City of Edmonton

Evaluation of Sustainable Development Goals: Final Report

September 2019

DIALOG

EXECUTIVE SUMMARY

The Evaluation of Sustainable Development Goals project is based on direction from the Community Energy Transition Strategy and Industrial Investment Action Plan to investigate gaps, barrier and opportunities for sustainability in the planning and development process. The project began with a review and analysis of several plans at various stages within the planning framework, followed by a series of workshops and phone interviews with City staff, stakeholders, and other municipalities with a focus on addressing and improving the implementation of sustainable development goals.

Some of the main gaps and barriers identified include cost, risk, and market demand for sustainable development, as well as a lack of coordination, education and administrative capacity. Another barrier includes a lack of policies and regulations to adequately facilitate and encourage sustainable development. To address the gaps and barriers the project team explored opportunities for incentives, programs and plans, and policy and regulations which have been refined into recommendations and summarized on the following page. These recommendations will provide strategic direction for future initiatives that will support the implementation of sustainable development in Edmonton.

RECOMMENDATIONS

Strategic Plans, Policies and Guidelines

+ Explore municipal charter powers to more strictly regulate sustainability in the design and construction of buildings;
+ Develop a strategic plan with incremental targets to reduce emissions in new building and to more effectively enforce/incentive sustainable design through associated policy and regulations, and;
+ Consider amending the Zoning Bylaw to abolish single-family zoning.

Area Redevelopment Plans, Area Structure Plan, and Neighbourhood Structure Plans

+ Incorporate a sustainable design review with City staff at the master planning stage of ARP/ASP/NSP planning and development;
+ Consider stronger language within the policy in these documents (ie. "shall" instead of "should"), and;
+ Create a standardized template and a framework for what needs to be included in the sustainability section in these documents.

Rezoning and Subdivision

+ Provide additional variance power for City planning to allow for innovation and discretion in support of goals;
+ Explore additional contribution requirements for developers for sustainable design in new development projects, and;
+ Incorporate density/far bonus policy into the rezoning process.

Development and Building Permits, Servicing Agreements and Licensing

+ Develop a program which educates developers on sustainable servicing approaches (LID, district heating, water management technologies);
+ Provide financial incentives to offset cost and risk with sustainable development, and;
+ Develop a program and staffing position to educate City staff on innovation in servicing, in tandem with an expedited permitting process.

General

+ Develop a standardized metric to more effectively quantify and streamline the feasibility and effectiveness of sustainability (from a triple bottom line) perspective, and;
+ Provide additional educational programs and marketing campaigns to build literacy and showcase the benefits of a green city.

Eco-industrial

+ Research prospective anchor tenant to act as a catalyst for development, potentially by considering opportunities within the City for large-scale sustainability projects;
+ Assess the cost and time associated with the technical / servicing requirements for EETP and evaluate through a cost benefit analysis, and;
+ Undertake a discussion at the regional level to discuss working together to support sustainability objectives.

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// INTRODUCTION

The City of Edmonton is dedicated to reducing carbon emissions and resource consumption associated with the built environment. This dedication is reflected by the City's goals regarding sustainable development, primarily involving: energy use, resource efficiency, alternative transportation, green infrastructure, and renewable energy in the City's Strategic Plans, Policies, and Statutory Planning Documents. In some cases, the implementation of these sustainability goals has not been effective. As such, Edmonton's Community Energy Transition Strategy (CETS) has identified a need to investigate the barriers and gaps between Edmonton's plans, policies, development regulations, design guidelines, and approval processes (herein called "planning and development processes") with respect to implementing sustainability goals. Often the City's sustainability goals conflict with existing development plans policies, regulations, and approval processes, making it difficult to achieve those goals that have been committed to. To resolve these conflicts and effectively encourage and facilitate sustainable development creative solutions are needed in order to apply sustainable principles effectively to all stages of development. The goal of this project is to identify gaps and barriers in the planning and development process that prevent the City from achieving its sustainable development goals and to determine the most effective way to update the planning and development processes to meet those goals for land development and building construction. The solution(s) must comprehensively address commercial, residential and industrial development.

PROJECT BACKGROUND AND PROCESS

Two initiatives led to the creation of this project: Edmonton's Community Energy Transition Strategy (CETS) and Edmonton's Industrial Investment Action Plan (IIAP). These initiatives have goals/actions that recommend investigating the gaps and barriers in the planning and development process and to create solutions to better implement sustainable development. It was decided that due to similarities between the two initiatives' objectives that Administration would use the Evaluation of Sustainable Development Goals in the Planning and Development Process project to accomplish both Plan's objectives to ensure a more holistic approach and reduce the risk of work duplication. This project is consistent with and complements the City's overall goals for environmental protection and sustainable built form, and will support a strategic approach to the implementation process.

EDMONTON'S COMMUNITY ENERGY TRANSITION STRATEGY (CETS)

The CETS is a risk management strategy designed to make Edmonton energy sustainable. The CETS is a response to City Council's goal to become the nation's leader in setting and achieving the highest standards of environmental preservation and sustainability. The Strategy addresses the Council-approved goals in The Way We Green: Environmental Strategic Plan. Multiple actions from the CETS necessitates changes to the Planning and Development processes in order to implement sustainable development.

INDUSTRIAL INVESTMENT ACTION PLAN (IIAP)

The Industrial Investment Action Plan's (IIAP) purpose is to increase the City's investment competitiveness of Edmonton's industrial neighbourhoods. The IIAP consists of 9 actions that support retention and growth within Edmonton's industrial neighbourhoods and the non-residential tax base. These actions include Action 8.0 - Implement Eco-Industrial Principles. Action 8.0 directed Administration to position the Eco-Industrial model as a viable form of industrial development and to determine how the concept can best be implemented. One of the recommendations from Action 8.0 was to create an Eco-Industrial Development Planning Framework. A missing link between current policies and regulations and implementation was identified; changes to the planning and development process that effectively encourage and accommodate Eco-Industrial Development could bridge that gap. Eco-industrial development encapsulates much of what is trying to be implemented via the recommended solutions of this project. Eco-Industrial development is defined as:

Industrial development that promotes land use and business practices that are environmentally and economically efficient, encouraging innovation in design standards to improve environmental performance of industrial development (for example, bio-swales, shared infrastructure systems, varied street widths, shared facilities).

Eco-Industrial development encourages different businesses of various sizes to cooperate with each other to share resources (for example, information, materials, energy, infrastructure and natural habitat), leading to improvements in environmental quality that reduce resource use.

PROJECT PHASES

1. Review and Analysis - Existing Plan, Approval Process and Precedents (Other Municipalities)

The project began with a comprehensive review of existing plans within the planning framework, the approval process, and precedent examples from other municipalities (Please see the Phase 1 report for more information). The report included a summary of gaps, barriers and opportunities that exist within the planning and development process, as well as an evaluation of plans, programs, and policies from other municipalities in North America that are known as leaders in sustainability.

2. Engagement and Research - Refining Gaps, Barriers and Opportunities

The next phase of the project included a series of internal and external stakeholder engagement events and phone interviews to build on the gaps and barriers and began to explore potential ideas for plans, regulations, metrics and incentivization. Phone interviews were undertaken with City of Edmonton staff and other municipalities and organizations to learn more about the successful implementation of sustainability, as well as the context of planning and development in Edmonton.

3. Recommendations - Exploring Improvements to the Planning and Development Process

The final phase of the project included identifying clear and implementable recommendations to begin to address the barriers to sustainable development through improvements to the planning and development process. These recommendations support our sustainability goals, and provide a series of actions to bring them to fruition.

1 // REVIEW AND ANALYSIS

EXISTING PLAN, APPROVAL PROCESS AND PRECEDENTS (OTHER MUNICIPALITIES)

The main objective of the first phase of the project was to develop a better understanding of the City's sustainability goals and policy and how they apply to the planning and development process. To achieve this, the project team reviewed several plans at various stages of the planning framework and analyzed the goals and policies to identify gaps and barriers in implementation. An analysis of other municipalities across North America was also undertaken, to understand how other municipalities have successfully implemented sustainability and to gather ideas for Edmonton. The project team synthesized the findings and provided high level opportunities to be explored further in the next phase.

The following sections includes a description of the City of Edmonton planning framework, as well as a summary of the gaps, barriers and opportunities, and precedent findings from other municipalities across North America (Vancouver, Calgary, and Chicago).

1.1 CITY OF EDMONTON PLANS AND POLICY DOCUMENTS

Document Name	Description of Document
Area Structure Plan (ASP)	+ ASPs lay out an area's long-term development plan. They generally apply to new developing suburban areas. ASPs identify where residential, commercial, institutional and recreational development will be located and how essential municipal services such as water, sewer systems, arterial and collector roads, schools, parks and fire protection will be provided. The way these services are implemented into a neighbourhood can have large implications on achieving higher-level City sustainability goals.
Area Redevelopment Plan (ARP)	+ ARPs lay out the long-term redevelopment plans for an existing site. They are generally comprehensive in their nature and scope and address the following topics: land use and physical development patterns, urban design, physical infrastructure, accommodation of growth and decline, social and community development, transportation facilities, community facilities such as schools, parks and open spaces, historical preservation, environmental protection.
Neighbourhood Structure Plan (NSP)	+ NSPs are detailed sub-plans within an ASP. The NSP specifies in greater detail the general pattern for subdivisions by designating land uses by type, size, and location, the transportation network (including local roads), location and size of neighbourhood facilities and staging of development.
Servicing Concept Design Brief (SCDB)	+ SCDBs contain most of the elements of an ASP. It also states the City's position on the placement of major land use developments, such as municipal/school facilities. The SCDB establishes a framework for municipal infrastructure, servicing, planning, development and environmental requirements. City Council may authorize an SCDB for any area of the City where municipal servicing requirements must be defined in advance of anticipated development.
Rezoning	+ Zoning allows City Council to set rules for where new buildings should go, what types of buildings they can be, what activities and businesses can happen there, as well as requirements for other things such as parking and landscaping. Zoning also controls the height, size and location of buildings. Zoning is the main tool that cities use to regulate land use and implement the objectives and goals in our MDP. The rules and requirements in the Zoning Bylaw are legally enforceable.
Subdivision	+ Subdivision is the process whereby a parcel of land is divided into two or more parcels in order to obtain separate legal titles for each parcel. Subdivision sets pattern of development by determining location, size, shape of lots and roads.
Servicing Agreements	+ A servicing agreement may be required with the City in order to ensure that the development is constructed in accordance to the City's standards and that the developer pays for the development’s share of the infrastructure that it will benefit from.

Document Name	Description of Document
The Way Ahead	+ The Way Ahead establishes six 10-year strategic goals to achieve the City's vision for Edmonton in 2040 and to direct long-term planning for the City of Edmonton. The Way Ahead outlines corporate outcomes for the strategic goals and provides a set of measures and targets for each outcome.
They Way We Green	+ The Way We Green is the City of Edmonton's 30-year environmental strategic plan with emphasis on resilience and sustainability. The Way We Green sets 12 goals that need to be reached for Edmonton to achieve a sustainable future.
The Way We Grow	+ The Municipal Development Plan (MDP), The Way We Grow, is the City's strategic growth and development plan. Through its MDP, the City of Edmonton will shape the city's urban form and direct the development and implementation of more detailed plans.
The Way We Live	+ The Way We Live: Edmonton's People Plan acknowledges the municipal government's role in bringing people together to create a civil, socially sustainable and caring society where people have opportunities to thrive and realize their potential in a safe, attractive city.
The Way We Prosper	+ The Way We Prosper is the City of Edmonton's comprehensive economic development plan. The Way We Prosper focuses on what it means to achieve the goal of "diversifying Edmonton's economy." There are expectations from citizens and business leaders that Edmonton's economic future be diverse and sustainable so that Edmonton can continue to grow as a prosperous, competitive world city.
Edmonton's Community Energy Transition Strategy	+ Edmonton's Community Energy Transition Strategy is a risk management strategy designed to make Edmonton an energy sustainable city. This includes actions that will: + Reduce Edmonton's greenhouse gas (GHG) emissions to levels consistent with limiting the long-term rise in the average global temperature to 2 degrees Celsius; + Increase energy efficiency and energy conservation in all sectors; + Ensure Edmonton's energy delivery systems (for electricity and natural gas) are resilient to shocks and disturbances from climate change, and; + Position Edmonton to participate in what is possibly one of the greatest economic opportunities in history.

1.2 GAPS, BARRIERS AND OPPORTUNITIES

The following is a thematic summary of the gaps, barriers and opportunities that we discovered in support of achieving sustainable development goals. For more information please refer to the Evaluation of Sustainable Development Goals Phase 1 Report.

Gap and Barrier	Opportunities
FINANCIAL: Mandating design requirements in development projects to support sustainability goals can create additional costs which may deter development or encourage developers to take their business elsewhere.	+ Opportunity to provide incentives which support sustainable design and off-set the cost to developers, to encourage uptake on development in a particular area.
MARKET DEMAND: The design of development projects is often based on market demand, as opposed to sustainability goals.	+ Opportunity to educate developers on the values of sustainability and how this can support market demand through innovative technologies and design features that are attractive to customers and lead to cost-savings.
RISK MANAGEMENT: Innovative technology and sustainable design features can present risk to a developer in terms of effectiveness, cost, and approval time.	+ Opportunity to provide regulatory and financial support to developers who are willing to implement innovative technology to off-set the risk involved and provide a level of certainty around approval time.
COORDINATION: New development projects do not often considered the synergies that could be built between other projects in the vicinity.	+ Opportunity to share energy resources and services to result in energy and cost-savings for commercial, residential and industrial developments.
REGULATIONS: Existing regulations may present challenges to the implementation of sustainable design.	+ Opportunity to design future plans with greater flexibilities to permit innovation in building design, stormwater management, material use and energy efficiency.
IMPLEMENTATION: Implementation often does not occur, because the policy does not mandate sustainable design for development projects.	+ Opportunity to enforce or incentivize sustainable design in a manner which ensures that it is implemented in the physical design of development projects. Also opportunity to define sustainability goals more accurately with metrics to reduce subjective interpretations of how to achieve these goals.
EDUCATION: Commercial and industrial developers may be unaware of the opportunities that exist within sustainable design such as shared resources through eco-industrial partnerships and district energy systems.	+ Opportunity to educate developers about the opportunities that new technology and innovation could provide and how sustainability can be cost-effective.
ADMINISTRATIVE CAPACITY/RESOURCES: There are potential administrative capacity and resource gaps to fully implement the policy.	+ Opportunity to develop working groups to identify how administration can strategically and effectively implement the policy, and determine how resources should be allocated.
INCENTIVES: Incentives should be evaluated to ensure that they provide an appropriate level of value to encourage utilization.	+ Opportunity to re-evaluate the incentives program to ensure their effectiveness, potentially through a cost-assessment.

1.3 OTHER MUNICIPALITIES (LEADERS IN SUSTAINABILITY)

The following is a summary of research undertaken for other municipalities across North America that are known as leaders in sustainability. The findings were used as precedents to determine what has worked elsewhere and could be consider in the context of Edmonton to improve the planning and development process.

1.3.1 THE CITY OF VANCOUVER

The City of Vancouver completed their Greenest City Action Plan in 2011, the program outlines 10 goal areas and 15 measurable targets to guide Vancouver toward becoming the greenest city in the world by 2020. The Green Buildings 2020 Targets are to reduce energy use and GHG emissions in existing buildings by 20% over 2007 levels and require all buildings constructed from 2020 onward to be carbon neutral in operations. To achieve this the City has integrated several mandatory performance-based policies and standards into the permitting and rezoning process as well as the Zoning Bylaws. While certification standards are incorporated into some of the requirements, often they are accompanied by additional performance and reporting requirements. In an effort to advance zero emissions buildings, the City has created a Zero Emissions Building Catalyst Policy which informs staff and applicants about the range of measures available to advance zero emission buildings at the rezoning and development permit stage.

1.3.2 THE CITY OF CHICAGO

In 2012 the City of Chicago developed the Sustainable Chicago Action Agenda, which outlines 7 themes, 24 goals, and 100 concrete actions to help Chicago become a more livable, competitive and sustainable city. The themes Energy Efficiency and Clean Energy and Climate Change work towards improving energy efficiency and reducing GHG and Carbon Emission. Both themes directly require major changes in the built environment. In 2016 the City created a Sustainable Development Policy, that requires development projects that are receiving financial assistance or special approvals from the City to include Sustainable Elements. Projects must meet a point requirement based on the type of construction and points can be earned by meeting a building certification requirement such as LEED or Passive House or incorporating sustainable strategies from a menu provided by the City. Private projects are incentivized to ‘’Go Green’’ by providing expedited permitting through Green and Solar Permit incentives as well as through the Retrofit Chicago Commercial Buildings Program. Recently the City has begun requiring building owners or managers of properties over 50,000 sq feet to measure and report their annual energy use.

1.3.3 THE CITY OF CALGARY

The City of Calgary has had a Sustainable Building Policy since 2002. The policy utilizes LEED and Building Green as a standard for all new construction and major renovations in excess of 500m2 that are owned and funded by the City. In addition, the City’s Land use Bylaw provides density bonusing as an incentive for projects that incorporate ‘’Green Building Elements’’. More recently the City of Calgary has developed a Climate Resilience Strategy. The strategy contains and action plan that address climate mitigation and adaptation respectively, in a total of 10 categories. The Buildings and Energy Systems section, outlines a list of actions that the City is working towards to help improve energy management and reduce greenhouse gas emissions in the built environment.


Workshop Activity #3: Metrics &
Incentivization

2 // ENGAGEMENT AND RESEARCH

REFINING GAPS, BARRIER AND OPPORTUNITIES

The main objective of the second phase was to refine the understanding of gaps, barriers and opportunities by consulting with internal and external stakeholders. To achieve this, a series of workshops and phone interviews were undertaken. Workshop #1 gathered insights into the existing gaps and barriers to sustainable development identified in the first phase and began to explore opportunities to address the gaps and barriers and improve implementation. Workshop #2 refined the opportunities by focusing on solutions to improve the effectiveness of current policy and implementation tools, such as new standards and metrics, regulations and policy, and other forms of innovations. These workshops brought together internal and external stakeholders including City staff (from various departments), developers, infill champions, industry advocates and housing organizations. By bringing together a diverse group of stakeholders, the project team was able to gather a broad range of perspectives and undertsand the impact that various solutions could have on the planning and development process Additional research was undertaken through phone interviews to support the development of the solutions and inform recommendations.

2.1 STRATEGIC PLANS, POLICIES AND GUIDELINES

Workshop #1 - Barriers to Sustainable Development

+ The City's strategic goals for sustainability are clearly conveyed, but are not effectively implemented into the planning and development process. For example, the City strives to be more energy efficient, however green features such as district energy are difficult to implement;
+ Policies and guidelines can act as a deterrent to developers as they can complicate the process, resulting in additional costs and delaying the approval process;
+ Existing higher-level plans do not effectively create a prescriptive roadmap to truly support sustainability and achieve the desired outcomes for transformational projects such as the Blatchford redevelopment project;
+ Currently, there is a delay between the vision illustrated in strategic plans and reality which suggests a problem with implementation;
+ The City should identify areas where infrastructure is over-built and there is capacity for new development or high density redevelopment projects;
+ The City needs to incorporate policy or guidelines to monitor energy efficiencies after a development is built out (heating demand targets), and;
+ Although introducing density into well-serviced areas is a top priority of the City, infill development can be difficult to build, due to the approval process, cost and risk. The City should be incentivizing infill development by expediting the permitting process, reducing cost, and providing a greater level of certainty to developers.

Workshop #2 - Determination of Sustainability Standards and Metrics

+ Policy is often restrictive in a particular zone and guidelines can be difficult to understand, which can significantly deter new development and redevelopment projects in a specific zone or area;
+ The City needs to consider that the requirement of LEED can be a deterrent because of the upfront cost, and should consider incentives to mitigate the hardship to the developer;
+ The City needs to consider creating a level playing field for neighbouring zones, as currently certain areas have much more stringent regulations for sustainability than others, which can cause development to leapfrog certain areas;
+ Existing policy and regulations can make it difficult to implement sustainable practices (ie. re-using greywater for fire suppression) and should be redesigned with flexibility and innovation in mind;
+ There is a lack of certainty and inherent risk associated with innovation even though this is often the key to achieving aspirational strategic goals;
+ The province should consider a STEP code that the City can utilize to improve building standards, as one of the biggest barriers is that sustainable design is not written into code;
+ Current policy and regulations allow for developers to remove unprotected trees and natural areas for greenfield development, the City should identify and explore opportunities to retain these spaces to support sustainability, and;
+ Performance-based monitoring and sustainability guides are excellent tools, but compliance can be difficult. The City needs to determine how sustainable design can be implemented more effectively through incentives/ enforcement measures.

Phone Interviews and Research - Determination of Sustainability Standards and Metrics

+ The City needs to determine if the Province would support the City in exercising their Charter powers to adopt bylaws to more strictly regulate the design and construction of buildings to support sustainable development, beyond the legal requirements outlined in the Alberta Building Code (similar to the Vancouver Charter/Vancouver Building Bylaw). The CItys should also discuss interest in a STEP energy program with the Province and review the Lessons From BC Energy Step Code;
+ The City should improve energy efficiencies and reduce greenhouse gas emissions through a comprehensive strategic plan with requirements for incremental change over a specified timeline (similar to the Vancouver Zero Energy Building Plan, which works with the Building Bylaw to incrementally reduce building emissions from 14 kg of Co2 per square metre annually to 6 kg of Co2 per square metre annually by 2025). Currently, the City has developed excellent plans/resources to address sustainability for capital projects/investments (ie. Green Building Plan), but there may be an opportunity to develop a plan that addresses development in the City as a whole, and creates an actionable plan for new bylaws and regulations;
+ The City should create policies within the planning and development process that ensure that the goals (incremental targets) of a comprehensive strategic plan are achieved. Policy could include additional requirements at the rezoning, development permit, building permit, and occupancy permit stage to ensure that a project is considering sustainability at each stage of the planning and development process (similar to the Vancouver Green Building for Rezoning policy). The City should consider a sustainability checklist, as a resource to ensure that requirements are achieved that could include green program requirements (ie. LEED, Passive House) and/ or a combination of customized strategies, reports, and tests in support of the targets (ie. Airtightness testing, Commissioning reports, Energy metering, Water management plan, etc.). To ensure compliance, the City could consider security deposits or letters of commitment requirements in the approval process, and;
+ The City should consider amending the Zoning Bylaw to allow for greater density in low density residential neighbourhoods by permitting denser housing forms (such as triplexes, quadplexes, row houses) and improving the associated regulations and overlays. Minneapolis recently passed a citywide ban on single-family zoning, meaning developers are now allowed to build multi-unit housing in neighborhoods that were previously reserved for houses accommodating just one family each. These amendments would allow for greater densities in well-serviced areas of the City in support of a sustainable future.

Solutions

+ Engage in a stakeholder workshop with municipal and provincial stakeholders to determine if the Province would support the City in exercising their Charter powers to more strictly regulate the design and construction of buildings. Also discuss the potential for a Province-based STEP energy program;
+ Engage in a stakeholder workshop with municipal and private sector stakeholders to explore the creation of a comprehensive strategic plan, including a technical discussion on the targets for incremental change over a specified timeline as well as the implications on the development industry (ie. discussion about how the desire for floor to ceiling glazing impacts energy modeling requirements);
+ Engage in a stakeholder workshop with municipal and private sector stakeholders to determine how policy (ie. additional requirements at the rezoning stage), can be implemented to support a comprehensive strategic plan and the associated target requirements, and;
+ Undertake a detailed review of the Minneapolis 2040 comprehensive plan and the associated engagement process to develop a better understanding of the process that was undertaken to abolish single-family zoning.

2.2 AREA REDEVELOPMENT PLANS, AREA STRUCTURE PLANS & NEIGHBOURHOOD STRUCTURE PLANS

Workshop #1 - Barriers to Sustainable Development

+ ARP, ASP, and NSPs are often outdated and do not meaningfully consider the need to develop sustainable communities in a manner that aligns with the CIty's strategic goals;
+ Policies relating to sustainable development are often no longer relevant by the time a plan is implemented as the latest trends and innovations in sustainable development are constantly changing;
+ The content and design of ARP, ASP, and NSPs can vary substantially. Some are not committed to sustainability at all or structured in a manner where it would be easy to make an amendment to include goals for sustainable development. Amendments can also be costly and reduce the speed of the approval process;
+ ARP, ASP, and NSPs are often not very prescriptive and do not create an articulate roadmap (implementation plan) to achieve the sustainability goals that may be outlined within;
+ Policies relating to sustainability are often encouraged but not enforced which often leads to them simply being ignored, and;
+ Developers are incentivized to get the most out of the land (financial return), regulations are barriers and sustainability is costly, which can reduce the financial return.

Workshop #2 - Determination of Sustainability Standards and Metrics

+ Mixed use areas are often competing with suburbs in regards to residential development. ARPs may plan for higher density, but the market demand may not be realistic to support these plans. The City needs to consider how consumer interest factors into sustainable development;
+ ASPs only specify land use and often do not consider the nuances of sustainability, such as the orientation of solar panels, within the design of a neighbourhood;
+ The City needs to consider innovation in sustainability at the ASP level including the potential for new technologies such as electric vehicles and how this could impact the design of a neighbourhood;
+ The timeframe between the development of ASP, ARP, NSP planning documents and implementation (development) can be quite significant which results in the documents become outdated quickly, and;
+ The 104 Avenue ARP is visionary and high level but implementation has not been overly successful (likely because the vision for sustainability is not reflected substantially in the policy, and encourages rather than enforces sustainable design).

Phone Interviews and Research - Determination of Sustainability Standards and Metrics

+ The City should engage in an additional sustainable design review during the creation of these documents, to determine if there are land use concept, transportation and servicing approaches that can be incorporated to more effectively support sustainable development and innovation in neighbourhood design. The City could also review and identify additional areas of environmental significance (existing tree stands and vegetation) that were not included in ER/MR and should be considered for preservation, and offer recommendations based on this review process to the working group;
+ The City should identify how sustainable goals can be more effectively implemented by mandating sustainability, instead of simply encouraging it, through the policy and implementation plan within these documents;
+ The City should streamline the design of these documents for better consistency (provide a template for the section on sustainability or for the document as a whole) to ensure that these plans share the same level of detail and pertinent information on the development of sustainable neighbourhoods, and;
+ The City should engage with private sector stakeholders to determine how the additional cost premium associated with sustainable development can be managed and offset through grants/subsidies/incentives to encourage sustainable private development. Currently, there has been a lot of excellent achievements for sustainable neighbourhoods developed in partnership with the City or on City-owned land, but there is a barrier to implementation in private sector development that is likely related to the upfront cost of sustainable development.

Solutions

+ Create an additional review process that is specific to sustainability at the master planning stage of development for these documents, and provide recommendations to help the proponent incorporate sustainable development into neighbourhood design, and identify natural significant areas not protected by ER that should be considered for preservation;
+ Engage in a workshop with municipal and private sector stakeholders to determine how policy can more effectively support the implementation of sustainable development and what type of policies should be enforced instead of simply encouraged at the ASP, ARP and NSP stage of the planning and development process, and;
+ Create a standardized template for these documents and guidelines for what should be included in the sustainability section. The guidelines should take an outcome-oriented approach to sustainable development.

2.3 REZONING AND SUBDIVISON

Workshop #1 - Barriers to Sustainable Development

+ The rezoning and subdivision process can be slow, which can make it difficult to bring new development projects to market in a timely manner;
+ Zones are rigid and lack flexibility, which can often lead to the creation of site-specific zones. These zones can complicate the planning and development process and can reduce the speed of the rezoning process considerably;
+ NIMBYism can prevent rezoning, especially if a development proposes higher density in a mature neighbourhood. Rezoning to permit higher density should be easier to achieve, especially in areas that are well-serviced and near transit, which is supported by the City's strategic goals;
+ Garden suites are difficult to build based on current zoning and subdivision regulations;
+ Zones are too prescriptive and should instead focus on the overarching vision and intent;
+ The definition of sustainable development is not easily understandable in the Zoning Bylaw;
+ The subdivision process should be more flexible to accommodate sustainable development and includes outdated infrastructure requirements (ie. overly wide road right-of-ways);
+ The rezoning process should occur at the same time as the development permit process to allow for greater efficiencies, and;
+ The review of technical documents such as Transportation Impact Assessments can be time-consuming, and parking is a site specific requirement, which often leads to over-built parking infrastructure, that does not support the City's strategic goals.

Workshop #2 - Determination of Sustainability Standards and Metrics

+ Single lot land sales can make it difficult to coordinate sustainable development on a larger scale to create synergies and energy efficiencies. The City should explore opportunities to encourage land sales on a larger scale in support of sustainable development;
+ The City needs to consider incorporating the requirements for solar power such as appropriate height, orientation, and spacing at the subdivision and rezoning stage;
+ The City should consider incentive programs to allow for greater FAR and increased density for sustainable developments;
+ The City should review areas that are suitable for infill development prior to a rezoning application, to provide greater certainty to a developer about what they might be able to build and increase the speed of the rezoning process;
+ Pre-application meetings should be provided at no cost to the applicant to better inform the developer of what they can build. These meetings should also be used to build literacy about sustainable development;
+ The City should remove the review process in areas where technical information is already well-documented to increase the speed of the rezoning process (such as the need for a review of the transportation network in Downtown through a Transportation Impact Assessment), and;
+ The City should consider an incentive zoning system based on a point based sustainability checklist. Additional provisions may be required, as rezoning may be too early in the process for a checklist and is difficult to enforce.

Phone Interviews and Research - Determination of Sustainability Standards and Metrics

+ The City should consider incorporating additional flexibilities in the Edmonton Zoning Bylaw to support innovative sustainable design at the rezoning process and provide an incentive for early adopters of sustainable development features to mitigate the impact of the additional cost and risk associated with innovation;
+ The City should consider providing a financial off-set for the additional cost premium associated with sustainable development through monies allocated to the Community Amenity Contribution or elsewhere. (The City of Vancouver estimated that the green construction cost premium is likely 4% to 7% for passive house, and has implemented a similar policy within community contributions, to act as a financial off-set);
+ The City should consider more flexible zoning/ subdivision regulations that promote higher density development in well-serviced areas to provide a level of certainty to developers about what can be built on a site, especially for infill development, and;
+ The City should consider amending the Zoning Bylaw to allow for greater density in low density residential neighbourhoods by permitting denser housing forms (such as triplexes, quadplexes, row houses) and improving the associated regulations and overlays. Minneapolis recently passed a citywide ban on single-family zoning, meaning developers are now allowed to build multi-unit housing in neighborhoods that were previously reserved for houses accommodating just one family each. These amendments would allow for greater densities in well-serviced areas of the City in support of a sustainable future.

Solutions

+ Consider amendments to the Zoning Bylaw to grant City Planning (Director of Planning, Development Officer, etc.) greater variancing power to more effectively accommodate sustainability and allow for greater flexibilities in support of innovative green development features;
+ The City should explore the possibility of amending the Community Amenity Contribution policy to allow monies to be allocated to sustainable building or site design features or other sustainable initiatives within the surrounding neighbourhood, and;
+ Develop a density/FAR bonus policy at the rezoning stage to permit higher density development for projects that achieve a certain level of sustainability based on existing green programs or a sustainability checklist/guidelines. Develop associated regulations to ensure that the checklist requirements are enforced.

2.4 DEVELOPMENT PERMITS, BUILDING PERMITS, SERVICING AGREEMENTS, AND LICENSES

Workshop #1 - Barriers to Sustainable Development

+ There is a lack of understanding of how sustainable development is quantified and which metrics should be used (ie. LEED, Net-Zero), as well as how these metrics should be incorporated into the permitting process;
+ There is a lack of authority for development officers to enforce sustainable metrics (ie. Energuide) at the permitting stage;
+ The permitting process can be slow, which can make it difficult to bring new development projects to market in a timely manner;
+ Energy modeling should be considered earlier in the process than the building permit stage so that it can be more effectively integrated into the planning and development process;
+ City staff lack specialized knowledge in sustainable development and should be trained in green building metrics to inform developers about how they more effectively support the City's sustainability goals;
+ The City does not adequately consider how infrastructure requirements could differ for sustainable developments and how this could negate the associated cost premiums with sustainable development (ie. smaller drainage pipes for homes that have installed high efficiency appliances), and;
+ The City does not fast track sustainable development and the process is often slower because it is less conventional.

Workshop #2 - Determination of Sustainability Standards and Metrics

+ The City should set minimum sustainability requirements at the permitting stage for new development, this could act as a deterrent however and encourage developers to build elsewhere if the requirements become too costly;
+ The City should fast-track the development process for sustainable development projects and reduce the cost of building and development permits;
+ The City should consider alternative servicing approaches for sustainable developments\ (ie. geo-thermal heating);
+ It can be difficult to achieve third party certification as there is often push back from regulators on what is permissible;
+ A STEP code should be implemented at the provincial level to provide a mechanism to encourage/enforce a higher standard of development;
+ There is a lack of coordination with drainage, electrical services and other utilities when planning for higher density mixed use developments. The City should develop a strategy to encourage developers to explore synergies in utility servicing to support sustainable development;
+ An expedited electronic permit process should be considered for projects that meet sustainable requirements, and;
+ The City needs to do a better job of incorporating LID into new development and redevelopment projects.

Phone Interviews and Research - Determination of Sustainability Standards and Metrics

+ The City should create a program to incentivize and educate developers about sustainable servicing approaches, as these approaches are often not as conventional or proven as more traditional servicing methods, and can add time to the approval and monitoring process, which can create hardship and uncertainty for a developer. The City should explore ideas to coordinate with service providers, provide upfront funding and allow for more flexibilities through innovation and green technology in servicing approaches;
+ The City should expedite the permit process and reduce the cost of permitting for developments that achieve green program certification or sustainability checklist/ guidelines;
+ The City should provide training to permitting staff in sustainable design so that they can share their knowledge with an applicant to improve literacy and promote sustainable design features for building design and servicing, and;
+ The City should enforce sustainability through permitting, but this may be counterintuitive to CIty direction to reduce red tape and increase the speed of the approval process.

Solutions

+ Create an education/grant program for developers which provides education on innovative sustainable servicing approaches (LID, district heating), as well as a financial incentive for servicing agreements which incorporate sustainable design features;
+ Create a program which provides training to permitting staff on sustainable design and how it can be incorporated the servicing approaches process;
+ Create an expedited process which fast-tracks sustainable development projects that achieve green program certification or the requirements of point-based sustainability checklist, and;
+ Create a staffing position (ie. energy advisor) that works with private sector stakeholders and the public to improve literacy, reduce red tape, promote sustainable design features and servicing approaches, and bridge the gap between strategic goals and implementation.

2.5 GENERAL

Workshop #1 - Barriers to Sustainable Development

+ There is a cost premium associated with sustainable development, that can act as a deterrent for developers;
+ There is a lack of financing options for green mortgages;
+ People are fixated on single family detached homes and are unaware that other forms of residential development are more sustainable, and;
+ There is a lack of understanding of the life cycle benefits of sustainable developments, and how they can reduce cost related to energy usage, and save money over the long term.

Workshop #2 - Determination of Sustainability Standards and Metrics

+ Sustainable design can price residential development out of the market (ie. the cost of townhouses in Blatchford is nearly double the market price);
+ There is a specific market for niche sustainability features, potentially due to lack of education on the life cycle benefits and concern about the upfront costs;
+ The City needs to consider the public perception of sustainable development and how this can be improved;
+ The City should consider tax incremental financing for large-scale sustainable development projects;
+ The City should promote PACE financing to mitigate the upfront costs associated with sustainable development, and;
+ The City needs to provide more education on the beneficial aspects (environmental, social, and financial) of sustainable development.

Phone Interviews and Research - Determination of Sustainability Standards and Metrics

+ The City should consider creating a program to improve literacy and educational awareness of sustainable development , as well as a marketing campaign that positions Edmonton as a green city and shares some of the social and financial benefits with residents (not just environmental);
+ The City should consider developing an effective metric for determining the feasibility and effectiveness of sustainability policies, and;
+ The City should assemble, or support private sector stakeholders in assembling, large tracts of land in well-serviced areas similar to the Edmonton City Centre Airport for Blatchford (could also include golf courses, industrial areas, etc,), for large-scale sustainable development projects.

Solutions

+ Develop an educational program with classes for City employees and the development industry that illustrate changes to the planning and development process and builds capacity and prepares them for any additional requirements. Also, create a research and marketing campaign to share some of the triple bottom line benefits of a green city, and;
+ Develop a rubric to evaluate the feasibility and effectiveness of sustainability. This rubric would aid staff in right sizing sustainable policies and reduce the number of developers paying the penalty rather than meeting the intent of the policies to better achieve the intent of the policy.

2.6 GENERAL (ECO-INDUSTRIAL)

Workshop #1 - Barriers to Sustainable Development

+ Eco-industrial plans are complicated and overly-regulated;
+ There is too much land to work with, which can make it difficult to enforce sustainability guidelines in a particular area, as developers can choose to build elsewhere;
+ There are often conflicting interests between City objectives such as supporting the non-residential tax base and striving for excellence in sustainability;
+ There is a lack of understanding as to what eco-industrial means, and how it can be achieved;
+ Regional competitiveness is often an issue, as policy can often impact the cost of a development, making it more desirable for a developer to take their business elsewhere;
+ There should be a greater focus on green industrial instead of eco-industrial with consideration for how green requirements for industries actually work;
+ District energy requires consumer education and buy-in and cooperation which is often a barrier to implementation, and;
+ Market forces and timing can make it difficult to coordinate symbiotic relationships between different businesses for eco-industrial.

Workshop #2 - Determination of Sustainability Standards and Metrics

+ Waste assets are often unknown upfront for eco-industrial which makes it difficult to coordinate in advance as there is often uncertainty about the end user;
+ The City needs to provide more flexibility within industrial development projects and should be selling land for industrial use on a block basis (not individual units);
+ The City needs to explore more effective ways to attract large end users for eco-industrial parks;
+ The City should provide clarification on who is responsible for coordinating eco-industrial relationships (ie. business association, City of Edmonton). The City may need to look towards successful examples in established business parks across North America as precedent examples;
+ The City should consider a variable tax rate that provides a tax break to sustainable developments such as eco-industrial as a way to offset the cost premium associated with additional sustainable development requirements, and;
+ The City needs to showcase success stories for green development to instill confidence in developers, businesses, and residents, and should try to encourage media coverage for sustainable development.

Phone Interviews and Research - Determination of Sustainability Standards and Metrics

+ The municipality of Clarington, Ontario built their eco-industrial park (Clarington Energy Park) around a major anchor tenant specializing in nuclear reactor refurbishment through a partnership with Ontario Power Authority. The major anchor tenant pre-serviced the park and brought capital and confidence to the project to support a high standard in urban design, and the development of a waste to energy facility for district heating. The park has experienced limited growth in recent years as market factors have impacted growth. Clarington is re-evaluating the plan for the park to improve uptake and reviewing the eco-industrial standard requirements to potentially make them less stringent;
+ In Fort McMurray, Wood Buffalo Housing Corporation developed TaigaNova Eco-industrial Park in the mid 2000's. The success of the park is largely attributed to timing as many businesses bought into the park because there was a premium on land at the time of buildout. There are no major anchor tenants that the park was built around. Policy amendments were required because the guidelines were developed by a consultant who had clauses and regulations in regards to district energy systems and other features that were not realistic within the park. Amendments were also required to allow for an improved mix of uses such as restaurant services. The park is not eco-industrial in the sense that there are no waste output/input relationships, they do have some LEED Gold buildings;
+ The Town of Hinton, developed Phase 1 and 2 of the Innovista Eco-industrial Park. Phase 1 began with the Town developing a Public Works building which was a relatively small project. Soon after a developer wanted to build on the other side of the park, the Town tried to encourage them to reconsider and focus more on symbiotic relationship for parking, park space, resources, and other synergies but the timing was off. There were no sewer hookups so the City installed a trunk line to encourage development. The park has experienced limited growth in recent years, and they sold a good portion of the lands to a private developer with hopes that they would develop this has not occurred yet, however;
+ The City needs to procure large anchor tenants and major developers to undertake technical and servicing work and act as a catalyst for development;
+ The City needs to consider the time and cost associated with some of the requirements for eco-industrial areas within the City, such as the technical reports and servicing requirements of EETP, as well as the costs associated with infrastructure improvements such as the need to upgrade roads for large trucks, and;
+ The City should partner with surrounding municipalities and counties to more effectively engage in regional planning for industrial development in support of more sustainable planning for these parks.

Solutions

+ Research large-scale projects that could benefit from being positioned within an eco-industrial park (through waste and resource input/output relationships). Explore partnership opportunities with renewable energy/ sustainable projects where synergies could potentially be built;
+ Undertake a cost assessment of the servicing and technical report requirements for the Edmonton Energy and Technology Park, to determine if these requirements are cost and time prohibitive and if the City may need to undertake some of this work or provide incentives to encourage development;
+ Engage in a workshop with key stakeholders at Edmonton Metropolitan Region Board to support regional cooperation; and;
+ Review the National Industrial Symbiosis Program (NISP) and see if there is a potential opportunity to create a partnership to implement the practical application of industrial symbiosis methodology to more effectively encourage eco-industrial. (NISP is a pilot of a national industrial symbiosis initiative based on a re-thinking of "waste").

3 // RECOMMENDATIONS

EXPLORING IMPROVEMENTS TO THE PLANNING AND DEVELOPMENT PROCESS

The main objective of this phase was to create a set of clear and implementable recommendations to address the gaps and barriers to sustainable development and explore improvements to the planning and development process. The recommendations provide a launching point to improve the implementation of sustainability to more effectively reach the City's strategic goals.

3.1 STRATEGIC PLANS, POLICIES AND GUIDELINES

1. CHARTER/BUILDING BYLAW AUTONOMY

Engage in a stakeholder workshop with municipal and provincial stakeholders to determine if the Province would support the City in exercising their Charter power to more strictly regulate the design and construction of buildings. The workshop should include a discussion on any potential or required amendments to the Edmonton Charter, as well as the idea of a customized Edmonton Building Bylaw to support a comprehensive strategic plan. The workshop would also provide an opportunity to discuss the potential for a STEP Energy program in Alberta (similar to what was recently enacted in British Columbia in 2017) to determine if there is interest in developing measurable requirements designed to steadily improve energy efficiency and transform the market towards a net-zero energy performance level, at the provincial level.

2. COMPREHENSIVE STRATEGIC PLAN (INCREMENTAL TARGETS)

Engage in a stakeholder workshop with municipal and private sector stakeholders to explore the creation of a comprehensive strategic plan to eliminate greenhouse gas emissions in new buildings by a pre-determined date (similar to Vancouver's Zero Emissions Building Plan). The workshop should begin by reiterating the vision for the future of Edmonton based on Edmonton's strategic goals for sustainability (The Way We Green) and the Community Energy Transitions Strategy. The workshop should focus on a discussion about quantifiable goals and strategies, types of potential targets, timelines, leadership, capacity building and implementation. The workshop could also include an indepth discussion on the target requirements for incremental change over a specified timeline, as well as the benefits and tradeoffs of particular green metrics (such as energy modelling, greenhouse gas intensity (GHGI) targets, and existing green programs).

3. POLICY REQUIREMENTS TO SUPPORT A STRATEGIC PLAN

Engage in a stakeholder workshop with municipal and private sector stakeholders to determine how policy can be implemented to support a comprehensive strategic plan and meet the associated incremental target requirements to reduce greenhouse gas emissions in new buildings. The workshop should include a discussion on potential policy requirements at the rezoning, development permit, building permit, and occupancy permit stage to ensure that a project is incorporating sustainability into the most appropriate stage of the planning and development process (similar to Vancouver's Green Building for Rezoning policy). Private sector stakeholders should share input on the impacts that these policies could have on the development industry, and the resources they would need to build capacity and support implementation.

3.2 AREA REDEVELOPMENT PLANS, AREA STRUCTURE PLANS & NEIGHBOURHOOD STRUCTURE PLANS

1. SUSTAINABLE DESIGN MEETING AND REVIEW (ASP, ARP, NSP DOCUMENTS)

Create the opportunity for an additional pre-application meeting with a focus on master planning for sustainable design for the creation of an ASP, ARP, NSP document. The meeting could be structured as a mini-workshop with the proponent, City staff, and sustainability experts, to determine if there are sustainable design features or considerations that could be incorporated into the neighbourhood design, and share resources that a proponent could use to off-set potential risk and reduce the cost premium associated with sustainable development. Once the plans for neighbourhood design are built out, the proponent should be required to submit a report which outlines how they incorporated sustainability into the design, and a review process should follow, with recommendations from City staff. The City may also want to explore creating an incentive program for preserving existing tree stands and vegetation that are identified through this review process and not protected through Environmental Reserve.

2. POLICY LANGUAGE (ASP, ARP, NSP DOCUMENTS)

Engage in a workshop with municipal and private sector stakeholders to determine how policy relating to sustainability can be enforced instead of simply encouraged within an ASP, ARP and NSP document, and how these policies could impact the development industry. The workshop should include a discussion on what types of policies are most appropriate to enforce at this stage in the planning and development process, as well as potential mechanisms to ensure compliance.

3. STANDARDIZED TEMPLATE(ASP, ARP, NSP DOCUMENTS)

Create a standardized template for the sustainability section of ASP, ARP and NSP documents, as well as guidelines for how sustainability should be meaningfully incorporated and outlined in these plans, based on the key findings from the Policy Language workshop. The guidelines can include information on what should be enforced versus simply encouraged to ensure that these plans are created with an outcome-oriented mindset for sustainable design.

3.3 REZONING AND SUBDIVISON

1. FLEXIBILITIES/VARIANCE POWER IN THE ZONING BYLAW

Consider amendments to the Zoning Bylaw to grant City Planning (Director of Planning, Development Officer, etc.) with greater variancing power for sustainable development in the Edmonton Zoning Bylaw. These variancing powers should allow for greater flexibilities and discretion to more effectively encourage and incentivize sustainability. For example, greater variance powers may allow for City Planning to exempt thicker walls (that provide additional insulation and reduce thermal bridging) from the FAR calculation. Another example would be to relax setback distances to more effectively accommodate solar panels/energy on a project. Additional research will need to be undertaken to determine if approval conditions or a security can be obtained at the rezoning stage to ensure that the building design includes the sustainable development features upon build-out and complies with potential conditions. A discussion on these mechanisms can be undertaken at the "Policy Requirements to Support a Strategic Plan" workshop.

2. SUSTAINABLE COMMUNITY AMENITY CONTRIBUTION

Consider an amendment to the Community Amenity Contribution (C599) policy to allow for this contribution to be allocated towards sustainable building design features or other sustainable initiatives on a site or within a neighbourhood. Please note, that there is a tradeoff discussion that must be undertaken by the City prior to the amendment, as less monies would be allocated towards current community amenities (such as public art or upgrades to park spaces), which could detract from the intent of the policy. The City may also want to explore an additional contribution that is not related to the existing C599 policy.

3. DEVELOP DENSITY/FAR BONUS POLICY

Develop a density/FAR bonus policy as an incentive for all projects that require a rezoning, to encourage higher density development for projects that achieve a certain level of sustainability based on an existing green program or a point-based sustainability checklist/guidelines This policy could be based on the density/FAR bonus policies provided through "The Quarters Overlay", and may require consultation with developers to ensure that the bonusing incentive, off-sets the cost and risk associated with the additional sustainable measures. Additional discussion on compliance will also be required and likely tied to another stage in the planning and development process.

4. ABOLISH SINGLE FAMILY ZONING

Undertake a comprehensive review of the Minneapolis 2040 plan and the associated engagement process, to develop a better understanding of the steps that were undertaken to abolish single-family zoning. Engage in a phone interview with a City of Minneapolis planner to determine the feasibility of a similar amendment to the RF1 Zone in Edmonton, as well as a SWOC analysis to determine the impacts the amendments may have within the context of Edmonton.

3.4 DEVELOPMENT PERMITS, BUILDING PERMITS, SERVICING AGREEMENTS, AND LICENSES

1. SUSTAINABLE SERVICING APPROACH PROGRAM (DEVELOPER)

Create a program for developers which provides education on innovative sustainable servicing approaches (LID, district heating, water management technologies), as well as a financial incentive for servicing agreements which incorporate sustainable design features. This program will help offset some of the uncertainty/hardship from the additional review and monitoring time and costs associated with sustainable features and may also be an opportunity to reward early adopters of innovative servicing approaches in private development and act as a catalyst for other projects.

2. SUSTAINABLE SERVICING APPROACH AND PERMITTING PROGRAM (STAFF)

Create an educational program which provides information to City staff on innovative sustainable design servicing approaches and building features, and training for how the City can encourage these provisions through the planning and development approval process. Also, create a staffing position to spread awareness of innovative approaches and measures with private sector stakeholders and the public at large, to improve literacy, streamline the process, reduce red tape, promote innovation in building design and servicing, and bridge the gap between strategic goals and implementation.

3. EXPEDITED PERMITTING

Create an expedited permitting process that is capable of fast-tracking the approval of development projects that achieve green program certification or the requirements of a point-based sustainability checklist/guidelines. The City should develop communication materials for the expedited permitting process to share with the development industry to generate excitement about the program and encourage more developers to utilize the program for their development projects.

3.5 GENERAL

1. STANDARDIZED METRIC (SROI, LCA)

Develop a rubric to evaluate the feasibility and effectiveness of sustainability. This rubric would aid city staff in right sizing sustainable policies and reduce the number of developers paying the penalty rather than meeting the intent of the policies.

Metrics can include but are not limited to:

- Life Cycle Cost Analysis;
- ROI (Return on investment);
- SROI (Sustainable Return on Investment), and;
- Environmental Impact measured in CO2e diversion.

Engage in a workshop with technical staff and sustainability experts to discuss potential metrics, and evaluate how the standardized metric should be defined and applied to development projects.

2. EDUCATIONAL PROGRAM, RESEARCH AND MARKETING CAMPAIGN (PROCESS/TRIPLE BOTTOM LINE)

Develop an educational program with classes for City employees and the development industry which highlights and explains the changes to the planning and development process to build capacity in regards to new plans, policies, and requirements to support Edmonton's strategic goals for sustainability (The Way We Green) and the Community Energy Transitions Strategy. Also, create a research and marketing campaign to share some of the less transparent (triple bottom line) benefits of sustainability to help generate community buy-in. For example, the City of Vancouver engaged in a cost assessment of their sustainable development industry in Vancouver and valued it at $3.3 billion dollars. This information was shared with the public as an exciting economic development opportunity and is supported today by many success stories for private businesses in the sustainability sector. For example, several Vancouver companies that specialize in Passive House windows have experienced success both locally and internationally.

3.6 GENERAL (ECO-INDUSTRIAL)

1. LARGE-SCALE PROJECT AS ANCHOR TENANT (ECO-INDUSTRIAL)

Research large-scale projects that could act as an anchor tenant and become a catalyst for other private development projects within an eco-Industrial park. Explore opportunities in the private and public sector for large scale projects that could benefit from being positioned within an eco-industrial park, with a focus on projects that are inherently linked to sustainability in the context of Edmonton (ie. a new City of Edmonton composting facility, EPCOR solar farm, wind turbines, etc.). Undertake a workshop or phone call meetings with potential tenants to identify opportunities and synergies that could be created with an anchor tenant of an eco-industrial park.

2. COST AND TIME ASSESSMENT FOR SERVICING AND TECHNICAL REQUIREMENTS (ECO-INDUSTRIAL)

Undertake a cost/time assessment of the servicing and technical report requirements for the Edmonton Energy and Technology Park to determine if the requirements are acting a deterrent to development within the park. This assessment can be used by the City in a cost benefit analysis to determine if there is value in the City undertaking some of the servicing and technical work pre-emptively to stimulate and encourage development within the park.

3. REGIONAL COOPERATION FOR INDUSTRIAL DEVELOPMENT

Engage in a workshop with key stakeholders at Edmonton Metropolitan Region Board to discuss sustainability guidelines for industrial development at the regional level. The objective of these guidelines would be to create a more level playing field for sustainable development within the industrial sector, and to reduce regional competitiveness and support a common vision for sustainability in the Edmonton Metropolitan area.

4. EXPLORING ECO-INDUSTRIAL METHODOLOGIES

Collaborate with National Industrial Symbiosis Program (NISP) - Canada to determine if the practical application of industrial symbiosis methodology could be applied to EETP to more effectively incorporate eco-industrial relationships. The NISP program involves the development of a network to identify mutually profitable transactions between companies so that underused or undervalued resources (including energy, waste, water and logistics) are brought into productive use. This program has been successfully replicated in 20 countries world-wide to date at a national or regional level

CONCLUSION

The Evaluation of Sustainable Development Goals Final Report provides a series of tangible recommendations to more effectively incorporate sustainability into the planning and development process and achieve the City's sustainability goals. While many of the recommendations are based on research from other municipalities, it is important to remember that every municipality is unique and presents its own opportunities and challenges. With this in mind, the City of Edmonton is in an excellent position to consider how success stories from other municipalities can be incorporated into the context of Edmonton through the recommendations in this report. These recommendations will address barriers and gaps to achieving sustainability goals and act on opportunities to support a greener future that is uniquely Edmonton.


DIALOG