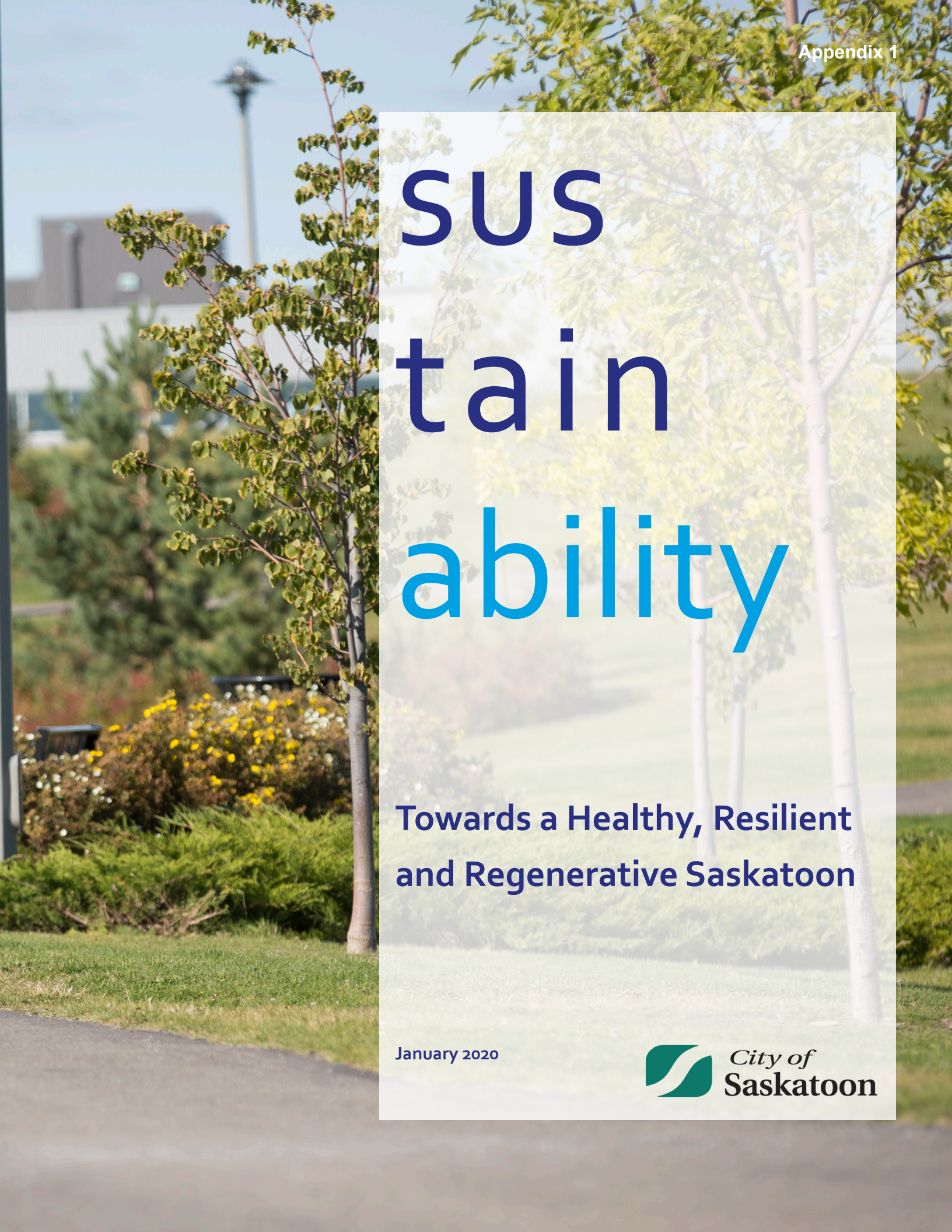

sus tain ability

Towards a Healthy, Resilient and Regenerative Saskatoon

January 2020

City of Saskatoon

The Sustainability Division is responsible for planning education programs for Saskatoon's curbside and multi-unit recycling programs, in close collaboration with the Communications Division. Here, the "Recycle Better in your ugly sweater" education campaign is displayed on a City bus in December.

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A Changing Role

Dedicated action on environmental stewardship and sustainability has been a foundation of the City of Saskatoon (City) for many years and the 2018-2021 Strategic Plan highlights this commitment through its Environmental Leadership goal:

Saskatoon thrives in harmony with its natural environment and consistently demonstrates environmental leadership - Saskatoon's growth is environmentally and economically sustainable and contributes to a high quality of life.

As a climate change leader, the Sustainability Division has a significant role to play as changes to our local and global environment rapidly increase. The City's Strategic Risk Register contains three items related to climate change:

- The City may not be prepared for the effects of climate change.
- The City's community education and awareness initiatives regarding carbon footprint may not be affecting change in people's attitudes and behaviours.
- The City may fail to identify and pursue corporate CO_2e reduction initiatives.

The Sustainability Division (Division) was formed in 2019 through the corporate restructuring, evolving through various iterations to what it is today. In order to strategically support and achieve the City's environmental- and sustainability-related objectives, the Division adopted a renewed vision and mission as follows:

Vision
Saskatoon is a sustainable community where every citizen and organization enjoys and prospers in a clean, healthy, resilient and regenerative city.

Mission
Our mission is to collaborate and support the City of Saskatoon to embed sustainability into all of our decisions and actions. It is to empower and enable the community to be stewards of sustainability.

Sustainability initiatives bring value to the community and the City. The Division accesses grants and loans to work on environmental initiatives and to provide energy savings through building improvements. As well, the Division's environmental grants have leveraged community investments of approximately seven times the amount funded by the City. Looking to benefits beyond the dollar, the Division's work involves stewardship of clean air, water, and soils, promotion of active and clean transportation, and improving building performance not just to save money but also to support health and comfort.

This report provides an overview of the City of Saskatoon's Sustainability Division to showcase the roles and functions that the Division has traditionally supported, whether that be independently, in partnership with other divisions, or in collaboration with the community. The report also looks ahead and outlines roles, responsibilities, and tasks which serve to better align with community, corporate, and strategic direction for 2020-2021.

With a clear view of goals and tasks for the next fiscal period, we aspire to gain momentum on strategic goals and targets and work toward our vision for a sustainable community, where every citizen and organization enjoys and prospers in a clean, healthy, resilient, and regenerative city.

Food plays an important role in strategies for an equitable and enviromentally sustainable Saskatoon. Here, members of the team take time over their lunch break to pitch in and plant vegetables at the Garden Patch, in support of the Saskatoon Food Bank and Learning Centre.

sustainability

Program Background and Context

Branch and Division Development

The City of Saskatoon's Sustainability Division has evolved out of decades of environmental action that was led and facilitated by both the City and community.

Saskatoon's environmental sustainability program has gone from a branch primarily focused on operational aspects of environmental compliance and waste management to a 23-person Division in 2019 focused on a broad scope of sustainability outcomes.

Prior to 2004, the Environmental Compliance Branch was responsible for waste management and minimization, environmental labs, environmental monitoring, and capital projects for water and waste water treatment.[1]

The Environmental Protection Branch was formed in April 2004 as part of the Utility Services Department. It was "responsible for administering programs and capital work relating to resource management and safeguarding the environment."[2] Its activities included public outreach, waste diversion programs, greenhouse gas reduction monitoring, soil remediation, and environmental planning. At that time, Environmental Engineering was a separate Branch within Utility Services responsible for water, wastewater, and solid waste operations.

In July 2005, Environmental Protection was combined with Environmental Engineering to form the Environmental Services Branch to provide "an integrated

1 Environmental Operations Annual Report 2002. Water Treatment & Meters, Wastewater Treatment & Lifts, Environmental Compliance. Utility Services Department.
2 Utility Services Business Plan. 2004-2006.

approach to environmental protection, water and wastewater quality and solid waste management to protect human health and safety and the environment."[3]

In 2011, the Saskatoon Environmental Advisory Committee (SEAC) presented a report to the Administration and Finance Committee recommending:

"That the Adminstration be directed to:

1) Create an office of Sustainabilit and the Environment, and:

2) Place responsivbility for the environmental policy and sustainability and environmental initiatives within the newly created office."

SEAC's report signaled a shift in how organizations and municipalities were starting to address environmental initiatives, by applying a broader sustainabilty lens to achieve more holistic outcomes and co-benefits.

In 2013, as part of Corporate restructuring, the branch was renamed the Environmental and Corporate Initiatives (E&CI) Division and moved to the Corporate Performance Department. E&CI maintained most of its staff and responsibilities related to greenhouse gas management, environmental protection, planning, and waste diversion programs and outreach. City-run operations of waste collections and facilities, as well as the environmental labs, were moved into other divisions. A new section, Corporate Initiatives, was added to E&CI to facilitate project development through its early stages.

The E&CI Division mandate also grew during this time after taking over the Energy Management responsibilities from the Project Services group in Facilities and taking a leadership role in natural gas procurement.

Healthy soil and clean water are critical for Saskatoon and the health of the region. The Division's role as a leader in environmental protection serves to safeguard the community from the impacts of pollution by preserving the quality of the water, soil and air - now and for future generations.

Municipal Leadership in Sustainability

In Canada and internationally, it is not unique for municipalities to take on leadership roles in addressing sustainability challenges. For example:

- 1,180 jurisdictions in 23 countries have declared climate emergencies, representing 290 million citizens. As of November 4, 2019, 468 governments in Canada have declared climate emergencies, including Edmonton (the only prairie city).[4]
- 174 communities in Canada, including Davidson and Regina, have passed Blue Dot declarations in support of the Right to a Healthy Environment, which includes clean air and water, safe food, a stable climate, and a say in decisions that affect our health and well-being.[5]

While Saskatoon has not declared a climate emergency or passed a Blue Dot declaration, in 2015, City Council made a commitment to climate action by becoming a signatory of the Global Covenant of Mayors for Climate & Energy, along with over 10,000 other cities and local governments across the world, and representing more than 800 million people.[6] Saskatoon is also a member of the Carbon Disclosure Project[7], as well as the Canadian Urban Sustainability Prac-

3 Utility Services Department Business Plan, 2007-2009.
4 https://climateemergencydeclaration.org/climate-emergency-declarations-cover-15-million-citizens/
5 https://bluedot.ca/about/declarations/
6 https://www.globalcovenantofmayors.org/about/
7 https://www.cdp.net/en/cities

titioners (CUSP) network, which is a working group stemming from the Urban Sustainability Directors' Network, a North American peer group of sustainability practitioners. CUSP facilitates information sharing, best practice support, and resource identification between many of the major municipalities in Canada.

A sampling of municipal Sustainability Office models in Canada can be found in Attachment 1. They vary significantly across municipalities. Some have smaller groups focused primarily on climate change strategy while sustainability is embedded more broadly throughout their organization, while others have numerous staff that focus on areas such as climate change and resiliency, energy management, and buildings, amongst others. Budgets, funding models, and staffing vary significantly across the cities.

Public Opinion and Support

During the 2019 Federal election, action on climate change was considered one of the top three issues by Canadians.[8] Climate Emergency Declarations, youth-led rallies, and global environmental movements are being supported by individuals, governments, and businesses.

In 2017, the City hired Environics Research to conduct surveys to better understand environmental attitudes of Saskatoon's residents and businesses (see Attachment 2 for more detailed results). The majority (89%) of Saskatoon residents agree that climate change is happening, and 32% believe that it is already impacting our local community; however, one-third do not believe that climate change is human-caused, and 10% do not believe that climate change is happening at all.

Nearly 85% of residents agreed that more restrictions on industry are needed to stop pollution, and approximately 80% expressed concern about a variety of impacts related to climate change, such as rising costs for food, energy, public services, and insurance. Most residents supported municipal spending to slow down or protect the negative impacts of climate change, either with no strings attached or if it would lead to community benefits (such as improved health, safety, and quality of life outcomes), demonstrate financial savings, and/or generate economic activity and employment opportunities in our community. Only 11% responded that they did not support municipal spending on initiatives that reduce greenhouse gas emissions.

Survey findings also showed that multiple barriers exist that prevent environmental action. For example, 60% of residents noted that the initial cost of installing solar panels, upgrading to high quality windows, and adding insulation was a barrier. However, if those barriers were to be removed, residents showed interest in taking up a variety of actions.

From a business perspective, environmental responsibility was considered a core part of business by the survey respondents, particularly among larger organizations. Nearly three quarters of respondents believed that climate change will have a major or minor impact on their business within the next 10 years, with their primary concerns related to higher costs for energy, insurance, and public services, as well as damage to infrastructure. Many businesses also acknowledged that clients/customers expect organizations to be environmentally responsible.

Voices of Saskatoon's youth are shared at a "Fridays for the Future" climate rally in Summer 2019.

8 https://www.ipsos.com/en-ca/news-polls/Four-Weeks-In-Climate-Change-Fastest-Moving-Health-Care-Still-Top-Issue

Most Important Issues in Determining Vote: By Age			
	18-34	35-54	55+
Health care	28%	33%	40%
Climate Change	29%	25%	32%
Affordability and cost of living	27%	31%	22%
Taxes	24%	24%	29%
The economy	20%	29%	25%
Housing (e.g., affordability, availability)	17%	16%	11%
Education	24%	15%	6%
Seniors' issues/ageing population	2%	7%	28%

Blue highlights indicate the top issue of importance per age group.

Figure 1: Most Important Issues in Determining Vote by Age – 2019 Federal Election (Ipsos, 2019)

National and Global Climate Crisis

Science is very clear on the facts and the causes of climate change. The world is warming, and human activity is the cause. If left unchecked, the impacts will be serious.

The climate threat is real, but so are the exciting possibilities to find new and creative approaches to living together with health and prosperity within the limits of the natural world. -Climate Atlas of Canada

In 2017, the American Meteorological Society published its seventh edition of *Explaining Extreme Events from a Climate Perspective.* The report identifies extreme weather events that could not have happened without the presence of a warming climate. It presents 17 peer-reviewed analyses of extreme weather across six continents and two oceans, conducted by 120 scientists from 10 countries.[9]

Examples of recent extreme weather events include:

- In 2018, Montreal experienced 70 heat-related deaths, British Columbia experienced its worst fire season on record, and two brief thunderstorms caused widespread flooding in Toronto, bringing the downtown core to a standstill.[10]
- Argentina and Uruguay sustained severe droughts in 2018 that impacted livelihoods and the countries' economies.[11]
- Europe endured a series of extreme heatwaves throughout the summer of 2018, leading to health issues and elevated mortality.[11]
- On the coastal Indian state of Kerala, flooding in 2018 claimed the lives of 361 people and left hundreds of thousands completely stranded or homeless.[11]
- A 2018 drought left Afghanistan with a food shortage that forced over 300,000 people from their homes.[11]

9 https://www.ametsoc.org/ams/index.cfm/publications/bulletin-of-the-american-meteorological-society-bams/explaining-extreme-events-from-a-climate-perspective/

10 https://www.cbc.ca/news/technology/climate-change-canada-1.4878263

11 https://www.theguardian.com/environment/ng-interactive/2018/dec/21/deadly-weather-the-human-cost-of-2018s-climate-disasters-visual-guide

- The Mendocino Complex wildfire became the largest in California's history. An estimated million acres were devastated by fire in 2018.[11]

Locally, our weather is predicted to become "warmer, wetter, and wilder," which could lead to: increased insurance claims; demand on our utility services (i.e. water, electricity); power outages; stress on our urban forest and green spaces due to heat and drought; freezing rain and icy conditions; risks to our water supply; property damage; smoky conditions and poor air quality due to wildfires; infrastructure damage due to flooding; and pest outbreaks (amongst others).[12] Climate change and other human-caused activities are also responsible for threatening a million different plant and animal species,[13] with "[extinctions] occurring hundreds of times faster than they would naturally."[14] Not only that, but the Canadian Public Health Association recently published a *Climate Change and Human Health* report, which underscores that "the effects of climate change ... represent an unacceptably high and potentially catastrophic risk to human health."[15]

The impacts of climate change also come with a large price tag. "The higher the emissions rates are, the larger the increase in average annual temperature becomes and, in turn, the larger the cost and magnitude needed for adaptive actions grows over time."[16] A recent publication by the Insurance Bureau of Canada also determined that:

12 https://www.saskatoon.ca/sites/default/files/documents/local_actions_report._.pdf
13 https://ipbes.net/news/Media-Release-Global-Assessment
14 https://www.nationalgeographic.com/science/prehistoric-world/mass-extinction/
15 https://www.cpha.ca/climate-change-and-human-health
16 https://www.saskatoon.ca/sites/default/files/documents/local_actions_report._.pdf

This rain garden is an example of green infrastructure, which serves to capture water and help to manage extreme weather events, when the grey infrastucture may be reaching its capacity.

Property and casualty insurance payouts from extreme weather have more than doubled every 5 to 10 years since the 1980s. While insurable payouts averaged $400 million per year from 1983 to 2008 in Canada, for eight of the last nine years leading up to 2017, insurance payouts for catastrophic losses exceeded $1 billion per year. The insurance gap in Canada is also significant; for every dollar of insured losses borne by insurers in Canada, three to four dollars are borne by governments and home and business owners.

-IBC Natural Infrastructure-Report-2018

The *Low Emissions Community Plan* describes the positive payback for multiple mitigation efforts, as well as the costs of inaction. When compared to a Business as Planned (status quo) scenario, the Low Emissions Plan results in a total estimated return of $14.6B after investments, in addition to 3.08 million tonnes of city-wide CO_2e emissions reduced annually. But to realize these benefits and paybacks, swift and dedicated action is required (both globally and locally) to address climate change and to reduce emissions.

Saskatoon's environmental sustainability program has developed alongside City Counci's leadership, citizen expectations, other municipal contexts nationally, changing regulatory requirements and in response to changing environmental conditions. As with most civic programs, we can expect that the work of the Sustainability Division will continue to evolve in years and decades to come.

The Sustainability Division manages the Household Hazardous Waste Program, which provides a convenient service for residents to safely dispose of hazardous material. 2019 was the City's most succesful year for this type of recovery, with 148,844 kg of material collected.

sustainability

Division Structure and Business Model

This section introduces who we are as a Division, including our structure, vision, mission, and operational goals, as well as the people who deliver our work. An overview of our value proposition, partners, beneficiaries, and financial structure is also provided to highlight the Division's business model.

Division Overview

The Sustainability Division was established within the Utilities & Environment Department on January 1, 2019. The Corporate Initiatives section moved to Planning and Development, while Recycling Operations was transitioned to Water and Waste Operations.

In alignment with the 2019 corporate transformation, the Sustainability Division refreshed its Vision, Mission, and Operational Goal (Figure 2) to better capture the role of the Division as an environmental leader in the community, and as a capacity builder to enhance sustainability skill-sets, perspectives, and peer-to-peer learning within the corporation. The Division has four core responsibilities: Climate Action, Green Infrastructure, Environmental Protection, and Community Outreach (Figure 3), which are guided by broader strategic documents such as the Low Emissions Community Plan, Corporate Adaptation Plan, the Green Infrastructure Strategy, and the Environmental Managment System.

Figure 2: Vision, Mission, and Operational Goal

Vision

Saskatoon is a sustainable community where every citizen and organization enjoys and prospers in a clean, healthy, resilient and regenerative city.

Mission

Our mission is to collaborate and support the City of Saskatoon to embed sustainability into all of our decisions and actions. It is to empower and enable the community to be stewards of sustainability.

Operational Goal

As a team, we achieve innovative, creative stewardship solutions through shared decision-making, research-based outcomes and empowerment of others.

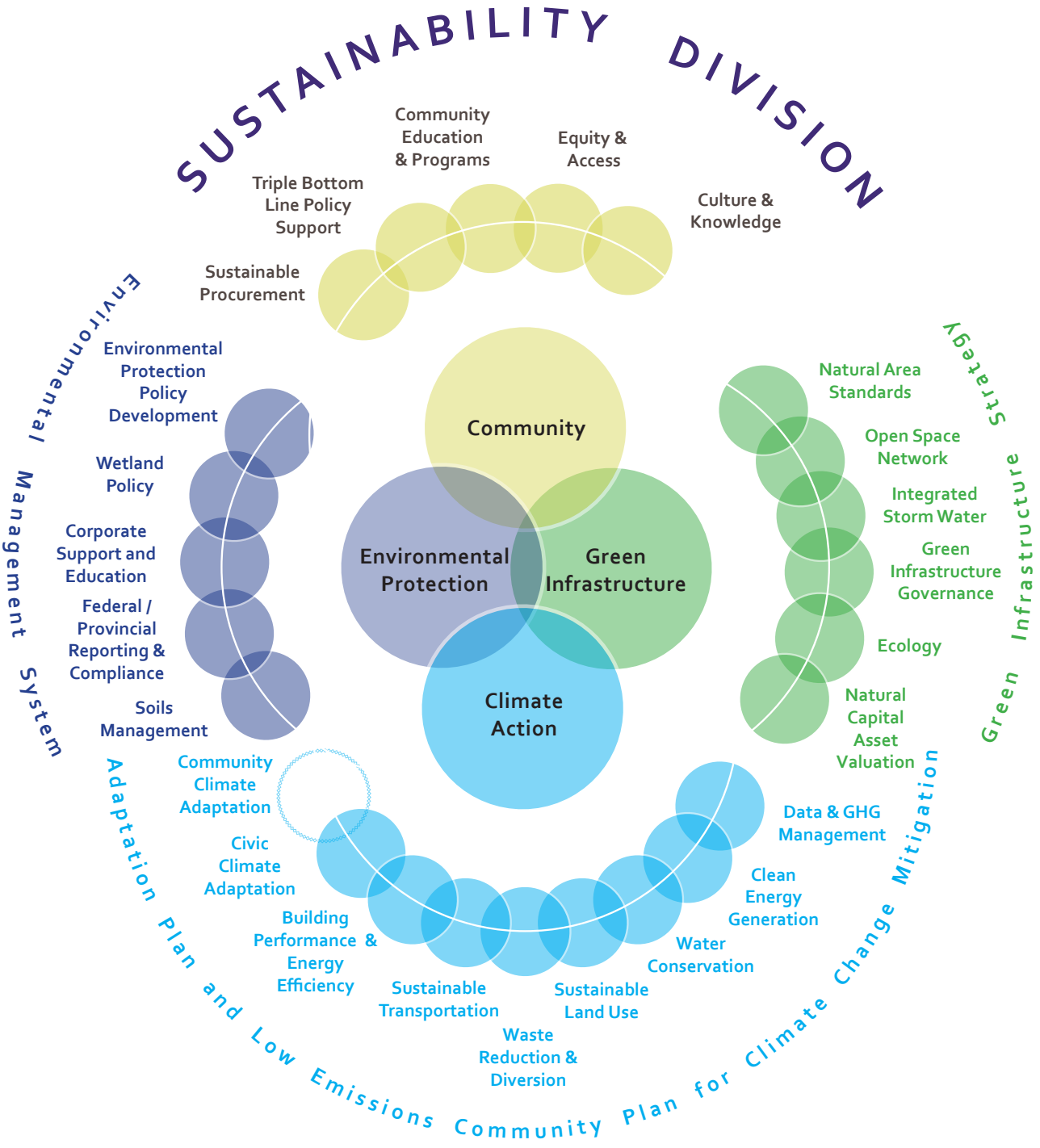


Figure 3: Four Responsibilities of Sustainability

The Sustainability Service Line was newly established in the *2020/2021 Operating and Capital Budget* and incorporates most of the Division's operating and capital spending. Corporate and community performance toward environmental goals is tracked on the City's Environmental Dashboard.

The Division leads and collaborates on initiatives with other civic departments and community partners to improve sustainability outcomes and protect the environment for the benefit of current and future residents. In some cases, The Sustainability Division provides a supporting role to other divisions (e.g. for emissions reporting, environmental compliance, building performance, business case development, and technical expertise), while in other cases, environmentally beneficial corporate work requires little to no resources from the Sustainability Division.

There are a number of major initiatives being led by other civic divisions that have the potential to have significant environmental impacts, such as corridor planning, urban forestry, and transportation mode-share projects. These initiatives represent just a few of many opportunities for collaboration to occur between the Sustainability Division and other divisions to enhance the environmental outcomes and sustainability co-benefits of the City's work. Other examples include the transfer of project management of Recovery Park and the Energy Performance Contract projects to Major Projects while still maintaining a valuable support role for the delivery of these important initiatives.

Approved in September 2019 and effective January 2020, the City's new Triple Bottom Line Council Policy requires that the City pursue "*a holistic approach to sustainability by embedding environmental, social, and economic considerations in the City's decision making processes*." While the Sustainability Division is currently providing support to operationalize the Policy, each City division is responsible for ensuring that sustainable co-benefits are planned into and achieved through corporate decision making and initiatives.

> Sustainability is the simultaneous pursuit of environmental health and integrity, social equity and cultural wellbeing, and economic prosperity and fiscal responsibility. Good governance is considered a key factor for the delivery, uptake, and success of sustainability outcomes.
>
> -City of Saskatoon Triple Bottom Line Council Policy

As sustainability outcomes and indicators increasingly inform our collective work plans throughout the Corporation, the Sustainability Division may need to revisit its scope, role, and structure, as well as adapt to the changing needs of the Corporation and community.

Our People

The Sustainability Division is made up of a diverse, interdisciplinary team dedicated to environmental leadership. Over the years, the team has shown itself to be effective in coming up with meaningful and innovative solutions, solving complex problems, conducting thorough research, and designing and implementing successful initiatives.

In 2019, the Division was comprised of 23-25 staff, of which 11 were permanent full-time equivalent (FTE) positions and two were vacant. Staff positions are housed in CUPE 59, SCMMA, and ESA. In 2020, 5.3 additional permanent FTEs are approved and will be used to prioritize transition of long-term temporary staff into permanent positions.

Staff are currently organized into four sections:

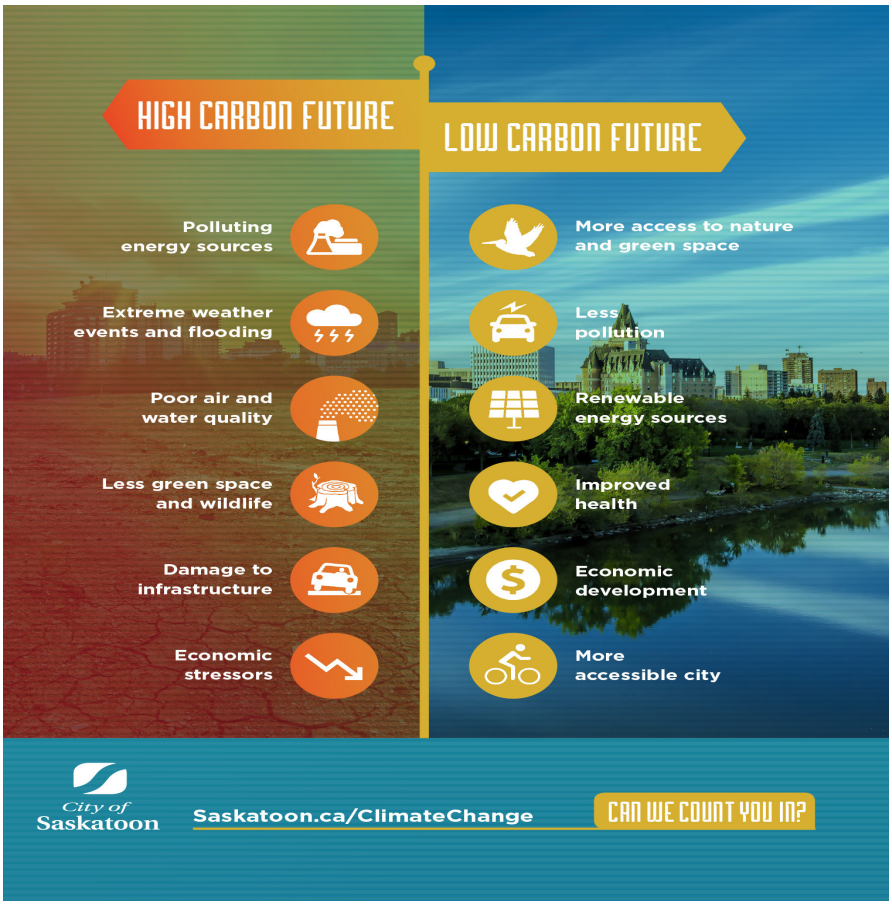
- Climate Change
- Energy and Sustainability Engineering
- Environmental Protection
- Education & Environmental Performance

The 2019 Organizational Chart can be found in Attachment 3, with the staff positions summarized below.

Figure 4: Staff Positions in December 2019

1 Director	**5** Environmental Coordinators	**1** Greenhouse Gas Controls Specialist
1 Secretary II	**4** Section Managers	**1** Soils Engineer
1 Project Geoscientist	**5** Special Projects Managers	**6** Project Engineers

The diversity of educational backgrounds and skillsets held by the team directly supports the unique work of the Division to provide solutions to complex issues and plan forward-thinking initiatives. Staff have achieved post-secondary degrees in Accounting, Architecture, Agriculture, Agrology, Biology, Commerce, Engineering, Environment & Sustainability, Fine Arts, Geography, History, Kinesiology, Landscape Architecture, Political Studies, Renewable Resource Management, and Human Ecology amongst others. A number of staff have graduate and/or professional degrees in their respective fields.



Financials and Value Proposition

Surveys conducted by the City (Attachment 2) have revealed that many citizens value environmental sustainability and recognize that sustainable initiatives often have notable social and economic benefits. Many residents expressed support for municipal spending to address climate change, especially when those activities support community, quality of life, and financial co-benefits.

In order to provide value to Saskatoon citizens, the Sustainability Division leads and supports work involving climate action, green infrastructure, environmental protection, and community leadership in ways that maximize environmental, social, and economic benefits for the city. The Division researches, plans, pilots, and operationalizes initiatives that are both scalable and effective, as well as provides support to other divisions so that they can do the same. The team is also dedicated to community education and engagement, and acts as a liaison with stakeholders specializing in sustainability-related fields.

The 2019 work plan for Sustainability was ambitious, with 15 reports being brought forward to Committee, notably:

- The Low Emissions Community report lays out a roadmap for greenhouse gas emissions reductions of 80% by 2050, in concert with significant co-benefits such as reduced operating costs, cleaner air, improved health outcomes, and support for green economy jobs.
- *Climate Projections and Possible Impacts* was Part One of the Local

Actions Adaptation Strategy. The report clearly described the predicted impacts of climate change on our region.

- Local Actions Part Two, the *Corporate Climate Adaptation Strategy*, outlined actions that the City can take to mitigate climate-related risks to our assets, staff, and services.
- The Brownfields Renewal Strategy promotes infill development and management of contaminated sites within key growth corridors of Saskatoon.
- The Energy Performance Contracting project is leading facility improvements valued at $36M through civic building energy retrofits. These activities are being carried out with financing sourced through the future energy savings and the civic building comprehensive maintenance (CBCM) reserve.

To carry out its work plan, the Sustainability Division was responsible for a 2019 operating budget valued at $4.5M (split between mill rate and utility). The Division also manages a $0 cost centre with approximately $4.6M in expenses that are recovered through cross charges. In 2019, the Division managed $31M in capital projects, with new 2020-21 capital projects totalling $5.83M. The majority of the capital projects have been historically funded from grants and the Reserve for Capital Expenditures, with no funding or reserve for environmental sustainability being in place.

The Sustainability Division is uniquely positioned to leverage funding earmarked for sustainability-focused work. Attachment 4 summarizes the grants obtained by the City of Saskatoon since 2002 to achieve environmental outcomes. These projects successfully obtained $3.15M in Federation of Canadian Municipalities (FCM) and Natural Resources Canada grants, $4.43M in FCM loans, and $387,360 in other grants to carry out projects valued at over $20M.

Not only is the City able to leverage the increasing number of funding opportunities that are earmarked for environmental sustainability, but the City has also enabled the community to deliver environmental projects and programs through its Environmental Grant. Since 2015, the Sustainability Division has awarded 34 environmental grants totaling $90,000, which has leveraged $659,315 in community initiatives.

Value for and by the municipality can be demonstrated much beyond the dollar. Value is also achieved through the environmental, social, and economic outcomes that benefit our corporation and the community. Research supports that dedicated action on climate change and the implementation of sustainable solutions can lead to a high quality of life, improved health and wellbeing, and a more resilient community.

Figure 5 captures further Sustainability Division initiatives that create value for the community and the City.

Figure 5

At a Glance: The Value of the Sustainability Division

Benefit	Description	Value
Leverage funding from external sources	The Division researches opportunities for external funding for environmental projects including the Federation of Canadian Municipalities, the National Research Council of Canada, and provincial utilities, amongst others. See Attachment 4 for details.	**$1,220,000** In federal grant funding for environmental initiatives in 2018-19
Support community led initiatives	The City's Environmental Grant supports community groups to carry out sustainability initiatives. In the last five years, 34 grants totalling $90,000 have been awarded, which have leveraged initiatives valued at $659,315. See Attachment 5 for details.	**$1 : $7.30** For every City dollar spent through the Environmental Grant program, $7.30 community dollars are leveraged
Facilitate asset improvements for operational savings and user satisfaction	The City's Energy Performance Contracting (EPC) project is leading facility improvements valued at $36M.[17] Completed "go early" projects have already led to upwards of $180,000 in annual savings, while the entire contemplated scope of work is estimated to result in over $1.1M in annual savings. EPC projects also reduce annual emissions, contribute to asset renewal, and provide facility comfort.	**$1,100,000** Projected savings per year resulting from EPC improvements
Save money through utility bill management	Sustainability manages utility bills for City operations through measurement and verification, budgeting, and utility consumption and cost analysis, which has led to $877,234 in savings since 2017. Sustainability also provides support for capital projects that involve energy management for energy baselining, measurement and verification, and expertise, which has resulted in $250,689 in savings since 2017.	**$1,128,000** Total cost savings to the City resulting from energy management for operations and capital project support[18]
Reduce costs through natural gas procurement	Sustainability manages natural gas contracts with a third party supplier allowing the City to obtain lower commodity charges through the natural gas market, implement hedging strategies, and obtain lower delivery charges.	**$2,016,000** Total cost savings to the City resulting from Natural Gas Supply Management[19]
Support a water system that is efficient & reliable	A Water Conservation Strategy is currently under development, which will identify strategies to achieve reductions and outline the financial implications for both our utility and water customers. Current water use is approximately 40 billion litres per year, meaning an 11% reduction would be equivalent to 4.4 billion litres of water per year.	**11% = 4.4 billion litres** Reduction in potable water use by 2025 proposed in the LEC Plan

17 Inclusive of PST and GST
18 from 2017 to Nov. 2019
19 Compared to SaskEnergy's posted rates, from 2015 to November 2019.

Benefit	Description	Value
Identify actions to mitigate & manage climate risks	Using scientifically generated climate scenarios and projections, Sustainability worked with other divisions to create a corporate climate adaptation plan to manage the increasing risk to the City from changing local weather conditions and the climate crisis.	**$1 : $6** Cost of preventative adaptation planning compared to costs of reactive measures
Extend the life of the landfill through waste reduction & diversion	In 2018, recycling and organics diversion resulted in 28,421 tonnes of waste diverted from the landfill, while residential garbage collection has decreased from 284 kg/capita in 2011 to 226 kg/capita in 2017. Further work on waste reduction is underway, including: planning and design for Recovery Park; Industrial, Commercial, and Institutional (ICI) recycling and organics; and the creation of a new Waste Reduction & Diversion Plan.	**18** Additional years of landfill life once the residential curbside organics program and the full build out of Recovery Park are in place[20]
Properly manage hazardous waste	The Household Hazardous Waste (HHW) Program provides a convenient service for residents to safely and responsibly dispose of hazardous materials. The 2019 HHW program saw seven of the largest events in the program's history with records set in participation (3,930 vehicles). Since 2015, the HHW program has received 540,024 kg (540 tonnes) of household hazardous waste from 15,369 residents.	**148,844kg** Amount of Household Hazardous Waste material collected in 2019 through the City's HHW program
Support environmental protection to improve safety and reduce risk	The Sustainability Division ensures that impacted soils on City properties are identified, and safely and effectively managed according to legislation by providing impacted soil expertise on environmental risks for City projects.	**16** Corporate initiatives accessed soil advisory services in 2019

20 Assumes that a "Status Quo" approach would include the same per capita residential waste disposal as 2019 and a population increase of 1.5% annually.

Benefit	Description	Value
Enhance the Green Network and support ecosystem regeneration	The Green Infrastructure Strategy uses research-based planning to inform work to safeguard and regenerate the environment and local ecosystems. The City – in collaboration with community partners – is planning to develop a contiguous network of high-quality public land to provide ecosystem services to citizens and support the region's natural systems.	**600+** Stakeholders informed the development of the Green Infrastructure Strategy in 2019
Align GHG reduction targets with other municipalities	The City is a signatory of the Covenant of Mayors for Climate and Energy and has aligned its greenhouse gas reduction targets with those of over 10,000 cities and local governments from around the world.	**80% by 2050** The City's corporate and community GHG emission reduction target
Manage costs through dedicated climate mitigation actions	The Low Emissions Community (LEC) plan identifies multiple co-benefits associated with dedicated action to reduce greenhouse gas emissions and address climate change.	**$5.7B** Estimated return on City investments by achieving low emissions and meeting GHG reduction targets by 2050
Collaborate with corporate and community partners	The Sustainability Division recognizes that collaboration with internal and external partners is key to effectively and successfully implementing its work plan and mandate. See Attachment 6 for details.	**30+** External organizations the Sustainability Division partnered or collaborated with in 2019
Build capacity in our youth	The Student Action for a Sustainable Future program engages with students each year in action projects that result in measurable environmental improvements in the areas of waste, water, energy, food, biodiversity and transportation.	**300** Grade 5-8 Students directly engaged in environmental action projects each year

The Climate Action plan includes strategies that address the causes of climate change as well as initiatives to plan for its effects. The benefits of proactive planning include reduced costs over business as planned, improved air and water quality, and better health and well-being for Saskatoon's citizens.

Outcomes and Beneficiaries

More often than not, discussions around climate change, biodiversity and environmental protection focus on how global actions result in global benefits, which can be a challenge to understand and translate into local outcomes and impacts. However, the current and future work of the Sustainability Division has multiple local beneficiaries, some of which are outlined below.

Action	Beneficial Outcomes	Beneficiaries
Climate Action Plan (includes actions from the *Low Emissions Community Plan* and *Corporate Climate Adaptation Strategy*)	• Human health and wellbeing • Improved air quality • Risk mitigation and preparedness • Lower utility bills	• Residents • ICI sector • Energy, building, and transportation industry • Community organizations
Energy Performance Contracting (EPC)	• Improved building performance • Lower operating costs • Asset renewal and system modernization • Healthy, comfortable indoor environments • GHG emission reductions	• Civic employees • Contractors • Visitors and users of civic facilities
Waste reduction	• Extend the life of the landfill • Cleaner community • Protection of our environment, river and wildlife • GHG emission reductions	• Single and multi-family households • ICI waste generators • Waste industry • Civic employees • Wildlife
Green Infrastructure and Environmental Protection	• Recreational and educational opportunities • Flood prevention and mitigation • Improved water quality • Increased green space & natural areas in and around Saskatoon • Urban agriculture opportunities • Regulatory compliance for environmental protection • Tourism	• Residents • Regional partners • Educators • Community organizations • Civic employees • Contractors • Wildlife

When planning and implementing our work, it will be important to apply an equity lens to initiatives and to work with internal and external partners. Multiple jurisdictions are starting to design their sustainability programs to simultaneously achieve environmental and equity benefits. For example, energy efficiency programs and building improvement incentives can be designed to help low-to-moderate income households reduce their energy costs; water conservation initiatives can directly lower monthly bills; and electric vehicle and renewable energy programs can be re-thought to become more inclusive and accessible. A goal of our Division is to consider ways that our work can help address persistent inequities, rising affordability issues, high rates of energy poverty, and the disproportionate energy burdens experienced by certain households.

Awards

The City of Saskatoon's Sustainability initiatives have been recognized by multiple community awards programs.

In 2013, the Student Action for a Sustainable Future (SASF) program was awarded the Saskatchewan Waste Minimization Award and also recognized by the Regional Centre of Expertise for Education for Sustainable Development. The SASF has been featured by the Global Environmental Education Partnership as a Case Study for global leadership in environmental education.

The Rolling Education Unit, which provides hands-on, interactive waste management education, received recognition by the Regional Centre of Expertise for Education for Sustainable Development in 2016.

At the 2015 Rob Dumont Energy Management (RDEM) Awards, the City's investments and leadership in renewable and alternative energy was recognized, including: the solar thermal heating systems at Lawson Civic Centre and Harry Bailey Aquatic Centre swimming pools to offset natural gas use; and the Combined Heat and Power units at Lakewood Civic Centre and Shaw Centre that use natural gas to generate electricity, and use that same natural gas to heat the pools. In 2019, the Low Emissions Community Plan was nominated for a RDEM Award in the Leadership category.

The City received two Nature City Awards nominations in 2017 in the Community Initiatives category for the Winter City Strategy and the Healthy Yards initiative.

Healthy Yards is a program led by the Sustainability Division in collaboration with neighbourhood partners such as the University of Saskatchewan, Saskatchewan Waste Reduction Council and Saskatoon Food Bank and Learning Centre. The program provides information for the community on home composting, water conservation and pesticide reduction.

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2019 Work Summary

The detailed work of the Sustainability Division is carried out by four sections: Climate Change, Energy and Sustainability Engineering, Environmental Protection, and Education and Environmental Performance. The following chapter provides further details on the financials and key deliverables of each section in 2019.

Climate Change Section

The purpose of the Climate Change section is to enable a sustainable Saskatoon though an integrated and actionable climate change approach. The section's vision is to make Saskatoon a connected community where every citizen and organization takes pride in prosperous, resilient and low-carbon solutions to realize a clean and healthy city.

The section manages broad corporate strategies which define, manage, and mitigate climate change. The section provides GHG management support for the City in order to manage GHG accounting, reporting, risk, and mitigation support.

Total Operating in 2019: $150,000

Cost Center	2019 Budget	Funding Source
01-781: Environmental Accounting	$150,000	Mill rate

Total Capital in 2019: $2,181,000

Cost Center	Capital Funding to Date	Funding Source
P2183: GHG Reduction	$1,560,000	Reserve for Capital Expenditures, FCM, and Federal Government
P2538: Natural Capital Asset Valuation	$157,000	Reserve for Capital Expenditures (budget includes $125,000 of committed FCM funds, expected in 2020)
P2539: Climate Change Mitigation Business Plan	$257,000	Reserve for Capital Expenditures, FCM, and CP - Capital Reserve
P2598: Climate Adaptation	$207,000	Reserve for Capital Expenditures, CP - Capital Reserve, and FCM (budget includes $125,000 of committed FCM funds, expected in 2020)

Engaging youth within Saskatoon's community is key for successful climate action. Here, Sustainability's Amber Weckworth is describing the Low Emissions Community Plan to high school students participating in a forum in their Fall 2019 term.

2019 Key Deliverables - Climate Change

The Climate Change section developed the *Low Emissions Community Plan* and the *Corporate Climate Adaptation Strategy*. This section leads GHG emission management and conducts monitoring and annual reporting on community and City emissions.

Area	Deliverable
Climate Action Plan: **Low Emissions Community and Corporate Adaptation Strategy**	• *Low Emissions Community Plan*. • LEC Plan Stakeholder Engagement (phase 1) and Partnership Opportunities Report. • Prepared budget requests and business cases related to emissions reduction and adaptation work (8 business cases were created, 4 of which were included in budget deliberations). • Co-reporting, research, and management of Net Metering stakeholder feedback for Saskatoon Light and Power. • *Climate Projections and Possible Impacts* report (April 2019). • *Corporate Climate Adaptation Strategy* report (December 2019).
GHG Emissions Management	• Inventory of community and corporate greenhouse gas emissions – 2016 and 2017 inventories completed and verified. • Reported to the Carbon Disclosure Project, Global Covenant of Mayors, National Climate League, and ICLEI.
Support for Other Divisions	• GHG calculations for other divisions upon request (either for administrative reports or reviews for capital projects). • Net-Metering report support and stakeholder feedback. • Financing Sustainability Report - support.

Energy and Sustainability Engineering Section

The purpose of the Energy and Sustainability Engineering section is to provide support, project management, and subject matter expertise in areas such as building performance, energy efficiency, clean energy and fuels, and waste diversion.

Specifically, the section focuses on:

- Energy and performance management, including: utility management; natural gas procurement; energy audits; utility, budget and variance reporting for facilities; and facility metering and performance monitoring;
- Energy and sustainability engineering, including: project management; project development; design and management of pilot projects; policy development and review; research; technical greenhouse gas calculations; expertise and research on renewable and alternate energy systems; and measurement and analysis of sustainability metrics;
- Procurement and management of consultants;
- Waste diversion engineering, including: optimization of composting operations; researching best practices; national solid waste benchmarking research and analysis; technical support for waste diversion program decision making; technical contributions to waste diversion studies and plans; capital project planning for transfer stations/Recovery Park; greenhouse gas emissions calculations; and
- Business Case development, operational cost estimates, process improvements, grant applications, and contract management.

Total Operating in 2019: $295,100

Cost Center	2019 Budget	Funding Source
01-775: Energy Recovery	$295,100	Mill Rate
01-462: Energy Management	$0	Cost Recovery from City Divisions ($4,696,600)

Total Capital in 2019: $22,009,000

Cost Center: P2568 – Civic Facility Energy & Water Monitoring	Capital Funding to Date	Funding Source
17-900: Energy and Water Monitoring	$109,000	Mill Rate and Grant Reallocation
17-901: Energy Efficiency Improvements for Civic Facilities	$1,300,000	Productivity Improvement Loan and Grants from Natural Resources Canada and SaskEnergy
17-903: Energy Performance Contracting	$600,000	Green Loan
17-907: Energy Performance Contracting Design	$20,000,000	Approved internal borrowing

2019 Key Deliverables - Energy and Sustainability Engineering

In 2019, the Energy & Sustainability Engineering team commenced the Energy Performance Contracting work for civic facility retrofits, led procurement of a 4-year natural gas contract, and continued as an energy manager for numerous city facilities.

Area	Deliverable
Energy Performance Contract (EPC)	• Completed "go early" projects for the Energy Performance Contract (EPC) work. • Formalized processes with Corporate Financial Services for the management of the project's internal loan / line of credit. • Completed review of the 90% Feasibility Study for Phase 3 (approx. 35 buildings). • Obtained approval for the contract value and blended project budget.
Natural Gas Procurement	• Awarded a 4-year natural gas supply contract for small and large natural gas meters. • Formalized a natural gas hedging strategy.
Renewable Energy	• Administrative Report: Facilitating Solar Energy Opportunities (drafted in 2019, report may proceed in 2020).
High Performance Buildings	• Supported Fire Hall 5 capital project planning.
Energy and Performance Management	• Analyzed budgeting for spray pads. • Supported the City's annual GHG inventory. • Adjusted energy management cross-charges to better distribute actual utility usage. • Designed a pump retrofit to improve operations at the Lakewood civic centre. • Conducted a major overhaul of the Shaw Centre Combined Heat and Power (CHP) unit and made minor repairs to the Lakewood CHP unit. • Met with Natural Resources Canada / CANMET to understand the potential benefits of using RETSCreen.
Water Efficiency	• Completed the Civic Water Revenue Loss Audit and Mitigation project Phase 1.
Waste Diversion Engineering	• Contributed to the curbside residential organics program, including Council report, technical analysis support, and processing RFP. • Contributed to the preparation of the Recovery Park project. • 2019 Administrative Reports (support/contributor): Curbside Waste and Organics Program Status, Curbside Organics and Waste Funding Options, and Additional Information on Curbside Organics.

Environmental Protection Section

The purpose of the Environmental Protection section is to safeguard our community from the impacts of pollution by preserving the quality of our water, soil, and air—now and for future generations.

Specifically, the section focuses on:

- Ensuring the City plans for and complies with changing federal and provincial environmental regulations;
- Monitoring best practices in managing risks that have environmental implications, and incorporating better-practice approaches into civic operations through planning, policy, and initiatives;
- Building environmental protection capacity of civic staff through education and collaboration; and
- Reducing corporate risk, improving civic management of environmental assets, and promoting consistency in the city's approach to environmental issues.

Total Operating in 2019: $347,500

Cost Center	2019 Budget	Funding Source
02-400: Water Initiatives	$198,700	Water Utility
03-500: Waste Water Initiatives	$148,800	Wastewater Utility

Total Capital in 2019: $3,480,100

Cost Center	Capital Funding to Date	Funding Source
P1975: Corporate Wide Environmental Management System	$80,000	Corporate Projects Capital Reserve
P2263: Watershed Initiatives	$675,000	Water & Sewer Infrastructure Reserve
P2264: Sewer Baseline	$510,000	Water & Sewer Infrastructure Reserve
P2279: Sewer Bylaw	$1,400,000	Water & Sewer Infrastructure Reserve
P2390: Green Infrastructure	$565,000	Reserve for Capital Expenditure Water & Sewer Infrastructure Reserve CY Capital Reserve
Brownfields Renewal Strategy	84,600	Corridor Planning Program (PTIFF)
	$103,000	FCM Grants
P4G Green Network Refinement Phase I	$62,500	North Partnership for Growth

2019 Key Deliverables - Environmental Protection

The section provided advice and corporate support for impacted soils management, Wetlands Policy implementation, and general regulatory compliance. Contractor Environmental Guidelines were piloted in 2019 and the Green Infrastructure Strategy prepared for presentation to Council in Q1 2020.

Area	Deleverable
Corporate Support Services	• Soil advisory services for 16 corporate initiatives for on compliance with provincial regulations. • Advice for 60 initiatives on compliance with the City's Wetland Policy • Supported in the creation of protocols for Natural Area Screenings
Public Education	• Supported the development of public education programs: Irritable Sewer System, Sanitary Sewer Education and Bird Friendly Yards • Supported the delivery of Trout Unlimited Canada's Yellow Fish Road™ program, where 400 teachers and students painted 504 storm drains painted with a yellow fish and "rain only" signage
Corporate Training	• Published and piloted the Contractor Environmental Guidelines and Environmental Management Plan Quick Reference Guide • Developed training for Construction & Design and Parks field staff
Environmental Records Searches	• Coordinated 72 corporate-wide Environmental Search Requests
Civic Regulatory Reporting	• Acted as the City's account administrator for federal and provincial web-based reporting, including: o Federal: Environment Canada's Single Window Information Management System: G reenhouse Gas Reporting Program; National Pollutant Release Inventory; and Wastewater Effluent System Regulation o Provincial: Ministry of Environment Online Portal
Green Network	• Completed the draft Green Infrastructure Strategy • Supported the development of the Urban Forestry Management Plan • Supported the development of the Natural Area Standards • Worked with Meewasin to develop a proposed framework for future collaboration between the City and Meewasin on the Green Network • Completed a Natural Areas Inventory to inform the Green Infrastructure Strategy • Performed a desktop Natural Area Screening for the P4G regional partners to assist with Green Network Refinement Stage 1
Brownfield Renewal Strategy	• Completed work with Dillon Consulting on the Brownfield Inventory and targeted assessments at proposed bus rapid transit station locations. Work also included creation of a Scoring Tool to evaluate brownfield development potential and an *Incentive Program Recommendations Report* • Completed engagement on potential brownfield renewal incentives • Proposed a framework for future work on the Brownfields Renewal Strategy (approved by Council in June 2019)

Education and Environmental Performance Section

The purpose of the Education and Environmental Performance section is to improve the environmental performance of city (both the community and corporation) by: developing environmental strategies, programs, and policies; operating environmental and educational programs; reporting on environmental outcomes; and providing research, support, and training.

Total Operating in 2019: $3,687,500

Cost Center	2019 Budget	Funding Source
01-777: Environmental Awareness	$500,400	Mill Rate
01-778: Waste Recovery	$220,000	Mill Rate
08-100: Curbside Recycling Operations*	$1,898,100	Recycling Utility
08-200: Multi-Unit Recycling Oper-atiions*	$1,069,000	Recycling Utility

* Sustainability managed the recycling programs for the first 5 months of 2019 and then programs and budgets were transitioned to Water and Waste Operations

Total Capital in 2019: $3,008,000

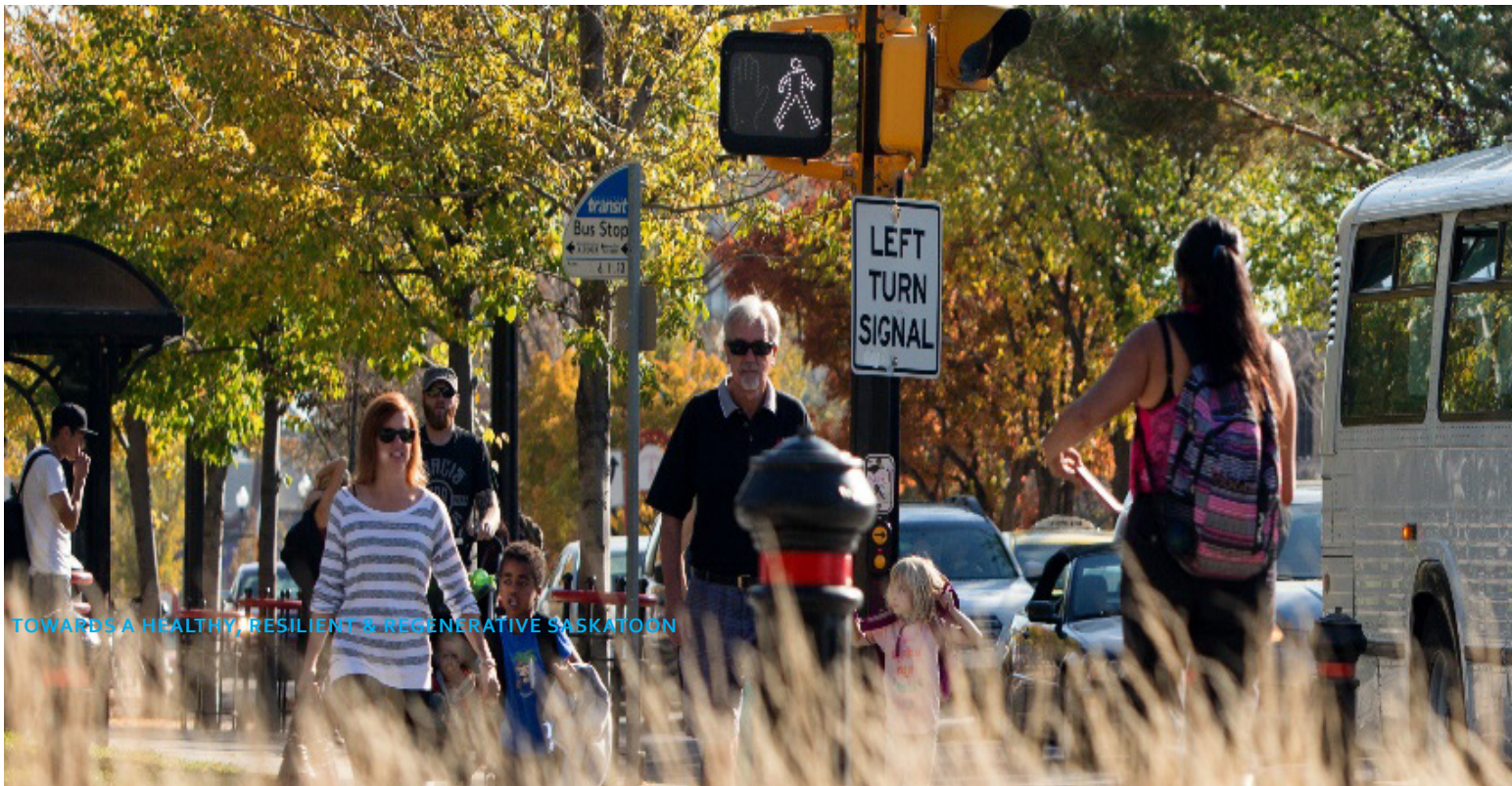
Cost Center	Capital Funding to Date	Funding Source
P2184: Waste Characterization Study	$1,060,000	Landfill Replacement Reserve and Waste Minimization Reserve
P2197: Water Conservation Initiative	$1,830,000	Waterworks Capital Project Reserve
P2518: Public Space Recycling	$118,000	Reserve for Capital Expenditures

Research and community engagement are critical for crafting options and recommendations for complex issues associated with enviromental sustainability. Once gathered, analysis and synthesis of what can be an overwhelming amount of information is required. Here, Katie Burns is preparing a session for the team who will review waste reduction options using a "Choosing by Advantages" decision-making model.

2019 Key Deliverables - Education and Environmental Performance

Area	Deleverable
Waste Reduction	• Completed the *Industrial, Commercial, and Institutional Waste Diversion Strategy* including engagement. • Led Multi-unit Waste Diversion engagement and strategy development. • Finalized the *Leading by Example Waste Diversion Strategy* and inventory. • Participated on the Saskatchewan Waste Reduction Council Board. • Conducted a Single Use Item Reduction Study with Johnson Shoyama School of Public Policy. • Completed the draft *Waste Reduction Plan* (March 2020 report) and *Waste Diversion Plan Update*. • Completed City-wide Waste Characterization. • Continued the Household Hazardous Waste program. • Operationalized and transitioned residential recycling services. • Conducted research for the Bottled Water at Civic Facilities report. • Supported the Curbside Organics program preparation and reporting. • Provided recycling in parks and public spaces.
Corporate Support	• Supported the development of the *Triple Bottom Line Council Policy* and completed the *Triple Bottom Line Decision Making Tool*.
Community Education	• Continued the Healthy Yards, Outdoor Water Conservation, and Compost Coach programs. • Continued the Student Action for Sustainable Future program. • Led recycling education programs, including: Rolling Education Unit, Cart Blitz, Newcomer program, Education Rooms, Waste Guide, Waste and Recycling calendar, app, and Waste Wizard, and Curbside Swap. • Continued to lead the Environmental Community Grant program.
Water Conservation	• Completed a draft *Water Conservation Strategy* and engagement plan.
Data Management and Reporting	• Published the 2018 *Integrated Waste Management Report*. • Participated in National Solid Waste Benchmarking Initiative Reporting. • Conducted the biennial Waste and Recycling Awareness Surveys (residential and ICI). • Made reporting enhancements to the City's Environmental Dashboard.

The Sustainability Division collaborates with other divisions in order to support Council's Strategic priorities and the Low Emission Community roadmap. Alternate transportation, such as cycling and transit figure prominently in the Plan.



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Influences on 2020-2021 Division Planning

New leadership within the Sustainability Division and Utilities & Environment Department has provided an opportunity to revisit the approach to the Division's work and operations while working toward implementation of Council's 2018-2021 Strategic Goals.

This work has been influenced by the context of increasing awareness of the global climate crisis, a better understanding of the impacts of global heating on Saskatoon and emissions target status, development of a new Official Community Plan, formative reports and council direction, and strategic corporate processes. This chapter outlines some of the key drivers that are influencing the planning and proposed operationalization of work for 2020-2021.

Increasing Awareness and a Sense of Environmental Urgency

2019 has seen unprecedented community actions and media coverage of environmental issues around the climate crisis and habitat loss, emphasizing that issues around sustainability are rapidly growing and of increasing importance. Not only did the environment become a top election issue across Canada this year, but it's also an area of concern for residents locally. For some, action on climate change, pollution, and environmental protection comes with a sense of urgency, while for others it looms in the not so distant future. And while the rising costs of living and doing business are a shared concern, delaying action could lead to even greater costs than making dedicated financial investments today. Waiting also comes at greater risk, as both the science behind and impacts of climate change are increasingly signalling a need for dedicated, urgent action to prevent further harm to humans, wildlife, and ecosystems.

Our research has shown that, for the most part, the community is aware of this urgency and expects the municipality to prioritize actions. Planning and work for 2020-2021 will respond to the expectation that timely progress is needed

to efficiently and effectively execute direction from Council and achieve City targets. The text that follows includes some of the strategic foundations that are influencing how this work is further defined, organized, and resourced, as well as systems and structures that will be utilized to implement the work.

A Better Understanding of the Impacts of Global Heating on Saskatoon and Emissions Target Status

Consistent with the City's Strategic Goal of Environmental Leadership, the City signed an agreement with the Global Covenant of Mayors for Climate and Energy in November 2015. In signing the agreement, the City committed to:

...implement policies and undertake measures to (i) reduce / avoid greenhouse gas (GHG) emissions, (ii) prepare for the impacts of climate change, (iii) increase access to sustainable energy, and (iv) track progress toward these objectives. [21]

Specifically, within three years, the commitment pledges to develop, adopt, use and regularly report on the following:

- A community-scale GHG emission inventory, following the recommended guidance;
- An assessment of climate risks and vulnerabilities;
- Ambitious, measurable and time-bound target(s) to reduce/avoid GHG emissions;
- Ambitious climate change adaptation vision and goals, based on quantified scientific evidence when possible, to increase local resilience to climate change;
- An ambitious and just goal to improve access to secure, sustainable and affordable energy; and
- A formally adopted plan(s) addressing climate change mitigation / low emission development, climate resilience and adaptation, and access to sustainable energy.

In 2018, Price Waterhouse Cooper's (PwC) *City of Saskatoon CO_2 Reduction Initiatives Report* examined two risks relevant to the role of Environmental Leadership and Climate Change:

- *EL-2: The City's community education and awareness initiatives regarding carbon footprint may not me affecting climate change and people's behaviors.*
- *EL-3: The City may fail to identify and pursue corporate CO2 reduction initiatives.*

The status of the PwC report is included in Attachment 7 and shows, that of the six PwC actions, two have been fully completed this year and the remaining four are in progress. The PwC Actions that involve the creation of a Marginal Abatement Cost (MAC) curve specific for Saskatoon and development of a realistic emissions strategy with reasonable targets have been completed with the creation of the *LEC Plan*. The four remaining actions are also consistent with LEC Actions.

21 Appendix C: Proposed New Global Committed Letter, GCOM-Commitment Template

Completion of the *Low Emissions Community (LEC) Plan* and the *Corporate Climate Adaptation Strategy* in 2019 provides a better understanding of global heating projections for Saskatoon, including impacts and costs under a business as planned scenario. The *LEC Plan* proposes a roadmap for reducing corporate and community GHG emissions by 80% by 2050. Completion of the *LEC Plan* and the *Corporate Climate Adaptation Strategy* has significant impact on the trajectory of work for the Sustainability Division and the corporation.

The *LEC Plan* roadmap of 40 actions impacts work across multiple sectors, such as buildings, energy, transportation, water, and waste. With Council's permission to continue LEC work and approved capital funding in 2020-2021, City Administration will be able to make progress on plan implementation, which will include involving the community in realising some of the short-term goals, as well as focusing on business case development for the next priority actions. The success of the plan lies in the ability of the City and the community to implement all of the actions and follow the timing laid out in the roadmap. With dedicated action, corporate targets of 40% emissions reductions by 2023 can be met. However, community reductions are expected to fall short of the 15% target by 2023, instead meeting this target by 2027. It is not yet possible to determine whether an 80% reduction in community and corporate emissions by 2050 will be met.

Renewable energy is an important component of Saskatoon's Low Emissions future. Sustainability has been closely involved in a number of these initiatives, including combined heat and power at City facilities, solar opportunities and landfill gas.

The *Corporate Climate Adaptation Strategy* was received for information by City Council in December 2019. It outlines corporate actions and initiatives for resiliency in four areas, including corporate decision-making, staff, services and assets. Implementation of the prioritized actions in the corporate plan is not part of the Sustainability funded work occurring in 2020-2021. A community adaptation plan is included as a part of the global commitment, but it is not planned and resourced for 2020-2021.

Official Community Plan

In 2020, the Community Services Department will launch a refreshed City of Saskatoon Official Community Plan (OCP), which will include a new section on 'The Environment'. Generally speaking, OCPs describe the long-term vision of communities:

> *"They are a statement of objectives and policies that guide decisions on municipal and regional district planning and land use management. These decisions impact communities' sustainability and resilience.*[22]

The content of the OCP impacts the Sustainability Division and the corporation as a whole. After the adoption of the new OCP, all bylaws or works undertaken by the City must be consistent with the Plan. The new OCP differs significantly from the previous version, in that it lays out areas of responsibility for the corporation and makes specific reference to the environment. It conceptualizes a corporate environmental strategy and mandates that Sustainability will both lead and share responsibility with other teams across the City, including Saskatoon Water, Saskatoon Light & Power, Water & Waste Operations, Community Planning, Facilities, and Urban Forestry.

Saskatoon's draft OCP section on 'The Environment' includes six sections with the following subtopics:

1. Environmental Protection: Environmental Stewardship, Water, Air, and Land.
2. Natural Systems: Integration with the Urban Environment, Asset Management, Integrated Storm Water Management, Wetlands and Conservation Management, Conservation of Natural Areas, Riverbank Stewardship, and Urban Forestry.
3. Energy: Energy Conservation and Efficiency, Renewable Energy, and Sustainable Buildings.
4. Waste Management: Reduction, Recovery, and Residual Waste.
5. Climate: Mitigation and Adaptation.
6. Community Leadership: Shared Stewardship and Community Programs.

The areas of environmental responsibility broadly outlined in the draft OCP have helped inform the roles, responsibilities, and re-organization of the Sustainability Division for 2020-2021. For example, the Division is: formalizing and enhancing its structure for the Environmental Protection staff to support the OCP's Environmental Protection and Natural Systems oversight; maintaining a strong Energy and Sustainability Engineering Section; renewing and aligning resources for community education and support; and continuing the significant efforts that were demonstrated in 2019 on climate action and waste reduction planning.

The new Official Community Plan includes sections on both environmental protection and natural systems, which will help to guide sustainable decision-making on planning and land-use management in Saskatoon.

22 Retrieved 2019-11-20: https://www2.gov.bc.ca/gov/content/governments/local-governments/planning-land-use/local-government-planning/official-community-plans

Direction through Recent and Anticipated Reports

The definition of corporate sustainability continues to evolve as work is planned, refined, and delivered in areas such as climate action, environmental management, and green infrastructure. To this end, the role of the Sustainability Division as a corporate support and facilitator will develop and respond over time to new reports, policies, and goals.

Some significant Council decisions were made in 2019 that set a course for the work of the Sustainability Division—and other divisions—for 2020 onwards. *The Triple Bottom Line (TBL) Report* presented to City Council in Q3 of 2019 put forward a Council Policy and City decision making process based on four principles: e nvironmental health and integrity, social equity and cultural wellbeing, economic prosperity and fiscal responsibility, and good governance. With the policy and decision making tool coming into effect in 2020, this will start to guide corporate decisions by directing that a "sustainability lens" be applied to City initiatives.

Other significant reports that will impact the scope and work plan of the Division and point to significant new program opportunities, include the *Waste Reduction Plan, Green Infrastructure Strategy*, *ICI Waste Diversion*, and *Water Conservation Strategy*.

Each of these reports (and corresponding strategies, policies, and actions) closely examine our city's context around specific environmental issues. They were developed based on research and best practice, and identify short-, medium-, and long-term actions necessary to prepare for change. Not only will these reports help coordinate efforts across the corporation, but resourcing needs and deliverables are likely to be better managed and understood due to the clarity and direction these reports provide.

Strategic Corporate Business Practices

Corporate development of the Strategy and Transformation Office (STO) has enabled access to additional tools and opportunities for improvement and efficiency of the Sustainability Division. Effective use of these tools can improve the delivery of the Sustainability program by helping us to work *smarter*. For example, Process Improvement Coordinators have demonstrated benefits through process mapping, business case development, design thinking, and other measures which have been or could be utilized by this team. Project management (PM) tools and the PM Community of Practice have also provided immeasurable benefit to the Division, and further planning is underway to develop a team of professional project managers who can work effectively across the Division, mentor staff on PM best practice, and provide an enhanced level of project controls and oversight.

Development of Portfolio Management best practices by the STO also highlights opportunities for Sustainability to adopt its principles for successful implementation of initiatives. In gathering and analyzing data on sustainability initiatives for this report, the findings show that the Division / Branch has taken on dozens of initiatives since the Environmental Protection Branch was created in 2004. Some of these initiatives have successfully evolved into programs and others into completed projects. In some instances, programs have graduated and moved to other Divisions for ongoing operations, such as the curbside recycling program which was transitioned to Water and Waste Operations in 2019. On the other hand, one can also see that other projects were not completed or operationalized at scale. There are a host of initiatives that were proposed (sometimes multiple times) but not operationalized. In some cases, initiatives were initiated, studied, or piloted, but did not proceed past that point. At the time of preparing this report, it is not fully understood why these initiatives did not proceed to implementation at scale, only that multiple examples exist.

Incorporating principles of Portfolio Management into the work of the Sustainability Division can help to better determine the viability and business case of initiatives before they move forward for consideration by Council. Because of the perception of climate urgency, coupled with financial limitations and scrutiny, projects should be vetted with criteria for their ability to be scalable and likelihood to be delivered within a determined timeframe. There is an opportunity to more efficiently manage workloads and resources by considering project and program implementation at scale from the outset.

A variety of climate concerns have been communicated, indicating a need to work closely with many groups, and across ages and gender to tailor programs and education to specific communities rather than a one-size-fits-all approach.

The STO is also providing support for the development of continuous Quality Management Systems (cQMS), which could be invaluable for Sustainability. Fortunately, much of our administrative work practices are already in alignment with corporate practices. Some of the new, emerging, or evolving initiatives, which are unique offerings by Sustainability to the Corporation, require formalization or improvement. For example, operationalization of the *Triple Bottom Line Policy* requires process development in order to support corporate delivery of the new policy. Some of this work involves processes for intake, support, and governance. Furthermore, when the *Wetlands Policy* was implemented in 2013, processes and resources were not formalized. The Environmental Protection section has been supporting the implementation of this policy in an ad hoc manner, but further work is required to formalize resources, work requests, tracking, and accountability. The management of greenhouse gas tracking and reporting has also become a relatively new corporate responsibility, which is being led by Sustainability. With resources secured in 2019 and the *LEC Plan* moving forward, work to systematize the GHG accounting and reporting structures, as well as support the measurement of GHG impacts by other Divisions, will be operationalized through 2020-2021. The *High Performance Civic Building Policy* will also need to be operationalized and supported after it is completed.

Building Partnerships and Co-Designing Change

The work led and facilitated by the Sustainability Division depends on a model of collaboration with both the community and other civic divisions.

Community engagement standards for the City were enhanced in 2019 through a new Engagement Policy. The Division has traditionally collaborated with numerous partnersand stakeholders (some of which are listed in Attachment 6). Due to the diverse nature of sustainability work, partnerships can take many forms and vary in governance structures, including public sector agencies, community-based organizations, and businesses. Working side-by-side, we seek to leverage the unique advantages of each partner in ways that produce mutual value. A goal of this collaborative model is to make our work more accessible when compared to traditional government services. We look for community partnerships which may offer something unique to our division or the delivery of an initiative or service, with an opportunity to foster innovation, experimentation, or scale that may not be possible within the scope of our own municipal work.

Corporate collaboration and internal partnerships will become increasingly important in 2020, especially as Sustainability further develops its City support role for Triple Bottom Line assessments, business case development, funding research, Project Management support, GHG emission impacts, and new and existing Environmental Protection services. The Division will also support and monitor initiatives relating to the *LEC Plan* and work directly with other divisions such as Saskatoon Transit, Saskatoon Water, Fleet, Facilities, Planning, SL&P, and Finance. In addition to strategic supports, Sustainability will also continue to lead and support initiatives within other divisions.

Collaboration ensures that the broadest scope of co-benefits can be explored for each initiative. Increasingly, best practices in sustainability are defined not just by their GHG or environmental impact, but by their approach to equity. The demographic results of recent Surveys conducted by Sustainability point to a variety of climate-change concerns across age, gender, and income – indicat-

ing a likely need to use different tactics and educational approaches to create programs that are tailored to specific audiences in our community. Best practice program design seeks to enhance program access first for those most in need and to not leave anyone behind. For these reasons, applying a deeper focus on Triple Bottom Line, Reconciliation, and social equity has been identified as a priority for the Sustainability Division going forward.

A Culture of Leading by Example

Over the years, our team has developed and encouraged a culture of sustainability and well-being in the workplace and beyond. Many staff are involved in volunteer and community initiatives outside of work that support environmental, social, and/or economic benefits. As a goal for collaboration and to model a way forward, Sustainability will continue to lead by example.

Where possible, Sustainability staff have taken part in environmental behaviours to better understand how they work prior to promoting the initiative to the City or the community on a broader scale. For example, in trying to "walk the walk," a large number of Sustainability staff walk, bike, or bus for their daily commute to work. Where it makes sense, the Division has operationalized and encouraged options for work travel using active or public transportation options, including office bus passes for worktime use. This has resulted in lower operating costs for the Division and reduced corporate parking resources used by the team, including the Director.

Waste has been at the forefront of the work of the Division from the outset. Our team ensures that we recycle properly and showcase responsible waste diversion practices. Some members of the team started an office composting pilot at Civic Square East, which has now taken root as an established 4th Floor Lunch Room practice. The approach has also been taken up by other work groups at the City. These lessons learned will be applied to the roll-out of organics collection across the City, once it is ready to be operationalized.

The strategic direction for the Division will include opportunities to continue to use ourselves as a testing ground in order to pilot and vet operational initiatives and changes and determine their viability to the corporation and the community.

Waste reduction and education are a key focus for the Sustainability Division. With the implementation of any program, engagement with a broad group of stakeholders allows us to gain meaningful feedback in order to develop better, more effective programs.

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2020-2021 Goals

The influencing factors outlined in the previous section were considered as the Sustainability Division identified and prioritized its 2020 work plan. In order to provide a cohesive and comprehensive approach to both corporate and community sustainability, the Division's 2020 goals reflect that leadership, resourcing, planning, and action at scale are key to success.

1.0 Take the Long View

1.1 Draft detailed actions for 10-year planning to coordinate the recommendations from climate mitigation and adaptation, green infrastructure and environmental protection planning.

1.2 Create and plan for a living and coordinated vision for sustainability to 2050. Plan the long-term delivery of the *Low Emissions Community Plan*, *Corporate Climate Adaptation Strategy*, and *Green Infrastructure Strategy*.

1.3 Source sustained funding for environmental initiatives to ensure consistency and to better facilitate moving initiatives from research to pilot to implementation at scale.

2.0 Community First

2.1 Engage, co-design and problem solve: Further develop partnerships with community in order to collaboratively approach problem-solving and face the climate crisis collectively.

2.2 Incorporate Truth and Reconciliation Commission (TRC) and equity into all projects from the outset. Revisit existing programs to find possible improvements.

2.3 Involve and engage youth meaningfully.

2.4 Inform and support: Create a suite of communications information for the community to enable and encourage sustainable actions and easily access and share knowledge.

3.0 Lead the Corporation in a Time of Change

3.1 Plan strong programs in collaboration with other Divisions that can graduate to operationalization or implementation at scale.

3.2 Lead by Example: Provide information, training and support for sustainable practices for the corporation.

3.3 Develop capacity and skills in change management: The Sustainability team is a change leader. Team development on organizational change management and co-creation is required.

3.4 Strengthen and formalize Project Management (PM) skills: Ensure that PMs are trained and knowledgeable in PM tools and processes. Develop and use PM tools in a consistent manner as the Corporation.

4.0 Work Smarter and Tune our Processes

4.1 Nurture and build team strength: Celebrate significant milestones. Collaborate. Listen. Encourage. Learn from each other.

4.2 Use portfolio management to consider the work of the Division as a cohesive whole and more efficiently manage resources.

4.3 Strengthen the environmental regulatory role and formalize regulatory processes as a priority.

4.4 Formalize/Improve administrative processes around work requests, billing, data tracking, energy management, etc.

4.5 Rebalance staffing across the Division to better manage resources and work portfolio.

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2020-2021 Planned Activities by Section

The strategic actions listed in the previous section identify Division-wide goals and tasks for 2020 and beyond. These goals will also shape how tasks are carried out by each section.

In order to better address the tasks and workload of each section and team member, some adjustments to the Division Organizational Structure are planned. Refer to Attachment 8 for the 2020 Organizational Chart and work summary.

Climate, Strategy and Data: 2020-21 Planned Activities

This section will become the leader in strategic environmental planning, which will broadly impact both the corporation and community. The team will also manage climate change related data, systems, and protocols. Deliverables are outlined below, including LEC implementation oversight, process development for GHG emissions reporting, and the Water Conservation Strategy.

Climate, Strategy and Data: Planned Activities

Administration	• Redefine section name from Climate Change to Climate, Strategy and Data.
LEC Plan	• Provide an update report for Council on the LEC Plan. • Provide oversight of implementation for LEC Actions and sub initiatives. • Continue engagement related to LEC Plan implementation. • Provide Business Case support for other Divisions.
GHG Emissions Management, Data Management and reporting	• Prepare and review the 2018 and 2019 Greenhouse Gas Inventory and reports. • Establish intake process (requests from other divisions) for GHG quantification and other corporate services. • Establish process for GHG inventory preparation and verification. • Continue updates and improvements to the Environmental Dashboard.
Projects	• Continue Water Conservation planning through engagement and a report to City Council. • Corporate Adaptation Implementation Report for 2022. • Align the Low Energy Access Partnership with other strategies. • Provide support for PACE financing program development. • Refresh the Environmental Management System Plan. • Co-Author the Sustainability Reserve report with Finance. • Develop and begin implementation of the Triple Bottom Line program. • Lead the development of a Community Electric Vehicle Pilot Project and engagement. • Support a Fleet electric vehicle Pilot.

Energy and Sustainability Engineering: 2020-21 Planned Activities

This section will remain focused on the multi-year delivery of the Energy Performance Contract for civic facility retrofits. Energy management will be maintained and evolve with a goal to further improve data analysis capacity. The team will continue to build capacity to provide engineering support for GHG emissions reporting, waste reduction, and water audit and conservation initiatives.

Energy and Sustainability Engineering: 2020-21 Planned Activities

Environmental Performance Contracting	• Manage EPC contracts to complete engineering design and "go early" work. • Support contract administration for primary EPC work, including site review and technical input.
Energy Management & Natural Gas Procurement	• Find utility cost savings in collaboration with Facilities Management and other Divisions. Pilot the RETScreen software for utility bill portfolio management. • Extend energy monitoring contract and finalize a long-term sub-metering strategy through the EPC project. • Continue to improve cross charge equity through continual refinement of distribution of cross charges. • Manage natural gas contract, document the governance and decision-making process for natural gas procurement, and hire a natural gas consultant.
High Performance Buildings	• Complete High-Performance Civic Building Policy Part 1: Policy & Handbook. • Hand off maintenance and operation of CHP units to Facilities Management. • Assist the Fire Hall 5 project with implementation of the High-Performance Civic Building Policy. • Provide support to Saskatoon Land for their contemplated net-zero housing project.
Renewable Energy & Electric Vehicles	• Complete the Solar Strategy report. • Provide support and subject matter expertise for electric vehicle, right sizing, and efficiency work for the City's fleet.
Water Efficiency	• Contribute to the Water Conservation Steering Committee. • Assist Saskatoon Water with developing an Energy Management team/ strategy. • Start phase 2 of the Civic Water Revenue Loss Audit and Mitigation project. • Complete the Blue Communities report. • Participate on and/or contribute to the Spray Pad/Paddling Pool Advisory Committee.

Environmental Protection: 2020-21 Planned Activities

This section will continue to provide corporate support for development subject to the Wetland Policy and initiatives dealing with impacted soils, while working to create and improve processes for these services. Delivery of the *Green Infrastructure Strategy* will occur in early 2020.

	Environmental Protection 2020-21 Planned Activities
Corporate Support Services	• Develop process improvements for Environmental Protection services. • Provide advice on compliance with provincial contaminated soil regulations. • Update the impacted sites inventory with information collected via the Brownfield Renewal Strategy. • Provide advice on compliance with the City's Wetland Policy. • Digitize the corporate wetland inventory. • Act as the City's account administrator for federal and provincial web-based reporting. • Investigate corporate risk regarding groundwater protection and spills management and undertake appropriate policy development. • Complete work on the Green Network Refinement Stage 1- Natural Area Screening for the Saskatoon North Partnership for Growth. • Complete work on the Brighton Raw Water Irrigation pilot. • Support the Storm Water Utility in collaboration with the University of Saskatchewan on storm water quality projects.
Corporate Training	• Provide regulatory education and training for civic staff on: Contractor Environmental Guidelines; Environmental Management Plans; Soil Management; Spills and Discoveries Management. • Complete year 2 of the Contractor Environmental Guidelines pilot project.
Green Infrastructure & Network	• Finalize the *Green Infrastructure Strategy*. • Support implementation and refinement of the Natural Area Standards and Wetlands Policy. • Complete work on the Natural Capital Asset Valuation project, including completing FCM grant deliverables.
Brownfield Renewal Strategy	• Support Planning & Development to implement the Brownfields Renewal Strategy framework in conjunction with the Corridor Planning Program. • Develop education and awareness materials for brownfield soils remediation.
Environmental Records Searches	• Transfer the Environmental Records Search service to the Access & Privacy Management Program with the City Clerk's Office starting Jan. 1, 2020.

Community Leadership & Program Development: 2020-21 Planned Actions

Starting in 2020, the Education and Environmental Performance Section will be renamed the Community Leadership and Program Development section. This will allow the section to focus on the delivery of environmental programs across the Division, as well as develop expertise in program design and delivery for the corporation and the community. A significant program that will be developed by this section is Industrial, Commercial, and Institutional Mandatory Organics and Recycling. Support to operationalize the *Triple Bottom Line Policy* across the corporation will also be led by this team.

Community Leadership & Program Development 2020-21 Planned Activities

Administration	• Change Section name to Community Leadership and Program Development from Education and Environmental Performance.
Waste Reduction	• Complete an Implementation Plan for mandatory recycling and organics for the Industrial, Commercial and Institutional sector. • Create an Implementation Plan for multi-unit residential organics. • Deliver a final version of the City's Waste Reduction Plan. • Continue delivery of the Household Hazardous Waste program. • Create a Public Space Recycling implementation plan. • Support completion of Organics Feasibility Study reporting to FCM. • Provide technical support for the Waste Reduction and Diversion Plan. • Assist with specifications and procurement for Recovery Park, waste diversion programming planning, operations planning, and waste diversion business cases.
Community Education	• Continue existing education programs, including Student Action for a Sustainable Future, Healthy Yards, Recycling Education programs, and Curbside Swap. • Develop a new multi-unit recycling education program. • Expand the Environmental Community Grant program using the new/amended Community Grants policy. • Deliver the Sanitary Sewer Education Program and the Yellow Fish Road – Storm Water Education Program.
Green Infrastructure	• Lead Green Infrastructure Strategy implementation, as well as biodiversity and urban agriculture initiatives.

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Conclusion

The Sustainability Division has evolved out of decades of environmental leadership by the City and our community. Work by the Division on climate change, waste reduction, green infrastructure, building performance, and water conservation, amongst others, is strongly aligned with the City of Saskatoon's strategic goals and vision.

Over this period of time, municipalities and communities around the globe have declared an environmental state of emergency, as ecosystems, the climate, and the well-being of humans and other species face serious and potentially irreversible threats. As the City strives to define and build a Saskatoon which is healthy, equitable, resilient, and regenerative, a leadership role is required to address what science has defined as quickly-accelerating environmental issues.

While taking action to resolve the impacts of climate change can seem overwhelming, many solutions already exist that can be implemented quickly. Other solutions will require research, innovation, investment, and experimentation as new approaches to tackle new challenges are designed and tested by local and global communities. Whether solutions are well-understood or require further development, they can provide uplifting, inspiring, and tangible outcomes that solve multiple issues at once and benefit people and planet.

As the field of environmental sustainability continues to adapt to a changing world, the work of the Sustainability Division will continue to evolve as well. While the work before us will require dedication and perseverance, it is also exciting to be on the cusp of change. The next steps will require a Sustainability team which is on one hand dynamic, agile, and creative, while on the other hand has the expertise and vision to guide administration and the community to find balanced, accountable, and achievable solutions.


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Keep Your Lawn and Garden Healthy, Strong and Ready for Hot Weather.
Choose drought tolerant and low-maintenance plants.
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Water early in the morning.
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CP - Environmental & Corporate Initiatives
Environmental Protection
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Attachment 1: Municipal Scan

A municipal scan was conducted that reviewed the following 18 Canadian Cities: Saskatoon, Regina, Edmonton, Calgary, Winnipeg, Halifax, London, Mississauga, Ottawa, Toronto, New Westminster, Victoria, Saanich, Abbotsford, Richmond, Surrey, Vancouver, and Montreal. The high-level results show significant variances across municipalities.

The number of dedicated sustainability staff in each City ranges from 1.75 - 79. The types of positions that exist include: environmental management professionals; climate mitigation and adaptation project managers; environmental coordinators; utility/energy management specialists; policy experts; resilience, infrastructure, and transportation strategists; IT specialists; environmental professionals focused on environmental risk, energy efficiency, water, and clean energy; project engineers; building professionals; planners; emissions specialists; and waste analysts.

Annual budgets also vary depending on the scale and scope of work, with the highest annual budget being $11M. While some municipalities have no (or very little) dedicated funding for sustainability, all of the municipalities that were reviewed have some staff resources assigned to help move this work forward. Funding and funding models vary significantly across the cities, with larger cities typically accessing greater resources.

In terms of organizational structure, a lot of diversity exists. For example, while a few cities have an Office of Sustainability, others house their sustainability staff in divisions such as: Economic & Environmental Services; Energy & Environment; Parks, Forestry & Environment; Infrastructure Planning; Climate Change & Resiliency; Technology & Digital Innovation; Climate Action; Environmental Services; Sustainability & District Energy. These divisions are managed under various departments, such as: Urban Form and Corporate Strategies Development; the Chief Administrative Officer (CAO) Office; Community Services; Planning and Development; Planning, Infrastructure and Economic Development; Citizen Experience, Innovation & Performance; Development Services; Engineering; Planning; Parks, Recreation and Culture.

Of note:

- Some cities have cross-departmental sustainability working groups, climate change teams, or energy management committees to support activities throughout the corporation.
- One municipality rotates its sustainability staff between departments every two years.

Waste reduction and diversion efforts are often located within separate Waste Management divisions.

Attachment 2: Survey Results

Environmental Awareness Survey

In 2017, the City of Saskatoon (City) hired Environics Research to conduct a survey to better understand environmental attitudes and behaviours, perceived barriers to taking environmental actions, and perceptions of the City's environmental performance of both Saskatoon residents[23] and the Industrial, Commercial and Institutional (ICI) sector[24]. The full results can be viewed on the City's Environmental Dashboard webpage: saskatoon.ca/envirodashboard.

General findings include:

- 19% of residents totally agree and 69% somewhat agree that, compared to others, they are doing their part to protect the environment.
- 84% of residents totally agree or somewhat agree that more restrictions on industry are needed to stop pollution.
- 69% of residents totally agree or somewhat agree that the way we consume and live is leading to the complete destruction of the planet.
- 66% of residents totally disagree or somewhat disagree that growing the economy should take priority over protecting the environment.
- 69% of residents totally disagree or somewhat disagree that the environment can recover on its own from problems caused by humans.

There are a number of barriers that prevent residents from engaging in activities:

Eating local/organic food	Turning off lights/electronics	Reducing water use on lawn/garden	Taking shorter showers	Avoiding idling vehicle
Cost: 68%	I/others forget to do it: 27%	Lack of rain: 22%	Prefer long showers: 25%	Weather: 32%
Inconvenience and/or availability of organic food: 29%	Time to boot up electronics: 11%	Want a green lawn: 19%	Need to clean/wash hair properly: 22%	Rarely idle: 11%
Don't believe in benefits of organic food: 7%	Not convenient: 8%	Only water as necessary: 9%	Take short showers now: 7%	Inconvenient: 11%
Will buy what I need anyway: 5%	Want lights on for safety: 6%	Have big yard: 8%	Long showers relieve pain: 4%	Always on the go: 9%
Unsure: 3%	Smart devices remain on: 6%	Plants need water: 8%	*Unsure: 5%*	Traffic flow: 8%
	Unsure: 19%	Heat: 6%		I forget: 4%
		Unsure: 14%		*Unsure: 6%*

23 A total of 817 residents completed the survey between June 28th and July 22nd, 2017. Quotas by area of Saskatoon (Suburban Development Area, or SDA), gender and age were applied to the sample, with minor statistical weighting by these variables to ensure the sample reflected the known characteristics of the City's population (based on StatsCan data). Because this was an online survey with a non-probability sample, no margin-of-error can be ascribed to these survey results. For the purposes of comparison, a margin-of-error with a probability sample of n=817 is +/- 3.4%, 19 times out of 20.

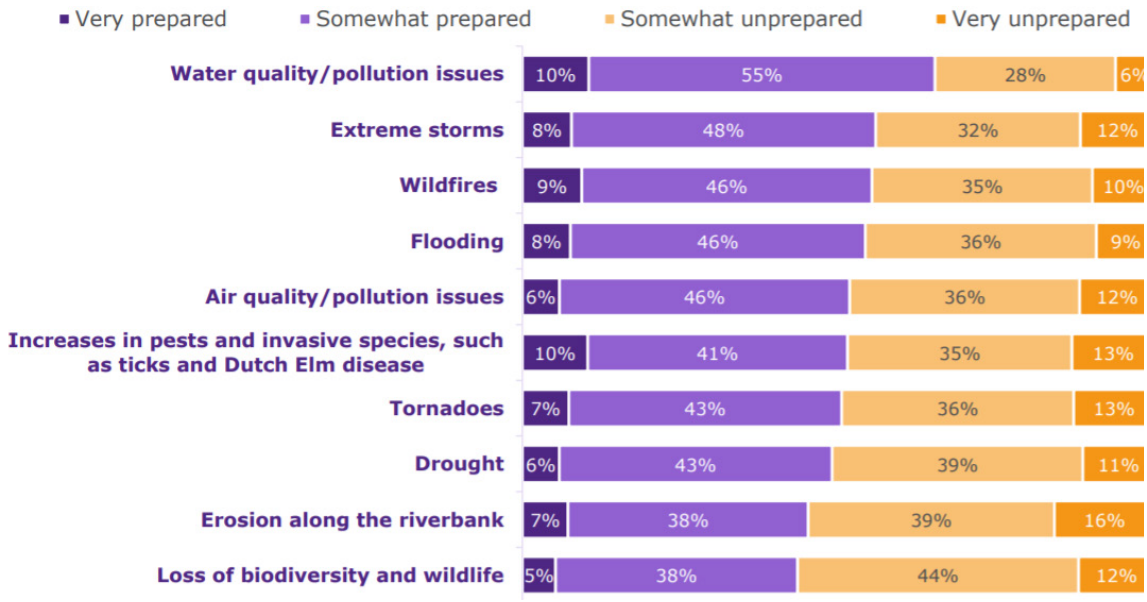
24 Environics conducted a telephone survey with representatives of ICI organizations operating in Saskatoon. This included businesses, not-for-profit organizations, and health and educational sector representatives. A total of 151 respondents were interviewed by telephone between June 29th and July 19th, 2017 (108 businesses, 31 non-profits, and 12 institutions). The margin of error for a sample size of n=151 is +/- 7.98%, 19 times out of 20.

	Installing solar panels	Installing high-quality windows/insulation	Installing water-efficient appliances
Cost	61%	60%	43%
Don't own home	17%	22%	20%
Current item(s) are new/work fine	-	-	13%
Lack of knowledge/ hadn't considered it	10%	--	4%
Bylaw restrictions	8%	5%	-
Logistical issue (e.g. lack of space)	6%	3%	-
Takes too much time	-	4%	3%
(Unsure)	*3%*	*10%*	*15%*

The results specific to climate change concluded that:

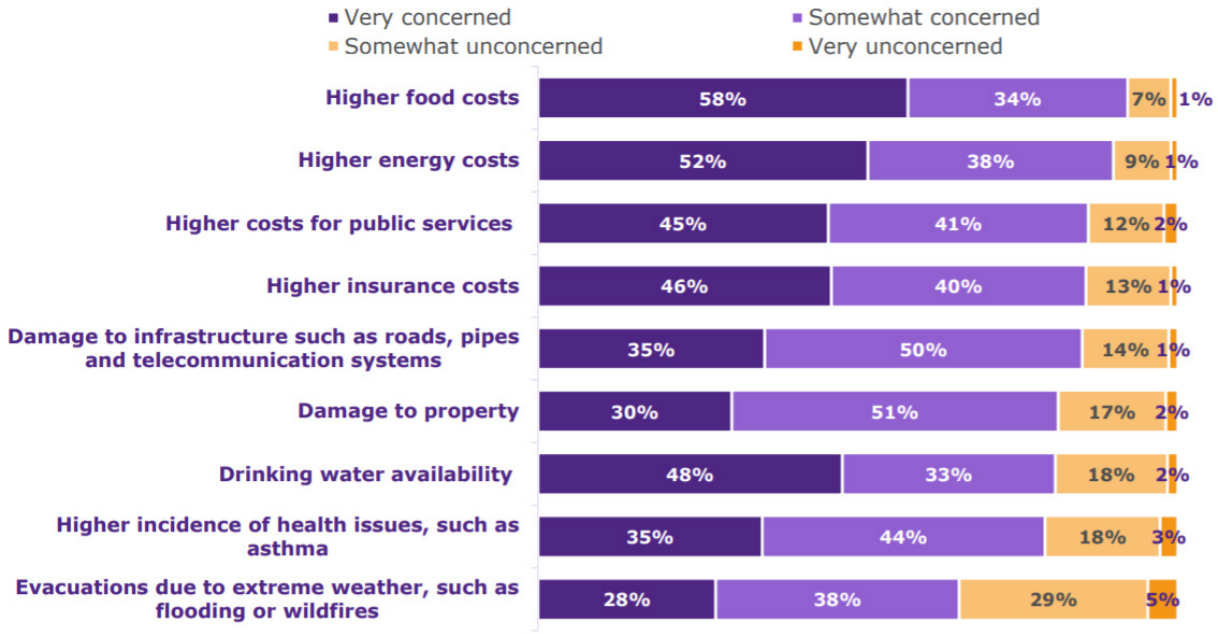
- 89% of Saskatoon residents agree that climate change is happening (57% believe it is caused by human activity[25], and 32% believe that science is not conclusive that climate change is caused by humans[26]). Only 10% believe the science is not conclusive that climate change is happening. These perceptions about climate change are similar to those of other Canadians.
- 39% of residents consider themselves very well or extremely well informed about climate change[27], which is higher than the Canadian average of 27%. Only 10% consider themselves to be not very well informed.
- 32% of residents believe climate change is negatively affecting Saskatoon today[28]. 57% believe that it will do so in the future, with only 11% believing that climate change will have no impact now or in the future.

When asked how prepared residents feel Saskatoon is to deal with the impacts of climate change, views were divided:



25 Higher among: those living in Saskatoon's Core SDA, women, recent immigrants, and those with higher education and household income.
26 Higher among: older adults (55+) and non-immigrants.
27 Higher among: men, younger adults, those who immigrated to Canada, and those with higher levels of formal education.
28 Higher among: women, younger adults, those living in Saskatoon's Core SDA, those with higher levels of education, and those who engage in environmental behaviours on a frequent basis.

Survey results also show that residents are concerned about a variety of impacts related to climate change[29]:

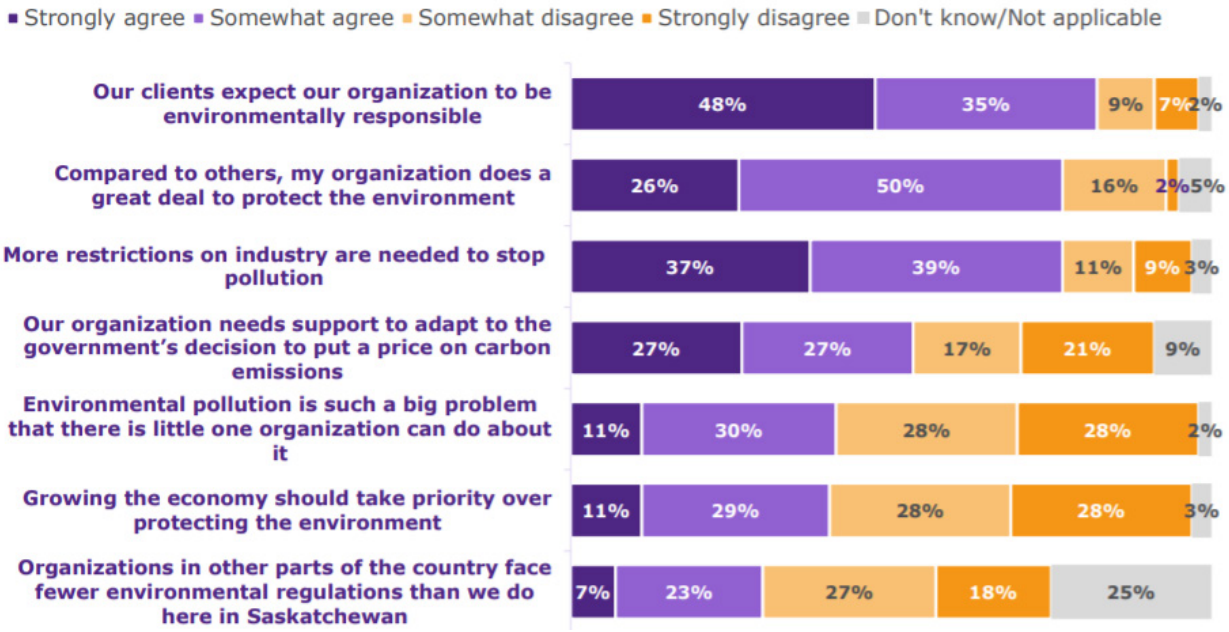


Key findings of the Industrial, Commercial and Institutional (ICI) survey include:

- Three in ten organizations currently have an environmental sustainability plan in place, with large organizations more likely to have done this planning.
- Six in ten business/organization representatives say protecting the environment is a major issue, with this sentiment more likely to be shared by larger organizations.
- 42% of businesses were very interested and 42% were somewhat interested in receiving environmental support from the City.
- 28% of businesses believe that climate change will have a major impact and 44% a minor impact on their organization within the next 10 years. Primary concerns about climate change include higher costs for energy, insurance, and public services, as well as damage to infrastructure.

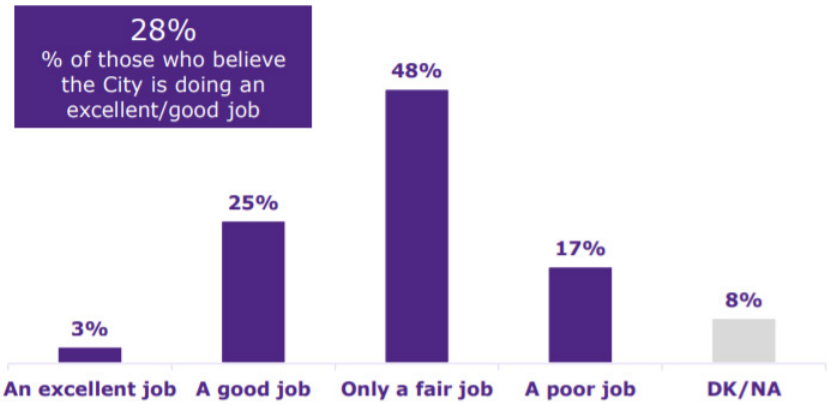
29 Recent immigrants to Canada and indigenous citizens tend to be more concerned than other residents about most of these impacts. Women tend to be more concerned than men about many of these items. Lower-income earners tend to be most concerned about having to evacuate. Older residents tend to be more worried about property-related impacts, such as higher insurance costs, high costs for public services, damage to infrastructure, and damage to property.

Businesses held a diversity of attitudes about environmental issues:



When asked to rate the City of Saskatoon's efforts to help organizations reduce their environmental impact, the results show there is room for improvement:

Three in ten consider the City of Saskatoon to be doing an excellent or good job in helping organizations reduce their environmental impact.



Climate Change Mitigation Survey

During the City's 2018 Climate Change Mitigation engagement and communications campaign, a Residential Survey was posted on the City's engagement page[30]. A summary of findings are as follows:

- While the majority supported taking action on climate change due to the direct and indirect benefits that would occur, other residents had concerns about the high cost of action, that the benefits would not outweigh the costs, and that there are other priorities where funds should be directed.
- 58% of respondents selected Strongly Agree to the statement "I want our community to do everything it can to reduce greenhouse gas emissions and take action on climate change."

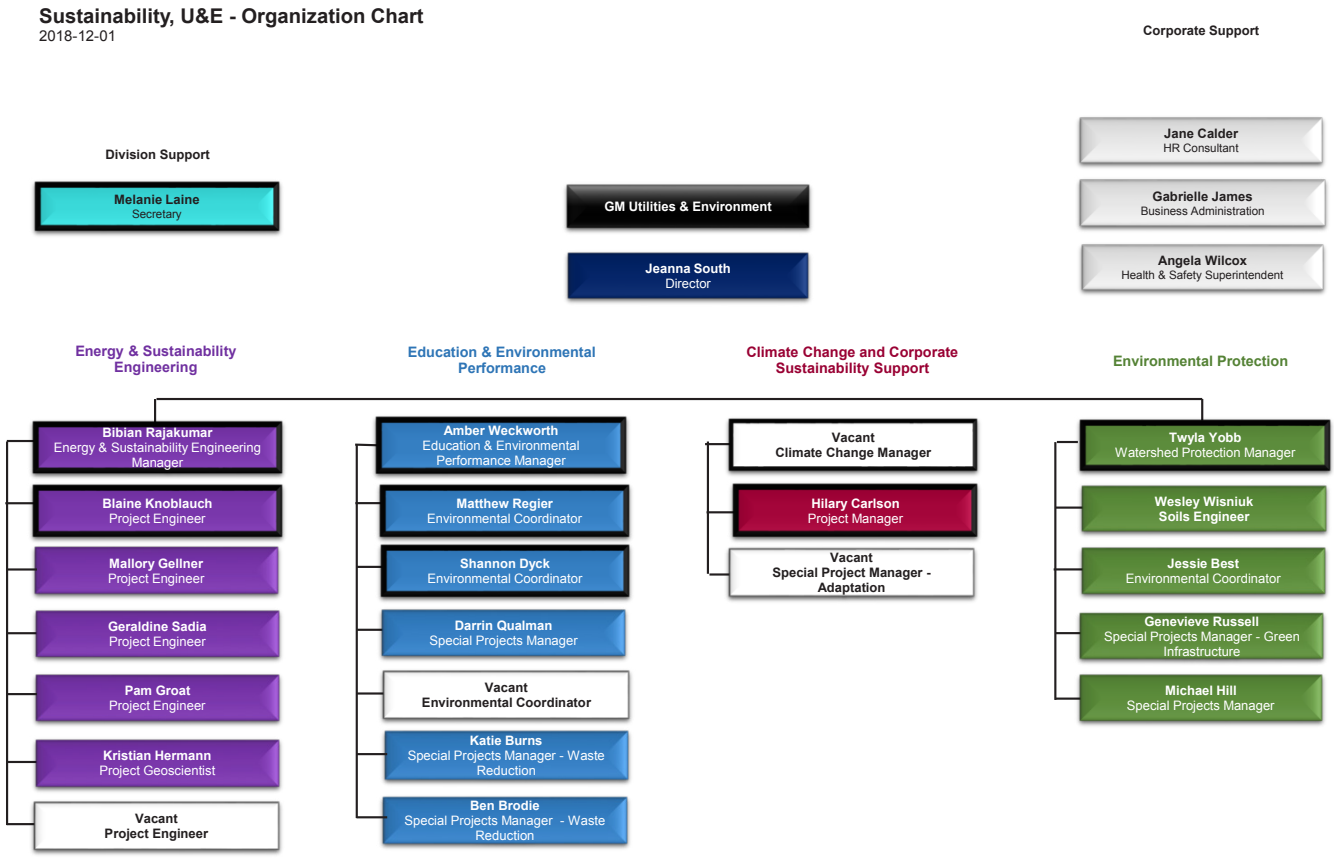
30 1,197 residents participated in the survey that was posted online from January 16 – February 15, 2018. The survey was promoted through a variety of communications channels.

- 55% of respondents selected Strongly Agree to the statement "protecting the environment can be done in a manner that can also benefit our economy."
- When asked, "If you could wave a magic wand and make all of the barriers disappear, what actions would you do first?", the following came up as the top priorities: support renewable energy, buy or use an electric vehicle, add more insulation or better windows to my home, and renovate or build using green building practices and materials.

Residents were asked to indicate which statements they were in agreement with when responding to the following question: *How should our City invest in initiatives that slow down or prevent the negative impacts of climate change*?

- 50% agreed with the statement: "I support spending on initiatives that reduce greenhouse gas emissions, whether or not future financial savings can be expected."
- 42% agreed with the statement: "I support spending on initiatives that reduce greenhouse gas emissions, but only if investments lead to community benefits, such as improved health, safety, and quality of life outcomes."
- 36% agreed with the statement: "I support spending on initiatives that reduce greenhouse gas emissions, as long as investments demonstrate financial savings over the long-term."
- 31% agreed with the statement: "I support spending on initiatives that reduce greenhouse gas emissions, but only if investments generate economic activity and employment opportunities in our community."
- 12% agreed with the statement: "I support spending on initiatives that reduce greenhouse gas emissions, but only if investments demonstrate financial savings over the short-term."
- 11% agreed with the statement: "I do not support spending on initiatives that reduce greenhouse gas emissions.

Attachment 3: Current Organizational Structure



Attachment 4: Grants and Loans

Federation of Canadian Municipalities (FCM) – Green Municipal Fund

Canadian municipalities are eligible to apply for FCM's Green Municipal Fund to study bold environmental projects, innovative environmental pilot projects, and impactful capital projects that reduce GHG emissions and protect the air, water, or land. While this is only one source of external funding, it has provided significant support over the years for environmental initiatives led by the City of Saskatoon (City).

Year	Project	Amount ($)	Description
2002	Water Treatment Sludge Reclamation	• Grant: $200,000 • Loan: $2,303,000 • Total Project Value: $9,211,000	The project was focused on designing and constructing a sludge reclamation facility to collect water treatment wastes for utilization at the city's landfill, in order to entirely eliminate sludge discharges.
2002	Solid Waste Recycling Depots	• Loan: $360,000 • Total Project Value: $1,440,000	The project replaced 100+ old recycling depots with 10-15 "one-stop" modern recycling centres.
2003	Regional Waste Management Facility	• Loan: $300,000 & $337,500 • Total Project Value: $1,200,000 & $1,350,000	This project was an integral part of a larger systems approach that included solid waste diversion and water quality improvement projects to manage affluent and effluent to and from the water treatment plant. Landfill capping and capture/utilization of Landfill Gas also formed part of the City's Solid Waste Management Master Plan.
2003	Solid Waste Cogeneration Facilities	• Grant: $63,187 • Total Project Value: $126,374	This feasibility study assessed the technical options and developed a business plan for a bio-digester within the City of Saskatoon, to treat between 49 and 66 per cent of the City's organic waste from five to ten different waste streams.
2004	Construction and Demolition (C&D) Waste Management Centre Feasibility Study	• Grant: $15,693 • Total Project Value: $31,386	This project focused on the potential of developing a construction and demolition materials handling facility at an alternate site to the Saskatoon Waste Management Centre. The intent was to extend the lifespan of the Landfill by over seven additional years by diverting approx. one third of the waste stream.
2005	Planning Study: Greenhouse Gas Emissions Audit and Corporate Environmental Management System	• Grant: $37,000 • Total Project Value: $74,000	The City of Saskatoon completed the PCP Milestone 1 by creating a GHG emissions inventory and forecast that assessed how to best reduce emissions from City and community operations.
2005	Field Test Study: Retrofitting Rapid Stabilization and Gas Collection in Older Landfills	• Grant: $262,500 • Total Project Value: $525,000	The goal of this field test was to enhance Landfill Gas production and collection at the City of Saskatoon Landfill by adding moisture to the landfill to stabilize the existing waste mass.

2006	Local Action Plan for GHG Reduction	• Grant: $139,100 • Total Project Value: $278,200	The City of Saskatoon developed a local action plan outlining a range of projects to reduce municipal greenhouse gas emissions as part of its commitments under the Partners for Climate Protection program.
2006	Saskatoon Transit: Purchase of Hybrid Buses	• Grant: $300,000 • Loan: $1,127,181 • Total Project Value: $2,854,362	The City of Saskatoon Transit Branch purchased four 40-foot, low-floor hybrid (diesel-electric) buses and installed its first transit signal priority system on the College Drive corridor, the most challenging and strategic section of its transit system.
2010	District Energy System Feasibility	• Grant: $110,000 • Total Project Value: $230,000	The objective of the study was to determine the financial viability and GHG savings of district energy projects in Saskatoon.
2011	City of Saskatoon Strategic Plan & Community Visioning Initiative	• Grant: $333,771 • Total Project Value: $721,605	The City of Saskatoon engaged in a community visioning initiative in order to strategically plan how to: maintain a diverse, innovative and competitive economy; grow sustainably; create a more socially and culturally diverse city; support sustainable transportation systems; and determine the City's roles and responsibilities in the area of environmental leadership.
2013	City of Saskatoon North Downtown District Energy Feasibility Study	• Grant: $58,150 • Total Project Value: $126,800	
2015	Transportation Study – Saskatoon Transit Strategic Plan	• Grant: $110,000 • Total Project Value: $220,000	The project identified and assessed tools to align service and demand to optimize efficiency, increase attractiveness to new riders, and set a course for implementation over the next ten years.
2018	Natural Capital Asset Valuation	• Grant: $125,000 • Total Project Value: $157,000	The natural capital asset valuation study will inventory natural assets within the City of Saskatoon and determine a value (in financial terms) that green infrastructure provides to the community. The project will develop an accounting and reporting framework for natural capital assets, conduct a vulnerability assessment on municipal infrastructure and recognize natural infrastructure as a key component of municipal development.
2018	LEC Plan	• Grant: $125,000 • Total Project Value: $490,000	The City of Saskatoon Sustainability Division developed a 30 year comprehensive plan for reducing greenhouse gas emissions in order provide a roadmap for achieving the City's pre-established emissions reduction targets for both the community and the corporation. Strategy included the work of consultants Sustainability Solutions Group.
2019-20	Organics Feasibility	• Grant: $144,600 • Total Project Value: $299,100	Agreement with FCM in place, funds not yet received. Funding to be received once study is complete and completion report is filed.
2019-20	Brownfield Renewal Strategy, Plan	• Grant: $46,400 (exact amount TBD)	Agreement with FCM in place, funds not yet received. Funding to be received once completion report is filed.
2019-20	Brownfield Renewal Strategy, Study	• Grant: $56,600 (exact amount TBD)	Agreement in place, funds not yet received. Funding to be received once completion report is filed.
2020	Corporate Climate Adaptation Strategy	• Grant: $125,000 • Total Project Value: $207,000	Application has been submitted to FCM. Funding has been committed.

Natural Resources Canada (NRCan) and Utilities Grants

Year	Project	Amount ($)	Description
2009	EcoCanada Internship	• EcoCanada Grant: $12,000	Internship funding for Project Engineer.
2009	Fire Hall 6 Boiler Retrofit	• SaskEnergy Grant: $7,360	High efficiency boiler retrofit.
2010	Field House Boiler Retrofit	• NRCan Grant: $24,840 • SaskEnergy Grant: $29,844 • SRC: $2,400	High efficiency boiler retrofit where the grant was administered by the Saskatchewan Research Council (SRC).
2010	Solar Hot Water Panel Installations	• NRCan Grant: $273,902	Solar water heating panels installed at Lawson Civic Centre (90 panels) and Harry Bailey Aquatic Centre (72 panels).
2011	ACT Arena Controls System and Energy Monitoring	• SaskPower In-Kind Contribution: $41,000	SaskPower paid for the installation of a building management system (BMS) and electricity monitoring system in ACT Arena as a pilot project for their municipal ice rink program.
2011-2012	Ice Rink Additive Pilot Project	• SaskPower In-Kind Contribution: $2,000	SaskPower paid for a pilot project to test a flood water additive (IceMax) in municipal rinks for their municipal ice rink program.
2015 - 2016	Combined Heat and Power Market Development / Pilot Project	• NRCan Grant: $600,000 • SaskEnergy Contribution: $325,000 • Total Project Value: Approx. 1.3 million	All requirements are complete except annual post-project reporting.

Attachment 5: Summary of Projects Leveraged through the City's Environmental Grant

The Sustainability Division allocates grants annually to local non-profit organizations implementing initiatives that support the City of Saskatoon's strategic goal of Environmental Leadership. To be eligible for the grant, activities must relate to one of the following categories:

- environmental stewardship;
- climate change mitigation and/or adaptation;
- water conservation;
- waste reduction and/or diversion; and
- environmental communications and/or awareness.

Over the last five years, the Environmental Grant has funded 34 initiatives and leveraged nearly $660,000 in community dollars spent on environmental initiatives.

Year	Projects Funded	Total Allocated	Total Leveraged
2015	7	$10,000	$133,625
2016	6	$10,000	$147,376
2017	6	$20,000	$122,550
2018	8	$20,000	$61,575
2019	7	$30,000	$194,189
TOTAL	**34**	**$90,000**	**$659,315**

Attachment 6: Partnerships and Affiliations

The following external partners are those in which the Sustainability Division has direct collaboration with, whether it be through memberships, board participation, research partnerships, and/or program, project, or service delivery.

Government, Institutions, and Crowns

- Federation of Canadian Municipalities
- National Resources of Canada
- Meewasin Valley Authority
- Partners for Climate Protection
- Saskatoon Environmental Advisory Committee (SEAC)
- Saskatoon Public School Division
- Greater Saskatoon Catholic Schools
- Saskatchewan Polytechnic LINC program
- University of Saskatchewan (e.g. School of Environment and Sustainability, Johnson Shoyama School of Public Policy, Master Gardeners, Edwards School of Business, Facilities Management, College of Engineering, Global Institute of Water Security, Sustainability Education Research Institute)
- Western Yellowhead Air Management Zone

Non-Profits and Community

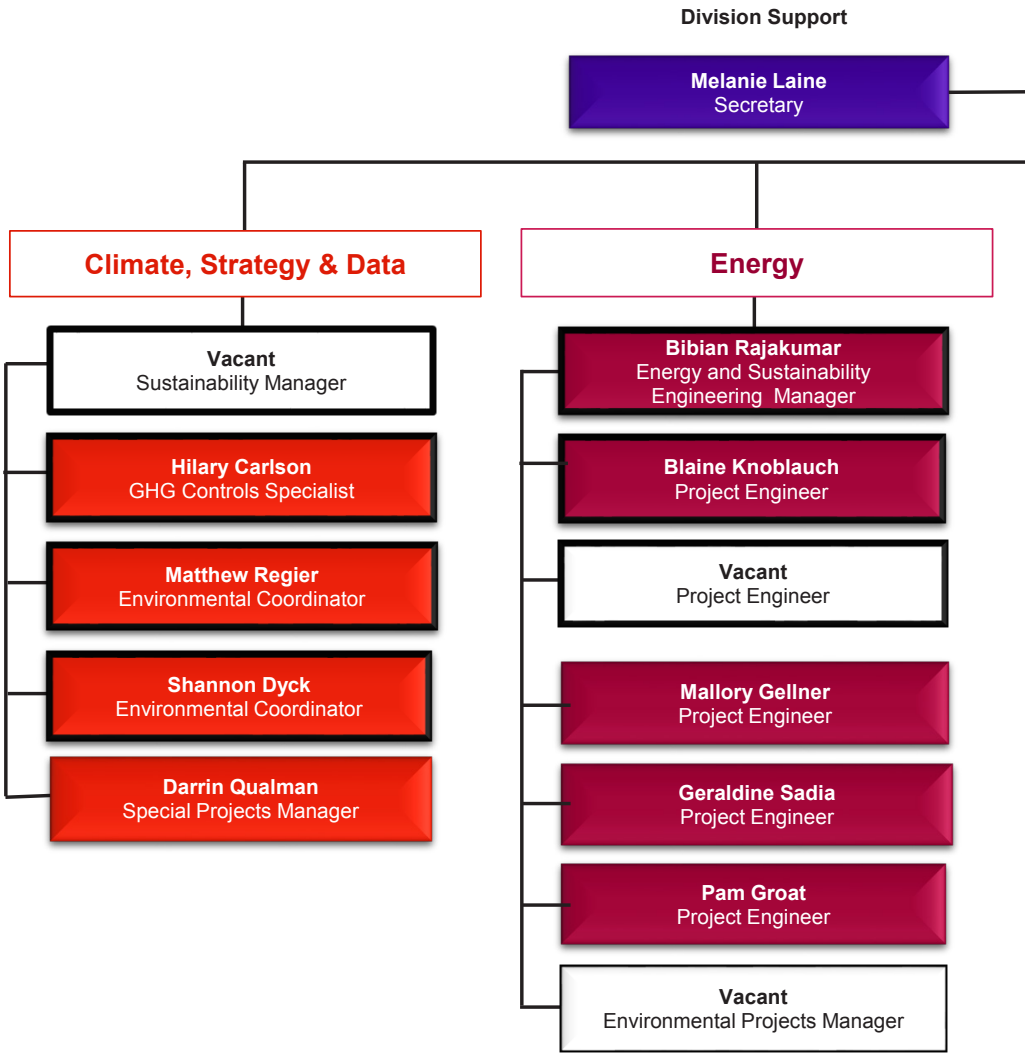
- American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
- Canadian Green Building Council (CaGBC) – Local Chapter
- CHEP
- National Climate League
- National Zero Waste Council
- Native Plant Society
- Saskatoon Open Door Society
- Saskatchewan Intercultural Association (SIA)
- Partners FOR the Saskatchewan River Basin
- Saskatchewan Environmental Society (SES)
- Saskatchewan Waste Reduction Council (SWRC)
- Saskatoon Food Bank and Learning Centre
- South Saskatchewan River Watershed Stewards
- Wild About Saskatoon
- SARCAN
- Cosmopolitan Industries
- SaskPower
- SaskEnergy

Industry

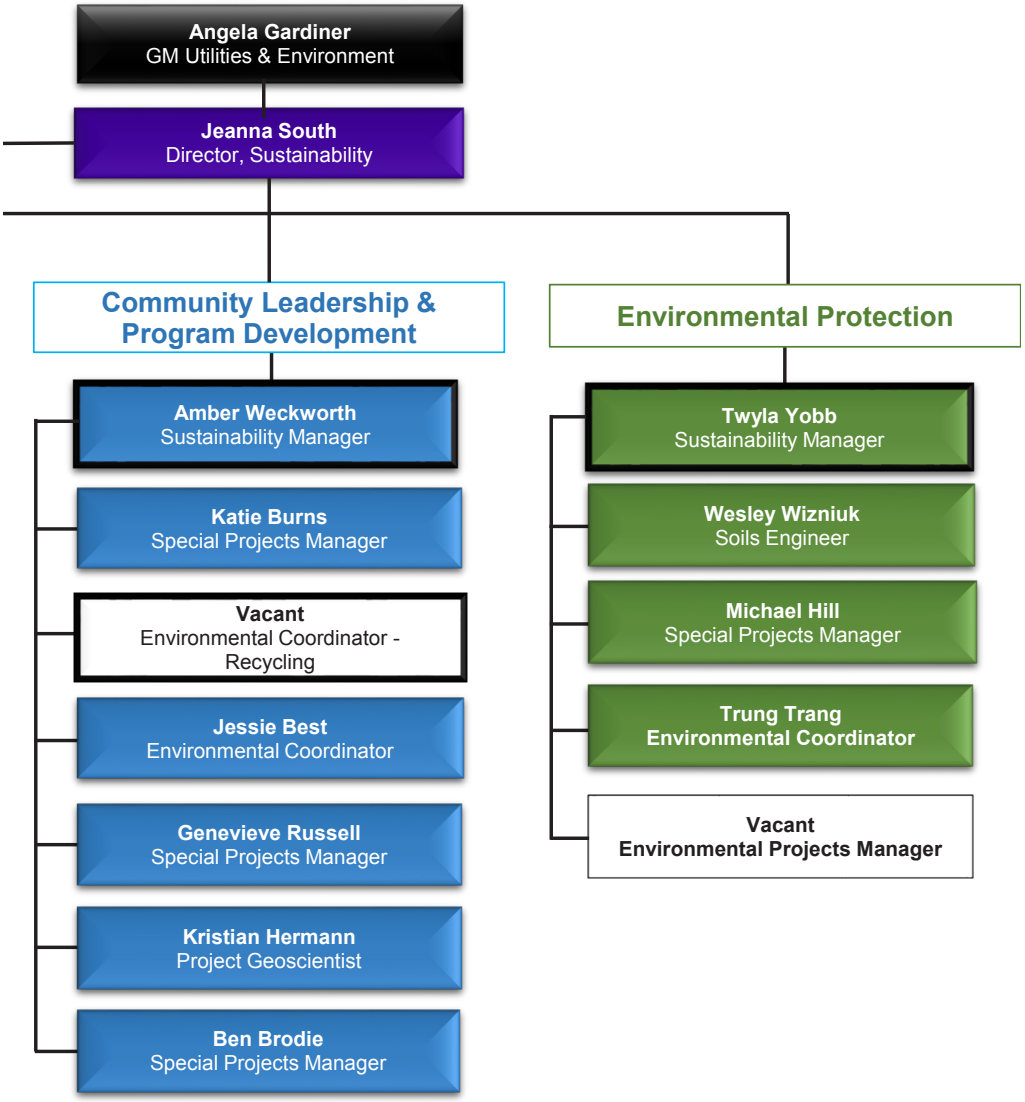
- Electronic Products Recycling Association (EPRA)
- Saskatoon and Region Homebuilders Association (SRHBA)
- Multi-Material Stewardship Western (MMSW)
- Product Care
- SARC

Attachment 7: PWC CO_2 Reduction Audit Update

Response to CO_2 Reduction Initiatives Audit Recommendations						
Theme	#	Action/Recommendation	Current Status	Next Steps	Owner	Timeline
Mitigation risk identification and measurement	1	Develop MAC curves specific to the City's circumstances as a minimum fundamental tool.	COMPLETE - MAC curve was developed and presented to Council in August 2019.	Consider further review of the MAC curve as new information is gathered – for instance as part of the Water Conservation strategy.	Not assigned	TBD
	2	Develop a realistic emission reduction strategy with reasonable targets, focused on the areas of greatest emission reduction potential and employing appropriate levers.	COMPLETE - the Low Emissions Community Plan provides a 30-year roadmap indicating the 40 actions that the City and Community need to take to meet the 80% reduction target. Was presented to Council in August of 2019.	The LEC Plan is complete however, further engagement and communications with stakeholders is required to get community buy-in and understanding, as well as look for opportunities for implementation.	GHG Controls Specialist	ongoing
Mitigation goal setting	3	Develop City-specific emission reduction goals based on a more sophisticated understanding of the inventory and aligned with an environmental management system.	ONGOING – A water conservation strategy and waste reduction plan will include specific targets, both are in draft form. New capital projects for electric vehicles, high performance building policy, and the solar strategy will help set emissions targets for buildings and fleet. Further work on the EMS is required.	Water Conservation Strategy to include Corporate targets. Waste Reduction Plan to include Corporate targets (along with ICI strategy). Scoping and project development in 2020 for EV, buildings, and EMS.	Water Conservation PM Waste Reduction PM EMS, Solar, EV, and buildings PMs to be assigned in Q1-2020	August, 2020 March 2020 TBD
	4	Develop an environmental management system (EMS) that includes high-level goals, objectives and targets, including those related to deep decarbonization.	To start in this budget cycle – Sustainability plans to implement an EMS system in collaboration with a Climate Change Adaptation strategy. Funding in place.	Hire a PM to develop an EMS system.	Climate Change Manger	2021
Data management	5	Implement a more robust, automated system that extends the entire length of the data management cycle to ensure quality data control over the GHG inventory and to enable effective measurement of performance.	Ongoing – Sustainability has adequate resourcing for GHG inventory and verification. A process review has been initiated in order to document and improve processes.	Sustainability will work with Process improvement coordinator to improve and document processes. Further work with IT to look for better data management and integration with City systems and processes.	GHG Controls Specialist	2020
Resourcing	6	Build out a resourcing plan that addresses the current gap of five to six FTE's based on the actions and programs currently in place and proposed in the internal work plans.	ONGOING – 5.3 permanent FTE's were approved in the 2020/2021 budget to work on some parts of the Low Emissions Community Plan and other aspects of sustainability's work plan. Note, that no resourcing was identified for Corporate Adaptation.	A What We Do Report outlining the Sustainability division's mandate, resourcing, and long term plan is being drafted.	Sustainability Director	January 2020


Division Support
Melanie Laine
Secretary
Climate, Strategy & Data
Vacant
Sustainability Manager
Hilary Carlson
GHG Controls Specialist
Matthew Regier
Environmental Coordinator
Shannon Dyck
Environmental Coordinator
Darrin Qualman
Special Projects Manager
Energy
Bibian Rajakumar
Energy and Sustainability
Engineering Manager
Blaine Knoblauch
Project Engineer
Vacant
Project Engineer
Mallory Gellner
Project Engineer
Geraldine Sadia
Project Engineer
Pam Groat
Project Engineer
Vacant
Environmental Projects Manager

Attachment 8: 2020-2021 Sustainability Organization Chart




Climate
CHANGE
Towards70%
SASKATOON'S WASTE DIVERSION PLAN