



Promising Practices Research to Inform Development of a Corporate Sustainability Strategy for the Township of Langley

Prepared by: Samantha Thyret, UBC Sustainability Scholar, 2023
Prepared for: Township of Langley Community and Policy Planning
Department

August 2023

Disclaimer

This report was produced as part of the UBC Sustainability Scholars Program, a partnership between the University of British Columbia and various local governments and organisations in support of providing graduate students with opportunities to do applied research on projects that advance sustainability and climate action across the region.

This project was conducted under the mentorship of Township of Langley staff. The opinions and recommendations in this report and any errors are those of the author and do not necessarily reflect the views of Township of Langley or the University of British Columbia.

Territory Acknowledgements

The author acknowledges that the work for this project took place on the unceded ancestral lands of the xwməθkwəy̓əm (Musqueam), Skwxwú7mesh (Squamish), Stó:lō and Səlilwətaʔ/Selilwitulh (Tseil- Waututh) Nations.

Acknowledgements

The author would like to thank the following for their contribution and support throughout this project: Aubrey Jensen (Manager, Strategic and Social Planning, Township of Langley), Melisa Gunn (Community and Policy Planning, Township of Langley), and Karen Taylor (Manager, Sustainability Scholars Program).

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Executive Summary

This report was written as part of the Sustainability Scholars program with the University of British Columbia, under the guidance of the Township of Langley Community and Policy Planning Department. The purpose of this report is to summarize promising practices in corporate sustainability to inform the development of a Corporate Sustainability Strategy for the Township of Langley.

The report was developed through a literature review which analyzed existing municipal sustainability strategies to identify promising practices in corporate sustainability. Municipalities with geographical relevance were analyzed including primarily municipalities in British Columbia, but also extending to other regions in Canada. Once the promising practices were identified, they were sorted into a Corporate Sustainability Framework created for this project. The hierarchical framework begins by sorting strategies into the sustainability pillars: environmental, social, and economic. Each of the three pillars are then broken down into dimensions, then objectives, and finally example actions that are associated with fostering sustainability within the pillar.

Environmental sustainability is divided into mitigation and adaptation strategies. Environmental mitigation strategies recognize three key dimensions: facility, fleet, and waste management. Environmental adaptation strategies recognize four key dimensions: planning, infrastructure, habitats parks and green space, and emergency services. Social sustainability recognizes five key dimensions: employee behaviour, employee motivation and satisfaction, human capital development, health and safety, and ethical behaviour and human rights. Economic sustainability recognizes six key dimensions: Innovation and technology, collaboration, knowledge management, processes, procurement, and sustainability reporting. For each of the dimensions, associated objectives and actions were identified based on the research findings.

In an effort to be mindful of implementation and reduce strategic adoption time, potential implementation barriers and solutions were identified. Many strategies may sit dormant for a period before the implementation process gets started. It is common in organizations to resist change and have a difficult time implementing sustainability strategies. The barriers have been

defined as organizational and individual. Organizational barriers are viewed from the perspective of broad-based barriers that an organization may face while trying to influence or change corporate goals or structure, versus individual barriers that could be experienced as challenges presented to individual employees. These challenges may include resistance to organizational change or a lack of buy-in from senior management.

As an outcome of this research, it has been noted that there are few examples of municipalities having adopted corporate sustainability strategies. Many municipalities have sustainability plans and documents that have corporate goals embedded within them, but few explicit examples of corporate sustainability strategies were to be found. As a result, this research relied on academic literature from Baumgartner and Ebner (2010) to support the creation of the framework and associated objectives and actions presented in this report.

Further insight on the rationale for sustainability pillars, the benefits of recommended strategies, and deeper explanations of the frameworks and implementation barriers can be found within the official report.

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1.0 Introduction

This report is part of the Sustainability Scholars Program with the University of British Columbia, and it is intended to summarize sustainability opportunities that municipalities have implemented in their business practices to improve corporate sustainability. This project is not intended to serve as a corporate sustainability plan, and instead provides a list of promising practices in corporate sustainability implemented by other municipalities or found in academic literature. The promising practices are meant to help influence the creation of a corporate sustainability plan, and therefore serves as a starting point for a future Corporate Sustainability Strategy for the Township of Langley in British Columbia.

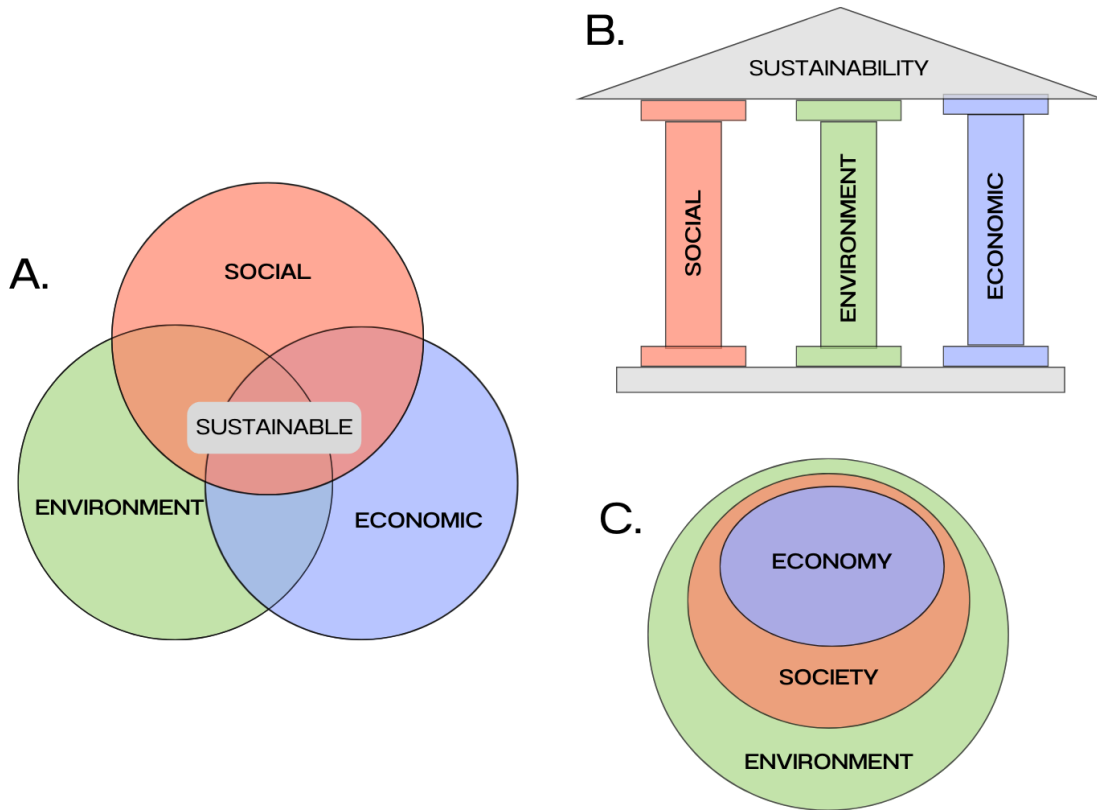
As the economy grows, society evolves, and the climate changes, the need for corporate sustainability expands. At the forefront of the community, it is the Township of Langley's responsibility to ensure ethical operations that contribute to a prosperous and thriving municipality. To accomplish this, the municipality is tasked with balancing the needs of the stakeholders, environment, and economy to maintain a sustainable community. Many other local governments have responded to the demand for sustainability by implementing community initiatives and policy integration that align with sustainability goals, and the Township of Langley is following suit. This report helps to turn the focus inwards on their own corporate operations and demonstrates how sustainability through business operations can be the key to a durable and long-lasting community.

1.1 Background: Defining Corporate Sustainability

Sustainability

Sustainability is the maintenance of a process at a certain level for a long time. Most visual models of sustainability divide conceptually into three components: social, environment, and economic. There are three prevailing models in the literature to visualize the relationship between the three components and their contribution to sustainability, provided in Figure 1.

Figure 1. Three models of sustainability. Recreated from Purvis, Mao, & Robinson (1).



Model A in Figure 1 is the most common model of sustainability, known as the triple Venn diagram approach involving three overlapping circles of society, environment, and economy. This representation provides a helpful visualization of the interconnectedness of the three components through a systems approach (1). The interconnectedness of the three components of sustainability is inferred throughout the report, since many of the promising practices benefit multiple components simultaneously.

Model B in Figure 1 is a sustainability model known as the Pillars of Sustainability. This model depicts physical pillars that all share equal responsibility in supporting sustainability (1). It is also likely the origin of the term “pillars” which is used to describe the economic, social, and environmental components of sustainability. This model best illustrates sustainability in the operational context because the components are represented separately, indicating that trade-offs

are sometimes necessary when practicing corporate sustainability, but too many trade-offs favouring one component will result in instability (2).

Model C of Figure 1 is the Three Nested Dependencies Model which visualizes sustainability by embedding the components within each other to show dependency relationships (1). This model shows the social and economic systems within the environmental realm since development can only occur with the resources provided by the environment (e.g., space, building materials, food, water) (2). Therefore, the environment is the principal component that determines the carrying capacity for society, and creates the foundation for the other components (2). The social component is next in the order of dependence, since it relies on the environment, but provides for the economy (2). The economy is a component of society, and reflects the needs of the people, which is why it is found at the center (2). This model is a holistic representation and is beneficial when creating a sustainability strategy. The Nested Dependencies Model will be referenced throughout the report, and the sustainability pillars will be presented in order of dependence.

Corporate Sustainability

Corporate sustainability is defined as business operations that create sustainability within the business long term, and benefit stakeholders by pursuing environmental, social, and economic strategies (3). It is important for the continuous success of a business without compromising the needs of future generations (3).

Corporate sustainability for a municipality is focused on internal business practices to help make municipal operations and services more sustainable. A municipal corporate sustainability strategy is meant to complement and support existing community sustainability strategies, which are external-facing plans to improve resilience within the community.

1.2 Methodology

This report was created through a literature review of official sustainability strategies from local governments. The sustainability strategies analyzed were reviewed based on geographical relevance and alignment with our definition of corporate sustainability. Municipalities of nearest proximity were considered first, in order of Metro Vancouver, British

Columbia, Canada, then North America. A full list of municipal strategies analyzed can be found on page 51. Once geographical relevance was established, the reports were only reviewed if they contained internal, corporate actions. Municipalities with only external, community-facing strategies were not considered.

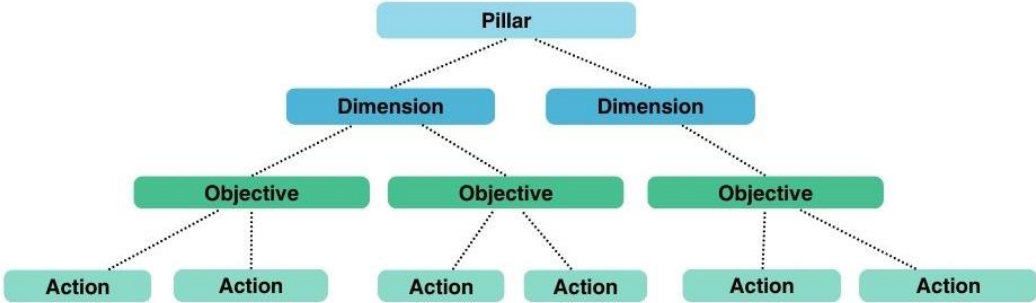
Academic literature was also analyzed for supplemental information to help synthesize the framework, describe benefits, and identify key implementation barriers of the promising practices collected.

One limitation of this method was that the literature offered limited examples of social and economic sustainability actions in a municipal context. It is recommended that future research into corporate sustainability methods for municipalities analyzes other corporate entities for applicable social and economic methods.

1.3 Corporate Sustainability Framework

This report provides four key sections: Environmental Sustainability, Social Sustainability, Economic Sustainability, and Implementation Barriers and Solutions. The sustainability sections summarize and categorize promising practices within the Corporate Sustainability Framework. The framework was created specifically for this project and depicts a hierarchy beginning with the sustainability pillar, followed by dimensions, then objectives, and finally actions, as demonstrated in Figure 2.

Figure 2. Example corporate sustainability framework.



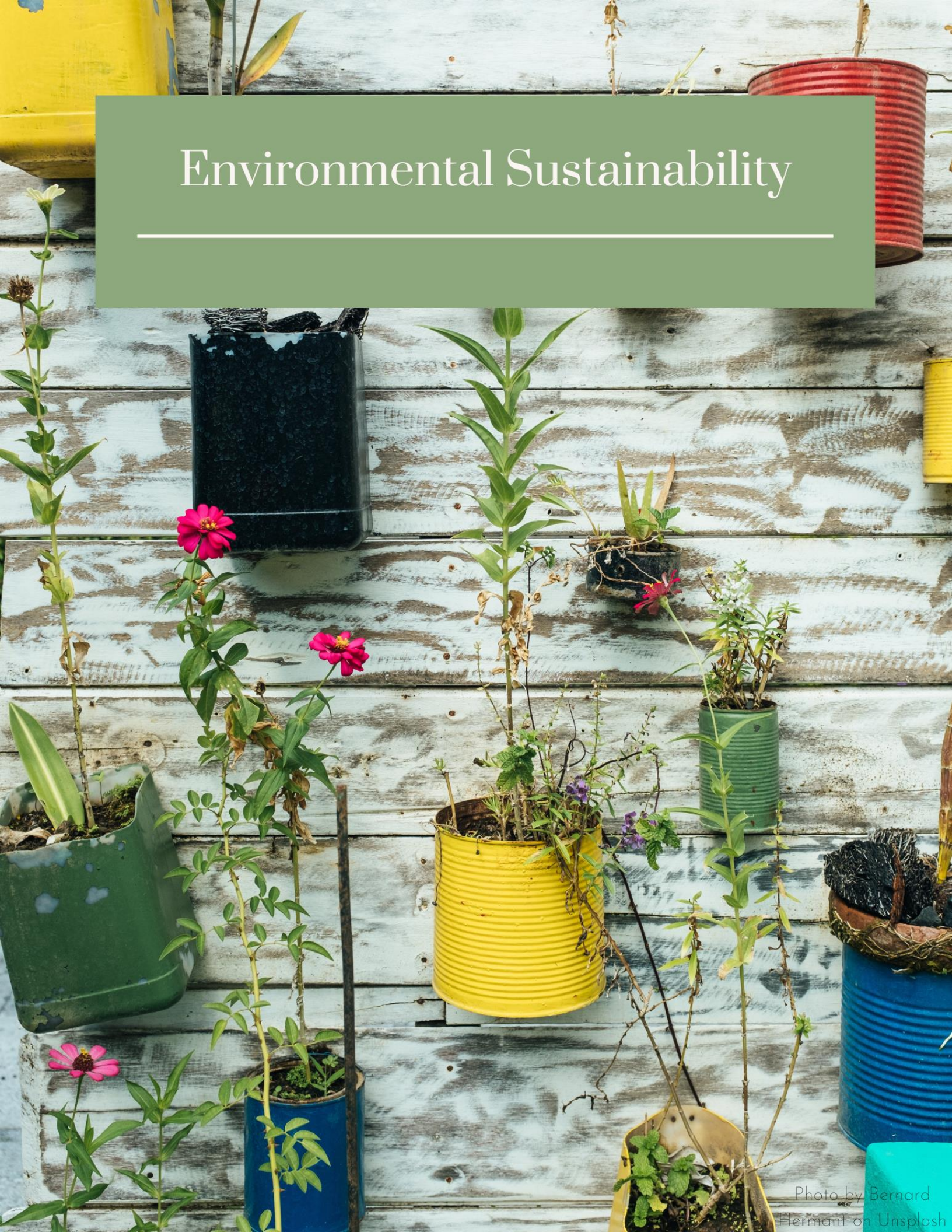
The top line of Figure 2 represents the three pillars of sustainability, including environmental, social, and economic. Within each of these three pillars, multiple dimensions were identified.

Dimensions, found on the second line of Figure 2, are focus areas within the pillar that are most critical to corporate sustainability. These dimensions are extremely broad and serve as overarching themes within the pillar. Within the dimensions, various objectives were identified.

Objectives, as seen on line three of Figure 2, are the specific goals that represent the desired outcome within the dimension. The objectives are more focused than the dimensions and serve as organizational goals for the future of the business. Within each objective, multiple actions were provided.

Actions, as seen on line 4 of Figure 2, are meant to serve as examples that the organization can do to work towards the objectives. These actions are not specific to the Township of Langley and are not exhaustive since the scope of this project did not include an analysis of business operations. Instead, the actions are meant to serve as general examples to help inspire the future creation of a corporate sustainability strategy.

Environmental Sustainability



2.0 Environmental Sustainability

Corporate environmental sustainability refers to business practices that reduce the environmental impact of the organization and preserve the environment for future benefits. The societal demand for environmental consideration from businesses has grown as the public becomes more aware of climate change, and the effects of climate change become more noticeable. Therefore, the framework in the corporate environmental sustainability pillar provides climate change management options that will meet this demand and work towards corporate sustainability. Managing environmental changes can be pursued through actions aimed at mitigation and adaptation, which represent one pillar in the pursuit of corporate sustainability. There is significant supporting rationale for corporations, municipalities included, to undertake actions directed toward environmental sustainability.

2.1 Rationale

Global warming is driven by human activities that release greenhouse gases into the atmosphere, influencing long-term changes in temperature and weather patterns. Anthropogenic activities such as burning fossil fuels for energy and transportation, deforestation, urban development, and agriculture are the main drivers of greenhouse gas emissions (4). As a result of the warming climate, there has been an increase in heat waves, forest fires, hurricanes and other coastal storms, droughts, crop loss, glacial and sea ice recession, ocean acidification, and sea level rise (4). These consequences initiate various positive feedback loops that lead to further climate instability and unpredictability, accelerating the rate of climate change. In addition to the consequences for the planet, climate change also impacts social and economic factors. Risk to human health rises on account of heat stress, flooding displacement, disease-transmitting pests, and food shortages (5). Climate change also inhibits economically beneficial ecosystem services including provisions (food, fuel, medicine), regulation (air quality, climate, pollination) and supporting services (nutrient cycling, water cycling, photosynthesis). Therefore, the cost of materials will continue to increase as resources become scarce. Additionally, economic loss will

occur from stress to structural assets caused by intense weather conditions, such as the increased need for road repairs and building modifications.

Climate change management has two primary methods: mitigation and adaptation. Climate change mitigation is the process of reducing or eliminating greenhouse gas emissions to make the impacts of climate change less severe (6). Climate change adaptation is the process of adjusting organizational procedures and structures to account for the effects of climate change and to create resiliency (6). Climate adaptation and mitigation are both key factors of climate change management, and yield benefits such as improved ecosystem health, increased ecosystem services, and increased carbon storage. Climate change management also offers social benefits like improved organizational reputation and increased quality of life for employees and residents, and economic benefits such as reduced operating costs and competitive advantages (7).

2.2 Environmental Mitigation Framework

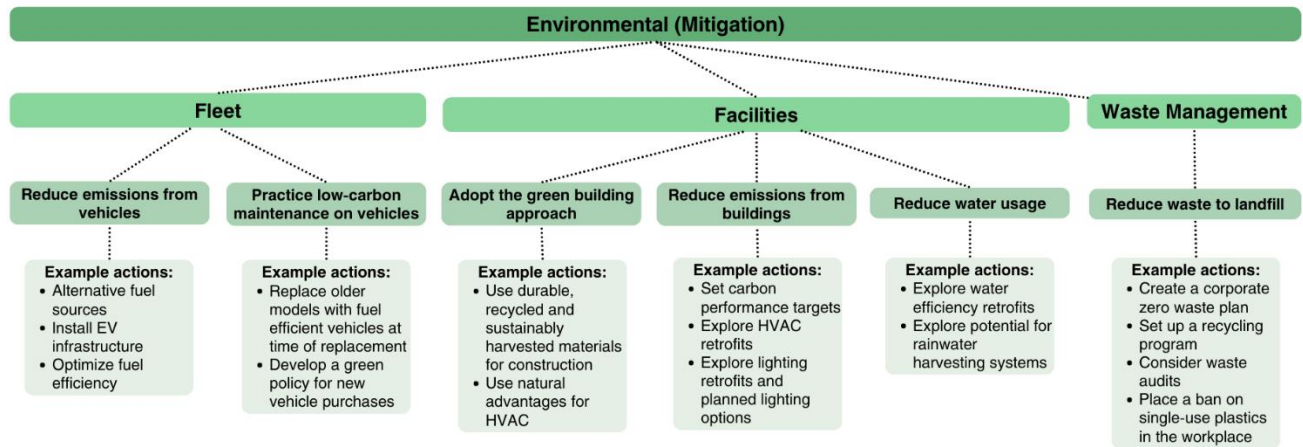
The three dimensions within the environmental mitigation pillar, as seen in Figure 3, include: fleet, facilities, and waste management.

The fleet includes any transportation vehicles owned and used by the municipality. With transportation accounting for over 20% of all greenhouse gas emissions, it is a dimension with plenty of opportunity for improvement (8).

Corporate facilities include any buildings owned or operated by the municipality. Buildings have an environmental impact at every stage of their life cycle from sourcing materials, construction, operations, and destruction (9). No matter the life stage of a building, changes can be made to make the building more environmentally friendly.

The final dimension, waste management, includes all disposal methods within the workplace. This dimension is essential because improper recycling in Canada is so common that 91% of recyclable material still ends up in landfills (10).

Figure 3. Framework of corporate sustainability practices for the environmental mitigation pillar



Fleet

Objective: Reduce emissions from vehicles and optimize the fleet’s fuel usage.

The primary benefit of reducing emissions from the fleet is having a reduced carbon footprint, which improves air quality and slows climate change. Economic co-benefits include the potential for cost reduction in long-term fuel spending since alternative fueling will remain cost-effective as gas prices continue to rise. Additionally, optimizing driving routes will eliminate redundancy and decrease the amount of time employees spend travelling, therefore increasing productivity. There is also potential for indirect social co-benefits such as employees adopting environmentally sustainable driving practices and vehicle selection in their personal lives if they are inspired by the corporate fleet and have electric charging infrastructure available at work.

Potential strategic actions to achieve this goal include:

1. Switching the fleet to alternate fuel sources with higher renewable content and/or lower GHG emissions. For example, electric, hybrid, or biodiesel.
2. Ensuring proper fueling options for new vehicles, such as installing EV charging infrastructure to support an electric fleet or locating nearby biodiesel fueling options.

3. Increase fuel efficiency of vehicles by tracking driving routes for optimization, teaching and enforcing fuel-efficient driving practices, and selecting properly sized vehicles to complete tasks.

Objective: Practicing low-carbon maintenance and replacements on corporate vehicles.

Given that vehicles will eventually need to be repaired or replaced, there is an opportunity to increase the environmental efficiency of the fleet by reducing emissions and vehicle waste. This can also serve as an economic benefit, as fuel-efficient models will reduce fuel costs.

Potential strategic actions to achieve this goal include:

1. Developing a green process for new vehicle purchases to ensure that future vehicle purchases will be considered through a green lens.
2. Replacing older vehicle models with fuel-efficient models at the time of their intended replacement, and ensuring all retired vehicles are recycled or repurposed.

Facilities

Objective: Incorporate the green building approach and principles into new and existing buildings.

The benefit of the green building approach is that it provides a holistic sustainability plan surrounding the life cycle of the building, which reduces its environmental impact including energy efficiency, water efficiency, resource efficiency, emission reduction, and reduced demolition waste (9). Social co-benefits of green buildings include improved employee health and quality of life, from the improved air quality and ventilation (9). A healthy and safe environment for employees also improves employee morale and motivation (9). Economic co-benefits include cost savings from natural HVAC systems and energy/water efficient technologies, as well as added property value (9).

Potential strategic actions to achieve this goal include:

1. Design buildings to use natural advantages for heating, cooling, and lighting using insulation, ventilation, and strategically placed windows. Also, using energy and water-efficient systems and technologies, as seen in the following objectives.
2. Use durable, recycled, and sustainably harvested materials for new construction and renovations. Then recycling and salvaging materials upon demolition.
3. Utilize LEED Goals and Certification as a tool to create objectives and monitor progress.

Objective: Reduce emissions from municipal buildings.

The main benefits of emission reduction are reducing energy use and improving air quality. Social and economic co-benefits include improved employee health and decreased cost of energy usage.

Potential strategic actions to achieve this goal include:

1. Create a carbon budget for buildings, including specific performance targets to be achieved short- and long-term. For reference, the existing carbon reduction goals from Climate Action Strategy are a 45% reduction by 2030 and a 100% reduction by 2050.
2. Explore options for heating, ventilation, and air conditioning upgrades and retrofits that will reduce energy usage and emissions. Some examples include geothermal heating, District Energy Systems, and heat-waste capture.
3. Explore options for lighting retrofits and planned lighting options. Some examples include using only LED lights, installing smart systems to monitor consumption and determine inefficiencies, daylighting, and solar lighting.

Objective: Reduce water usage from municipal buildings.

The benefits of reducing water consumption are protecting the waterways from erosion and overexploitation and reducing wastewater effluent. Economic co-benefits include reduced water costs and decreased energy costs of water extraction, treatment, and distribution.

Potential strategic actions to achieve this goal include:

1. Explore options for water-efficient upgrades and retrofits. Examples from the literature include low-flow appliances, smart water meters to monitor water use and identify sources of leaks, faucet aerators, and water reuse.

2. Explore potential for types of rainwater harvesting systems. Rainwater harvesting systems range from large tanks such as cisterns to supply non-potable water to the building, or small tanks such as rain barrels for watering garden beds.

Waste Management

Objective: Reduce waste that ends up in landfills.

The main benefit of waste reduction is limiting pollution and increasing recycling and reuse. A social co-benefit may also arise if employees adopt sustainable waste management behaviours into their personal lives, further improving the environmental benefits. Economic co-benefits will also result from reducing single-use items, since replacement costs would decrease.

Potential strategic actions to achieve this goal include:

1. Create a corporate Zero Waste Plan. This type of plan describes how to identify waste inefficiencies, structural and procedural changes to reduce waste, and educational methods of changing employee behaviours about waste reduction. Some specific examples include going paperless, using reusable products, and repairing items instead of replacing them.
2. Set up a recycling program for the building, which is a system in the workplace to properly recycle. This encompasses all categories of recyclables including paper, plastic, metal, glass, clothing, batteries, and building materials.
3. Conduct periodic waste audits to identify inefficiencies in waste management and track progress in reducing waste.
4. Ban the use of single-use plastics in the workplace. This strategy opts for a stricter regulation of plastic that forces changes to be made to procedures and eliminates the option for “just once” plastic use.

2.3 Environmental Adaptation Framework

The four dimensions within the environmental adaptation pillar, as seen in Figure 4, include: planning, infrastructure, habitats/parks/green spaces, and emergency services.

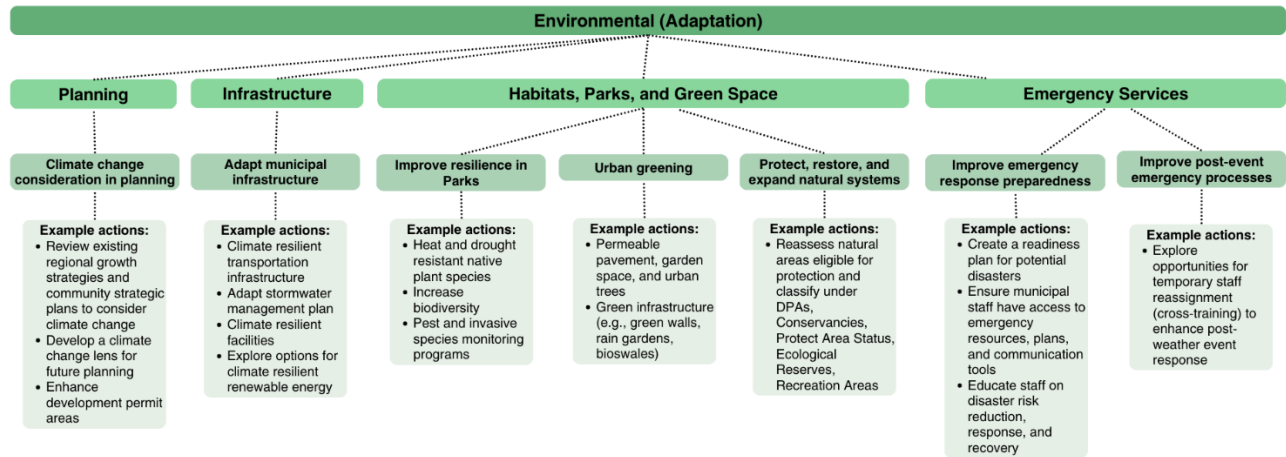
Local government planning establishes allocated land use and devises strategies for the future of the municipality, such as regional growth plans and official community plans. In the past, it is recognized that planning has prioritized the economic health of the community, but as Model B in Figure 1 shows, equal consideration must be given to all three pillars to create sustainability (1,11). Given the new demand for environmental and social involvement in planning as well, there is a need to revise old strategies (11).

Infrastructure refers to any physical structure maintained by the municipality, including transportation (roads, sidewalks, bus stops), water and wastewater systems, and any other structural assets. Transportation infrastructure is physically impacted by worsening weather conditions expedited by climate change, such as melting pavement, roadside erosion, and flooded bridges. Water and wastewater systems are also municipally operated and are at risk of overflowing due to increased rates of stormwater runoff and water consumption. Additionally, electricity infrastructure is at risk as droughts will reduce hydropower output, solar panels become less efficient with each degree of warming, and increased storm intensity can cause power outages (12). Moreover, climate change effects also influence energy demand, such as heat waves resulting in energy surges as air condition is switched on, or as electric vehicles become more common and demand more electricity.

Habitats, parks, and green spaces are asset maintained municipally that are not only beneficial for aesthetic and recreational purposes, but also essential for regulating ecosystem processes and services. As climate change worsens, green spaces can act as a buffer for urban areas and can absorb some of the impacts of climate change.

Emergency services and fire dispatch are municipal responsibilities that may become overburdened given the projected increase in natural disasters (e.g., fire, flood) and power outages. Increasing preparation for emergency events is crucial for keeping the community safe through adverse weather conditions.

Figure 4. Framework of corporate sustainability practices for the environmental adaptation pillar



Planning

Objective: Integrate climate change adaptation methods into past and future municipal planning.

The main benefit of this strategic action is that it guides development towards becoming a climate-resilient community. Local government planning sets the stage for how the community is going to thrive and grow, and yields numerous co-benefits such as supporting the environment, keeping the community safe, and limiting costs of weather disaster cleanup.

Potential strategic actions to achieve this goal include:

1. Review existing strategies (e.g., regional growth strategies, official community plan) to revise with consideration of new climate predictions. Then, plan a revision schedule for strategies to be updated every few years given the emerging predictions and data.
2. Develop a climate change lens for staff to utilize during land use decision making. For example, site plan approvals, building and demolition permits.
3. Enhance development permit areas to include updated climate predictions.

Infrastructure

Objective: Improve municipal infrastructure to withstand the impacts of climate change.

The benefits of improving infrastructure resilience are to prolong the life of municipal assets, reduce maintenance costs from weather damage, and increase structural reliability. Social co-benefits include enhanced public safety from reduced chance of infrastructure failing (e.g., bridges during floods) and increased public approval. Additionally, some of the strategic actions could reduce greenhouse gas emissions, reduce stormwater runoff, and reduce the heat island effect.

Potential strategic actions to achieve this goal include:

1. Explore options for resilient transportation infrastructure. For example, permeable pavement for sidewalks can help reduce the amount of water on storm drain infrastructure and wastewater treatment facilities (13). As well, low-carbon asphalt and concrete options could reduce the emissions from production, reduce improve road flexibility, and increase long-term resilience (14). Finally, increased resilience in bridges could accommodate more frequent and intense flood events.
 2. Update integrated stormwater management plans to include updated climate projections. For example, the plans should reduce flash flooding possibility, decrease stormwater runoff (and potential contamination and erosion), and improve piped systems to accommodate higher volumes of water.
 3. Explore climate-resilient sources of renewable energy to power municipal operations. Given the risk to electricity infrastructure and the likelihood of increased power outages, creating reliability in the municipal energy source through variability in energy generation (e.g., having multiple sources of energy) will allow for continued operations through power outages.
 4. Upgrade facilities to withstand the impacts of climate change. For example, overflow mechanisms for roof drainage and heat management plans.
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Habitats, Parks, and Green Space

Objective: Improve resilience in community parks.

The benefits of resilience in community parks are water filtration, flood prevention, regulation of the heat island effect through shade and transpiration, biodiversity protection, and carbon storage. Potential economic co-benefits include the reduced cost of AC in nearby houses and benefit to the local food web through pollinator support.

Potential strategic actions to achieve this goal include:

1. Retain moisture and select drought-resistant native plant species in parks. Some examples of moisture-retaining strategies include mulching, tree watering bags, and planting trees with a large natural canopy.
2. Increase biodiversity within the parks. For example, planting pollinator gardens, increasing the number of planting beds (as opposed to grass flats), and building wildlife corridors between green spaces.
3. Reduce pests and invasive species. For example, planting pest-resistant species and implementing invasive species monitoring programs.

Objective: Increase urban green space and landscaping.

The benefits of urban green space include decreased runoff, increased water filtration (and water quality), reduced heat island effect, and increased carbon storage. Economic and social co-benefits also arise from cost reduction from heat, prolonged life of stormwater infrastructure, and increased aesthetic value of the community.

Potential strategic actions to achieve this goal include:

1. Decrease impervious surface area using permeable pavement or garden beds. These can be used in places with a lot of urban coverage, such as along sidewalks or around buildings.
2. Explore potential for innovative green-blue infrastructure. For example, green walls, rain gardens, and bioswales.

Objective: Protect, restore, and expand natural conservation and heritage systems.

The benefits of ecological conservation include wildlife habitat protection and regulation of ecological processes. The economic co-benefits are ecosystem services that supply economic provisions, such as drinking water and medicine. Social co-benefits also arise in natural spaces, as human cognitive function and mental health are known to improve in natural environments (15).

Potential strategic actions to achieve this goal include:

1. Identify and distinguish areas eligible for protection as: Class A, B, or C parks, conservancies, protected area status, ecological reserves, and recreation areas (16).

Emergency Services

Objective: Improve emergency response to extreme weather events.

Given the likely increase of extreme weather events, this objective ensures staff and emergency workers have the necessary equipment, know the plans and policies, and know how to keep themselves safe during an emergency. The benefits are enhanced community and staff safety and improved organizational efficiency.

Potential strategic actions to achieve this goal include:

1. Create a readiness plan for potential disasters. Define worst case scenarios and implement contingency plans to ensure that staff and township are prepared.
2. Create emergency communication tools that ensure that staff have access to information about emergency resources and plans.
3. Educate staff on disaster risk reduction, preparedness, response, recovery, and rehabilitation.
4. Explore opportunities for temporary staff reassignments to enhance post-weather event processes.

Social Sustainability



3.0 Social Sustainability

Corporate social sustainability refers to business practices that benefit the social systems regulated by the organization to enhance social well-being for stakeholders in the long term. Corporate social sustainability is defined in literature to have two distinct practices; socially-oriented and employee-oriented (17). Socially-oriented corporate sustainability prioritizes social enhancement for external stakeholders such as residents, businesses, and suppliers, while employee-oriented corporate sustainability refers to enhancing the well-being of internal stakeholders such as employees and senior management (17). Given the focus of this report, the corporate social sustainability section focuses exclusively on employee-oriented internal social structure and management. The framework found in Figure 5 provides strategic actions to benefit municipal employees and internal stakeholders, and work towards corporate sustainability. There is significant supporting rationale for organizations to improve their internal social systems.

3.1 Rationale

Constant societal change is inevitable, and social sustainability is a promise to keep up with emerging trends to continuously accommodate the well-being of social systems. Trends such as growing population size, fluctuating labour markets, rapid rates of urbanization, and technological progression are just some of the influencing factors that could place strain on organizational social structure (18). The benefits of adapting to these influencing factors and improving human well-being yields positive benefits for both employees and the organization, and is considered instrumental in corporate success (18). In addition to ethical reasons for corporate social sustainability, other benefits include employee satisfaction, financial success, and competitive advantage (18,19).

Social sustainability actions foster a positive organizational culture which is termed CSS culture and signifies an organization unified in values, beliefs, and goals (18,19). This occurs because employee well-being is prioritized, organizational structure supports the operations, and values (trust, honesty, and respect) are reinforced. CSS culture results in higher job satisfaction and quality of life for employees, which leads to higher employee productivity, lower turnover

rates, and more opportunity for human capital development (18,19). These benefits translate to financial success for the organization. Moreover, CSS culture fosters innovation, collaboration with stakeholders, and boosts the organization's reputation, giving a competitive advantage over other corporations (18).

Corporate social responsibility (CSR) is another emerging term that refers to the ethical considerations of a business. CSR differs from corporate social sustainability in that it is defined as social accountability for past actions, while the latter looks forwards in time to maintaining social balance (17).

3.2 Social Sustainability Framework

The five dimensions within the social pillar, as seen in Figure 5, include: employee behaviour, employee motivation and satisfaction, human capital development, health and safety, and ethical behaviour and human rights. Reports and literature analyzed through this research lacked fully comprehensive corporate social sustainability plans, since it was found that sustainability plans were often environmental focused and social strategies are often community oriented. Therefore, the dimensions for the social sustainability pillar were sourced from a paper by Baumgartner and Ebner (2010), which listed various important aspects of corporate sustainability, including the dimensions listed above (20).

Employee behaviour is a dimension overlapping both the social and environmental pillars, since it pertains to the internal actions performed by the staff in the interest of the environment. Staff effort is the driving force behind climate actions, considering that it is the responsibility of staff and employees to plan and implement climate actions. Therefore, this pillar works towards overcoming strategic adoption barriers and is an important dimension for environmental sustainability implementation.

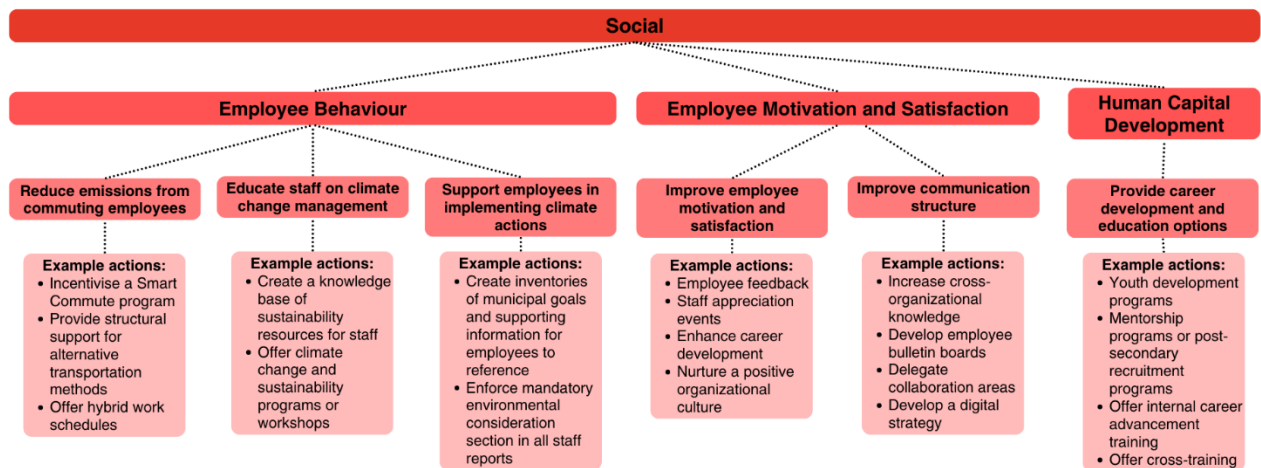
Employee motivation refers to the level of commitment and energy that the staff bring to their company, and employee satisfaction refers to the level of contentment that the employees feel with their job (19). This dimension requires active awareness from management of employee needs, values, and motivation factors (20). Motivation and satisfaction are both essential to creating a CSS culture, and further generating innovation, productivity, and financial success.

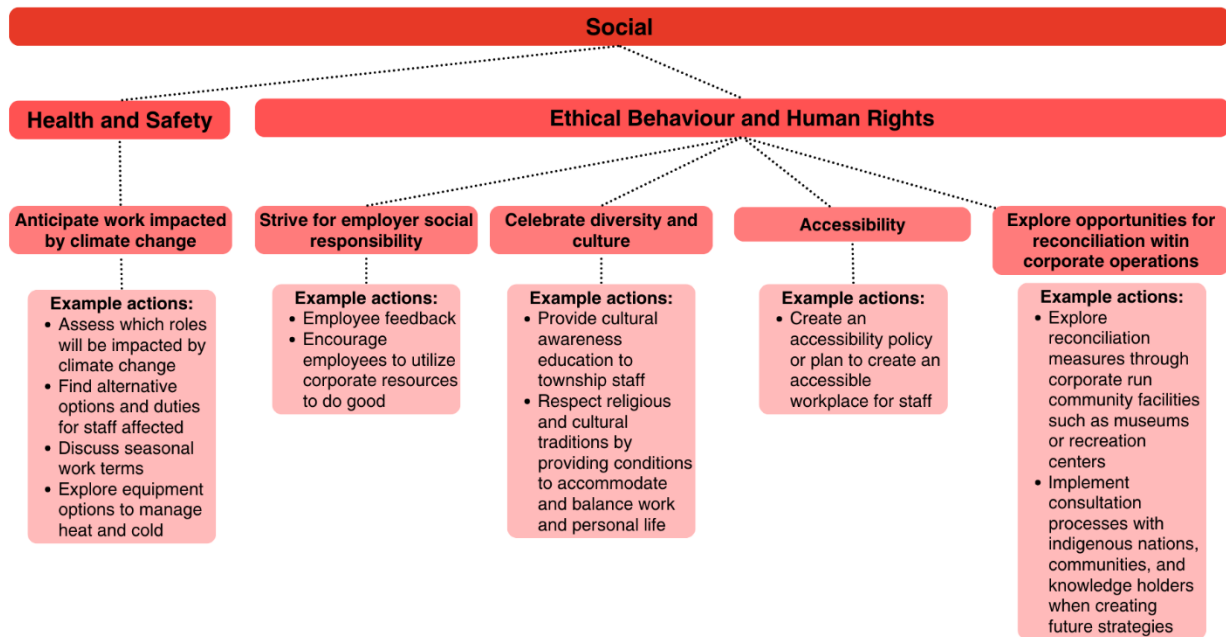
Human capital development is the advancement of the staff experience through education, mentoring, or training (20). Not only is job enrichment important for employees to feel more confident in the workplace, it also cultivates a workforce of competent and knowledgeable employees, yielding faster problem solving times (20).

Health and safety is guaranteeing that everyone working in or for the organization is not subjected to any health or safety risks, and the organization is being proactive about preventing dangers for employees (20). Ensuring workplace safety benefits the company long term by increasing productivity and increasing employee satisfaction.

Ethical behaviour and human rights is a dimension that refers to the behaviours within an organization that influence internal stakeholders including fundamental ethics elements such as respect, fairness, and consideration of ideals and needs (20). Business ethics is rooted deeper than just managerial control and is structurally established within organizations. Therefore, successful ethical companies have respect, diversity, and inclusion enforced through the company culture so that it is an underlining consideration in all day-to-day operations.

Figure 5. Framework of corporate sustainability practices for the social pillar





Employee Behaviour

Objective: Reduce emissions from commuting employees.

The direct benefits of encouraging low-carbon commuting options are emission reduction and improved air quality. Other potential benefits include prolonging the life of vehicles, saving money on gas, reducing stress from driving, and reducing traffic (21).

Potential strategic actions to achieve this goal include:

1. Incentivise or offer a smart commute program for employees who commute. Smart commute is a term for alternative lower-carbon methods of travelling to work other than driving a personal vehicle, such as carpooling, public transit, biking, or walking.
2. Provide structural support for alternative transportation methods. For example, secure and theft-free bike infrastructure and solar-powered electric vehicle charging infrastructure.
3. Offer hybrid work schedules. For example, hosting meetings online and installing secure at-home computer software.

Objective: Ensure that all staff have the necessary information to manage their own personal energy use and emissions while at work.

Having climate-literate staff who understand and manage their own contributions to corporate emissions is beneficial because it builds resiliency within the workplace and will help the organization reach climate action targets faster. Additionally, training and awareness is an investment into employee knowledge that will payoff down the line, given that staff will have the knowledge to make decisions that improve their quality of life, both at work and at home.

Potential strategic actions to achieve this goal include:

1. Create a knowledge base or shared resource space where staff can find resources related to sustainability and their personal role in reducing the overall corporate impact.
2. Offer climate change and sustainability learning opportunities for training and awareness. For example, workshops, digital training, and office signage.
3. Introduce activities for staff such as waste-free lunch day, earth day, or other creative climate initiatives to get employees involved.

Objective: Ensure that all staff have emission and energy use targets within the scope of their responsibilities.

This objective helps overcome the barrier of delayed strategic adoption, which is common when strategies are created but implementation plans are unclear. Ensuring that employees are given targets and how to achieve the targets (within the scope of their work) will reduce implementation time and help the organization move toward success faster.

Potential strategic actions to achieve this goal include:

1. Create inventories of municipal goals (greenhouse gas emission targets, energy use benchmarks), and make this information accessible to all staff.
2. Enforce mandatory environmental reporting. A mandatory environmental consideration section in all staff reports will ensure that staff are monitoring their own progress and looking at decision making through a climate change lens.

Employee Motivation and Satisfaction

Objective: Increase employee motivation and satisfaction.

The main benefit of this objective is to increase employee productivity and retention, and therefore further financial success. Additionally, employee feedback is a powerful tool to help improve workplace relationships, make better decisions for the company, and understand how to truly create job satisfaction.

Potential strategic actions to achieve this goal include:

1. Gain insight into employee motivation and satisfaction levels through a survey. Employee feedback can provide key areas of concern.
2. Introduce staff appreciation events and programs.
3. Create a thriving organizational culture by enforcing core values. To have successful corporate sustainability initiatives, strategies should be ingrained in the corporate culture (also referred to as CSS culture in Section 3.1)

Objective: Improve communication structure.

Effective communication structure reduces miscommunication, decreases conflict, and decreases redundancy, resulting in increased employee satisfaction and productivity. Additional economic benefits of efficient communication include innovation, faster decision-making, and a greater holistic understanding of the organization.

Potential strategic actions to achieve this goal include:

1. Increase cross-organizational knowledge. For example, podcasts, workshops, employee newsletters, social events, or bulletin boards.
2. Delegate collaboration areas to encourage teamwork such as physical spaces in the workplace where employees can connect, work, and learn together.
3. Develop a digital strategy that describes how technology can be utilized in the workspace to improve performance and communication.

Human Capital Development

Objective: Provide career development and education options.

Facilitating employee development yields the benefits of having a knowledgeable and competent workforce, which decreases human errors, improves problem-solving and decision-making, and

increases efficiency (22). As well, employees who are provided with learning opportunities are more likely to be content with their job and loyal to the organization (22).

Potential strategic actions to achieve this goal include:

1. Consider youth engagement and development programs. Programs can be offered for youth and young adults (ages 10-25) in developmental topics such as recreation, social groups, prevention, and education.
2. Consider mentorship programs or recruitment programs for post-secondary students and young adults.
3. Offer training for internal career advancement, such as a leadership development program.
4. Offer cross-training education for lateral movement within the organization.

Health and Safety

Objective: Assess and anticipate work impacted by climate change.

Climate change brings about more adverse weather events, such as extreme heat and cold, floods, storms, and wildfire smoke. Weather patterns also determine pest populations and could result in larger insect populations in warmer weather. Given these changes, employees may be at a higher risk while at work than in past years, especially outdoor employees who are influenced heavily by the elements. The benefits of protecting employees include reducing the risk of injury and complying with ethical and legal regulations.

Potential strategic actions to achieve this goal include:

1. Review job descriptions and agreements to identify roles and responsibilities that will be impacted by climate change. Emphasis on outdoor staff susceptible to hot and cold conditions.
2. Find alternative options and duties for staff affected by extreme weather conditions.
3. Discuss seasonal work terms and the potential for an extension of the summer term.
4. Explore options for equipment to manage heat and cold. For example, lawn mower canopies, shade tents, and mosquito netting.

Objective: Employee mental health consideration.

This objective was not found in municipal literature but is an important aspect of employee health. Workplaces that put effort into nurturing the health and well-being of their employees have fewer sick leaves and a more positive organizational culture (23).

Potential strategic actions to achieve this goal include:

1. Explore options to create awareness and support employee mental health.
-

Ethical Behaviour and Human Rights

Objective: Strive for employer social responsibility.

Corporate social responsibility has previously been defined as social accountability of corporate actions that influence all stakeholders. Employer social responsibility is similar, except that it applies only to one stakeholder: the employees. The benefit of being a fair and equitable employer is that employees will feel happier and empowered, leading them to be more productive and loyal to the organization.

Potential strategic actions to achieve this goal include:

1. Gather feedback from employees (through anonymous collection methods) into the perceived level of employer social responsibility and identify areas of improvement.
2. Empower employees to utilize resources to do good (e.g., good actions/helping others)

Objective: Celebrate diversity, culture, and inclusion.

Diversity and culture in the workplace are beneficial for providing new perspectives and increasing innovation. Inclusion is key to making employees feel safe and welcome, which increases employee satisfaction and helps create a positive company culture.

Potential strategic actions to achieve this goal include:

1. Provide cultural awareness education to staff.
2. Respect religious or cultural traditions by providing working conditions that accommodate and balance work and personal life.

3. Prioritize inclusion and equality through core company values.

Objective: Ensure corporate facilities and operations are accessible to everyone.

Accessibility will benefit the organization by improving the quality of life for staff and allows for greater employee independence.

Potential strategic actions to achieve this goal include:

1. Create an accessibility policy to ensure all corporate buildings, municipally operated infrastructure, and workspaces are accessible. For example, physically accessible spaces (e.g., wheelchair ramps and restrooms), and digital accessibility.

Objective: Explore opportunities for reconciliation within corporate operations.

Indigenous reconciliation and inclusion within local governments is essential for building relationships and supporting indigenous communities. As well, indigenous knowledge could offer insight into future strategies and community advancements.

Potential strategic actions to achieve this goal include:

1. Explore reconciliation measures through corporate-run community facilities such as museums and recreation centres.
2. Implement consultation processes with indigenous nations, communities, and knowledge holders and incorporate indigenous knowledge into future strategies.



Economic Sustainability

4.0 Economic Sustainability

Corporate economic sustainability refers to business practices that generate profit and financial stability for the organization in the long term (24). Traditionally, the objective for many businesses has been to achieve economic prosperity through growth and profitability. Economic sustainability is different from this objective because it aims to achieve growth and profitability while still operating within the best interest of environmental and socio-cultural needs (24). In the nested dependencies model shown in Model C of Figure 1, the economic system operates within social systems, which then operates within the natural system, meaning that it must provide a neutral or positive impact on both other pillars. Many of the economic sustainability actions suggested in Section 4.2 create economic value through societal or environmental benefits.

For community-targeted economic development plans, economic sustainability would refer to prioritizing the well-being of the community through creating jobs, attracting businesses, improving quality of life, and attracting skilled workers to the area (25). For corporate economic sustainability plans the focus must be turned inwards. The framework found in Figure 6 provides general strategic actions to enhance economic growth for the municipality, and work towards corporate sustainability. There is significant supporting rationale for a municipality to improve their economic sustainability.

4.1 Rationale

The purpose behind economic profitability is intuitive since most businesses operate to make a profit and to expand their operations. The purpose for economic sustainability is similar but aims to increase profit and expand operations while maintaining the environmental and social pillars to create a stable foundation for long-term economic stability. This is important not only for healthy business operations within the municipality, but also extends to benefit the well-being of the community.

Economic sustainability through social and environmental methods has proven to be beneficial for business operations by improving operational efficiency, developing a competitive advantage, and improving reputation (24). Operational efficiency describes a variety of operational benefits that save time and cost such as simplified procedures, higher productivity, faster decision-making, and faster problem-solving (24). A competitive advantage arises from encouraging employee innovation to continually optimize daily operations and allocating more time to research and development (18). Improved reputation is beneficial for forming positive relationships with stakeholders (e.g., community, businesses, partnerships, staff) by expressing transparency and accountability through sustainability reporting (24).

Economic stability also enhances and strengthens the community. Through internal economic initiatives, local government would be more equipped to lead and support the municipality's economic development strategy (26). The ability to reduce corporate costs and allocate community taxes effectively will allow for more funding for local infrastructure and community services (26). This creates a more desirable community and improves the quality of life for residents.

4.2 Economic Sustainability Framework

The six dimensions within the economic pillar, as seen in Figure 6, include: innovation and technology, collaboration, knowledge management, processes, procurement, and sustainability reporting. Consistent with the social sustainability pillar, the dimensions for the economic sustainability pillar were sourced from a journal article by Baumgartner and Ebner (2010) (20).

Innovation and technology includes all research and development focused on corporate sustainability and technological advancements (20). Innovation is the source of progress and advancement of the company and can include any technological innovations for the environment (e.g., water and energy-saving appliances) or social (e.g., workflow optimization software) pillars.

Collaboration refers to partnerships with external business partners, such as suppliers, local governments, businesses, and other organizations (20). Collaboration is a powerful tool for

organizations since it allows for knowledge sharing and teamwork, which leads to greater innovation, higher productivity, and faster problem-solving (27).

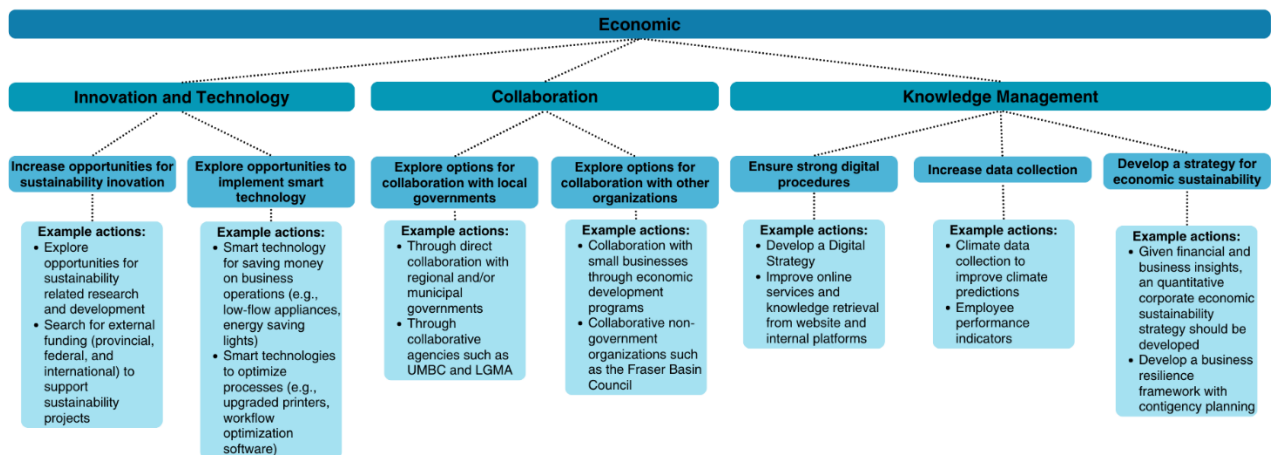
Knowledge management includes methods of utilizing knowledge within the organization to plan, transfer, and apply knowledge when necessary (20). Proper knowledge management leads to less redundancy and higher productivity within an organization (20).

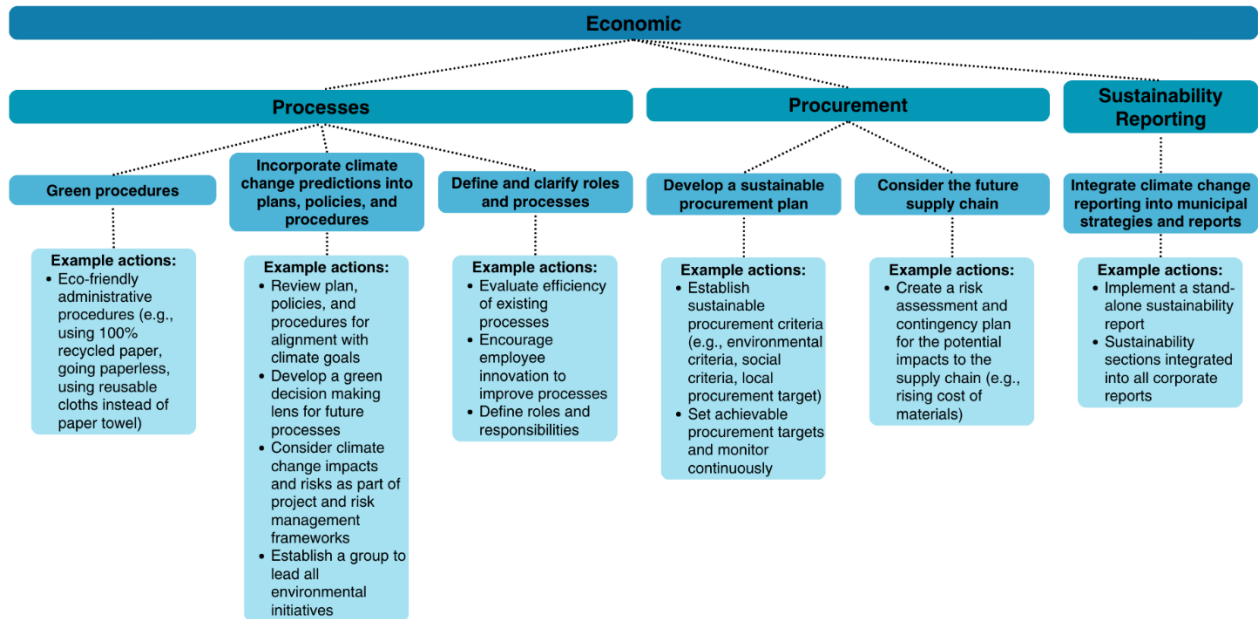
Processes are all the defined business practices that employees perform within the organization. Clear and defined processes are important for overall productivity, so that each employee knows their role and responsibilities, and operations can be conducted efficiently (20).

Procurement refers to external sourcing for materials or services. This dimension requires environmental and social awareness to maintain ethical considerations (20). Ensuring that products and services meet the standards of being ethically and environmentally sourced is important for upholding corporate reputation, reducing carbon footprint, and boosting employee morale.

Sustainability reporting is the consideration and reporting on sustainability within the company in order to identify problems and monitor progress (20). This dimension is especially important since strategic adoption is one of the most prevalent implementation barriers, and sustainability reporting is the best method of overcoming it.

Figure 6. Framework of corporate sustainability practices for the economic pillar





Innovation and technology

Objective: Increase opportunities for sustainability innovation.

Innovation benefits an organization by providing a competitive edge and being ahead of trends. Additionally, employees encouraged to innovate often find new methods of performing, which increases employee satisfaction and productivity.

Potential strategic actions to achieve this goal include:

1. Explore opportunities for sustainability-related research and development.
2. Search for external funding (provincial, federal, or international) to finance sustainability projects.

Objective: Explore options to implement smart technologies.

Smart technology's primary benefit is to simplify everyday processes and ease the responsibilities of the technology user. Some smart technologies, such as energy and water-saving equipment, reduce the operational costs of a facility.

Potential strategic actions to achieve this goal include:

1. Smart technology for reducing operation costs. For example, low-flow appliances to reduce water use and energy-efficient lighting systems.
 2. Smart technologies to optimize organizational processes. For example, high-tech printers, or workflow optimization software.
-

Collaboration

Objective: Explore options for collaboration with neighbouring local governments.

Intergovernmental collaboration allows for some services and policy development to be merged, resulting in reduced costs, efficient administrative procedures, and faster problem-solving (27). Other benefits include reduced rivalry between neighbour municipalities, and reduced jurisdictional disagreements between different levels of government (27).

Potential strategic actions to achieve this goal include:

1. Direct collaboration with regional and/or municipal governments.
2. Through collaborative agencies. For example, the Union of BC Municipalities (UMBC), Local Government Management Association (LGMA), or Municipal Insurance Association (27).

Objective: Explore options for collaboration with other organizations.

Non-government collaboration can yield enhanced financial benefits, standardized assessments (e.g., property valuations), and improving the relationship with key stakeholders (e.g., indigenous or community stakeholders) (27).

Potential strategic actions to achieve this goal include:

1. Collaborate with small businesses through economic development programs.
 2. Get involved with external collaborative organizations such as the Fraser Basin Council.
-

Knowledge management

Objective: Ensure strong digital procedures.

The benefits of digitization include increased accessibility, faster retrieval and collaboration, and streamlined processes (28).

Potential strategic actions to achieve this goal include:

1. Develop a digital strategy. The digital strategy describes how benefits from technology can be maximized in the workplace.
2. Improve online services and knowledge retrieval from the website and internal platforms.

Objective: Increase data collection.

Internal data collection helps to identify issues, monitor progress, and identify opportunities within the organization (29). This yields benefits such as increased accuracy in decision-making and improved understanding of employee satisfaction (29).

Potential strategic actions to achieve this goal include:

1. Climate data collection to improve climate predictions.
2. Tracking employee performance indicators.

Objective: Develop a thorough economic sustainability strategy.

An official economic plan should be created using financial insights to produce a customized plan that will work for the municipality. This will help to create economic stability long term and prepare for any potential external disturbances.

Potential strategic actions to achieve this goal include:

1. Use financial and business insights to create a quantitative economic sustainability plan.
2. Develop a business resiliency framework with contingency planning for internal and external disruptions.

Processes

Objective: Make administrative procedures more eco-friendly.

The economic benefit of green administrative procedures includes cost and time saving on processes. Since this objective overlaps the economic and environmental pillars, the environmental co-benefits include reduced waste and carbon footprint.

Potential strategic actions to achieve this goal include:

1. Implement environmentally friendly printing processes. For example, going paperless/using recycled paper, double-sided copying, and upgrading to an environmentally friendly printer. Options for greening other typical office procedures can also be explored.

Objective: Incorporate climate change predictions into plans, policies, and procedures.

Incorporating climate change into all plans, policies, and procedures will help overcome implementation barriers, and progress will be made toward the climate action goals. Long-term economic benefits will come from climate resilience within business operations. Environmental benefits will also arise as environmental initiatives move forward.

Potential strategic actions to achieve this goal include:

1. Review plans, policies, and procedures for alignment with climate goals.
2. Develop a green decision-making lens for future processes.
3. Ensure climate change impacts and risks are considered as part of project and risk management frameworks.
4. Establish a group to lead all environmental initiatives. For example, an Environmental Advisory Committee, Corporate Environmental Committee, or a Sustainability Team.

Objective: Define and clarify roles and processes.

The benefit of having clear and defined processes is cost saving from reducing error and redundancy within the workplace.

Potential strategic actions to achieve this goal include:

1. Evaluate the efficiency of existing processes. For example, processes may be daily employee routines, or larger business operations such as customer service.

2. Encourage employee innovation to improve processes, particularly in their own daily tasks.
 3. Clearly define roles and responsibilities.
-

Procurement

Objective: Develop a sustainable procurement plan.

Changing consumption patterns benefits the organization through reduced cost (e.g., reduced packaging, joint procurement), and ethical considerations (30). Additionally, economic and community benefits occur when sourcing products or services locally from within the community, and relationships with community partners will be strengthened (30).

Potential strategic actions to achieve this goal include:

1. Establish sustainable procurement criteria. Goals for sustainable procurement can be found in academic literature, providing specifications for procurement that includes green production (lifetime costs of product) and shipping (recycled, low waste packaging) (30). Other criteria include the level of compliance the supplier has with environmental controls, efforts to source locally, or joint procurement (30).
2. Set achievable procurement targets and monitor continuously.

Objective: Consider the impacts of climate change on the supply chain.

Components of supply chain management, including physical, operational, and reputational attributes, face potential impacts of climate change (31). Identifying and preparing for potential impacts will save time, costs, and advance problem-solving (31).

Potential strategic actions to achieve this goal include:

1. Perform a risk assessment and create a contingency plan for the potential impacts of future climate and economic trends on the supply chain. For example, the cost of materials is impacted by resource overexploitation and inflation.
-

Sustainability reporting

Objective: Integrate climate change reporting into municipal strategies and reports.

Sustainability reporting allows for measurable climate action progress, which appeals to the public and to potential investors. Additionally, frequent reporting keeps climate actions relevant, so that they are implemented more widely, yielding environmental co-benefits.

Potential strategic actions to achieve this goal include:

1. Enforcing a stand-alone sustainability report to be delivered periodically which outlines progress toward sustainability targets.
2. Incorporating a sustainability consideration section into all corporate reports.



Implementation Barriers and Solutions

5.0 Implementation barriers and solutions

Implementing a corporate sustainability plan faces two forms of barriers: organizational and individual. Successful organizational changes are driven by many individual changes added together. This proves challenging because individuals in organizations often exhibit resistance to change, which happens when employees feel unsure or unconfident in the new methods. The conflict between necessary change and employee resistance to change is what causes individual implementation barriers. Opposite to these individual barriers are organizational barriers, which are limitations placed upon the employees by institutional factors that are out of their control.

Various organizational and individual barriers are explained in Sections 5.1 and 5.2, then summarized in Section 5.3.

5.1 Organizational Barriers

Financial barriers are the most prevalent to sustainability initiatives. The upfront cost of many of the strategies (particularly environmental technologies) and the uncertainty around long-term economic returns on structural investments is usually the primary reason why strategies are rejected (32). For example, there is a higher initial capital cost to sustainability actions like installing electric infrastructure, retrofitting company buildings, or implementing blue-green infrastructure. To overcome financial limitations, proper planning and resource allocation is required. Additionally, there is potential to seek external funding to finance environmental projects. Searching for provincial, federal, or private funding from programs such as The Green Municipal Fund could provide grants and loans to offset the financial barriers (33).

Time management barriers are restrictions to sustainability initiatives that arise because of limited human capital (34). Often, employees are already very busy with responsibilities and have limited time, and therefore aren't engaged with corporate sustainability actions (34). To overcome time constraints, corporate sustainability initiatives should be integrated into all activities, instead of being an additional daily responsibility for employees (34).

Communication barriers are communication breakdowns that occur because of inefficient communication structures (35). Some examples of communication barriers include selective perception, information overload, and reporting hierarchy (35). For example, when implementing the corporate sustainability strategy selective perception can cause some employees to interpret the objectives in a way that aligns with their own beliefs and slow the implementation of the strategy. Communication barriers can be improved through methods such as feedback, transparency, team-building activities, and proper communication channels.

Structural barriers are any structures that impede implementation, such as management structure and infrastructure (36). Management structure can cause barriers if departments of the organization become too separated in their work, causing resource sharing and communication to be difficult. This can be overcome by improving organizational communication structure and introducing inter-departmental collaborative events. Physical structural barriers include any initiative (e.g., natural HVAC options, electric vehicle infrastructure) that is physically impossible within the existing infrastructure. The level of potential structural initiatives will have to be assessed for each facility and all municipally owned infrastructure. Additionally, there may be infrastructure limitations to collaboration, since there aren't collaborative spaces large enough to accommodate. This has been overcome by renting local arenas for large collaborative events.

Professional and technical barriers may also arise, such as a lack of qualified workforce, inadequate research and development, limited stakeholder involvement, and inadequate distribution of information (32). These hurdles can lead to capacity gaps, which are divergences of the organization's vision and mission (37). Large turnover rates or lack of professional expertise limits the organizational ability to accomplish tasks (32). Furthermore, research and development is a critical stage of understanding the best options for organizations given infrastructure, organizational structure, and financial limitations, therefore adequate research and development into mitigation and adaptation options is essential. To overcome capacity gaps, effective project management and solidifying organizational communication structure will increase information distribution, increase stakeholder involvement, and will identify professional knowledge barriers (32).

Strategic adoption of the objectives over the long term is another common barrier. To overcome this, monitoring and formal reporting are all ways to ensure that the objectives are

actively being pursued. Some of the actions identified can serve as enforcement, such as working towards LEED certification. The LEED system is a rating system that awards certification for obtaining set levels of sustainability in terms of energy, water, waste, transportation, materials, and health (38). By achieving levels of LEED certification, this serves as a goal setting and success-monitoring system. Additionally, contingency planning for potential disruptions can help with long-term strategic adoption.

Regulatory barriers are limitations caused by existing policy tools and interactions with other levels of government (39). Municipalities sometimes have to wait for legislation to be passed at provincial or federal levels (e.g., vehicle efficiency standards, building codes), which can slow the implementation process (39). No solution examples were found in the literature.

Competition barriers are limitations to policy circulation caused by tensions between neighbouring municipalities. Policy circulation occurs regularly between levels of government, and it was found that on the West coast of British Columbia that sustainability policies are being shared across jurisdictional and national borders (40). Collaboration is inhibited by intergovernmental competition, and the tension usually results in obstacles throughout the sustainability policy development and implementation phases (40). Some intergovernmental competition can be mediated by collaborative organizations (27).

5.2 Individual

Organizational culture barrier is the resistance to change that an organization has. The existing organizational culture has a strong influence over staff, and requires effort from everyone in the company to change, which can prove difficult (34). As mentioned in Section 3.1, creating a CSS culture is a key driver in the adoption of the social sustainability strategy (18). Some specific reasons why the organizational culture might oppose the corporate sustainability strategy include the lack of awareness of benefits, resistance to change, and aesthetic objections to mitigation technologies (32). One method of overcoming this is to obtain senior management buy-in, and use them as the driving force behind the change (34). Another method is to use change management techniques to influence staff, such as planning, transparency, truthfulness, communication, and demonstration (41).

Behavioural barriers are cognitive biases that cause employees to resist change. This is different from organizational culture barriers since organizational culture treats employees as an entity, while behavioural barriers may only affect certain individuals. Individuals may be influenced by societal pressure, financial pressure, and personal beliefs, all of which may conflict with the sustainability strategy (39). Education and awareness are important to help overcome cognitive biases. For example, there is a preconception that switching from fossil fuels to renewable energy sources is always a difficult and costly transition, which is not true. By understanding the benefits of eco-friendly technology, there will be less resistance to adopting new technologies (32).

Technological barriers include the uncertainty of current technologies, and difficulty integrating technologies into organizational culture (32). This barrier is also heavily based on the perception that technology is unnecessary and leads to privacy concerns. To overcome this, fostering an organizational culture of innovation, and addressing security concerns will allow for technology to be adopted more willingly into the workplace.

Leadership support barriers include the lack of buy-in from senior management and executive leadership on corporate social sustainability initiatives (34). To overcome this barrier and obtain support from senior management, a report can be provided outlining the benefits of corporate sustainability, how corporate sustainability can support corporate targets, and how it can become an opportunity for the organization (34).

Community barriers are the community values and beliefs that influence how the local government operates and plans. Local governments may be reluctant to spend money on climate initiatives for fear of the public backlash they may receive if the community feels that resources are not allocated in their best interest (37). To overcome this, community engagement is key to developing an understanding of shared goals and increasing social learning (42). Social learning is a change in the knowledge of an individual in which the individual opens their understanding from introspective to become aware of wider social units or communities (42,43). This means that individuals in the community will understand the bigger picture of how climate change initiatives benefit them, even if those benefits are not experienced directly.

5.3 Barriers Summarized

Organizational Barriers

- **Financial:** the lack of funds to implement high-cost sustainability technology can be overcome by exploring options for external funding.
- **Time management:** employee time limitations can be overcome by integrating the strategy into all corporate activities, rather than making the strategy an extra separate task.
- **Communication:** disconnected communication structure can be overcome by increasing employee feedback, increasing transparency, team building, and ensuring proper communication channels.
- **Structural:** inefficient management structure can be overcome through interdepartmental communication. Unadaptable infrastructure must be evaluated for potential opportunities.
- **Professional and Technical:** effective project management structure will increase information distribution, stakeholder involvement, and could minimize professional knowledge barriers.
- **Strategic Adoption:** ensure long-term enforcement of the objectives through goal setting, monitoring, and reporting.
- **Regulatory:** limitations caused by existing policy and interactions with levels of government.
- **Competition:** intergovernmental competition barriers can be overcome through collaboration and mediated by collaborative agencies.

Individual Barriers

- **Organizational Culture:** employee resistance to change can be overcome by education and awareness training. Difficulties in creating a CSS culture can be overcome by senior management advocating for the strategy and by using change management methods.
- **Behavioural:** cognitive biases in employees can be managed through education and awareness.

- **Technological:** fostering an organizational culture of innovation and addressing technological security concerns will allow for technology to be adopted more willingly into the workplace.
- **Leadership Support:** lack of senior management buy-in can be overcome by framing corporate social sustainability as an opportunity and presenting the various benefits of the strategy.
- **Community:** backlash to sustainability decisions based on differences in values can be overcome through community engagement to increase understanding of goals and benefits.

5.0 Conclusion

This report analyzed existing municipal sustainability strategies and academic literature to create corporate sustainability frameworks of potential municipal actions that will help build a resilient and flourishing community. The promising practices were separated into environmental, social, and economic pillars, as determined by various models of sustainability. Additionally, benefits and rationale were provided for each pillar to help justify the need for corporate sustainability. The report also summarized potential barriers to strategic implementation and suggested some solutions to minimize the implementation barriers.

This report was created under the guidance of the Township of Langley, who will use this report as preliminary research into a future Corporate Sustainability Strategy. It is recommended that during the development of the plan, deeper research into the social and economic pillars is conducted.

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A full list of all municipal strategies analyzed for this report. All objectives and actions were adapted from these plans.

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