is type of gas that traps heat from the sun in the atmosphere, helping to prevent the loss of heat into space thus allowing for life on earth. While greenhouse gases are a natural part of earth's atmosphere, , human activities such as the burning of fossil fuels have exacerbated the greenhouse effect since the industrial revolution. This has led to an unprecedented rise in global temperature, shifts in precipitation patterns, and increased unpredictability of extreme weather events¹. Combined, the effect of climatic unpredictability will have an adverse impact on our local ecosystems, wildlife, water supply, agriculture, air quality, and human health.

Energy systems are the single largest contributor of GHG emissions in Canada². Conventional energy systems including oil, coal, and natural gas used for building operations, electricity, heating, cooling, and transportation comprise the most significant GHG contributions in the world. As a result, the Government of Canada has committed to reducing its GHG emissions by 30% below its 2005 levels by 2030³. As an urban municipality, Stony Plain has a role to play in helping Canada

¹ Government of Canada. 2020. Greenhouse gas sources and sinks: executive summary 2020.

² Government of Canada. 2005. GHG emissions by sector.

³ Government of Canada. 2019. Progress towards Canada's greenhouse gas emissions reduction target.



achieve its GHG reduction goals. Stony Plain can become a leader in GHG emission reductions, setting an example for municipalities throughout Canada. While much of our indirect GHG contributions fall outside of our control, there are local steps we can take as a community reduce our household, corporate, and business emissions of GHGs for climate leadership today and for the future.

Goal: Reduce the Town's corporate GHG emissions by 25% from 2021-levels by 2040 and community GHG emissions by 15% from 2021-levels by 2040.

This GHG emissions reduction goal encompasses the entire Energy theme of the ESS. Ultimately, the goal associated with all energy-related initiatives is to reduce Stony Plain's GHG emissions. This includes actions that include reducing Stony Plain's reliance on non-renewable energy sources, increasing energy efficiency, and exploring renewable energy options. By setting GHG emission reduction targets, Stony Plain will join neighbouring urban municipalities such as Spruce Grove, St. Albert, Edmonton, Leduc, and Strathcona County in helping Canada achieve its GHG emission reduction targets.

Administrative

Action 1: Hire a Municipal Energy Manager.

Status: *future*

Timeline: *short-term*

Stakeholders: *Town*

Cost: *\$20,000/year*

The Municipal Climate Change Action Centre (MCCAC) has launched a grant program that provides funding for municipalities to hire an energy manager. Alberta municipalities with a population less than 150,000 may apply for funding to hire an energy manager for two years to help achieve a 5% GHG emissions reduction. An energy manager is a professional environmental scientist and/or engineer experienced in energy consumption monitoring, retrofitting, and innovation. Some



of the roles of the energy manager are to build a customized energy management plan; conduct an energy audit on the highest energy-consuming municipal building; lead cost, energy, and emissions-reducing projects; and achieve a 5% GHG reductions⁴. An energy manager would oversee all energy-related environmental actions. By having an energy manager join Stony Plain's municipal team, staff will also benefit from new insight and expertise on energy and environmental topics helping to achieve a sustainability-oriented mindset throughout Town operations.

Energy Efficiency

Action 2: Replace older non-energy-efficient traffic lights with modern LED lighting.

Status: *ongoing*

Timeline: *long-term*

Stakeholders: *Town, residents, developers, and businesses*

Cost: *covered in current operating budget*

Currently the Town's lighting infrastructure is aging and is in need of replacement. In the replacement process, the Town is phasing out older lighting that no longer meets modern energy-efficiency criteria, for newer lighting technology that reduces electricity consumption and saves the municipality operational costs. In 2010, the Town converted two sets of traffic control lights and overhead lights at five pedestrian crossings from conventional incandescent lighting to LED lighting and four solar-powered LED lights were installed at two new pedestrian crossings. In addition, six new solar-powered LED lights were installed along the Town's public trail system, complementing four that were installed along the trail and two in a community playground in 2009.

⁴ Municipal Climate Change Action Centre. N.D. Municipal Energy Manager Program.



Action 3: Municipal Green Building Program

Status: *complete*

Timeline: *past*

Stakeholders: *Town*

Cost: *N/A*

In the mid-2000s, the Town of Stony Plain invested significantly in green building design for its then-new Fire Hall and Town Office. The buildings used ecological architectural features to prevent the loss of heat and leverage temperature regulation from the surrounding environment. The Town Office, built in 2003, was designed with uninterrupted insulation to prevent the loss of heat and high-performance fibre-glass windows that maximizes the heat absorption. The Town Office is also built with an innovative groundwater cooling system allowing groundwater from the local aquifer to cool the building. Furthermore, the building was equipped with occupancy sensors to prevent inefficient use of lighting. The Fire Hall was also designed with various energy-efficient features such as a heat recovery system and a window, door, and wall envelope that minimizes heat loss.

In the future, the municipality may consider innovative energy-efficient design in newer buildings.

Action 4: Conduct a corporate energy audit

Status: *Future*

Timeline: *Immediate*

Stakeholders: *Town*

Cost: *~\$35,000*

For Stony Plain to gauge the effectiveness of its energy-efficiency measures, it is critical to have an energy audit conducted. An energy audit involves an analysis of building design, energy consumption, and inefficiencies to recommend solutions to



increase energy-efficiency. This will give the Town quantitative data on its energy consumption patterns over time, sources of energy, and greenhouse gas emissions. Intermittent energy audits can show improvements to energy efficiency that have resulted from upgrades. Regular energy audits of municipal buildings are essential to tracking Stony Plain's environmental progress and to quantify if GHG emissions reduction goals are being met.

Action 5: Wherever possible, purchase new vehicles for Public Works that are listed on the Government of Canada's "most fuel-efficient vehicles" list

Status: *Future*

Priority: *High*

Timeline: *Long-term & ongoing*

Stakeholders: *Town*

Cost: *\$15,000/year addition to Public Works equipment replacement fund*

Stony Plain can set an example for vehicle fuel-efficiency by gradually upgrading its vehicle inventory to achieve modern fuel-consumption standards. Currently, the Town replaces its vehicle inventory on a cycle of 10-15 years. Through the replacement schedule, the Town can keep up with modern energy-efficiency standards as guided by Natural Resources Canada's fuel efficiency reports. The Government of Canada assigns fuel consumption ratings to all new vehicles sold in Canada measured in liters of fuel burned per 100km. Furthermore, Natural Resources Canada estimates the average annual fuel costs for an assumed number of kilometers driven per years. Of note to this initiative, the federal government releases a list of the most fuel-efficient vehicles each year by category of vehicle⁵. Residents, businesses, and the Town can use this tool to ensure the vehicle they are investing in minimizes greenhouse gas emissions while saving fuel costs in the long-term.

⁵ Government of Canada. 2021. Fuel consumption ratings search tool.



Fuel-efficient, low emission, and no-emission vehicles can be categorized into three categories: fuel-efficient gas/diesel, hybrid, and electric.

Fuel-efficient gas/diesel vehicles

Fuel-efficient gas/diesel vehicles have been engineered in a fashion that optimizes fuel-efficiency. Overall, these vehicles are not fuel-efficient as hybrid vehicles, but they are currently the only alternative for Public Works. Reliable and feasible options for hybrid and electric trucks are currently limited, so the most fuel-efficient trucks are the most reliable option until vehicle technology progresses further.

Hybrid vehicles

While hybrid vehicles still require the use of fossil fuel energy, they are substantially more energy-efficient than conventional vehicles. Hybrid vehicles utilize two energy sources resulting in the efficient transfer of power and torque from the fuel source to the powertrain. Furthermore, hybrid vehicles are engineered to recapture reversible energy thereby minimizing fuel consumption. Overall, a shift to hybrid vehicles will have greater up-front vehicle upgrade costs but will save the Town fuel costs in the long-term⁶.

Electric vehicles

Electric vehicles are regarded as the superior successor to hybrid technology as they rely solely on electricity as opposed to gasoline or diesel and do not directly lead to GHG emissions. As of 2021, the widespread availability of these vehicles is largely limited to a select few models, many of which are not suitable for the purposes of Public Works. However, as electric vehicle technology continues to advance, the possibility of incorporating fully electric vehicles into Public Works' vehicle inventory in the next decade remains open.

⁶ Karbaschian, M.A. and D. Soffker. 2014. Review and comparison of power management approaches for hybrid vehicles with focus on hydraulic drives. *Energies* 7: 3512-3536.



Table 1 shows vehicles on the Government of Canada's 2021 list of most fuel-efficient vehicles that are suitable for Public Works and other municipal departments.

Table 1. Summary of vehicles on Natural Resources Canada's most fuel-efficient vehicles list⁷ (accurate as of February 2021).

Vehicle Make & Model	Fuel-Efficiency (Combined L/100km)	Fuel Type	Vehicle Type	Estimated Price
2021 Chevrolet Spark	7.0	Regular Gasoline	Subcompact Car	\$21,000
2021 Toyota Corolla Hybrid	4.5	Hybrid; regular gasoline	Full-size car	\$31,000
2021 Kia Niro	4.6	Hybrid; regular gasoline	Small station wagon car	\$35,000
2021 Chevrolet Colorado	10.1	Diesel	Small pickup truck	\$50,000
2021 Chevrolet Silverado	8.8	Diesel	Standard pickup truck	\$60,000
2021 Toyota Highlander Hybrid AWD	6.7	Hybrid; regular gasoline	Standard SUV	\$50,000
2021 Toyota Sienna	6.5	Hybrid; regular gasoline	Minivan	\$50,000

⁷ Government of Canada. 2021. Most fuel-efficient vehicles.



Action 6: Create a webpage educating residents and businesses on energy-efficiency upgrades

Status: *Future*

Timeline: *Immediate*

Stakeholders: *Town, businesses, and residents*

Cost: *None*

An inexpensive action for the Town to pursue is the creation of a webpage with relevant and updated information regarding energy-efficiency home upgrades. The overarching intent of this project will be to educate residents on the importance of energy-efficiency from both an environmental and financial perspective to help achieve community GHG emission reduction targets. The webpage may include information on energy-retrofits and upgrades help save electricity and heating utility costs, information about the EnerGuide Home Energy assessment service with external links to the Government of Canada website to learn more, and information regarding the following home upgrades:

- Insulation upgrade
- Air sealing improvements
- Window upgrades
- Water heating upgrades, including drain water heat recovery and efficient water heating
- Space heating upgrades, including heat pumps, smart thermostats, and high efficiency furnaces

Action 7: Conduct a community energy audit

Status: *Future*

Timeline: *Long-term*

Stakeholders: *Town, businesses, residents*

Cost: *To be determined*



While the corporate energy audit will reveal energy consumption patterns for Town-owned facilities, a community counterpart will estimate the composition of energy sources and consumption patterns for residential and commercial units throughout town. This audit will reveal information regarding per-individual energy consumption, sources of energy and electricity, and a consumption breakdown based on land use (residential, commercial, industrial, and agricultural). Most importantly, the audit will reveal the on average annual greenhouse gas contribution per resident. The results of this study will provide information on areas of improvement and will inform community GHG reduction targets. At this time, a community energy audit is technically challenging, but it is included in the ESS for future investigation.

Action 8: Reintroduce the green-building rebate program

Status: *Future*

Timeline: *Long-term*

Stakeholders: *Town, developers, residents*

Cost: *Minor loss to revenue*

Due to the walkable and vibrant nature of Stony Plain, our community has seen a steady rise in population and built area through new developments. To ensure that new houses are constructed with the environment in mind, the municipality can incentivize home builders to build homes and businesses that meet high energy-efficiency standards, for example LEED-certification. This would occur in the form of a building permit fee rebate in which the builder would be eligible to receive a rebate on their permit fee by showing proof of LEED-certification. While the Town had such an initiative in the past, it was discontinued because of low demand. However, given that the trend toward climate-friendly homes is on the rise, the municipality may choose to reintroduce the incentive regardless of demand.



Action 9: Provide rebates for energy-efficiency upgrades

Status: *Future*

Timeline: *Long-term*

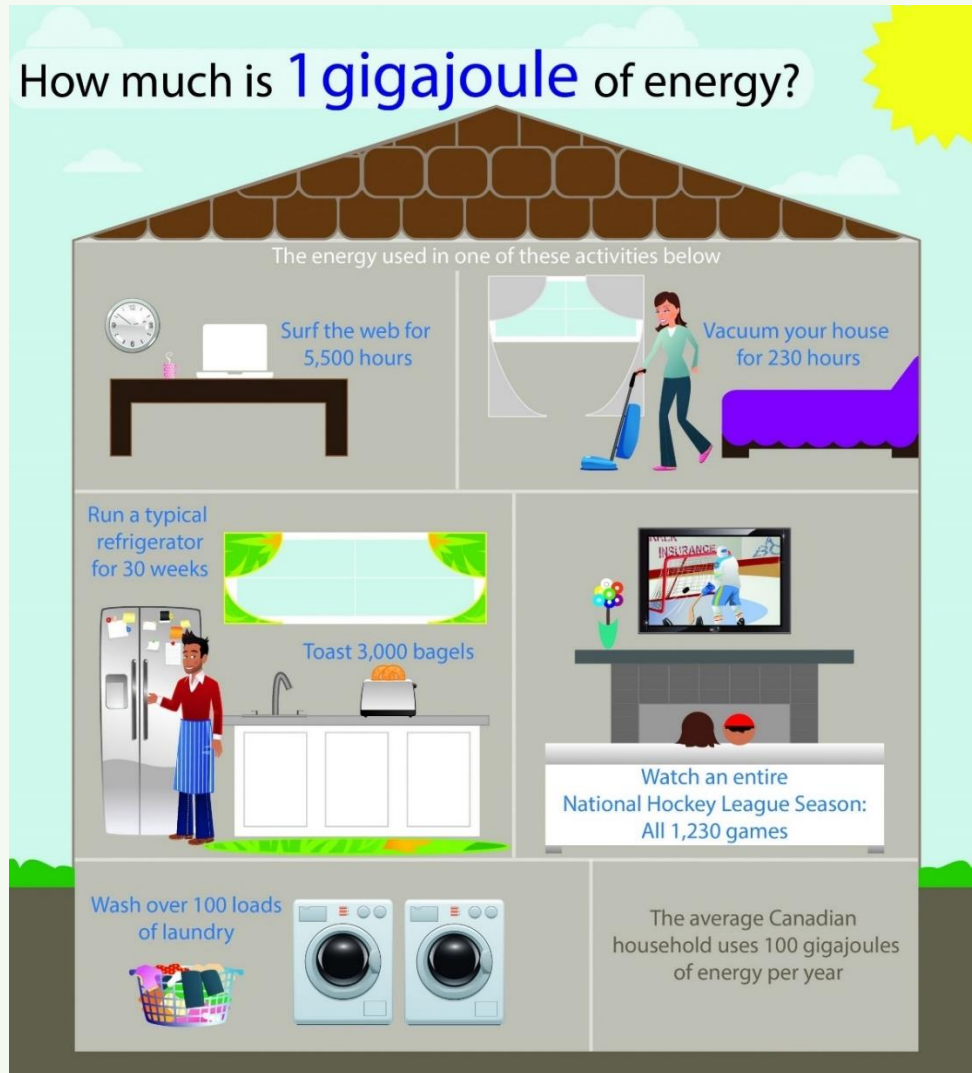
Stakeholders: *Town, businesses, and residents*

Cost: *To be determined*

Through an energy-efficiency rebate program, residents and business owners will be given a double incentive to invest in building upgrades to meet modern energy-efficiency standards. Firstly, the cost benefit associated with energy-efficient buildings. By improving the electrical efficiencies of appliances, modernizing appliances, and upgrading their built quality to prevent the loss of heat, residents and business owners will see a return on investment with utility costs. However, the cost associated with building upgrades may act as a barrier to implementation. As a result, the Town may further incentivize the adoption of energy-efficient initiatives by providing a rebate on a set portion of the cost. For energy-efficiency upgrades to be conducted, the building owner would first need to conduct an EnerGuide Home Energy Evaluation from a licensed energy auditor. The energy audit would reveal energy consumption patterns, inefficiencies, and gross energy consumption measured in gigajoules. How much is a gigajoule of energy? Reference Figure 6 from the Government of Canada for perspective⁸.

⁸ Government of Canada. N.D. After your EnerGuide home evaluation.

Figure 6. One gigajoule of energy (Source: Natural Resources Canada).





Active & Public Transportation

Action 10: Creation of Stony Plain Transit

Status: *Ongoing*

Timeline: *Long-term*

Stakeholders: *Town and residents*

Cost: *Accounted for*

As Stony Plain grows in population, the need for public transportation continues to increase. A viable public transportation system is essential to build a sustainable community from an environmental, social, and economic perspective. From an environmental standpoint, public transportation is a system by which multiple individuals use a single vehicle for their commute as opposed to private automobiles. This assists in reducing GHG emissions, preventing congestion, and improving local air quality. Recognizing this need, Council approved the proposed Yellow Route for Stony Plain Transit to start in 2021. The service will connect commuters in Heritage Park, Rotary Park, the Old Town to the South Business Park and will extend to the Tri-Regional Leisure Centre in Spruce Grove and Spruce Grove's transit system. Due to the residential-commercial-industrial and intermunicipal connection, this route will be beneficial to many who rely on personal vehicles to drive to work. This will help reduce reliance on personal automobiles and will assist in achieving our community GHG emissions reduction targets.

Action 11: Creation of Tri-Municipal Regional Transit System

Status: *Ongoing*

Timeline: *Long-term*

Stakeholders: *Town, residents, and regional stakeholders*



Cost: *To be determined*

In 2018, the Town of Stony Plain partnered with Parkland County and the City of Spruce Grove to commission the creation of the Tri-Municipal Regional Transit Plan. The regional transit plan proposes to connect transit system of the three municipalities to increase mobility between various populated centres of the Tri-Region. Furthermore, the regional system would connect Stony Plain to the Edmonton Transit System enabling widespread connection throughout the metropolis. In 2019, the three municipalities entered a Memorandum of Agreement to implement the Tri-Municipal Regional Transit Plan.

Action 12: Creation of an Edmonton Metropolitan Regional Transit System

Status: *Ongoing*

Timeline: *Long-term*

Stakeholders: *Town, residents, and regional stakeholders*

Cost: *To be determined*

To enhance connectivity within the Edmonton Metropolitan Region, the Town of Stony Plain along with the City of Spruce Grove, City of Edmonton, City of Beaumont, Town of Devon, City of St. Albert, City of Leduc, and City of Fort Saskatchewan came together to seek provincial approval for a regional transit entity. In 2021, the provincial government gave official approval for the establishment of the Regional Transit Commission. This project has the potential to enhance connectivity throughout the metropolis in a sustainable manner. Given that many residents of the metropolitan area live and work in separate municipalities, a metropolitan transit system would further reduce reliance on personal automobiles helping to reduce GHG emissions regionally.



Action 13: Update the Trails Master Plan to incorporate findings of the Active Transportation Strategy

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town*

Cost: *\$0*

Stony Plain has an incredible trail and mobility network connects our natural and built areas. This significantly contributes to the walkability of our community helping to reduce GHG and air pollution associated with vehicular transportation. As a result, this initiative falls within three of the five themes outlined in Stony Plain's environmental framework. The Active Transportation Strategy outlines various improvements that can further encourage active transportation within town thereby further encouraging residents to choose active modes of transportation over motorized modes. The incorporation of these findings into the Trails Master Plan, through an environmental lens, can help Stony Plain promote active modes of transportation while ensuring the health of our ecosystems is maintained.

Renewable Energy

Action 14: Conduct a solar feasibility study on select municipal buildings

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town*

Cost: *~ \$15,000*



Solar photovoltaic (PV) systems are a renewable form of energy quickly gaining popularity in Alberta municipalities. Through technology based on photosynthesis in plants, PV systems use solar collection panels to transform photons of light energy emitted by the sun into electricity that can be used immediately, stored in batteries, or sold back to the grid. This process does not rely on fossil fuels and therefore minimizes the ecological degradation associated with the extraction of non-renewable resources while reducing our overall GHG emissions. To foster the uptake of solar energy in the community, the Town will lead by example to gradually implement solar on municipal facilities, as has been done in neighbouring municipalities such as St. Albert, Spruce Grove, and Edmonton.

Solar systems have a lifespan of 25-30 years enabling sustainable energy use until novel technologies become available in the next generation. Solar energy is among the most favourable renewable energy alternatives as it has no associated GHG emissions, takes little space, and pays for itself saving the investor money. Alberta's climate is well-suited for solar energy due to our long summers and sunny winters.

However, to successfully implement solar on our municipal facilities, a solar feasibility study from a licenced company specializing in solar implementation is essential. A solar feasibility study will provide information on the solar potential of Stony Plain, constraints associated with implementation, recommendation on location most suitable for the placement, suggestions on technologies to consideration, and estimated cost savings.

Action 15: Implement solar on select municipal buildings

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town*

Cost: *To be determined from Action 12*

The results and recommendations given in the solar feasibility study will guide the implementation of solar systems on Stony Plain's municipal buildings. At this time, Town Council and Administration will decide the appropriate technologies and



locations to implement solar. As demonstrated by St. Albert and Spruce Grove, investments in solar implementation is largely flexible. Stony Plain can either choose to make a one-time investment in solar systems or allocate funds gradually over numerous budget cycles to progressively increase the quantity of solar electricity generated from the Town's system. Any investment in solar will contribute to reducing the Town's corporate GHG emissions, but the larger the investment, the greater the impact. The Municipal Climate Change Action Centre (MCCAC) supports municipalities through the solar transition through the Alberta Municipal Solar Program⁹. When solar is implemented in Stony Plain, funding will be requested from MCCAC to reduce the costs for Stony Plain, maximizing our resource investment.

Action 16: Implement solar into new Regional Recreational Centre design

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town*

Cost: *\$500,000 added onto total cost*

In 2019, Council approved a conceptual design for a new regional recreational facility to be built in the area adjacent to the Glenn Hall Centennial Arena. The intent of the new facility is to serve the needs of the residents of Stony Plain, Spruce Grove, and Parkland County while creating a hub for community interaction and activity and enhancing resident quality of life. The total cost of the project is expected to be \$80,500,500.

As Stony Plain moves toward an environmentally conscious future, it is essential that this be incorporated into the built form of new and proposed buildings. The addition of a solar system to the building is an excellent way to offset the building's contributions to greenhouse gas emissions. While the building would not be completely reliant on solar at a feasible price, an additional \$500,000, rounding the building's total cost to \$81,000,500 would contribute to the building's total electricity consumption. In the future, additional solar panels could be added to further reduce the building's GHG emissions.

⁹ Municipal Climate Change Action Centre. 2020. *Alberta Municipal Solar Program*.



Action 17: Create a webpage and online brochure to increase clarity regarding the installation of solar panels on private property

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town*

Cost: *None*

For Stony Plain to decrease public uncertainty regarding solar energy, aspects of the Land Use Bylaw (LUB) relevant to solar application must be readily available for residents to view on the Town website. By a simple Internet search, prospective solar customers should be able to determine the Town's rules regarding solar panels on private property. Currently, a solar panel mounted to a building is listed as validly exempt from requiring a development permit in Stony Plain's LUB Section 1.3.2. While Stony Plain's LUB clearly permits the installation of solar panels, this information is not easily available to the community. The creation of a webpage, online brochure, and advertisement through social media will increase public awareness regarding solar energy and may increase the number of people choosing to install the system.



Land

The human relationship to land is the most integral element of our natural heritage. Land provides food, nourishment, and natural resources for humans. It is the source of our culture, recreation, and social system. Urban and regional planning has historically been grounded in the notion of land use planning. As a result, land is a predominant theme of the EMP and ESS. We must protect our terrestrial ecosystems. This includes, but is not limited to, our native ecosystems, urban forest, urban greenspaces, and agricultural ecosystems. Stony Plain is home to numerous environmentally significant areas that are of local and regional importance. From a conservation standpoint, it is critical that Stony Plain continues to grow and develop in a manner that harmonizes the natural and built environments to prevent the loss of biodiversity and ecosystem services. While Alberta is blessed with an abundance of land, we acknowledge that this land is not infinite and commit to the efficient use of land and associated resources.

Urban Ecosystems

Goal: Increase Stony Plain's urban forest canopy to 20% by 2050.

Action 1: Arbour Day.

Status: *Ongoing*

Timeline: *Annual*

Stakeholders: *Town, residents, and businesses*

Cost: *\$5,000/year*



Arbour Day is perhaps the most popular and widely celebrated environmental action in Stony Plain. Each spring, residents and Town staff alike come together to celebrate the Day of Trees through fun activities, the most fun being, tree planting. The objective of Arbour Day is multi-faceted. A few of the benefits are as follows:

- Increases the community's appreciation of trees.
- Enhances the urban ecosystem through the planting of new saplings.
- Increases local biodiversity through the planting of different species that attract wildlife and pollinators.
- Fosters a sense of community and environmental stewardship.
- Educates residents on the importance of the urban forest.

The following environmental actions consider how Arbour Day can be leveraged and extended to help Stony Plain achieve its urban forest canopy targets.

Action 1.2: Seek corporate sponsorships for Arbour Day.

Status: *Future*

Timeline: *Immediate; annual*

Stakeholders: *Town, residents, businesses, and developers*

Cost: *None*

Developers, home builders, businesses, and oil & gas companies are a part of Stony Plain's vibrant community. As a result, the Town must provide opportunities for sponsorships in environmental actions and Arbour Day provides an excellent opportunity to do so. Maintaining the current municipal budget for Arbour Day, donations of any amount would significantly increase the Town's capacity to expand its Arbour Day celebration to include more trees, native species, and enhance advertising. The sponsor(s) will benefit through increased brand awareness, positive customer attitudes, and media exposure.



Action 1.3: Increase the proportion of native and edible tree/shrub species planted on Arbour Day to 50% and 20%, respectively.

Status: *Future*

Timeline: *Immediate; annual*

Stakeholders: *Town, residents, and businesses*

Cost: *Attainable within current budget*

The use of native and edible plant species was identified as an important priority for residents in the Environmental Awareness in Stony Plain survey for the EMP. Increasing the proportion of native and edible plant species planted on Arbour Day addresses the natural, urban, and agricultural ecosystem priorities outlined in the EMP. Native species are well-adapted to Alberta's climate, exhibit high survivability, and contribute positively to natural and urban ecosystems by increasing biodiversity and providing a food source for wildlife. Local mammal, bird, and insect species have adapted over time to use native plants as source of habitat, food, pollination, and shelter, a function that cannot be replaced through non-native species. By establishing a healthy native plant community, we are actively promoting an increase in local animal species diversity.

Alongside native species, edible fruit species will contribute to Stony Plain's local food security by enabling residents to forage for edible fruits such as apples, pears, plums, cherries, Saskatoons, huskaps, and raspberries. Furthermore, fruiting species also provides a food source for wildlife. Combined, increasing the proportion of these species will gradually enhance Stony Plain's natural, agricultural, and urban ecosystems.



Action 2: Create an Urban Forest Management Plan.

Status: *Future*

Timeline: *Medium-term*

Stakeholders: *Town and residents*

Cost: *\$40,000*

An Urban Forest Management Plan (UFMP) will serve to promote the health and stewardship of Stony Plain's existing trees – whether naturally occurring, planted, or accidentally propagated. It will propose an administrative framework to expand and enhance the urban forest by planting an increased variety and number of trees. The document will be uniquely Stony Plain by promoting native and edible fruit trees that combine to increase our local food security while promoting the health of the urban ecosystem. The document will identify significant tree stands through GIS mapping and will provide an inventory of Town-owned trees. It will set a roadmap for actions that need to be taken to increase our urban forest canopy while maintaining the health of existing trees.

UFMPs are gaining popularity throughout the region due to the ability of a healthy urban forest to increase local biodiversity, provide habitat connectivity, benefit human health and wellness, decrease stormwater runoff, reduce the effect of the urban heat island effect, and capture particulate air pollution. Furthermore, an urban forest is an appreciating asset that increases in economic, biological, and ecological value as the forest matures. The presence of mature trees increases property value, contributes to neighbourhood aesthetics and the public realm, and enhances community wellbeing. Spruce Grove was among the first municipalities in Canada to establish an Urban Forest Management Plan in 2004¹⁰. The City of Edmonton created its Urban Forest Management Plan in 2012 that aims to increase the urban canopy cover to 20% through partnerships and stewardship opportunities¹¹. The City of Edmonton's urban forest is currently

¹⁰ City of Spruce Grove. 2004. *Urban Forest Management Plan*. Volume 1. Documentation.

¹¹ City of Edmonton. 2012. *Urban Forest Management Plan*.



valued at \$1.3 billion and a similar evaluation is needed in Stony Plain. In 2017, the City of St. Albert adopted its Urban Forest Management Plan, also aiming to increase its canopy cover to 20%¹².

Natural Ecosystems

Goal: Protect Stony Plain's environmentally significant areas for conservation at the time of development.

Action 1: Establish a Natural Conservation Area within the Land Use Bylaw.

Status: *Complete*

Timeline: *Long-term*

Stakeholders: *Town and developers*

Cost: *Not applicable*

Stony Plain has demonstrated environmental leadership by ensuring that areas of significant upland vegetation and wetlands are not lost in new subdivisions through the creation of the Natural Conservation Area (NCA) within the Land Use Bylaw (LUB). An area is designated as NCA when it is intended to be kept in a state that preserves natural landscaping and drainage patterns to create and supports habitats and encourage the sustenance of local ecosystems. Development within a natural conservation area is limited to educational signage, enhanced stormwater drainage and maintenance, pathways, and sitting areas. The LUB ensures NCAs remain as pristine as possible while allowing for development nearby.

¹² City of St. Albert. 2017. *Urban Forest Management Plan*.



Action 2: Conduct an Environmentally Significant Area study in the Future Development District.

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town, landowners, and developers*

Cost: *\$40,000-50,000*

Considerable portions of undeveloped farmland, forests, and wetlands lie within the municipal boundaries of Stony Plain. Many of the forested and wetland natural areas are not accounted for in the LUB as a part of the NCA due to their location on private property. For the municipality to identify the ecological significance of the natural portions of rural areas intended for future development, the Town must hire professional environmental consultants to provide technical ecological and biophysical reports regarding Stony Plain's native ecosystems. Neighbouring municipalities such as Parkland County, the City of Leduc, Leduc County, and Strathcona County have conducted Environmentally Significant Areas (ESA) studies to identify their most significant ecosystems to mandate future protection. An ESA study would provide the Town with scientifically defensible information that can be used to guide future land use planning decisions. The ESA study would include a habitat, forest, and wetland inventory and would be published on Stony Plain's website enabling land developers to learn about the environmental context of their greenfield site to determine the appropriate placement of environmental and conservation reserves while ensuring compliance with provincial wetland regulations. The ESA study would serve as an educational tool for Stony Plain's residents to learn about our unique environmental context and best foster understanding for the need of conservation and preservation.



Goal: Restore Stony Plain's existing conservation areas to a native state by 2040.

Action 1: Revegetate barren and maintained portions of Willow Park Natural Area.

Status: *Future; somewhat ongoing*

Timeline: *Medium-term*

Stakeholders: *Town*

Cost: *\$5,000/year*

Willow Park Natural Area is a 20-hectare conservation park in the eastern portion of Stony Plain's built area that serves the dual purpose of being in a Natural Conservation Area, as mandated in the Land Use Bylaw, and being a recreational area for walking and exercise. Willow Park Natural Area is important to Stony Plain for the following reasons:

- Increases urban biodiversity as intact forested stands provide habitat to small mammal and bird species.
- Increases habitat connectivity by providing a refuge of rest to larger animals passing through the natural trail corridor within the built area.
- The positive impacts of urban greenspaces on human health, psychology, and physiology is well documented in scientific literature¹³.
- The natural area serves an educational purpose due to its proximity to High Park School, enabling youth to learn and appreciate Stony Plain's natural heritage.

Despite the site's current ecological function, approximately 4-hectares (20%) of the land constituting the Natural Conservation Area is barren or maintained. Currently, the forested portions of Willow Park Natural Area are dominated by

¹³ Kuo. 2015. How might contact with nature promote human health? Promising mechanisms and a possible central pathway. *Frontiers in Psychology* 25.



aspen and balsam poplar, species that propagate by root clones. As a result, leaving currently maintained areas for naturalization will allow the ecosystem to revert to its natural state. However, to further prevent susceptibility to invasive species, moderate budgeting for the active planting of rhizomatous native flower species will result in an aesthetically pleasing yet ecologically function reclamation initiative. Rhizomatous species have a “creeping rootstalk” that enables them to spread over an area relatively quickly, providing an advantage against non-native weeds.

Goal: Provide necessary resources for the management of invasive and pest species by 2025.

Action 1: Create an educational website on provincially regulated invasive species.

Status: *Future*

Timeline: *Medium-term*

Stakeholders: *Town and residents (notably rural residents)*

Cost: *\$0*

According to the Government of Alberta, invasive species are “non-native species that have been introduced, intentionally or unintentionally, from other countries or ecosystems and threaten Alberta's ecosystems and biodiversity.”¹⁴ Invasive species not only harm local biodiversity, many invasive species reduce agricultural productivity thus having negative economic implications for Alberta. Due to Stony Plain’s location in a highly urbanized metropolitan area surrounded by agricultural operations, we are home to most of Alberta’s common invasive species as identified in the provincial *Weed Control Act*. The Alberta Invasive Species Council has numerous resources available that identify all invasive and potentially invasive species introduced to the province and actions to limit their spread. Most of the approaches outlined by the Alberta

¹⁴ Government of Alberta. N.D. Invasive Species Overview.



Invasive Species Council avoid the use of herbicides and pesticides, thus mitigating damage caused by control measures in both the short- and long-term¹⁵.

To ensure residents and staff are informed on the identification, management, and reporting of invasive species, a brief guidebook and webpage can the problem of invasive species, provide a list of invasive species occurring in Stony Plain, and refer the reader to appropriate resources through the Government of Alberta and Alberta Invasive Species Council for further information regarding the species' biology, natural history, and preventative/control measures that must be taken.

Agricultural Ecosystems

Goal: Contribute to regional food security initiatives.

Action 1: Support the creation, implementation, and realization of the Regional Agricultural Master Plan.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town and regional stakeholders*

Cost: *To be determined*

Food is an irreplaceable and non-permanent resource that requires consideration in all forms of urban and regional planning. Agriculture is currently the largest single land use within Stony Plain's municipal borders. Stony Plain and surrounding

¹⁵ Alberta Invasive Species Council. N.D. Take Action.



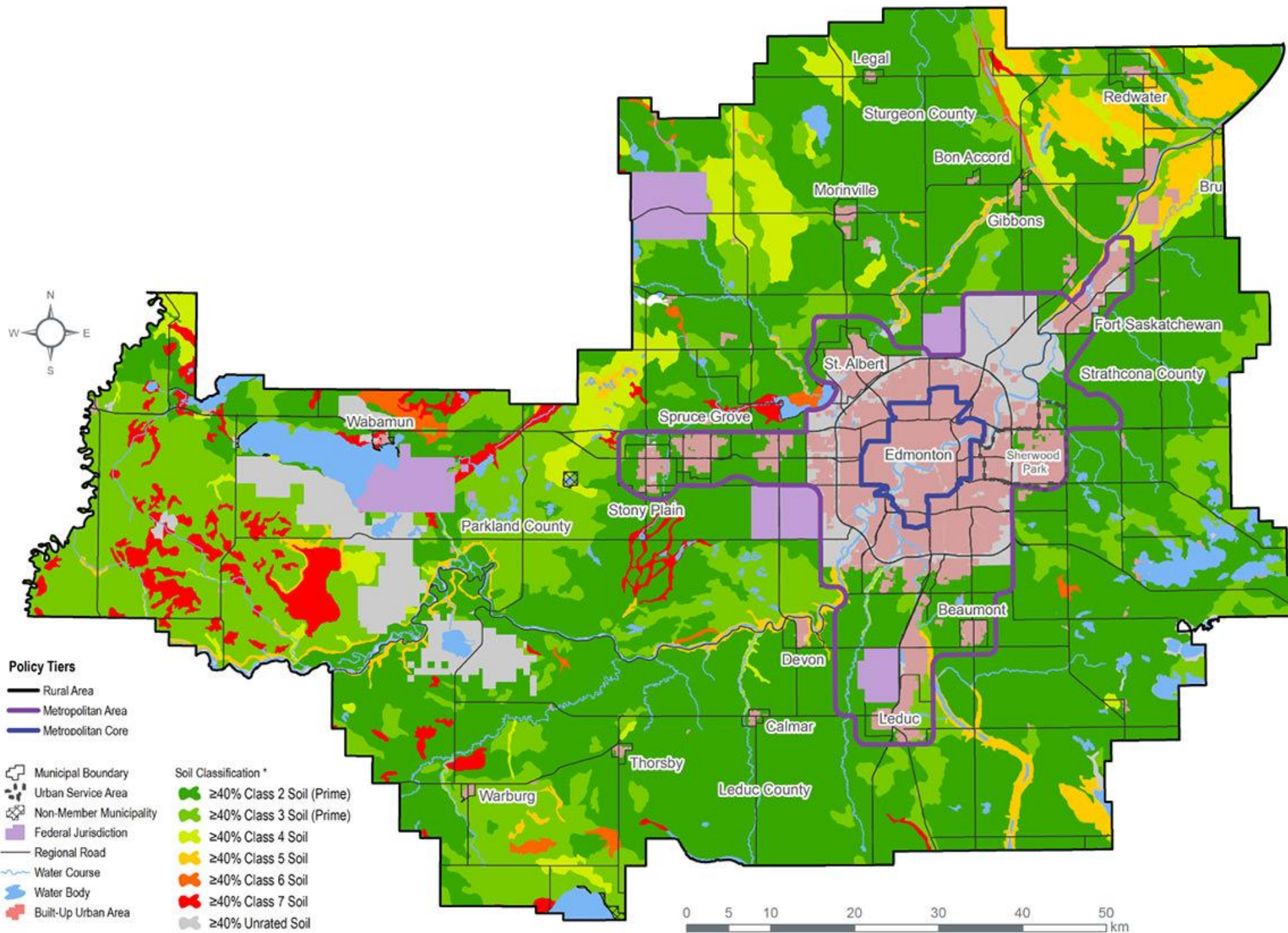
regions are home to some of the most fertile agricultural lands in Canada consisting of predominantly Class I and II soils, according to the Canada Land Inventory Soil Capability Classification of Agriculture system (Map 1)¹⁶.

As of 2021, the Edmonton Metropolitan Region Board (EMRB) is in the process of creating a Regional Agriculture Master Plan (RAMP) that will outline priorities aimed at conserving our region's declining agricultural assets. Furthermore, it will identify steps to protect agricultural lands from unnecessary loss, fragmentation, and devise methods by which novel technologies and approaches can be used to diversify our agricultural market¹⁷. As a member municipality of the Edmonton Metropolitan Region, Stony Plain understands our role as an expanding urban municipality and will strive to support the findings and recommendations of the RAMP to increase local and regional food security and take local action to foster the stewardship of our agricultural assets.

¹⁶ Government of Canada. N.D. Overview Of Classification Methodology for Determining Land Capability For Agriculture.

¹⁷ Edmonton Metropolitan Region Board. 2021. Regional Agriculture Master Plan.

Map 1. Soil classification map for the Edmonton Metropolitan Region. Source: Edmonton Metropolitan Region Board.





Action 2: Permit urban beekeeping.

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town, residents, and businesses*

Cost: *\$4,000*

Urban beekeeping addresses several policies under the land theme of the EMP. Local honey production will increase Stony Plain's local food security and reduce our reliance on non-local honey sources reducing costs and environmental impacts associated with long-distance transportation. Furthermore, it allows for educational opportunities associated with learning about pollinator insects, how food is produced, and connects individuals to urban agriculture. Easing restrictions for urban beekeeping was suggested in the Environmental Progress in Stony Plain survey by several residents. Urban beekeeping is a safe urban agriculture endeavour for both humans and bees provided compliance with municipal bylaw. Recently, Edmonton and St. Albert have amended their bylaws to accommodate for urban beekeeping provided the beekeeper obtains a beekeeping license and abides by all regulations. For urban beekeeping to be permitted, modifications will need to be made to the Land Use Bylaw and the Responsible Pet Ownership Bylaw. Furthermore, an urban beekeeping bylaw would need to be created that states the requirements, process, and restrictions associated with beekeeping and obtaining a licence. Some prerequisites to obtain a beekeeping licence includes annual registration with the provincial apiculturist, mentorship from an experienced beekeeper, proof of coursework in bee husbandry from an accepted organization, a drawing of showing the location of the beehive on the property, and a disease and swarm control plan¹⁸.

Action 3: Permit urban hens.

Status: *Future*

¹⁸ City of St. Albert. 2017. *Urban Beekeeping Bylaw*.



Timeline: *Short-term*

Stakeholders: *Town, residents, and businesses*

Cost: *\$4,000*

Much like an urban beekeeping program, hens can also assist in increasing Stony Plain's local food security. The program will enable residents to produce ethically raised and local poultry and eggs that does not require long transportation and therefore reduces GHG emissions and shipping costs. As mentioned in Action 2, the Land Use Bylaw and Responsible Pet Ownership Bylaw will require modifications in addition to the adoption of a new bylaw pertaining to urban hens. To apply for an urban hen licence, residents will need to show proof of coursework in an urban hen care program and will require consent from abutting neighbours.

Action 4: Partner with the Multicultural Heritage Centre to expand the community garden initiative.

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town, residents, and Multicultural Heritage Centre*

Cost: *\$2,000/year*

Aside from gardening and urban agriculture at the household level, community gardening increases local food security while fostering a sense of community and belonging. A major feedback received in the Environmental Awareness in Stony Plain survey was the expansion of community garden initiatives. The Multicultural Heritage Centre has built and maintained community gardens in town since 2010. The Centre's garden plots are at full capacity every year despite ample space for expansion. To assist the Centre in the maintenance of the community garden and facilitate the expansion of garden beds, the Town may provide the Centre with additional annual funding alongside social media advertising to increase exposure.



Air

While we may take air for granted, the fact is that humans can only survive a few minutes without it. While air may not be a marketable resource like land or water, it is a universal life source that mandates protection. What is air? Simply put, it is a mixture of different gases that naturally occur in the atmosphere. The most vital gas for human survival is oxygen, but the atmosphere contains various other gases that may or may not elicit health consequences for humans. Unfortunately, human activities have led to the unnatural increase of various gases into the atmosphere. Many of these gases occur naturally in small quantities. However, human activities have increased their abundance in a manner that may cause health ailments, harm local ecosystems, wildlife, and pets, and may contribute to the global greenhouse effect. For example, sulphur dioxide is a major air pollutant emitted in the burning of fossil fuels. It contributes to fine particulate matter in the air causing lung ailments and forms sulfuric acid which leads to acid rain¹⁹. As stewards of the environment, we must ensure the protection of our airshed from local and regional pollutants that degrade the quality of environmental and human health.

Regional Partnerships

Goal: Form regional airshed partnerships by 2025.

Action 1: Join the Alberta Capital Airshed.

Status: *Future*

Timeline: *Immediate*

Stakeholders: *Town and regional stakeholders*

Cost: *\$1,000/year*

The Alberta Capital Airshed (ACA) is a regional non-profit organization responsible for the regional air quality monitoring of the airshed in which Stony Plain is situated. Membership in the ACA will provide Stony Plain with the benefit of being

¹⁹ Government of Canada. 2016. New way to detect global sulphur dioxide emissions.



represented in committees with other municipalities and regional stakeholders. Furthermore, membership includes monthly air quality monitoring, technical and data analysis assistance for air quality issues, and the opportunity to run for a position on ACA's Board. Most importantly, participation in regional initiatives will ensure Stony Plain's voice is included in regional actions while allowing for opportunity to provide input accordingly.

Air Quality Monitoring

Goal: Implement air quality monitoring in Stony Plain by 2030.

Action 1: Partner with the ACA to establish a fine particulate matter sensor station in Stony Plain.

Status: *Future*

Timeline: *Medium-term*

Stakeholders: *Town and regional stakeholders*

Cost: *\$30,000-40,000/year*

Fine particulate matter are tiny airborne particles that cause various health problems if inhaled in large quantities. They are sourced from the burning of certain materials such as coal, or from wildfires. According to the Government of Canada, children with asthma, older adults, and people with underlying breathing conditions are the most susceptible to fine particulate matter pollution²⁰. To ensure fine particulate matter is monitored within Stony Plain and under an acceptable level, Stony Plain may partner with the ACA to bring air quality monitoring to town. The establishment of a fine particulate matter monitoring station will also address the issue of the absence of such data in the Stony Plain-Spruce Grove region.

²⁰ Government of Canada. N.D. Fine particulate matter.



Air Quality Enforcement

Goal: Enact bylaws prohibiting practices that contribute to air pollution as required.

Action 1: Traffic Bylaw

Status: *Complete; ongoing*

Timeline: *Long-term*

Stakeholders: *Town, residents, and businesses*

Cost: *Not applicable*

Section 11 of Stony Plain's *Traffic Bylaw* prohibits the non-essential idling of non-emergency for a period longer than 30 minutes. The *Traffic Bylaw* discourages motorists from idling for extended periods of time.

Action 2: Open Burning Bylaw

Status: *Complete; ongoing*

Timeline: *Long-term*

Stakeholders: *Town, residents, and businesses*

Cost: *Not applicable*

Stony Plain's *Open Burning Bylaw* prohibits the open burning of items that contribute to various forms of air pollution such as straw, stubble, grass, weeds, leaves, tree waste, utility poles, railroad ties, construction waste, animal waste, pathological wastes, garbage or refuse from commercial, industrial and/or municipal operations, combustible material in vehicle body,



tires, rubber, plastic, and materials coated with rubber, plastics, and Styrofoam. The prohibitions outlined in this bylaw are aimed at increasing local air quality by preventing unnecessary burning.

Air Quality Education

Goal: Educate the community on air quality issues annually.

Action 1: Launch an anti-idling campaign.

Status: *Future*

Timeline: *Immediate*

Stakeholders: *Town, residents, businesses, and regional stakeholders*

Cost: *\$0*

As opposed to a bylaw, an anti-idling campaign is an educational opportunity to teach people about the air pollutants that are emitted as a result of unnecessary idling and how they harm the health of people, pets, wildlife, and the ecosystem. It encourages people to change their behaviours and perceptions related to vehicle idling. The ACA provides various educational resources for municipalities to distribute to increase community awareness that could be used in the anti-idling campaign²¹. The Town of Stony Plain would promote the anti-idling campaign through associated material via social media and the website.

²¹ Alberta Capital Airshed. N.D. Air quality overview.



Noise Pollution

Goal: Collect quantitative data on noise pollution in Stony Plain by 2025 and implement mitigative measures by 2030.

Action 1: Conduct a noise acoustic study alongside Highways 16A, 628, and 779 and the CN Rail line and implement noise control improvements.

Status: *Future*

Timeline: *Medium-term*

Stakeholders: *Town, residents, businesses, and developers*

Cost: *Unknown*

Stony Plain has several major arterial roadways/highways and a CN rail line running through its municipal boundaries. While Stony Plain has noise reduction mechanisms in place adjacent to residential areas, a noise study will determine if improvements are required. Various academic studies have found noise pollution to disrupt human sleep patterns, cause stress, and contribute to psychological disorders^{22 23}. Furthermore, studies have found that noise pollution alters the movement and distribution patterns of birds and mammals that rely on vocalization as their primary means of communication. This ultimately disrupts ecological processes and creates an unnatural imbalance near areas affected by noise pollution²⁴. While little is known regarding the effects of noise pollution on Stony Plain, a noise study will help to identify areas that are prone to noise pollution to inform future noise reduction strategies.

²² Singh and Davar. 2004. Noise Pollution- Sources, Effects and Control. Journal of Human Ecology 16: 181-187.

²³ Stansfeld and Matheson. 2003. Noise pollution: non-auditory effects on health. British Medical Bulletin 68: 243-257.

²⁴ Shannon et al. 2015. A synthesis of two decades of research documenting the effects of noise on wildlife. Biological Reviews.



Action 2: Amend Community Standards Bylaw Section 3.11 to include quantitative noise prohibitions.

Status: *Future*

Timeline: *Medium-term*

Stakeholders: *Town, residents, businesses, and developers*

Cost: *\$10,000-15,000*

Stony Plain's noise prohibitions are stated in the Community Standards Bylaw, Section 3.11. While the Section is thoroughly detailed, it does not contain quantitative measures that allow law enforcement to enforce noise prohibitions with quantitative criteria. While many urban municipalities in the Edmonton Metropolitan Region follow the same approach, St. Albert and Edmonton have incorporated sound measurements in dBA to their respective bylaws to increase clarity regarding acceptable levels of noise through time and space. As a measure to further reduce commercial, industrial, and residential noise pollution and enhance clarity for law enforcement, Stony Plain's Community Standards Bylaw can be amended to incorporate the following elements, adapted from the City of St. Albert's Noise Bylaw²⁵.

1. Define a set period for "Quiet Hours".
2. Define and prohibit unreasonably loud sounds.
3. Set specific prohibitions and prohibited noise levels with an associated dBA measurement to ensure sound measuring and enforcement.
4. Designate maximum noise for quiet and non-quiet hours.
5. Regulate the use of noisy construction and yard maintenance equipment in quiet hours.
6. Outline exemptions: emergency vehicles, school bells, emergency sirens, and religious institutions.
7. Methodology for sound level reading.

²⁵ City of St. Albert. 2006. *Noise Bylaw*.



8. Outline enforcement action.

In addition to bylaw modifications, law enforcement will require appropriate equipment enabling noise measurements.

Light Pollution

Goal: Implement dark sky lighting principles into Stony Plain's built realm by 2040.

Action 1: Create a Dark Sky Bylaw.

Status: *Future*

Timeline: *Long-term*

Stakeholders: *Town, residents, businesses, and developers*

Cost: *\$3,000*

Various scientific studies have addressed the negative ecological impacts associated with light pollution caused by poorly aimed and overly bright lighting. Light pollution is an artificial stressor to ecosystems, wildlife, humans, and pets. It disrupts the natural night cycle for organisms and leads to the reduction of astronomical visibility reducing educational opportunities associated with dark sky gazing. Furthermore, an inefficient use of lighting leads to an increase in energy consumption contributing to greenhouse gas emissions and reduced air quality. A Dark Sky Bylaw that prohibits the use of specific forms of lighting is one of the few viable solutions an urban municipality can explore. By adopting such a bylaw, Stony Plain will join the Municipal District of Foothills as one of the few Canadian municipalities with a light pollution abatement bylaw. While the specifics of the bylaw will depend on feasibility of application, the following is some key elements from the MD of Foothills Dark Sky Bylaw²⁶ that can be considered:

²⁶ Municipal District of Foothills No. 31. 2011. *Dark Sky Bylaw*.



1. A prohibition on signage lighting that faces up.
2. A prohibition on lighting that trespasses from one property to the adjacent.



Water

Water is not an ordinary resource; it is a life source and earth's most precious resource. Water is the basis for life on earth. The existence of our ecosystems and human realm is dependent on water quality and quantity. Furthermore, a healthy local aquatic ecosystem is intimately connected to a healthy drinking water supply. Stony Plain's creeks, wetlands, and lakes are not critical for Stony Plain alone, but are of regional importance to the entire Sturgeon Subwatershed and North Saskatchewan Watershed. As a result, it is our environmental duty to ensure the protection, conservation, and enhancement of local waterbodies in the development process and to protect them from loss, erosion, pollution, and flooding. The way we manage stormwater, wastewater, grey water, and drinking water is integral to ensuring Stony Plain's sustainability. While Stony Plain is fortunate to have never experienced a water shortage, we must take steps now to ensure the sustenance of our water supply as the population of Stony Plain and the surrounding Edmonton Metropolitan Region continue to rise. As environmental changes continue to cause increase in the unpredictability of extreme storm events, the need for resilience planning is essential in all municipal decision-making processes.

Water Supply

Goal: Reduce municipal and community water consumption by 20% from 2021 levels by 2040.

Action 1: Toilet rebate program.

Status: *Complete*

Timeline: *2011-2014*

Stakeholders: *Town, residents, businesses, and developers*

Cost: *Not applicable*



From 2011 to 2014, the Town of Stony Plain administered a WaterSense Toilet Rebate Program. The program provided financial assistance for residents to upgrade their old toilets to new WaterSense toilets. WaterSense toilets differed from conventional toilets at the time by using significantly less water. The transition to modern water-efficient toilets was so successful that WaterSense toilets are now regarded as the status-quo. The shift toilet design was a positive leap forward on the trajectory to a water-efficient community.

Action 2: Conduct a Water Use Study and Implement a Water Conservation Strategy.

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town, residents, businesses, and developers*

Cost: *\$20,000-25,000*

As the population of Stony Plain and surrounding municipalities within the Edmonton Metropolitan Area increase alongside the increased industrial, commercial, and agricultural demand for water, we must take steps now to reduce human-induced strains to the water system. According to a study conducted by All One Sky Association, the Edmonton Metropolitan Region is facing unprecedented changes in temperature and precipitation patterns as a direct consequence of human impacts on the environment. Most notably, an increase in local temperature and precipitation variability is expected to affect local water supply in unpredictable ways²⁷. An adaptive Water Conservation Plan resulting from a Water Use Study is paramount in establishing a framework for sustainable water use. The project will conduct a critical assessment of municipal water use and will subsequently propose strategies to maximize water conservation. These recommendations will be applicable to both

²⁷ Kerr et al. 2019. The impact of climate change on water security in the Edmonton Metropolitan Region: A meta-analysis of existing knowledge and information. Prairie Adaptation Research Collaborative. All One Sky Foundation.



the municipal and residential setting. Lastly, the Water Conservation Plan will provide insight on future water efficiency, reuse, and enhancement initiatives for Stony Plain to pursue and may be included in subsequent versions of the ESS.

Flooding & Stormwater Management

Goal: Prevent new development in flood-prone areas and preserve existing floodplains for natural conservation.

Action 1: Allow Development Authority to request hydrological assessment when developing within a 30-meter proximity to water bodies.

Status: *Complete; future improvement*

Timeline: *Ongoing*

Stakeholders: *Town, residents, businesses, and developers*

Cost: *Not applicable*

The 2019 flooding event in Stony Plain was a wakeup call for the community. It demonstrated the urgent need for proper stormwater management and planning approaches to prevent development in flood-prone areas. To prevent further risk from arising in new developments, Stony Plain's LUB Section 3.2 gives the Town's Development Authority the right to request a hydrological study pertaining to flood risk in areas within 30 meters of a water or stream course, and within areas previously identified in the Atim Creek flood risk zone. The LUB also gives the Development Authority the right to not permit development provided the study has indicated a risk or may require site modifications as a mitigative approach. While the current form of the Section has been successful in preventing new development in the flood risk zone, should the need



arise, the Town may consider more restrictive approaches that redesignates the flood risk zones into the Natural Conservation Area, prohibiting any form of intensive development whatsoever.

Goal: Introduce a biological, chemical, and physical stormwater quality monitoring and control program by 2030.

Action 1: Monitor for total suspended solids (TSS) in stormwater discharge.

Status: *Future*

Timeline: *Medium-term*

Stakeholders: *Town*

Cost: *Unknown*

In 2018, the Town commissioned the creation of a Stormwater Master Plan (SWMP) to recommend various infrastructural stormwater facility improvements to reduce the risk of urban flooding. While the focus of the SWMP was flood mitigation, many of the recommendations were pertinent to ecological stormwater management. Relevant to this Action, the SWMP recommends the incorporation of water quality control designs and monitoring to ensure the negative impacts of stormwater runoff are mitigated. Through quantitative data, the Town will be able to identify measures that can be taken to reduce the degradation of aquatic ecosystems as a result of stormwater management techniques. A stormwater quality monitoring program can include measures such as, but not limited to, total suspended solids, nutrient levels, cyanobacterial populations, invasive species, and at a more complicated level, contaminants such as hydrocarbons, fertilizers, and herbicides. While the variety of biological, chemical, and physical water monitoring can be quite extensive, Stony Plain can take a gradual approach to implementing a stormwater quality monitoring program, beginning with total suspended solids (TSS).



TSS are fine, non-dissolved floating particles in water that can settle naturally through gravity. They are associated with sediment from urban stormwater runoff, reduce water clarity, and can damage the respiratory tissue of aquatic organisms²⁸. A common method that is used to reduce the total suspended solids entering aquatic ecosystems is stormwater retention and detention ponds and natural and constructed wetlands. The bodies of water allow sediments to settle prior to discharge into local creeks. Furthermore, aquatic and riparian vegetation, and their associated microbial communities assist in remediating stormwater of dissolved contaminants. Due to its associated ecological degradation, TSS monitoring would be the first step in establishing a stormwater monitoring program. As the Town gathers additional resources, the program can be expanded to include other parameters of measure such as invasive species, bacteria, and pollutants.

Action 2: Conduct a Road Salt Study and create a Salt Management Plan.

Status: *Future*

Timeline: *Medium-term*

Stakeholders: *Town, residents, and businesses*

Cost: *Unknown.*

Salinity pollution is a major problem in northern urban municipalities that use salts as a de-icing agent. Salinity stress has a negative impact on vegetation, wildlife, and aquatic ecosystems. Many species of plants and animals are unable to tolerate elevated amounts of salt concentrations in their surrounding environment often contributing the death of grass and other plants near heavily salted sidewalks and roadways. At the same time, we must acknowledge salt application increases the safety of slippery roadways in the winter saving pedestrians, motorists, and cyclists from slipping.

²⁸ Chapman et al. 2017. Total suspended solids effects on freshwater lake biota other than fish. Bulletin of Environmental Contamination and Toxicology 99: 423–427.



A Road Salt Study and subsequent implementation of the recommendations into municipal bylaw or through a Salt Management Plan will enable Stony Plain to achieve the benefits of de-icing while minimizing ecological harm. In addition, reduction in the amount of salt used on streets could save Stony Plain operational costs in the long-term.

The Transportation Association of Canada has various guidelines on how municipalities and other organizations can create their own Salt Management Plan²⁹. Factors that need to be considered are as follows:

- Employee training.
- Road, bridge, and facility design.
- Drainage.
- Pavements.
- Vegetation management.
- Design and operation of maintenance yards.
- Snow storage and disposal.
- Winter maintenance equipment and technologies.
- Salt use in the private realm.

Goal: Incentivize the uptake of ecosystem-based stormwater management facilities in existing developments at the community level.

Action 1: Tri-Municipal Rain Barrel Sale.

Status: *Existing*

Timeline: *Ongoing*

Stakeholders: *Town, residents, and businesses*

Cost: *Accounted for.*

²⁹ Transportation Association of Canada. N.D. *Syntheses of Best Practices Road Salt Management*.



To incentivize the reuse of precipitation as opposed to allowing runoff into storm sewer system, Stony Plain has partnered with Spruce Grove, Parkland County, and RONA to offer annual rebates on the purchase of rain barrels. Rain barrels allow residents to reuse rainwater for non-topical and non-drinking purposes such as watering gardens or washing outdoor appliances. This has multiple benefits.

- Rainwater collection reduces stormwater runoff reducing the strain on stormwater infrastructure and related ecosystems.
- Increased use of rainwater for gardens and outdoor use decreases the strain on drinking water supply.
- Use of rainwater can save residents money on water bills.

Action 2: Heritage Park pavilion water collection.

Status: *Existing*

Timeline: *Ongoing*

Stakeholders: *Town, residents, and businesses*

Cost: *Not applicable*

Due to the positive externalities mentioned above, the Heritage Park pavilion has incorporated water collection features on site to reduce facility water consumption.

Action 3: Create a rebate program to promote rain gardens, bioswales, and rainwater collection barrels.

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town, residents, businesses, and developers*



Cost: *A maximum of \$20,000/year*

Urbanization involves the removal of permeable topsoil and associated terrestrial and aquatic ecosystems in place of impervious building materials leading to urban stormwater runoff. The 2019 flooding event in older parts of town further exemplifies the need to build a resilient community that is capable of withstanding extreme weather through the enhancement and restoration of ecosystem services. While Public Works has been working diligently to enhance the capacity of our storm sewer systems, ecological approaches to stormwater management must accompany engineering ones. Conventional stormwater management approaches have notable environmental impacts on the drainage basin as urban stormwater runoff contains contaminants and pollutants and leads to an unnatural discharge rate³⁰

Ecological landscape features such as rain gardens are a depression in a lawn that can host aesthetic design elements and plants adapted to wet environments. When heavy rainfall occurs, stormwater from eavestroughs, sump pump discharge, and driveways can first enter portions of the yard such as rain gardens, bioswales, lawns, and gardens and can percolate into the soil substrate. Furthermore, collecting rainwater through rain barrels further reduces runoff and can be used in gardens thus saving residents water bills. Enhancing yard features to reduce impermeability and provide retention space when in excess reduces the quantity of stormwater that runs off into the storm sewer system thereby reducing stress on our infrastructure. Ecological stormwater management approaches also contribute positively to local biodiversity by providing vegetation for insects, pollinators, birds, and even amphibians.

While the development of stormwater retention and detention ponds have become standard practice in new greenfield developments, there are steps that property owners can take to help to best manage stormwater. The Town can incentivize the development of these features by covering up to \$500 per household of the cost to build rain gardens and bioswales, and the purchase of rain barrels. To be eligible, the individual will be the property owner, provide proof of payment, and will demonstrate evidence of upgrade.

³⁰ Rooney et al. 2014. Replacing natural wetlands with stormwater management facilities: biophysical and perceived social values. Water Research.



Watershed

Goal: Gradually implement natural erosion control and water remediation features to waterbodies until 2050.

Action 1: Allocate funds to increase vegetation in stormwater management retention and detention ponds, and on the riparian areas of Stony, Whispering Waters, Heritage, and Atim Creeks

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town*

Cost: *\$2,000/year*

An increased diversity and abundance of vegetation near locations of stormwater runoff and discharge assist in filtering water contaminants from urban areas promoting the health of the regional watershed. The four creeks that flow through Stony Plain's municipal boundaries are tributary streams of the Sturgeon River Subwatershed and flow into Big Lake – a water system which is of ecological and hydrological importance to Stony Plain, Spruce Grove, Parkland County, Sturgeon County, St. Albert, and Edmonton. Because these creeks flow within the municipal boundaries of Stony Plain, it is our responsibility to ensure the health of the creeks by increasing riparian stability through revegetation efforts. Through this Action, Stony Plain would annually set aside funding to increase vegetation near natural waterways and stormwater ponds to enhance slope stability while remediating water prior to discharge.



Groundwater

Goal: Explore reuse initiatives to prevent the waste of diverted groundwater.

Action 1: Use groundwater to fill skating rinks.

Status: *Complete; future improvement*

Timeline: *Ongoing*

Stakeholders: *Town and residents*

Cost: *Covered in current budget; new well - \$15,000-20,000*

Stony Plain lies on the Beverly Bedrock Valley, where groundwater is rising. Given that groundwater is used for crop irrigation and lake, river, and wetland recharge, it would be catastrophic for the groundwater level to rise to the point of sewer infrastructure. As a result, Stony Plain is actively diverting groundwater to maintain a safe level. Furthermore, this water is used by Public Works to fill skating rinks. Using well water reduces costs and environmental impacts associated with shipping water, ensures diverted groundwater is not wasted, and reduces the strain on the drinking water supply. However, given that the current diversion wells are not in proximity to skating rinks, in the future, Stony Plain may consider the drilling of new wells near the destination facilities to reduce environmental impacts of truck transportation.



Waste

Waste is a material that no longer has a use and is therefore disposed of. While it is hard to contemplate where the waste generated from thousands of households goes, the reality is that waste management is a serious environmental problem. The ecological impacts of landfills do not only affect the land upon which it is situated, but also the surrounding environment. Gases released from landfills such as methane contribute to the global greenhouse effect, leachates affect local water quality and the health of the watershed, and the land used for a landfill remains permanently altered despite our best reclamation efforts. Our conventional waste disposal systems require the transportation of waste for many kilometers, and numerous steps, to finally reach its destination. As a result, the Waste theme is relevant to all four themes before it. As an urban municipality, dedication to waste reduction is critical to ensuring community sustainability. There are 5 R's of waste management that will be explored by the Town. They are **Refuse, Reduce, Reuse, Recycle, and Rot**. By refusing to purchase products that are not necessary or degrade the environment, we are empowered as consumers to make a shift in market practices. By reducing the consumption of goods, we reduce the environmental impacts associated with production and disposal. By reusing items, we extend the usage life of raw resources to minimize the impacts of resource extraction, production, synthesis, and disposal. As a last resort before throwing items in the garbage, we explore options for recycling items. Lastly, organic items can be composted (rot) to return nutrients back to the ecosystem. The entire Waste theme can be summarized into one goal – using the 5 R's to maximize waste diversion from landfills.

Goal: Achieve 80% waste diversion from landfills by 2050.

Action 1: Conduct a residential waste audit.

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town and residents*

Cost: *\$20,000-\$25,000*



A prerequisite to achieving quantitative waste diversion targets are regular residential, corporate, commercial, industrial, and construction waste audits. A waste audit is a formal study that quantifies the amount of waste that enters and is diverted from landfills and provides information regarding the common sources of waste production in the community. While Stony Plain's current waste diversion rate fluctuates annually between the range of 50-60%, a specialized waste audit will help to pinpoint areas of improvement. A waste audit uses random sampling approaches to quantify contamination in each form of waste collection and can be oriented to search for specific types of waste, for example single-use plastics, coffee cups, and others. The study is followed by strategies and recommendations for the municipality to improve waste diversion through public education and restrictions. To begin, the Town can conduct a community-level waste audit that assesses waste produced at the community scale. This will enable the Town to monitor and track the quantity of waste entering landfills, recycling facilities, and composting.

Action 2: Recycling and composting programs.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town, residents, and businesses*

Cost: *Included in current budget*

In 2006, the Town of Stony Plain introduced its recycling and organics curbside collection program as a result of its *Solid Waste Management Bylaw*. This is perhaps one of Stony Plain's most successful environmental initiatives and continues to divert most waste collected from landfills to this day.



Action 3: Rotary Recycling Centre.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town, residents, and businesses*

Cost: *Included in current budget*

The Rotary Recycling Centre is Stony Plain's resident waste collection facility and allows residents to dispose of various items aside from what can be collected from curbside pickup. Some items that are accepted at the Rotary Recycling Centre include household furniture, washers, dryers, kitchen appliances, lawn mowers, hedge trimmers, barbeques, bicycles, and dismantled exercise equipment. While various items are not accepted by the Centre, staff are well trained and can guide individuals to the appropriate facilities in the Edmonton Metropolitan Region. As permitted by resources, the municipality may consider the collection of a wider variety of items for the future.

Action 4: Annual Shred-It Event.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town, residents, and businesses*

Cost: *Included in current budget*

The Shred-It Event allows residents and business owners in Stony Plain to dispose of confidential and personal paper documents in a manner that protects their security while allowing for the material to be recycled. This is a beneficial event



from an environmental perspective as it eliminates the need for alternative disposal methods (burning or landfill) and helps achieve waste diversion targets.

Action 5: Recycle Coach App.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town and residents*

Cost: *Included in current budget*

Stony Plain has adopted the Recycle Coach App to remind residents of waste collection days and proper procedures for waste disposal. The app interactively lists items that are recyclable to ease confusion about recycling.

Action 6: Christmas Tree Drop-Off.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town and residents*

Cost: *Included in current budget*



The Rotary Recycling Centre accepts Christmas trees free of decoration every January for chipping. Wood chips resulting from the chipping is used as mulch for Stony Plain's flower beds and new trees. This reduces the need to throw trees in the landfill while returning nutrients to the ecosystem.

Action 7: Community Street Market.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town, residents, and businesses*

Cost: *Not applicable*

In Spring and Autumn, Stony Plain hosts a Community Street Market allowing individuals to sell arts, crafts, books, and gently used items. The resale of gently used items not only increases Stony Plain's local economic vitality, but also allows for the reuse of items that are no longer required by the owner.

Action 8: Annual Treasure Hunt.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town, residents, and businesses*

Cost: *Not applicable*

Adding to the spirit of reuse, the Annual Treasure Hunt is a tradition in Stony Plain where residents place items they no



longer need on the curbside for collection by others. The Annual Treasure Hunt not only increases exposure and acceptance of reusing items, but also fosters a sense of community surrounding rehoming initiatives.

Action 9: Pitch-In Week.

Status: *Current*

Timeline: *Long-term*

Stakeholders: *Town, residents, schools, and businesses*

Cost: *Not applicable*

Roadside litter is a major issue following spring snowmelt. Litter negatively impacts the Stony Plain's aesthetics, takes away from our attractive streetscapes and art murals, poses a threat to wildlife, and causes ecological harm through plastic pollution. Earth Day (April 22) is an international event celebrating our planet and provides an opportunity for us to change our behaviour for the benefit of the environment. Conveniently, Earth Day coincides with spring in Alberta when litter is most evident. Pitch-In Week is an annual event that allows organizations and individuals the opportunity to sign up to help clean up Stony Plain in the week following Earth Day.

Action 10: Expand the 'Don't Just Trash It' campaign.

Status: *Current; future improvements*

Timeline: *Long-term*

Stakeholders: *Town, residents, schools, and businesses*

Cost: *\$1,000/year added to current budget*



The '*Don't Just Trash It*' campaign is an ongoing education initiative to increase awareness and public education on waste management. Most notably, the campaign was designed to encourage people to reuse, reduce, and instead of trashing items, inquiring as to if they are recyclable or compostable. Through this initiative, various educational videos aimed at all ages were created alongside information on Stony Plain's website and social media. A major feedback received in the public engagements for the EMP was to increase in education regarding waste management initiatives. Through additional funding, the Town will be able to create unique educational content that can reach a wider audience.

Action 11: Create a Tri-Municipal Waste Commission.

Status: *Future*

Timeline: *Short-term*

Stakeholders: *Town and regional stakeholders*

Cost: *To be determined*

While the collection of waste materials is a municipal jurisdiction, regional partnership between nearby municipalities is beneficial to achieving economies of scale associated with the marketing of recyclable products in addition to increasing waste management efficiency. In the past years, Stony Plain has partnered with Spruce Grove and Parkland County to conduct regional waste studies that may lead to the establishment of a regional waste commission in the future. Stony Plain is also actively involved in waste management committees and boards in the Edmonton Metropolitan Region.

Action 12: Investigate options for the recycling of Styrofoam and glass.

Status: *Ongoing; future*

Timeline: *Medium-term*

Stakeholders: *Town and regional stakeholders*



Cost: *To be determined*

Currently, residents with uncollectable items such as glass and Styrofoam are directed from the Parkland County Transfer Station or Rotary Recycling Centre to other facilities in the Edmonton Metropolitan Region. As identified in the public engagement surveys of the Environmental Master Plan, this acts as a barrier for residents and may discourage individuals from taking initiative to recycle such items. Most notably, numerous residents expressed concern with the lack of recycling options for Styrofoam and glass. While recycling materials does not fall under municipal jurisdiction, allowing the collection of such items at Town facilities will expedite and simplify the recycling process for residents. As a result, Stony Plain is in the process of developing regional solutions with municipalities in the Edmonton Metropolitan Region to explore various options to diversify our list of collected recyclables.

Action 13: Adopt a Single-Use Plastics Bylaw.

Status: *Future*

Timeline: *Medium-term – awaiting federal decision*

Stakeholders: *Town, businesses, and residents*

Cost: *\$3,000*

Single-use plastics are problematic from a waste management, GHG emission, and ecological perspective. Plastic pollution is a significant issue in terrestrial, freshwater, and marine ecosystems with single-use plastics being the single largest contributory factor³¹. Plastic pollution negatively affects wildlife and contributes to microplastic pollution that ends up in our drinking water. According to the Government of Canada, only 9% of plastic waste is recycled in Canada with the rest destined for landfills³². Furthermore, the synthesis of plastic products requires energy, unnecessarily increasing greenhouse

³¹ Rhodes, C.J. Plastic pollution and potential solutions. *Science Progress* 101: 207-260.

³² Government of Canada. 2020. Canada one-step closer to zero plastic waste by 2030.



gas emissions. While they provide convenience for the user, single-use plastics can be easily substituted for reusable plastics and non-plastic alternatives. Furthermore, a ban on single-use plastic bags in retail will help Stony Plain curtail its waste production. In 2019, the Town of Devon introduced its Single-Use Plastic Retail Bag Bylaw to curb the use of single-use plastic retail bags³³. The implementation of a similar ban in Stony Plain could be beneficial in helping us reduce our waste production and the amount of waste entering landfills.

The Government of Canada has set the goal of achieving zero plastic waste by 2030. Furthermore, the federal government has pledged to introduce legislation banning the sale of single-use plastic items such as checkout bags, straws, stir sticks, six-pack rings, cutlery, and food-ware³⁴. A federal ban on single-use plastics would be sufficient for the purposes of Stony Plain and would not mandate an additional bylaw. However, in case the federal legislation is not proposed or passed by the end of 2021, the Town may implement its own bylaw.

Action 14: Designate land for the rehome of salvageable construction scraps.

Status: *Future*

Timeline: *Medium-term*

Stakeholders: *Town, businesses, residents, and development community*

Cost: *\$15,000 to establish; \$4,000/year in maintenance*

Stony Plain is growing community that continues to attract new residents and therefore construction. In the construction process, scrap housing materials are often sent to the dumpster. While not all scrap material can be safely reused, leftovers such as pieces of drywall, plywood, studs, PVC pipes, insulation, sidings, carpets, and shingles may be salvageable by

³³ Town of Devon. 2019. Single-Use Plastic Retail Bag Bylaw.

³⁴ Government of Canada. 2020. Canada one-step closer to zero plastic waste by 2030.



residents and businesses for use in home upgrade and renovation projects. To salvage construction items and divert waste away from landfills, Stony Plain can partner with home builders to allocate space for a public rehome yard. This would enable residents and business operators to take non-hazardous building materials otherwise destined for the landfill, at no charge. This would effectively incentivize developers from throwing items in the dumpster by allowing them to divert salvageable items to the scrap yard for no cost and provides a cheaper alternative to waste pickup. After providing residents with a window of time to claim items, the Town would truck leftover materials to the landfill. Overall, the process would reduce the amount of construction waste entering landfills.



Summary of Actions

The following tables will summarize in all 61 Actions of the ESS by theme. Future initiatives have a priority is assigned as low, medium, high, and very high.

Table 2. Energy Actions.

Action	Description	Stakeholders	Timeline	Expected Cost	Priority	Measure of Success
Hire a Municipal Energy Manager	MCCAC program that covers 80% of the cost associated with hiring a municipal energy manager	Town	Future; two years	\$20,000/year; \$40,000 in total	High	A municipal energy manager was able to achieve a 5% GHG reduction
Replace older non-energy-efficient traffic lights with modern LED lighting	As public lights age, they are substituted with modern lighting technology in the replacement process	Town	Ongoing; long-term	Covered in current budget	Very High	All new lights meet modern standards at time of installation
Conduct a corporate energy audit	A study on Town facilities to determine energy use, GHG emissions, and areas for improvement	Town	Future; immediate	\$30,000-40,000	High	Obtain quantitative data on corporate energy consumption
Wherever possible,	Through the current vehicle replacement	Town	Long-term; ongoing	~\$15,000 added to	High	All new vehicles will be significantly

purchase new vehicles for Public Works that are listed on the Government of Canada's "most fuel-efficient vehicles" list	cycle, ensuring that Stony Plain purchases the most fuel-efficient vehicles, as listed by Natural Resources Canada			current budget		more fuel-efficient than their predecessor, as evidenced by Natural Resources Canada's fuel-efficiency ratings
Create a webpage educating residents and businesses on energy-efficiency upgrades	Promote the uptake of energy-efficient upgrades in the residential and business realm through public information	Town, residents, and businesses	Future; long-term	\$0	High	A website on energy-efficient upgrades with appropriate resources will be created
Conduct a community energy audit	Provides information on residential and business uses of energy and electricity with recommendations for improvements	Town, residents, and businesses	Future; immediate	<i>To be determined</i>	Medium	Obtain quantitative data on residential, commercial, and industrial energy consumption
Reintroduce the green-building rebate program	Provides a rebate on building permit fees for new construction that is LEED-certified	Town, residents, businesses, and developers	Completed; may be reintroduced; long-term	<i>Minor loss in revenue</i>	Low	A noteworthy rise in new homes that are LEED-certified

Provide rebates for energy-efficiency upgrades	Provides a rebate for residents and businesses to cover a set proportion of costs associated with EnerGuide evaluations and energy-efficiency upgrades.	Town, residents, and businesses	Future; long-term	<i>To be determined</i>	Medium	Through the incentive, a significant proportion of residents and businesses will have invested in energy improvements
Creation of Stony Plain Transit	Enhance public transportation options within Stony Plain to reduce reliance on private vehicles.	Town, residents, and businesses	Ongoing; long-term	<i>Accounted for</i>	Very high	The creation of a public transportation system for Stony Plain
Creation of a Tri-Municipal Transit System	Collaborate with Spruce Grove and Parkland County to enhance public transportation throughout the Tri-Municipal Region.	Town, residents, businesses, and regional collaborators	Ongoing; long-term	<i>To be determined</i>	High	The creation of a Tri-Municipal Transit System
Creation of an Edmonton Metropolitan Regional Transit System	Regional Transit Commission was approved in 2021 to explore options for regional transit in the metropolis.	Town, residents, businesses, and regional collaborators	Ongoing; long-term	<i>To be determined</i>	Very high	The creation of an Edmonton Metropolitan Regional Transit System



Conduct a solar feasibility study on select municipal solar buildings	Will assess the feasibility of solar implementation on ideal municipal facilities and provide recommendations for solar implementation.	Town	Future; immediate	\$10,000-20,000	High	Recommendations regarding solar implementation in Stony Plain
Implement solar on select municipal buildings	Results and recommendations from the solar feasibility study will be considered to implement solar on selected municipal buildings.	Town	Future; short-term	<i>To be determined from solar feasibility study.</i>	High	A percentage of the Town's corporate electricity will be sourced from solar energy
Implement solar into the new Regional Recreational Centre design	Solar may be considered in the subsequent design stages of the regional facility to offset its carbon contributions.	Town	Future; short-term	\$500,000 added to total cost	High	A percentage of the Town's corporate electricity will be sourced from solar energy
Create a webpage and online brochure to increase clarity regarding the installation of	Web information increasing clarity on the Town's rules regarding solar and direction to appropriate channels.	Town, residents, and businesses	Future; long-term	\$0	Very high	An increase in public awareness resulting in an increase in solar uptake on private property

solar panels on private property						
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Table 3. Land Actions.

Action	Description	Stakeholder	Timeline	Expected Cost	Priority	Measure of Success
Arbour Day	An annual day of celebrating trees through tree-planting in the spring.	Town and residents	Ongoing; annual	\$5,000/year (accounted for)	Very high	New trees are planted each year
Seek corporate sponsorships for Arbour Day	Allowing the opportunity for businesses to participate in environmental stewardship through donations and sponsorship opportunities.	Town, businesses, and developers	Future; annual	Positive revenue	High	Corporation(s) financially contribute to Arbour Day allowing for an expanded tree/shrub planting operation
Increase the proportion of native and edible tree/shrub species planted on Arbour Day to 50% and 20%, respectively	Increasing the proportion of native and edible species planted on Arbour Day to increase ecosystem health and local food security	Town, residents, and businesses	Future; annual	Attainable within current budget	High	Proportion of native and edible tree/shrub species planted on Arbour Day increases to 50% and 20%, respectively
Create an Urban Forest Management Plan	A study and plan to promote the health and expansion of Stony Plain's urban forest	Town	Future; short-term	\$40,000	Medium	Creation of an operational document that results in a

						noteworthy increase in urban forest canopy cover and tree health
Establish a Natural Conservation Area (NCA) within Land Use Bylaw (LUB)	Protects Stony Plain's environmentally significant areas from development to preserve biodiversity, vegetation, drainage patterns, and soil	Town	Complete; long-term	<i>Not applicable</i>	Very high	The NCA is kept in the LUB and the NCA is expanded as Stony Plain's built area expands
Conduct and Environmentally Significant Area (ESA) (study in the Future Development District)	To determine where the environmentally significant areas within the undeveloped portions of town lie and associated ecological importance, the Town can commission an ESA study	Town	Future; immediate	\$40,000-50,000	High	A mapping and biodiversity study of Stony Plain's ESAs are publicly available for education, are used to inform future Area Structure Plans, and are incorporated into the NCA at the time of development

Revegetate barren and maintained portions of Willow Park Natural Area	Revert 4-hectares of the Natural Conservation Area to a natural state though the active planting of native species	Town	Future; somewhat ongoing	\$5,000/year	Medium	A substantial decrease in maintained/barren portions of the Park as evidenced by satellite imagery
Create an educational webpage on provincially regulated invasive species	Create a webpage that directs residents and Town staff to appropriate provincial resources pertaining to the identification, control, and reporting of invasive species	Town and residents	Future; long-term	\$0	Medium	Increased public awareness and reporting of invasive and pest species
Support the creation, implementation, and realization of the Regional Agricultural Master Plan (RAMP)	Doing our due diligence to support the findings and recommendations that from the Regional Agricultural Master Plan to increase food security within the Edmonton Metropolitan Region	Town and regional stakeholders	Ongoing; long-term	<i>To be determined</i>	Very high	Support for the criteria outlined in the RAMP leads to changes in the management of agricultural lands
Permit urban beekeeping	Allow residents with backyards to keep bees with restrictions to	Town, residents,	Future; long-term	\$4,000	Medium	Increased popularity of urban beekeeping



	ensure the safety of humans and bees	and businesses				as evidenced by the number of beekeeping permits issued
Permit urban hens	Like the beekeeping initiative, this will allow residents with backyards to keep hens with restrictions to ensure the safety of humans and hens	Town, residents, and businesses	Future; long-term	\$4,000	Medium	Increased popularity of urban hens as evidenced by the number of hen permits issued
Partner with the Multicultural Heritage Centre to expand the community garden initiative	The Multicultural Heritage Centre leads the community garden initiative in Stony Plain. Additional funding for the Centre may be allocated to expand the initiative	Town, residents, and Multicultural Heritage Centre	Future; long-term	\$2,000/year	Medium	Increased capacity for communal gardening as evidenced by the number of garden plots available at the Centre



Table 4. Air Actions.

Action	Description	Stakeholder	Timeline	Expected Cost	Priority	Measure of Success
Join the Alberta Capital Airshed (ACA)	Stony Plain may become a member of the ACA, the regional organization responsible for the health of the airshed in Stony Plain	Town and regional stakeholders	Future; long-term	\$1,000/year	High	Increase in Stony Plain's representation on regional airshed initiatives as evidenced by representation on airshed groups
Partner with ACA to establish a fine particulate matter sensor station in Stony Plain	The Town may set up a sensing station to monitor fine particulate matter in the air to inform on human and environmental health concerns and take appropriate action	Town and regional stakeholders	Future; long-term	\$30,000-40,000/year	Medium	Quantitative data on fine particulate matter used to inform future regulatory action
Traffic Bylaw	Section 11 of the Bylaw prohibits non-essential vehicle idling for greater than 30 minutes.	Town, residents, and businesses	Ongoing	<i>Not applicable</i>	Very high	A decrease in vehicle idling that would not be achieved in the absence of the bylaw.



Open Burning Bylaw	Prohibits the burning of materials that contribute to air pollution.	Town, residents, and businesses	Ongoing	<i>Not applicable</i>	Very high	A decrease in open burning that would not be achieved in the absence of the bylaw.
Launch an anti-idling campaign	Campaign to educate community on health and environmental dangers associated with vehicle idling.	Town, residents, and businesses	Future; ongoing	\$0	High	An increase in public awareness on the dangers of vehicle idling as evidenced in the extent of public participation in anti-idling awareness campaigns
Conduct a noise acoustic study alongside Highways 16A, 628, and 779 and the CN Rail line and implement noise control improvements	This study will determine if Stony Plain's current noise attenuation infrastructure is a sufficient barrier and will provide recommendations for improvement	Town, residents, businesses, and developers	Future; medium-term	\$40,000-50,000 for study	High	Quantitative data on noise levels near contributory sources and implementation of improved noise attenuation enhancement infrastructure
Amend Community Standards Bylaw	This section can be modified to include	Town, residents, businesses,	Future; long-term	\$10,000-15,000	Low	Increased clarity regarding acceptable noise



Section 3.11 to include quantitative noise prohibitions.	quantitative noise reduction thresholds	and developers				levels as evidenced by law enforcement action statistics
Create a Dark Sky Bylaw	To reduce the impacts of light pollution, Stony Plain may adopt a bylaw restricting certain forms of overly bright and poorly aimed lighting	Town, residents, businesses, and developers	Future; long-term	\$3,000	Low	A decrease in overly bright and poorly aimed lighting through public education and enforcement



Table 5. Water Actions.

Action	Description	Stakeholder	Timeline	Expected Cost	Priority	Measure of Success
Toilet Rebate Program	From 2011 to 2014, the Town administered a WaterSense Toilet Rebate Program to help residents transition to water-efficiency	Town and residents	2011-2014	<i>Not applicable</i>	Very high	WaterSense toilets became the status quo for new developments
Conduct a Water Use Study and Implement a Water Conservation Strategy	A Water Use Study and Water Conservation Study will address water use in Stony Plain and will propose strategies and innovations to further conserve water	Town, residents, and businesses	Future; immediate	\$20,000-25,000	High	A noteworthy decrease in corporate and community water consumption as a direct result of implementing initiatives recommended in the Strategy
Allow Development Authority to request hydrological assessment when developing within a 30-meter	Stony Plain's LUB Section 3.2 gives the Town's Development Authority the right to request a hydrological study pertaining to flood risk in areas within 30 meters of a water or	Town and developers	Ongoing	<i>Not applicable</i>	Very high	No new developments occur in flood risk areas



proximity to water bodies	stream course, and within areas previously identified in the Atim Creek flood risk zone					
Monitor for total suspended solids (TSS) in stormwater discharge	The Town would begin a stormwater quality monitoring program by monitoring TSS at the point of stormwater discharge	Town	Future; long-term	<i>To be determined</i>	Medium	Quantitative data leads to the implementation of actions reducing TSS in stormwater discharge
Conduct a Road Salt Study and create a Salt Management Plan	To curb salinity pollution while also achieving the benefits of de-icing, the Town can conduct a road salt study and implement the findings into a Salt Management Plan	Town, residents, and businesses	Future; immediate	<i>To be determined</i>	Medium	A reduction in corporate road salt use as evidenced in Public Works salt application statistics
Tri-Municipal Rain Barrel Sale	To incentivize the reuse of precipitation as opposed to allowing runoff into storm sewer system, Stony Plain has partnered with Spruce Grove, Parkland County, and RONA to offer	Town, residents, and businesses	Ongoing; long-term	<i>Accounted for</i>	Very high	A noteworthy number of residents purchasing rain barrels as evidenced in rebate statistics

	annual rebates on the purchase of rain barrels					
Heritage Park pavilion water collection	Due to the positive externalities mentioned above, the Heritage Park pavilion has incorporated water collection features on site to reduce facility water consumption	Town	Ongoing; long-term	<i>Accounted for</i>	Very high	A decrease in the facility's water use as evidenced in water utility bills
Create a rebate program to promote rain gardens, bioswales, and rainwater collection barrels	To incentivize the uptake of ecosystem-based stormwater approaches, the Town can cover a set amount of the cost associated with the installation of such features	Town, residents, businesses, and developers	Future; short-term	\$20,000/year maximum	Medium	An increased uptake of ecosystem-based stormwater features as evidenced in the number of rebates issued
Allocate funds to increase vegetation in stormwater management retention and detention ponds, and on the riparian areas of Stony,	An initiative to gradually increase riparian vegetation to prevent erosion and promote the bioremediation of water.	Town	Future; long-term	\$2,000/year	High	An increase in riparian and stormwater facility vegetation as evidenced by spatial GIS-based Normalized Difference Vegetation Index (NDVI)



Whispering Waters, Heritage, and Atim Creeks						measurements taken from satellite imagery
Use groundwater to fill skating rinks	Stony Plain currently uses groundwater to fill skating rinks.	Town	Ongoing	<i>Accounted for</i> , an additional \$15,000 to drill new well	Medium	A decrease groundwater waste as evidenced by the reuse percentage of diverted groundwater



Table 6. Waste Actions.

Action	Description	Stakeholder	Timeline	Expected Cost	Priority	Measure of Success
Conduct a residential waste audit	A formal study to determine waste production, contamination, and areas for improvement to inform communication and education.	Town and residents	Future; immediate	\$20,00-25,000	High	Quantitative data on waste management parameters to inform future public education and communication strategies
Recycling and organics program	In 2006, the Town of Stony Plain introduced its recycling and organics curbside collection program because of its <i>Solid Waste Management Bylaw</i> .	Town, residents, and businesses	Ongoing	<i>Accounted for</i>	Very high	Continuation of the current recycling and organics program to maintain, at the very least, a 50% waste diversion annually
Rotary Recycling Centre	Stony Plain's resident waste collection facility that allows individuals to turn in items not collected at the curbside.	Town, residents, and businesses	Ongoing	<i>Accounted for</i>	Very high	The ongoing operation of the Rotary Recycling Centre with adequate operational budget



Annual Shred-It Event	The Shred-It Event allows residents and business owners in Stony Plain to dispose of confidential and personal paper documents in a manner that protects their security while allowing for the material to be recycled.	Town, residents, and businesses	Ongoing	<i>Accounted for</i>	Very high	The continuation of the event leading to a decrease in other means of disposal as evidenced by user statistics
Recycle Coach App	Stony Plain has adopted the Recycle Coach App to remind residents of waste collection days and proper procedures for waste disposal.	Town and residents	Ongoing	<i>Accounted for</i>	Very high	Increased public education and awareness on recyclable contents as evidenced by app user and interaction statistics
Christmas Tree Drop-Off	Residents can drop off their Christmas trees at the Rotary Recycling Centre to be chipped and used as mulch.	Town and residents	Ongoing	<i>Accounted for</i>	High	An increase in the organic disposal of Christmas trees as evidenced in the quantity of mulch generated



Community Street Market	A market that promotes the resale of gently used items.	Towns, residents, and businesses	Ongoing	<i>Not applicable</i>	High	An increase in the resale of gently used items as evidenced in the community popularity of the market
Annual Treasure Hunt	A Stony Plain tradition where residents place items they no longer need on the curbside for collection by others.	Town and residents	Ongoing	<i>Not applicable</i>	High	An increase in the reuse of gently used items as evidenced in the community popularity of the treasure hunt
Pitch-In Week	A week-long event that allows schools and groups to volunteer to clean up the town.	Town, residents, schools, and businesses	Ongoing	<i>Not applicable</i>	High	A decrease in spring-time litter waste as evidenced in the quantity of garbage removed from public outdoor locations
Expand the 'Don't Just Trash It' campaign	An educational event to encourage people to reuse, reduce, and recycle. The campaign can be expanded to reach a wider audience.	Town, residents, schools, and businesses	Ongoing; future expansion	\$1,000/year added to current budget	High	Increased public education on the 5 R's as evidenced in social media insights, video viewership, and

						other quantitative criteria
Create a Tri-Municipal Waste Commission	Stony Plain has partnered with Parkland County and Spruce Grove to conduct various regional waste studies that may lead up to a Tri-Municipal Waste Commission.	Town and regional stakeholders	Future; ongoing	<i>To be determined</i>	High	The creation of a regional waste commission resulting in an increase in waste collection efficiency and waste diversion
Investigate options for the recycling of Styrofoam and glass	The Town is working with other municipalities in the Edmonton Metropolitan Region to explore solutions.	Town and regional stakeholders	Future; ongoing	<i>To be determined</i>	High	The creation of a regional initiative to increase the feasibility of Styrofoam and glass recycling
Adopt a Single-Use Plastics Bylaw	The Town may explore options to limit the sale of single-use plastics.	Town, businesses, and residents	Future; awaiting federal decision	\$3,000	Medium	The reduction of single-use plastic items entering landfills as evidenced in a follow-up waste audit
Designate land for the rehome of salvageable construction scraps	To reduce viable construction scraps from entering landfills, the Town may explore options for creating a	Town, businesses, residents, and home builders	Future; pilot project	\$15,000; \$4,000/year in maintenance	Low	A reduction in construction waste entering landfills through the rehome of a



	rehome initiative for safely reusable scrap construction items.					noteworthy proportion of salvageable construction scraps
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Implementation

The ESS provides a glossary of environmental initiatives that may be chosen for implementation in each Council budget cycle. Implementation will be dependent on available resources at the time. We acknowledge that the extensive environmental initiatives listed in the 2021 ESS are ambitious and aspiration for a town of 18,000 residents. However, aspiration is imbedded within Stony Plain's identity. An optimistic outlook paired with excellence in environmental leadership will help Stony Plain enhance its local environment to make a global impact. As a community, we take responsibility for our environment and commit to ensuring it flourishes alongside the built environment. We strive to build a resilient community by fostering development that protects and enhances our environment for the benefit of current and future generations.



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Appendix B – Environmental Stewardship Strategy and Technical Report Translational Table

Environmental Stewardship Strategy and Technical Report Translational Table

The following table is an explanation for how each recommendation from the Environmental Stewardship Strategy Technical Report was incorporated into the Environmental Stewardship Strategy.

Energy	Land	Air	Water	Waste	Multiple
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Action Number	Technical Report Initiative	How initiative was incorporated in the ESS	Rationale
1	Hire a Municipal Energy Manager	Action Plan	The Town will conduct a corporate energy audit and analyze the data to create an energy reduction strategy when a Municipal Energy Manager is hired.
2	Replace older non-energy-efficient traffic lights with modern LED lighting	Ongoing	This initiative is underway and will be completed through the current replacement rate.
3	Municipal Green Building Program	Completed	In the mid-2000s, the Town of Stony Plain invested significantly in green building design for its then-new Fire Hall and Town Office.
4	Conduct a corporate energy audit	Action Plan	The Town will conduct a corporate energy audit when a Municipal Energy Manager is hired.
5	Wherever possible, purchase new vehicles for Public Works that are listed on the Government of Canada's "most fuel-efficient vehicles" list	Action Plan (rewritten)	The initiative was rewritten to state: Amend Town Vehicle Policy to incorporate criteria for fuel efficiency.
6	Create a webpage educating residents and businesses on energy-efficiency upgrades	Action Plan (combined and rewritten)	The initiative was rewritten to state: create a webpage and online brochure educating residents on environmental topics and initiatives.

Action Number	Technical Report Initiative	How initiative was incorporated in the ESS	Rationale
7	Conduct a community energy audit	Beyond the Action Plan	This initiative was identified as a lower priority that will be considered during a future update to the Environmental Stewardship Strategy.
8	Reintroduce the green-building rebate program	Action Plan (combined)	The rebate strategy will be created following the successful completion of the energy audits and Water Conservation Strategy.
9	Provide rebates for energy-efficiency upgrades	Action Plan (combined)	The rebate strategy will be created following the successful completion of the energy audits and Water Conservation Strategy.
10	Creation of Stony Plain Transit	Completed	Stony Plain Transit system became operational in 2021.
11	Creation of a Tri-Municipal Transit System	Completed	Stony Plain Transit has been formed as part of a regional transit system with the City of Spruce Grove and Parkland County through a regional partnership.
12	Creation of an Edmonton Metropolitan Regional Transit System	External Initiative	The Edmonton Regional Transit System will be developed through work with the Edmonton Metropolitan Region Board.
13	Update the Trails Master Plan to incorporate findings of the Active Transportation Strategy	Action Plan (as is)	The Active Transportation Strategy outlines various improvements that can further encourage active transportation within Stony Plain, incorporating these findings into the Trails Master Plan using an environmental lens can help the Town promote active modes of transportation, while ensuring the health of our ecosystems are maintained.
14	Conduct a solar feasibility study on select municipal solar buildings	Action Plan (rewritten)	The solar feasibility study will be used to determine eligibility for solar infrastructure on buildings throughout the town, including municipal buildings.
15	Implement solar on select municipal buildings	Action Plan (rewritten)	Rewritten to create a policy to encourage the use of solar infrastructure on all municipal buildings.

Action Number	Technical Report Initiative	How initiative was incorporated in the ESS	Rationale
16	Implement solar into the new Regional Recreational Centre design	Action Plan (rewritten)	Solar infrastructure will be explored in the design of the new Regional Recreation Centre and other new municipal buildings.
17	Create a webpage and online brochure to increase clarity regarding the installation of solar panels on private property	Action Plan (combined and rewritten)	This initiative was combined with an initiative to create a webpage and online brochure educating residents on environmental topics and initiatives, to include information on solar panels on private property.
18	Arbour Day	Ongoing	This initiative is a recurring event.
19	Seek corporate sponsorships for Arbour Day	Action Plan (as is)	Seeking corporate sponsorships for arbour day will allow the opportunity for an increased annual event budget to plant more trees.
20	Increase the proportion of native and edible tree/shrub species planted on Arbour Day to 50% and 20%, respectively	Beyond the Action Plan	Native and edible species are currently planted during Arbour Day events but increasing the current proportion will require additional operational capacity to ensure successful establishment.
21	Create an Urban Forest Management Plan	Action Plan (as is)	An Urban Forest Management Plan will promote the health and stewardship of Stony Plain's urban forest and provide an administrative framework to expand and enhance the urban forest by planting an increased variety and number of trees.
22	Establish a Natural Conservation Area within Land Use Bylaw	Completed	The Land Use Bylaw identifies Natural Conservation Areas to preserve significant environmental features.
23	Conduct and Environmentally Significant Area study	Action Plan (as is)	An Environmentally Significant Area study will determine environmentally sensitive areas for the Town to identify as Natural Conservation Areas.

Action Number	Technical Report Initiative	How initiative was incorporated in the ESS	Rationale
24	Revegetate barren and maintained portions of Willow Park Natural Area	Action Plan (as is)	Following the creation of the Urban Forest Management Plan, the Town will have the necessary background information to revegetate barren and maintained portions of Willow Park Natural Area to contribute to a healthy urban forest.
25	Create an educational webpage on provincially regulated invasive species	Action Plan (combined and rewritten)	This initiative was combined with an initiative to create a webpage and online brochure educating residents on environmental topics and initiatives, to include information on provincially regulated invasive species.
26	Support the creation, implementation, and realization of the Regional Agricultural Master Plan	Ongoing	Stony Plain continues to work with regional partners to create a Regional Agricultural Master Plan.
27	Permit urban beekeeping	External Initiative combined and rewritten)	The Town will explore urban beekeeping and chickens during the implementation of the Regional Agricultural Master Plan.
28	Permit urban hens	External Initiative combined and rewritten)	This initiative was combined with an initiative to explore urban beekeeping and chickens during the implementation of the Regional Agricultural Master Plan.
29	Partner with the Multicultural Heritage Centre to expand the community garden initiative	Beyond the Action Plan	Expanding the community garden initiative will be explored during the implementation of the Regional Agricultural Master Plan.
30	Join the Alberta Capital Airshed	Beyond the Action Plan	This initiative was identified as a lower priority that will be considered during a future update to the Environmental Stewardship Strategy.
31	Partner with Alberta Capital Airshed to establish a fine	Beyond the Action Plan	This initiative will be further considered if the Town joins the Alberta Capital Airshed.

Action Number	Technical Report Initiative	How initiative was incorporated in the ESS	Rationale
	particulate matter sensor station in Stony Plain		
32	Traffic Bylaw	Completed	Section 11 of Stony Plain's <i>Traffic Bylaw</i> prohibits the non-essential idling of non-emergency for a period longer than 30 minutes.
33	Open Burning Bylaw	Completed	Stony Plain's <i>Open Burning Bylaw</i> prohibits the open burning of items that contribute to various forms of air pollution.
34	Launch an anti-idling campaign	Beyond the Action Plan	This initiative will be expanded to actively promote anti-idling and encourage active transportation options to reduce the reliance on automobiles.
35	Conduct a noise acoustic study alongside Highways 16A, 628, and 779 and the CN Rail line and implement noise control improvements	Beyond the Action Plan	This initiative was identified as a lower priority that will be considered during a future update to the Environmental Stewardship Strategy.
36	Amend Community Standards Bylaw Section 3.11 to include quantitative noise prohibitions.	Beyond the Action Plan	This initiative was identified as a lower priority that will be considered during a future update to the Environmental Stewardship Strategy.
37	Create a Dark Sky Bylaw	Completed	The Land Use Bylaw prohibits excessive lighting from interfering with the night sky.
38	Toilet Rebate Program	Completed	From 2011 to 2014, the Town of Stony Plain administered a WaterSense Toilet Rebate Program.
39	Conduct a Water Use Study and Implement a Water Conservation Strategy	Action Plan (as is)	Conducting a Water Use Study will inform the Town on overall water consumption and allow for the creation of a Water Conservation Strategy to reduce water consumption levels in Stony Plain.

Action Number	Technical Report Initiative	How initiative was incorporated in the ESS	Rationale
40	Allow Development Authority to request hydrological assessment when developing within a 30-meter proximity to water bodies	Completed	Through the Land Use Bylaw, the Town's Development Authority may request a hydrological study to identify flood risk in areas within 30 meters of a water or stream course and not permit development where such a study has indicated a risk or require site modifications.
41	Monitor for total suspended solids (TSS) in stormwater discharge	Beyond the Action Plan	Monitoring for TSS is complex and will need further investigation.
42	Conduct a Road Salt Study and create a Salt Management Plan	Beyond the Action Plan	Stony Plain currently uses road salt in line with regional best practices, this may be further explored as standards change or as it becomes a higher priority.
43	Tri-Municipal Rain Barrel Sale	Ongoing	Stony Plain has partnered with Spruce Grove, Parkland County, and RONA to offer annual rebates on the purchase of rain barrels.
44	Heritage Park Pavilion water collection	Ongoing	Heritage Park Pavilion has incorporated on-site water collection features to reduce facility water consumption.
45	Create a rebate program to promote rain gardens, bioswales, and rainwater collection barrels	Action Plan (combined)	The rebate program will be created following the successful completion of the Water Conservation Strategy.
46	Allocate funds to increase vegetation in stormwater management retention and detention ponds, and on the riparian areas of Stony, Whispering Waters, Heritage, and Atim Creeks	Beyond the Action Plan	Needs further investigation to identify where this would be most beneficial and suitable.

Action Number	Technical Report Initiative	How initiative was incorporated in the ESS	Rationale
47	Use groundwater to fill skating rinks	Action Plan (rewritten)	Stony Plain currently diverts groundwater to fill outdoor skating rinks. This initiative will explore using groundwater at Rotary Park to fill a skating rink and for landscaping.
48	Conduct a residential waste audit	External Initiative	A standard approach to conducting waste audits is being developed at the regional level with the Town's support and participation, as necessary.
49	Recycling and organics program	Ongoing	The Town introduced recycling and organics collection in 2006 as a result of its <i>Solid Waste Management Bylaw</i> that is currently ongoing.
50	Rotary Recycling Centre	Ongoing	The Rotary Recycling Centre allows residents to dispose of various items, beyond what is collected through curbside pickup.
51	Annual Shred-It Event	Ongoing	The Shred-It event allows residents and business owners in Stony Plain to dispose of confidential and personal paper documents.
52	Recycle Coach App	Ongoing	The Recycle Coach App reminds residents of waste collection days and proper procedures for waste disposal.
53	Christmas Tree Drop-Off	Ongoing	The Rotary Recycling Centre accepts Christmas trees for wood chipping.
54	Community Street Market	Ongoing	The Community Street Market promotes reuse of household items.
55	Annual Treasure Hunt	Ongoing	The Annual Treasure Hunt promotes the reuse of household items.
56	Pitch-In Week	Ongoing	Pitch-In Week is an annual event that invites organizations and individuals to help clean up areas of Stony Plain.

Action Number	Technical Report Initiative	How initiative was incorporated in the ESS	Rationale
57	Expand the 'Don't Just Trash It' campaign	Ongoing	The 'Don't Just Trash It' campaign is ongoing and is re-launched when there are changes to waste management policies and practices.
58	Create a Tri-Municipal Waste Commission	External Initiative	A Tri-Municipal Waste Commission is being explored through regional partnerships.
59	Investigate options for the recycling of Styrofoam and glass	External Initiative	This will be undertaken through the direction of the Tri-Municipal Waste Commission.
60	Adopt a Single-Use Plastics Bylaw	External Initiative	Single-Use Plastic regulations are planned to come into effect through federal policy.
61	Designate land for the rehome of salvageable construction scraps	Beyond the Action Plan	Given the Town's existing recycling program, this initiative will explore designating land to store other type of salvageable construction scraps for future reuse.

Appendix C – Environmental Portfolio Table

Stony Plain Environmental Portfolio Table

This table summarizes all the current and proposed environmental initiatives in the Environmental Stewardship Strategy. This includes a description of each initiative, its category (ongoing, Action Plan, external, or beyond the Action Plan), and the related goal for each initiative. All initiatives have been categorized by theme to link them back to the Environmental Master Plan and have been arranged in the table by category. This approach illustrates the different types of environmental initiatives and provides a structure to track how each initiative progresses.

Energy	Land	Air	Water	Waste	Multiple
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Initiative	Description	Category	Supported Goal
LED Traffic Light Replacement Program	Replace older non-energy-efficient traffic lights with modern LED lighting.	Ongoing	<i>Establish the Town's corporate GHG emissions and determine an achievable emissions reduction target.</i>
Trail Solar Lighting	Implement solar lighting along trails.	Ongoing	<i>Promote and implement renewable energy.</i>
Arbour Day	Plant trees in under vegetated areas each year to promote the health of the urban forest.	Ongoing	<i>Promote the conservation and enhancement of natural ecosystems and urban forests.</i>
Regional Agricultural Master Plan Implementation	Support the creation, implementation, and realization of the Regional Agricultural Master Plan.	Ongoing	<i>Contribute to regional food security initiatives.</i>
Restrict Open Burning	Prevent the burning of materials that contribute to pollution through the Open Burning Bylaw.	Ongoing	<i>Establish and maintain bylaws and monitoring systems to minimize air pollution.</i>
Limit Vehicle Idling	Limit vehicle idling in the Traffic Bylaw to less than 30 minutes, unless exempted.	Ongoing	
Air Monitoring Station	View real time data on air quality in the town through the air monitoring station.	Ongoing	

Initiative	Description	Category	Supported Goal
Tri-Municipal Rain Barrel Sale	Offer rebates on rain barrels at the annual Rain Barrel Sale to incentivize reuse of rainwater.	Ongoing	<i>Reduce stormwater runoff.</i>
Heritage Park Pavilion Water Collection	Collect and reuse of water on-site to reduce facility water consumption at Heritage Park.	Ongoing	
Groundwater Filled Skating Rinks	Use groundwater instead of treated municipal water when filling skating rinks to reduce water consumption.	Ongoing	<i>Establish municipal and community water consumption levels and determine an achievable water consumption reduction target.</i>
Safe Hydrant Flushing	Use dichlorination pucks when flushing fire hydrants to protect stream courses and stormwater management facilities.	Ongoing	<i>Protect and improve stormwater quality.</i>
Recycling and Organics Program	Collect municipal recycling and organics alongside waste collection.	Ongoing	<i>Achieve 70% waste diversion from landfills by 2030.</i>
Rotary Recycling Centre	Provide a place for residents to drop off recyclables that are not accepted through regular curbside pick-up	Ongoing	
Annual Shred-It Event	Provide residents and business owners with an easy and accessible opportunity to recycle sensitive documents.	Ongoing	
Recycle Coach App	Educate residents on what household materials are recyclable.	Ongoing	
Concrete Recycling	Recycle concrete waste that is not useable.	Ongoing	
Christmas Tree Drop-Off	Allow residents to drop-off Christmas trees at the Rotary Recycling Centre for mulch.	Ongoing	<i>Encourage community awareness and action on waste management.</i>
Community Street Market	Promote the resale of gently used items through the community street market.	Ongoing	

Initiative	Description	Category	Supported Goal
Annual Treasure Hunt	Recycle large items on the curb and allow other residents to collect them.	Ongoing	
Pitch-In Week	Collect garbage with community members to reduce the amount of litter in the town.	Ongoing	
Expand The 'Don't Just Trash It' Campaign	Expand the 'Don't Just Trash It' campaign to educate residents on proper waste management.	Ongoing	
Create an Environmental Webpage and Online Brochure	Create a webpage and online brochure educating residents on environmental topics and initiatives (energy-efficiency upgrades, provincially regulated invasive species, solar, etc.).	Action Plan (phase 1)	<i>Promote and implement renewable energy. Promote the conservation and enhancement of natural ecosystems and urban forests.</i>
Develop a Rebate Strategy	Develop a rebate strategy for rebate opportunities around energy and water consumption.	Action Plan (phase 5)	<i>Promote and implement renewable energy. Establish municipal and community water consumption levels and determine an achievable water consumption reduction target.</i>
Gather Municipal Building Energy Consumption Data	Track and monitor the energy consumption of municipal buildings to understand municipal energy consumption.	Action Plan (phase 1)	<i>Establish the Town's corporate GHG emissions and determine an achievable emissions reduction target.</i>
Town Vehicle Fuel Efficiency Policy	Amend the Town Vehicle Policy to incorporate criteria for fuel efficiency.	Action Plan (phase 2)	
Explore Solar Infrastructure on New Town Buildings	Explore solar infrastructure opportunities on the new recreation facility and Public Works building.	Action Plan (phase 1)	<i>Promote and implement renewable energy.</i>

Initiative	Description	Category	Supported Goal
Town Building Solar Energy Policy	Develop a solar energy policy for Town-owned buildings to encourage the use of solar infrastructure.	Action Plan (phase 2)	
Solar Feasibility Study	Conduct a solar feasibility study to understand what areas of the town are most suitable for solar opportunities.	Action Plan (phase 3)	
Trails Master Plan Update	Update the Trails Master Plan to incorporate findings of the Active Transportation Strategy.	Action Plan (phase 2)	<i>Promote and implement alternative transportation modes.</i>
Urban Forest Management Plan	Develop an Urban Forest Management Plan to manage and monitor urban forest health.	Action Plan (phase 1)	<i>Promote the conservation and enhancement of natural ecosystems and urban forests.</i>
Arbour Day Corporate Sponsorship	Seek corporate sponsorships for Arbour Day to increase tree planting capacity.	Action Plan (phase 1)	
Environmentally Significant Area Study	Conduct an environmentally significant area study in the Future Development District.	Action Plan (phase 2)	
Tree Planting Program for Local Groups	Working with local groups on tree reforestation opportunities on municipal land.	Action Plan (phase 3)	
Willow Park Natural Area Revegetation	Revegetate barren and maintained portions of Willow Park Natural Area.	Action Plan (phase 4)	
Rotary Park Well for Skating Rinks and Watering	Drill a new well at Rotary Park to use groundwater to fill the skating rink and for general watering for landscaping.	Action Plan (phase 2)	<i>Establish municipal and community water consumption levels and determine an achievable water consumption reduction target.</i>
Explore New Water Meters	Increase water conservation opportunities with new water meters.	Action Plan (phase 4)	
Water Use Study	Conduct a water use study to create and implement a water conservation strategy.	Action Plan (phase 5)	

Initiative	Description	Category	Supported Goal
Edmonton Metropolitan Regional Transit System	Work with regional transit partners to provide a regional transit network.	External	<i>Promote and implement alternative transportation modes.</i>
Tri-Municipal Waste Commission	Promote regional collaboration and explore regional waste and recycling collection opportunities.	External	<i>Achieve 70% waste diversion from landfills by 2030.</i>
Conduct a Residential Waste Audit	Conduct a residential waste audit to understand current community waste diversion rates.	External	
Investigate Options for the Recycling of Styrofoam and Glass	Investigate recycling opportunities of Styrofoam and glass to encourage waste diversion.	External	
Adopt a Single-Use Plastics Bylaw	Adopt a single-use plastics bylaw to reduce production of single-use plastic waste and encourage reusable materials.	External	
Conduct Community Energy Audit	Conduct a community energy audit and develop a baseline of community GHG emissions to develop feasible reduction targets.	Beyond the Action Plan	<i>Establish the Town's community GHG emissions and determine an achievable emissions reduction target.</i>
Explore Enhanced Native and Edible Vegetation Planting Opportunities	Explore incorporating more native and edible tree and shrub species when planting on Arbour Day.	Beyond the Action Plan	<i>Promote the conservation and enhancement of natural ecosystems and urban forests.</i>
Explore Urban Agriculture Feasibility	Explore urban agriculture opportunities such as backyard beekeeping and chickens.	Beyond the Action Plan	<i>Contribute to regional food security initiatives.</i>
Explore Expanding Community Gardens	Explore new and expansions to existing community gardens through local partners such as the Multicultural Heritage Centre.	Beyond the Action Plan	

Initiative	Description	Category	Supported Goal
Join the Alberta Capital Airshed	Join the Alberta Capital Airshed to learn more about promoting and ensuring safe air quality in the community.	Beyond the Action Plan	<i>Educate the community on air quality issues.</i>
Establish a Fine Particulate Matter Sensor Station	Partner with the Alberta Capital Airshed to establish and monitor for fine particulate matter to mitigate air pollution.	Beyond the Action Plan	<i>Establish and maintain bylaws and monitoring systems to minimize air pollution.</i>
Launch an Anti-Idling Campaign	Launch an anti-idling campaign to encourage less vehicular idling.	Beyond the Action Plan	<i>Educate the community on air quality issues.</i>
Conduct Noise Acoustic Study	Conduct a noise acoustic study alongside Highways 16A, 628, and 779, and the CN Rail line to implement noise control improvements.	Beyond the Action Plan	<i>Collect quantitative data on noise pollution and implement mitigative measures.</i>
Introduce Quantitative Noise Prohibitions	Amend Community Standards Bylaw to include quantitative noise prohibitions.	Beyond the Action Plan	
Monitor for Total Suspended Solids in Stormwater Discharge	Monitor and understand the current amount of total suspended solids in stormwater discharge.	Beyond the Action Plan	<i>Protect and improve stormwater quality.</i>
Conduct a Road Salt Study and Create a Salt Management Plan	Conduct a road salt study to understand salt use in the Town and create a salt management plan to protect waterways.	Beyond the Action Plan	
Increasing Vegetation Adjacent to Stormwater Management Systems	Increase vegetation in stormwater management retention and detention ponds, and on the riparian areas of creeks in Stony Plain.	Beyond the Action Plan	
Explore Salvageable Construction Scraps	Designate land where salvageable construction scraps can be reused and recycled.	Beyond the Action Plan	<i>Achieve 70% waste diversion from landfills by 2030.</i>