breathe

EDMONTON'S GREEN NETWORK STRATEGY

Strategic Plan

August 2017

Edmonton

4 POLICY ACTIONS 79

LIST OF MAPS

LIST OF FIGURES

PHOTO CREDITS

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Foreword

BREATHE: Edmonton's Green Network Strategy presents a robust and comprehensive approach to managing, programming, and promoting the sustainable and efficient use of the city's parks and publicly-accessible open spaces. As the City's population increases, the need to make effective use of its open spaces is of paramount importance.

Describing and scoring open spaces by their contributions to Ecology, Celebration and Wellness, the Strategy highlights the need for efficient and highly functional open spaces which provide highly valued and irreplaceable opportunities. By moving beyond simple standards for the amount of open space, *BREATHE* calls for a well-connected set of multifunctional open spaces. From parks and plazas to greenways and community event spaces, the green network provides residents and visitors the opportunity to experience a wide range of amenities and activities.

Edmonton's renowned world-class River Valley and Ravine System provides an essential ecological backbone of core natural areas, further complemented by a diverse set of ecological parks and green infrastructure throughout the tablelands. A connected network of trails, corridors and pathways provides recreation and commuter access throughout the city, linking neighbourhoods and fostering wellbeing through the widespread use of the urban landscape. Plazas, sports fields and community event spaces provide iconic destinations, bringing the city together in a vibrant celebration of Edmonton's unique character.

BREATHE will act as a living framework, allowing the City to make the best use of its lands, bringing together key information on the opportunities and challenges the city faces as it grows and develops. The *Green Network Strategy* provides a powerful tool for the wise stewardship of the City's open spaces now and for decades to come.

Executive Summary

Open spaces define Edmonton. Our parks, squares and pathways help make this city among the world's most livable. To help prepare for the future and meet the needs of an increasing population, *BREATHE*: *Edmonton's Green Network Strategy* sets direction for the sustainable care and expansion of our open spaces. Recognizing the value of open spaces in improving the health and wellbeing of our residents, the *Green Network Strategy* outlines how to preserve the integrity of our environment while celebrating our community spirit and identity.

AN INNOVATIVE APPROACH

BREATHE is a transformative strategy, based on a network approach. This approach acknowledges the interconnected nature of open spaces across the city, and the way that many different urban networks coexist and overlap to form an integrated, multifunctional green network. The Strategy considers the amount, function and configuration of not only municipal parks, but all publicly accessible open spaces, in order to form a comprehensive picture of how the entire green network performs.

This approach will ensure that while the city grows, every neighbourhood will be supported by an integrated, multifunctional system of green and open spaces.

ECOLOGY NETWORK

CELEBRATION NETWORK

WELLNESS NETWORK

URBAN INFRASTRUCTURE

THE GREEN NETWORK

SUPPORTING EVIDENCE-BASED DECISIONS

BREATHE was realized through a rigorous process of research, analysis and engagement. The Strategy incorporates a geospatial database containing an inventory of all the open spaces in the city, and accompanying information about function and connectivity. This database informs a comprehensive understanding of the green network and the issues confronting it, and provides the City of Edmonton with a tool to make integrated, data driven, spatially explicit management decisions about the future of open spaces in Edmonton.

A COHERENT POLICY FRAMEWORK

The green network is part of a connected network of open spaces and corridors providing multiple services to humans and the environment, which we call functions. Functions broadly encompass the following benefits, which are arrayed in networks across the city:

ECOLOGY
Supports and enhances the environment by sustaining healthy and resilient ecosystems.

CELEBRATION
Connects people to one another and builds a sense of place by providing places for communities to thrive, gather and celebrate.

WELLNESS
Promotes healthy living and fosters wellbeing through diverse kinds of recreation, mobility and environments.

The performance of the green network was analyzed according to these themes. Incorporating direction from *The Way Ahead* and *The Ways*, Edmonton's Strategic Plans, and from the *BREATHE* Vision and Guiding Principles, the functional analysis was used to develop ten Strategic Directions and subsequent policy actions.

THE WAYS

VISION + GUIDING PRINCIPLES

STRATEGIC DIRECTIONS

POLICY ACTIONS
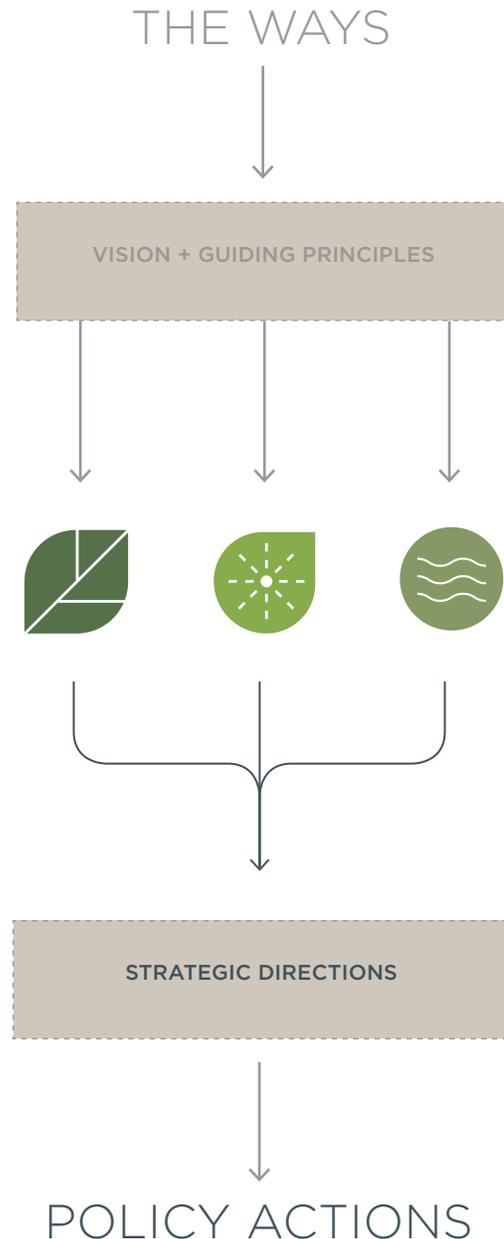
STRATEGIC DIRECTIONS

SAFE + INCLUSIVE: Ensure that the green network is safe, accessible and inclusive for all.

VIBRANT SPACES: Make open spaces vibrant, sustainable and functional to support community identity and needs.

COMMUNITY ENGAGEMENT: Empower people to become active participants and stewards in planning, sustaining and using the green network.

EDUCATION + AWARENESS: Improve awareness of open space opportunities and appropriate use.

DISTRIBUTION + SUPPLY: Ensure an adequate supply, quality, diversity and distribution of open space throughout Edmonton.

PUBLIC ACCESS + CONNECTIVITY: Improve open space access for residents and visitors.

ECOLOGICAL INTEGRITY: Preserve and enhance the ecological quality and connectivity of the green network.

ADAPTIVE MANAGEMENT + FLEXIBLE SPACES: Adaptively manage changing trends in growth, demographics and preferences.

COLLABORATIVE PLANNING: Improve collaborative open space planning among City stakeholders, community partners and other jurisdictions.

SUSTAINABLE FUNDING: Develop a sustainable funding model that responds to operational requirements, community capacity and local needs.

ADDRESSING OPEN SPACE PROVISION

The value of the green network depends on multiple factors, including the way open spaces are used, the benefits they provide and the quantity available for use. In order to incorporate a comprehensive understanding of the green network, *BREATHE* establishes provision strategies that consider measures of:

» **Distribution:** The arrangement of, and access to, open spaces across the landscape.
» **Quality:** The functionality of an open space, considering the condition of its infrastructure/ amenities and the value of the functions it provides.
» **Diversity:** The range of different open space types and functions within the landscape.
» **Supply:** The physical amount of open space.

These provision strategies recognize that multifunctionality is an essential tool to make the most efficient use of public land as a scarce but valuable civic resource.

A VALUABLE DECISION MAKING TOOL

BREATHE serves as a tool for collaborative decision making and provides guidance on high-level objectives and priorities for the Edmonton green network. Now, spatially explicit, functional valuations for each and every Edmonton open space enable green network managers to avoid ad hoc acquisition, disposal and programming decisions in favour of well supported interventions targeted to the communities where they are most needed.

The Strategy is supported by a separate Implementation Plan that provides concrete actions and guidelines for open space development, and a Technical Report that explains the methodologies used to analyze the green network. Further information can be found on the project website at **edmonton.ca/ breathe**.

Foundations

1.1   The Need for a Green Network Strategy

Edmonton's green network is an integrated system of open spaces, municipal parks and connections that provide value to residents and the environment. It includes all the outdoor land and water that is publicly owned or publicly accessible, such as parks, plazas, pedestrian-priority streets, natural areas, greenways and green infrastructure.

This network makes Edmonton among the world's most livable cities. But as the city grows, we will need to do better. The City of Edmonton was incorporated in 1904, and has since evolved into a vibrant and growing centre of 900,000 people. The city is situated within the traditional territories of many First Nations, and is an important homeland for the Métis Nation. Edmonton serves as a gathering place for creating and maintaining relationships among communities and peoples from all over the world.

Edmonton is a great place to live, work and play. It boasts a strong economy, friendly people, a rich cultural heritage and a world-class network of parks and open spaces. Our diverse green network provides a wide range of amenities, experiences and opportunities that support the integrity of the environment and the health and wellbeing of residents. Additionally, open spaces attract visitors and support economic growth and urban vitality.

BREATHE: Edmonton's Green Network Strategy provides an opportunity to revisit the role open spaces play in ensuring ecological integrity and quality of life. Edmonton's green network, like many other park and open space systems worldwide, is challenged by the pressures of population growth, changing demographics, limited resources, evolving trends in recreation and shifting environmental conditions. This Strategy will ensure better access to well-connected, highly functioning open spaces that support other city planning objectives and respond to diverse needs.

Cities everywhere are recognizing the value open spaces add to the urban system — the way green infrastructure provides ecological services, civic squares create sense of place, and recreational amenities support health and wellness. Edmonton has the potential to be a leader in open space planning by creating and implementing a strategy based on sound evidence, Indigenous and community engagement, and an integrated network-based approach. The *Green Network Strategy* is an opportunity to create a bold vision for a better future — to think strategically about what approaches and actions are needed to build the best possible green network for Edmonton.

1.2 Purpose of the Strategy

The *Green Network Strategy*:

» Provides a framework for explicit and defensible multiple-objective decision making about Edmonton's open spaces.

» Contributes to the City's broader strategic goals and vision as set out in the City of Edmonton strategic plan, *The Way Ahead.*

» Replaces the previous *Urban Parks Management Plan.*

» Establishes strategic directions and policy actions to guide open space development, management and use into the future.

The scope of the Strategy is limited to outdoor open spaces that are publicly owned or publicly accessible, and the primary focus is on planning physical infrastructure, as opposed to programs or other methods of animation.

This Strategy was developed in the context of a renewed Corporate Land Management Policy, which emphasizes that public lands are scarce resources, and as such, that the City has a responsibility to allocate and manage them as efficiently as possible. Now, spatially explicit, functional valuations of all Edmonton open spaces enable planners and land managers to avoid ad hoc acquisition, disposal and programming decisions in favour of well-supported interventions targeted to the spaces and communities where they are most needed, and where they would provide the greatest benefit to overall network functioning.

1.3 Structure of the Document

This *Green Network Strategy* is structured in five parts:

» Part 1 explains the vision and approach of the Strategy, and provides background information surrounding planning and policy context in Edmonton.

» Part 2 provides more detail about Edmonton's green network and its constituent functions and open spaces.

» Part 3 describes the state of open space provision in central core, mature, established, developing and industrial neighbourhoods, and establishes provision strategies appropriate for each area.

» Part 4 provides 10 Strategic Directions and supporting policy actions to guide the City and its community partners in planning open spaces.

» Part 5 concludes with a summary of challenges and opportunities, and an overview of the next steps needed to implement *BREATHE.*

BREATHE includes a separate Implementation Plan that explains in greater detail how to achieve the policy actions of this Strategy by providing concrete actions and projects for open space improvement. An additional Technical Report provides detailed information about the methodologies that were used to analyze the green network.

Finally, *BREATHE* is intended to be a living document. Even the most current and comprehensive information — the information used to build the Strategy — can become outdated as conditions change over time. This means that everyone responsible for implementing the Strategy must commit to keeping the document "alive" with new data, analytical methods and ideas for addressing issues as they evolve.

1.4 Planning and Policy Context

Edmonton exists within a nested series of natural, traditional and geopolitical jurisdictions. The North Saskatchewan River connects the City to adjacent municipalities and to larger regional and continental ecosystems from the Rockies to the prairies. The Parkland Ecoregion represents a highly biodiverse transition zone between boreal forests and prairie grasslands. The Edmonton Metropolitan Region includes Edmonton and surrounding municipalities, totaling nearly 12,000 square kilometres. Situated within Treaty 6 territory, the traditional territories of many First Nations, and the traditional homeland of the Métis Nation, Edmonton is the Capital of Alberta and the northernmost major city in North America.

BREATHE will influence, and is influenced by, a range of legislation, strategies, plans, programs and agreements that govern these relationships and determine how we plan, develop and manage the green network. (A comprehensive list of these associated policies is summarized in the *Green Network Context Report*, available at **edmonton.ca/breathe**). The North Saskatchewan Regional Plan, the River Valley Alliance Plan of Action and provincial and federal policies regarding wetlands conservation, endangered species and environmental impact assessments all influence the ecological network of the city. The Edmonton Metropolitan Region Growth Plan and the Municipal Government Act provide direction on growth, governance and land use. The *Green Network Strategy* can also help advance the recommendations of the Truth and Reconciliation Commission and City of Edmonton initiatives (e.g. the Urban Aboriginal Accord), which intend to honour the traditions and contributions of Indigenous peoples to this place.

CITY'S 2040 VISION: THE WAYS

EDMONTON NETWORK | **GREEN STRATEGY**

LINKED STRATEGIES AND PLANS PERTAINING TO:

Recreation
Urban design
Health
Local transport
Climate change
Biodiversity
Stormwater management
Cultural landscapes
Natural heritage
Food
Winter

FINER SCALE STRATEGIES AND PLANS PERTAINING TO:

Urban forestry
River Valley
Park master plans
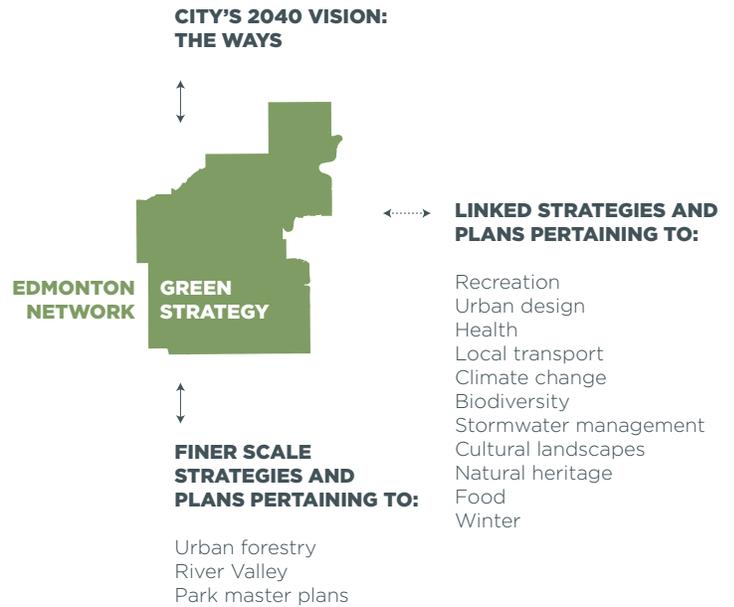
FIG. 1: Related City Plans and Policies

BREATHE must also support and align with other City plans and policies (see **FIG. 1**). The *Green Network Strategy* supports the civic priorities of *The Way Ahead: City of Edmonton Strategic Plan* and its six subsidiary strategic plans (*The Ways*), which establish a foundational vision and goals to direct the strategic work of the City. *BREATHE* provides a strategic foundation and policies to support complementary City plans and strategies, and provides direction for subsidiary municipal plans and projects (e.g. area structure plans, park master plans).

Together, this collection of plans and associated documents forms a **policy hierarchy** that provides important strategic guidance to *BREATHE*, and that in turn enables *BREATHE* to provide direction to the plans, initiatives, programs and projects that directly affect open spaces throughout the green network.

1.4.1 REGIONAL PLANNING CONTEXT

The Capital Region Board of the Edmonton Metropolitan Region (see **MAP 1**) consists of an elected representative from each member municipality, and was formed to coordinate planning for land use, transit, housing and geographic information systems across the Region. Regional planning is coordinated through the Edmonton Metropolitan Region Growth Plan.

The Plan indicates that over the next several decades, the Edmonton Metropolitan Region can expect 33,000 new people per year and 16,000 new jobs per year. Edmonton is anticipated to accommodate at least 70% of regional population growth, which means the City must "grow up, grow in and grow out" to accommodate regional targets for smart growth. The Growth Plan establishes targets for densifying greenfield development and Transit Oriented Development centres, and an intensification target that directs 25% of new residential development toward Mature neighbourhoods and the Central Core.

What these trends and targets imply for open space planning is that demands on the green network will increase, while enhancing open spaces becomes more important for supporting the quality of life in densifying communities. The *Green Network Strategy* intends to address the objectives of the Metropolitan Region Growth Plan by:

» Providing for complete communities with sufficient and appropriate open spaces

» Accounting for growth and densification with adequate servicing and provision guidelines

» Promoting active transportation by supporting infrastructure connectivity

» Protecting and restoring significant natural areas

» Planning open spaces that enhance climate change resiliency and improve environmental quality region-wide

» Encouraging urban agriculture and supporting local food vendors and activities

» Considering recreational and ecological connectivity through the region and beyond
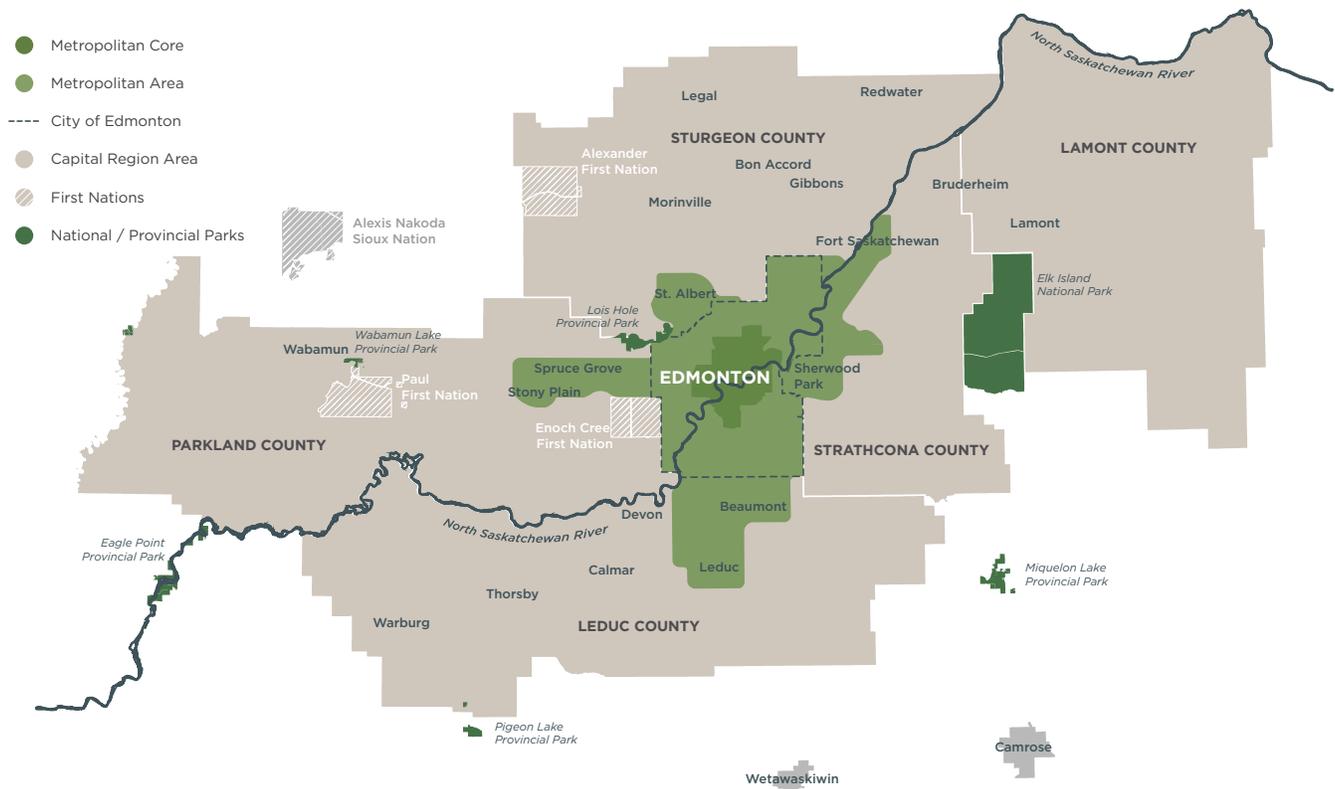
MAP 1: Edmonton Metropolitan Region

1.4.2 CITY PLANNING CONTEXT

BREATHE extends far beyond consolidating and updating existing open space policy. This *Green Network Strategy* responds to the unique and dynamic conditions of Edmonton, now and in the future. It identifies the key issues, considerations and policies that will achieve a vibrant and sustainable open space network to serve current and future populations.

The following pages provide local context for the plan.

THE WAY AHEAD & THE WAYS STRATEGIC PLANS

The Way Ahead: City of Edmonton Strategic Plan is the core planning document that directs the strategic work of the City. Its six subsidiary strategic plans (*The Ways*) explain how to achieve the corporate vision and goals for Edmonton in relation to growth (attractive and compact city), transportation (access to amenities and services), livability (health and wellness), environment, municipal finance and economy. Any subsidiary plan or strategy, including this *Strategy*, must align its actions and policies to accomplish the objectives of *The Ways*.

BREATHE is one of 23 City Priority Projects identified in The Way Ahead Implementation Plan (2016-2018). According to the Plan, a successful open space strategy will ensure that parks and natural area growth support growing communities, and multifunctional landscapes meet the growing needs of diverse communities. In service of these objectives, *BREATHE* recommends planning, management and programming actions that align with each of the six strategic goals of *The Ways*.

Transform Edmonton's urban form.
The Way We Grow | Municipal Development Plan

Open spaces and the connections among them are an important component in the network of land uses and infrastructure that influence how we grow. Well designed, strategically-located open spaces help build vibrant communities and facilitate a high quality of life for residents, especially as neighbourhood density increases across the City.

Enhance use of public transit and active modes of transportation.
The Way We Move | Transportation Master Plan

The green network supports more sustainable, equitable transportation system. Pedestrian-friendly streets, walking and cycling pathways, and supportive wayfinding systems can help increase travel choices for Edmontonians and encourage more efficient movement of people through the City. Well-designed green and civic spaces can also create welcoming environments around transit nodes, helping to enhance sense of place and encourage ridership.

Improve Edmonton's livability.
The Way We Live | Edmonton's People Plan

Safe, clean open spaces are a cornerstone of community livability. They are places for people to learn, recharge, recreate, gather and celebrate. They build a sense of community by providing welcoming places for everyone, and programming to bring people together. Open spaces enhance access to heritage, arts and entertainment opportunities, creating unique urban experiences.

Preserve and sustain Edmonton's environment.
The Way We Green | Environmental Strategic Plan

Open spaces encompass the urban ecosystems that are essential to environmental sustainability. These ecosystems clean our air and water, mitigate the effects of climate change and provide habitat for plants and animals. Open spaces can provide sites to support resilient food systems in the region, including production, processing, storage, transportation, buying, selling, eating and waste management activities. Conserving, connecting and expanding open spaces is imperative to achieving this goal.

Ensure Edmonton's financial sustainability.
The Way We Finance | Financial Sustainability Plan

Maintaining and expanding the green network requires substantial financial resources, which must be balanced with many other City priorities. As key amenities that reinforce Edmontonians' quality of life, open spaces should remain high on that list of priorities. In turn, if properly managed, open spaces can financially benefit the City by attracting residents and visitors, increasing the taxable value of nearby properties, and providing valuable ecosystem and green infrastructure services.

Diversify Edmonton's economy.
The Way We Prosper | Economic Development Plan

Edmonton is a city that supports a diverse local economy. The green network provides the quality of life that is key to retaining a strong workforce and spurring local investment. Open spaces can also provide the inspiration or the testing ground for innovative technologies, cultural initiatives and businesses such as farmers' markets, recreation service providers or ecotourism operators.

THE NORTH SASKATCHEWAN RIVER VALLEY AND RAVINE SYSTEM

The River Valley and Ravine System form the core of the green network, and provide important habitat for plants and animals, regional connectivity throughout the City and beyond, as well as cherished open spaces for human use. Planning in and around the valley involves a delicate balance between preserving ecological integrity and providing for sustainable human use. This Strategy establishes policy that addresses issues of environmental degradation, optimizing usage patterns and opportunities for long-term use and preservation.

WINTER CITY FUNCTIONALITY

As a proud northern city, Edmonton recognizes that the green network should celebrate our unique winter climate. The green network encourages residents and visitors to embrace winter life by providing spaces for winter recreation (e.g. cross-country skiing, skating, snowshoeing and tobogganing), community gathering (e.g. warming huts, heated outdoor patios) and celebration (e.g. festivals and other events). At the same time, open spaces should be designed to promote access to sufficient sunlight and shelter that mitigates darker, cooler winter conditions, and infrastructure should be maintained to ensure safe, barrier-free environments for people of every age and ability.

RECREATIONAL TRENDS

Active and passive recreational spaces are important elements of the green network. Much of the network land base is comprised of sports fields, recreation centres, pathway systems and other active living facilities. Changing recreational trends have significant implications for strategic open space planning. For example, busy schedules and limited leisure time have resulted in declining participation in organized sports and an increasing preference for more flexible, individualized fitness and wellness experiences. An aging population in Edmonton increases the demand for lower impact recreational activities such as gardening, walking and nature appreciation, while an increasing population of new Canadians may have recreational preferences currently under-supported by the green network. Strategies that support active living and the provision of recreation facilities (such as the Recreation Facilities Master Plan and Live Active Strategy) will align and partner with the *Green Network Strategy* in considering and responding to these trends.

POPULATION GROWTH

The population of Edmonton is projected to double to nearly two million residents. The City is taking action to help ensure that new growth is attractive and compact by encouraging the urban form to "grow up" through higher density redevelopment and Transit Oriented Development, "grow in" through neighbourhood intensification and infill, and "grow out" through responsible development of new neighbourhoods. The City must provide for diverse and changing demands using limited budgets. Strategic provisioning of open space includes acquisition of new areas, as well as enhancement and responsive management of existing spaces. The green network will support vibrant, healthy communities by supplying sufficient, diverse and wisely stewarded open spaces that meet anticipated needs into the future.

NEIGHBOURHOOD DECLINE AND RENEWAL

Unlike developing neighbourhoods, whose populations are projected to grow, some mature and established areas have experienced significant population decline over the past several decades (see **FIG. 2**). School closures, or school sites declared surplus to school board needs, present an opportunity for redevelopment as community open spaces, but they may also be sold or redeveloped for other land uses. City infill and open space renewal initiatives in older neighbourhoods could help reverse population decline while improving the condition of aging parks and infrastructure.

CLIMATE CHANGE

Climate change is a global issue that impacts Edmonton in numerous ways, including severe storm events (which produce flooding and accelerated infrastructure deterioration), drought, heat waves, shorter or milder winters, and changes in long-term weather patterns. Plants and animals that find habitat within the green network are challenged to adapt to these stressors and associated effects, such as increased vulnerability to disease or pests, and potential shifts in their habitat range. The green network contributes to a more climate resilient city by reducing the urban heat island effect and mitigating the impacts of climate change.

FLOODING

Although the open spaces of the River Valley and Ravine System help prevent damage from flooding of the North Saskatchewan River, older areas of the City face increasing risks from overland flooding due to high proportions of impervious land surfaces, and aging stormwater infrastructure not designed to accommodate current usage or weather patterns. This Strategy explains how the green network can be leveraged to provide land for upgraded stormwater management facilities like dry ponds, and Low Impact Development (LID) stormwater management alternatives.

Development of vacant lands results in population increase, typically young families with young children.

Neighbourhoods are completed and in-migration slows. The population continues to grow as families have children.

The population declines as children grow up and leave home.

Neighbourhoods may be revitalized, or become seen as a desirable place to live. Redevelopment and intensification increase available dwellings and attract new residents.

New in-migration from young families occurs as older couples begin to leave the neighbourhood. A stable neighbourhood population is achieved.

Undesirable economic and social conditions may make neighbourhoods unattractive, resulting in population losses.

FIG. 2: The typical lifecycle of a neighbourhood

THE LIFECYCLE OF A NEIGHBOURHOOD
All neighbourhoods change as they go through a typical lifecycle process. When they are first building out, new neighbourhoods experience rapid population expansion as the community develops, new households are formed and household size grows. They then tend to stabilize for a period of time, which is followed by population decline as children grow up and leave home. Neighbourhoods can then experience a variety of transitions and different outcomes over time. They may continue to shrink as household size declines, or they may grow again as new generations of Edmontonians move in and expand their household size.

1.5 Public and Stakeholder Engagement

Significant public engagement and dialogue were key components in the development of *BREATHE*'s findings and policy actions. The quality of Edmonton's open spaces is propelled by strong citizen participation, so our residents are uniquely placed to offer their insight.

A total of 3,750 individuals and 94 stakeholder and community organizations were engaged through online surveys (including a questionnaire and mapping tool), a stakeholder discussion guide, and more than 45 events and discussions, including:

» Interactive public open houses
» Stakeholder meetings or workshops
» Pop-up engagement sessions at festivals and public events
» Meetings with communities of interest (e.g. children, youth, older adults, persons with disabilities, newcomers, etc.)

INDIGENOUS ENGAGEMENT

In addition to public and stakeholder engagement, meetings were convened with Indigenous communities with connections to Edmonton. The City reached out to First Nations communities in Treaty Six, the Métis Nation of Alberta, communities from Treaty Seven and Treaty Eight with traditional territories in the Edmonton region, Indigenous organizations and urban Indigenous peoples. The meetings helped participants to share project information, gather input, and continue to engage in an open dialogue about the future of the green network.

The engagement process has presented a unique opportunity to engage people in a conversation about their open spaces. A summary of engagement results is available in the What We Heard Reports available at **edmonton.ca/breathe**.

1.6 Stages of BREATHE

The *Green Network Strategy* is based on the best available evidence in order to build the most comprehensive understanding of the green network. The project development process used research, discussion, geospatial data, analysis and coordination with other City plans and initiatives to inform conclusions about the strengths and weaknesses of the network and opportunities for improvement in the future.

BREATHE was developed over five project stages:

» **Stage 1: Review the Context**
  The project team evaluated existing approaches to the planning, design, management and funding of valued open space functions, including the best practices available from other jurisdictions. Key municipal, regional, provincial and federal plans and policies were also reviewed to determine how they might influence the green network or this Strategy.

» **Stage 2: Understand the Supply**
  The project team used spatial analysis to understand the key characteristics of the green network in Edmonton, and compiled a GIS database to inventory and analyze features like natural areas, recreational amenities and trail networks. A summary report outlined the types of existing open spaces in the city, and identified where gaps in access and connectivity occur.

» **Stage 3: Understand the Demand**
  Based on public and stakeholder engagement, user data and socio-demographic information, both current and future demand for open spaces were analyzed to provide a basis for the policy actions of the Strategy.

» **Stage 4: Objectives and Priorities**
  The purpose of this stage was to collect and synthesize all of the data, engagement feedback and analysis from the previous three stages to establish a series of Strategic Directions.

» **Stage 5: Prepare Final Deliverables**
  This stage was reserved for the project team to examine the priorities identified in Stage 4, and compare them with other city goals and best practices to develop policy actions for open space management moving forward.

1.7 A Vision for Edmonton's Green Network
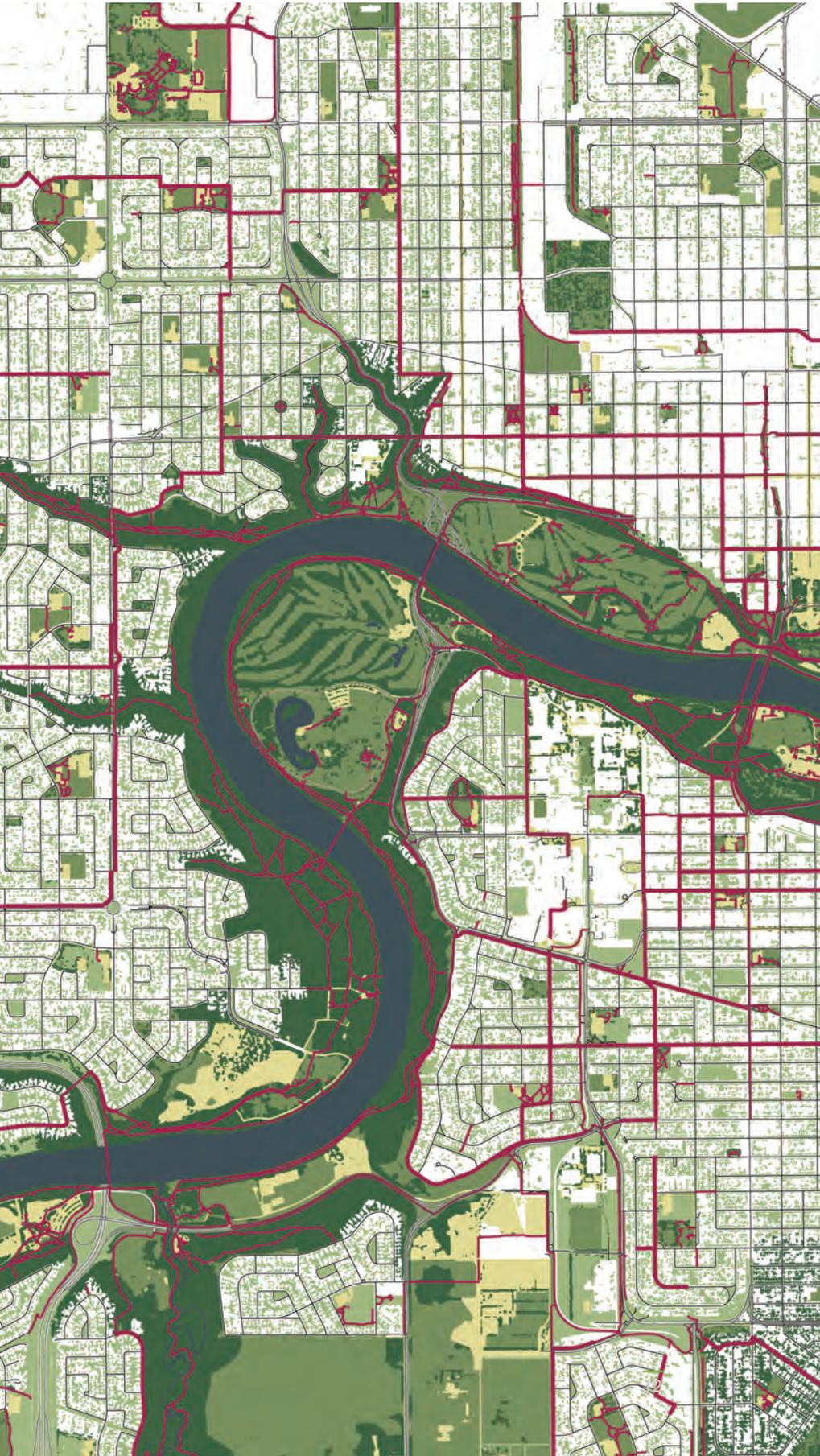
Edmonton offers an integrated, multifunctional network of parks and open spaces that is renowned as an iconic and defining feature of Alberta's capital city.

The green network supports healthy ecosystems and diverse wildlife habitats, and meets the needs of communities present and future by connecting people with year-round opportunities to learn, commute, recharge, recreate, gather and celebrate.

Edmontonians are proud of their green network and enjoy sharing the diverse environmental, economic and quality-of-life benefits the green network provides.

1.8 Guiding Principles

The Green Network Strategy is founded on the following guiding principles:

Recognizable and Unique
Edmonton's signature green network highlights its unique cultural and ecological character, and celebrates the relationship between Indigenous peoples and Edmontonians in meeting the needs of a culturally diverse, rapidly growing, thriving Metro Region.

Integrated and Multifunctional
Edmonton's green network integrates, connects and layers multiple open space types and functions to form a complete system.

Equitable and Accessible
Edmonton's green network is inclusive and equitably accessible for people of all ages, cultures, genders, abilities and income levels.

Connected and Coherent
Edmonton's green network facilitates safe, legible and easily navigable connections for people and wildlife throughout the Metro Region.

High Quality Public Realm
Edmonton's high-quality public realm connects people to its unique natural and cultural heritage, and contributes to an attractive, compact city.

Community Capacity
Edmontonians understand the value of open space and are empowered to be active participants in the creation, stewardship, programming and use of Edmonton's green network.

Ecological Integrity and Conservation
Edmonton's green network sustains healthy and resilient ecosystems and fosters a sense of connection with nature.

Safety
Hazards are prevented and risks are mitigated to create a resilient, welcoming green network for all to enjoy.

Wellness
Edmonton's green network promotes the health and wellbeing of Edmontonians through active living, access to the natural environment and connection to a vibrant, inclusive and caring community.

Financial Resilience
Edmonton's green network is flexible and financially sustainable in delivering open space services to changing and growing communities.

1.9 The Policy Framework

The following framework (see **FIG. 3**) informs and organizes the analysis and policy actions of the *Green Network Strategy*.

The Way Ahead + The Ways

The Way Ahead and *The Ways* are the highest level strategic planning documents of the City of Edmonton, and together they provide direction for any subsidiary corporate plan or initiative that relates to growth, transportation, livability, environment, municipal finance or the economy.

Vision + Guiding Principles

Based on the direction enshrined in *The Ways*, the Vision and Guiding Principles establish desired broad outcomes for the green network. The subsequent strategic direction and policies contained in the Strategy are oriented to accomplish these outcomes.

Themes + Functions

The functional benefits provided by open spaces to humans and the environment are organized into 15 functions, which fall within three overarching themes: **Ecology, Celebration** and **Wellness.** The current and future performance of the green network has been analyzed according to these themes and functions to determine issues and opportunities.

Strategic Directions

Using inspiration from *The Way Ahead* and *The Ways* strategic plans as well as *BREATHE*'s Vision and Guiding Principles, and incorporating a strong understanding of green network issues and opportunities, the Strategic Directions establish overarching initiatives through which higher level outcomes can be achieved.

Policy Actions

Finally, the Policy Actions provide clear details on the steps required to achieve the Strategic Directions and the ultimate goal of an integrated, multifunctional green network. More detailed actions can be found in the *BREATHE* Implementation Plan.

THE WAY AHEAD + THE WAYS

VISION + GUIDING PRINCIPLES

Recognizable + Unique	Integrated + Multifunctional	High Quality Public Realm
Community Capacity	Safety	Wellness	Financial Resilience

| Connected + Coherent | Equitable + Accessible | Ecological Integrity + Conservation |

ECOLOGY

- Water Management
- Climate Regulation
- Biodiversity
- Risk Mitigation
- Waste Management
- Food Production

CELEBRATION

- Aesthetic Value
- Community Building
- Public Safety
- Heritage
- Destination + Tourism

WELLNESS

- Recreation
- Mental Health + Wellbeing
- Active Transportation
- Learn + Play

STRATEGIC DIRECTIONS

Safe + Inclusive	Vibrant Spaces	Community Engagement
Education + Awareness	Distribution + Supply	Public Access + Connectivity	Ecological Integrity
Adaptive Management + Flexible Spaces	Collaborative Planning	Sustainable Funding

POLICY ACTIONS

1.10 Conceptual Approach to the Green Network

The *Green Network Strategy* adopts a multifunctional network planning approach to ensure a range of highly-valued open space functions and services are well distributed throughout the city. The Strategy evaluates the amount, function and pattern of not only municipal parks, but all publicly accessible open spaces, to review the functional performance of the entire open space system. The functions of open spaces are broadly grouped within three component network themes of Ecology, Celebration and Wellness (briefly described below). The functionality of individual open spaces is assessed for all themes, as well as their overlapping network functions (refer to **SECTION 2** for details).

While the location of the Ecology, Celebration and Wellness layers of the network vary, the *Green Network Strategy* seeks to maximize areas with overlapping functionality, to provide more effective use of public land. In addition, the green network complements, supports and leverages other City objectives, including those related to land use, active transportation and drainage networks.

BREATHE reviews the supply and demand for open space both now and into the future. Rather than simply measuring the amount of open space available, the functionality of open spaces by theme as well as access by various modes, is considered. In many cases, improvements to functionality, connectivity or access are needed, rather than simply more open space. For example, providing better access to a park increases the catchment area and serves a larger population without adding parkland. This is especially relevant in the context of limited land and financial resources. Additionally, a network approach is needed where individual projects are considered not only at the local scale, but also with a broader systems lens.

The importance of a site may not be evident at the fine scale but becomes apparent when viewed more broadly (e.g. a vacant parcel may appear to have few local assets supporting Wellness but is in a strategic position for regional connectivity of the trail system). The approach aims to make improvements to the overall network, recognizing that alterations in one part of the network may provide benefits elsewhere and boost the performance of the entire system.

ECOLOGY
Supports and enhances the environment by sustaining healthy and resilient ecosystems. The urban ecosystem supports biodiversity, climate regulation, food production, risk mitigation and waste and water management.

CELEBRATION
Connects people by providing places for communities to gather and thrive. Open spaces support community activities through aesthetic value, community building, appealing destination and tourism spaces, heritage elements and public safety.

WELLNESS
Promotes healthy living and fosters wellbeing through an array of environmental, mobility and recreational options. Open spaces promote wellness by supporting active transportation, mental health and wellbeing, and opportunities to learn, play and recreate.

1.10.1 AN INTEGRATED AND MULTIFUNCTIONAL GREEN NETWORK

Open spaces are the physical foundation of the green network. Open spaces promote health and wellbeing by providing space for recreation and mobility, as well as opportunities for relaxation and introspection. They support environmental sustainability and resilience by providing ecosystem services and protecting sensitive lands and habitats. People connect through the green network, building community and celebrating the beauty, heritage and vitality of their city in civic spaces.

The open spaces of the green network include not only municipal parks, but also a wide variety of other publicly accessible places: natural areas, civic squares, pedestrian-oriented streets, outdoor festival sites, municipal cemeteries and golf courses, school yards, provincially-owned parkland, institutional campuses and some privately-owned (but publicly accessible) spaces. The green network also includes marginal or undervalued spaces such as boulevards, stormwater management ponds and utility corridors.

The green network is more than a collection of parks and open spaces. Every open space, from the River Valley to a roadway green, is part of a connected network of green spaces and corridors providing multiple services to humans and the environment. While each open space in the city is characterized by a unique set of functions, they are also interconnected through the overlapping networks that support Ecology, Wellness and Celebration. The value of individual spaces is enhanced by their position in, and connectedness to, broader networks. In other words, the whole is greater than the sum of its parts. The components of the green network are designed to function across multiple scales, from the block and the neighbourhood, to citywide and metropolitan region levels.

As populations rise and demands on public lands grow, the multifunctionality of Edmonton's open space resources becomes increasingly important.

The green network supports multiple values and functions by providing diverse, well-connected, multifunctional open spaces throughout the city. For example, a natural wetland can provide stormwater management, aesthetic, educational, recreational and habitat functions simultaneously.

Where functions overlap, the City must coordinate its departments and community partners to determine how best to accommodate and complement different uses.
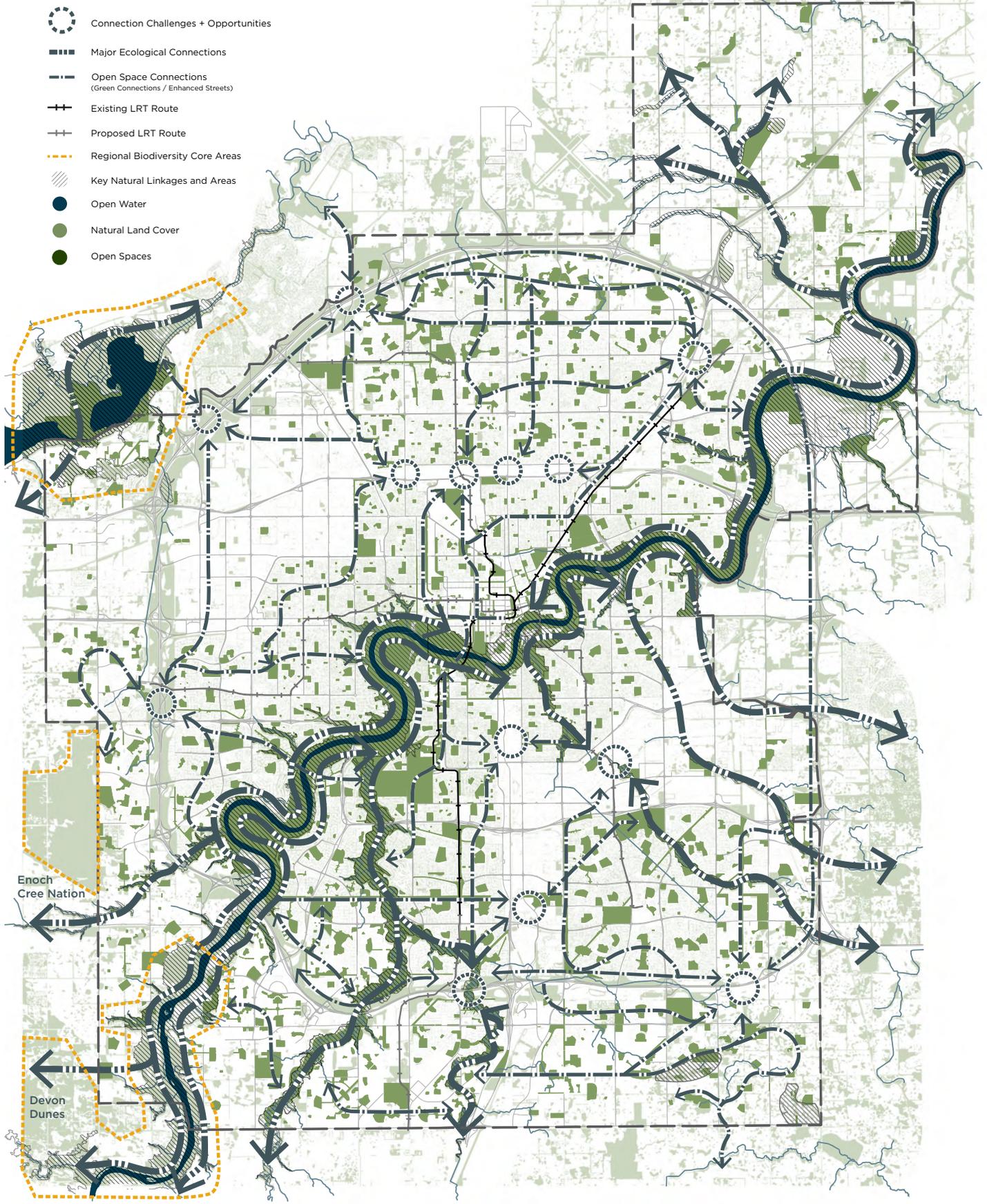
A WELL-CONNECTED GREEN NETWORK

The green network does not begin and end at the boundaries of any single open space (see **MAP 2**). Streets, alleys, sidewalks and natural corridors provide varying levels of connection between open spaces, as humans and wildlife move throughout the city. Habitats, refuges, gardens and other functional open spaces are found across Edmonton, bolstered by the urban tree canopy, complete streets and private properties. Ensuring strong linkages between these components will help maintain the natural functioning of the landscape: providing wildlife with means of moving between habitats, maintaining hydrologic connectivity between waterbodies, and retaining natural land cover throughout the urban area.

Recreational and commuter travel through the green network is another essential aspect of a functioning system of urban open spaces. By maintaining a well-connected and clearly communicated pathway network throughout the city, residents have increased opportunities to choose active transportation for both work and play. Ensuring that neighbourhoods are connected to the pathway system allows the people of Edmonton to more easily access the open space system. *BREATHE* adds real value to the city by ensuring access to natural areas and other ecological spaces, encouraging community events in Celebration spaces and promoting active living through nearby Wellness spaces.

MAP 2: Conceptual Spatial Connections

Legend:
- Connection Challenges + Opportunities
- Major Ecological Connections
- Open Space Connections (Green Connections / Enhanced Streets)
- Existing LRT Route
- Proposed LRT Route
- Regional Biodiversity Core Areas
- Key Natural Linkages and Areas
- Open Water
- Natural Land Cover
- Open Spaces

Enoch Cree Nation

Devon Dunes

COMPONENTS OF THE GREEN NETWORK

The open spaces of Edmonton's green network provide a wide variety of important functions for the city, encompassed by the themes of Ecology, Celebration and Wellness. People and wildlife move through the city in response to varying objectives and desires for a diversity of resources and experiences, and the functional components of open spaces contribute to the experiences offered in each space (see **FIG. 4**).

Ecology: Core areas provide important habitat for plants and animals, and are often buffered by spaces that support our outdoor recreational and social needs. **Wetlands** and **riparian areas** provide valuable flood mitigation services, climate change mitigation and stop-over sites for migrating species. **Ravines**, **greenways** and **urban forest stepping stones** ensure that ecological and hydrological connections are maintained through the urban matrix.

Celebration: Event spaces, **heritage sites** and **community spaces** provide residents and visitors with the opportunity to gather, interact and celebrate the diverse cultures of the city. Well-vegetated urban forests and **pedestrian-oriented streets** ensure that the city is a beautiful, scenic destination that encourages exploration.

Wellness: Broadly distributed **trails**, **corridors** and **sporting amenities** ensure that a high quality recreation and active living network is provided throughout the city.

While this Strategy focuses on publicly-accessible open spaces, the green network spreads across the landscape regardless of property boundaries and jurisdictions. Ensuring a well-connected and highly diverse set of open spaces helps to make the city a satisfying and bountiful experience for residents and visitors alike.
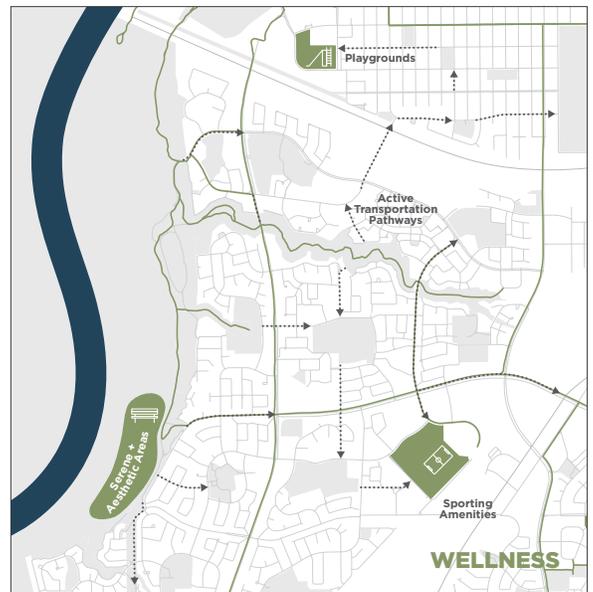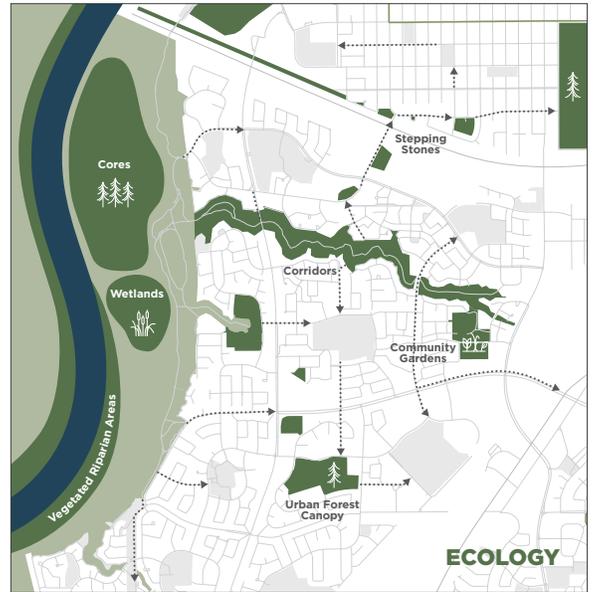
Playgrounds

Plazas

Indigenous Cultural Sites

Pedestrian Oriented Streets

Public Art

Stepping Stones

Cores

Event Spaces

Active Transportation Pathways

Scenic Viewpoints

Corridors

Wetlands

Community Gardens

Heritage Sites

Community Gathering Spaces

Vegetated Riparian Areas

Serene + Aesthetic Areas

Accessible Transit

Lighting + Visible Spaces

Urban Forest Canopy

Sporting Amenities

OPEN SPACE AS GREEN INFRASTRUCTURE

The green network provides measurable value that corresponds to the value provided by the more traditional infrastructure engineered to serve us. The roads, sewers, treatment plants, hospitals and schools constructed to support and improve our lives – our grey infrastructure – find a parallel in the green infrastructure services supplied by the green network:

» **Provisioning Services** that supply us with the raw materials for life, including food, fresh water, habitat, fuel, fibre and other goods.

» **Regulating Services** that help keep our environment safe and optimal, including mitigation of urban heat island effect, carbon sequestration, stormwater and air purification and disease regulation.

» **Supporting Services** that enable fundamental ecosystem processes, including soil formation, pollination and nutrient cycling.

» **Cultural Services** that support humans' non-biological needs, including education, aesthetic values, cultural heritage, Indigenous traditional uses, recreation and tourism.

Open spaces supply green infrastructure services at various scales, from the forests of the River Valley and Ravine system to the street trees on Whyte Avenue. A River Valley park contains natural ground cover that provides regulating and supporting services, while a community garden within that park provides provisioning and cultural services. Green infrastructure can include natural features, like wetlands, woodlands and naturalized landscapes, and features that have been constructed or engineered by humans to provide some ecological service, like stormwater ponds. Some green infrastructure has been deliberately engineered to reduce pressures on grey infrastructure, like the bioswales, green roofs or permeable pavement that help manage stormwater on site rather than directing it toward conventional stormwater sewers. In this way, the economic value of open space increases with increasing functionality.

The last category of green infrastructure services, Cultural Services, acknowledges that the green network supplies not only ecological value to Edmonton and its people, but also cultural and social value. Open spaces impact people by providing a "home" for outdoor recreation, education, socialization and celebration – essential services for a healthy society. We impact open spaces by using, modifying and improving them for human and ecological benefit alike. In other words, the green network is a socio-ecological network where environmental and anthropogenic components influence one another in diverse, yet inseparable ways.

1.10.2   GEOSPATIAL TOOL FOR PLANNING AND LAND MANAGEMENT

BREATHE developed a geospatial database containing an inventory of all the open spaces in the city, and accompanying functional and connectivity analysis results. This database provides the City of Edmonton with a tool to make integrated, data driven, spatially-explicit management decisions about the future of open spaces in Edmonton.

Compiling the geospatial database involved collecting and integrating over 75 relevant datasets to create an open space inventory containing 1,889 polygons and 124 attributes (see **FIG. 5**). The new database will help open space planners, designers and operators make decisions about how best to build and manage the green network, and how to prioritize capital and operational investments. Many of these diverse datasets were already available from different sources within the City, but had never been assembled and organized into a comprehensive database to support open space decision making. The goal of *BREATHE* is to leverage existing information to build an innovative, effective management tool to support integrated, evidence-based open space planning.

More information about the data used and analyzed for *BREATHE* can be found in the Technical Report.

WHAT IS GIS?
A Geographic Information System (GIS) is a computer-based system for recording, storing and displaying data related to geographic locations on the Earth's surface. GIS software enables the user to visualize multiple types of data about a place, and to manipulate that information to understand patterns and relationships.

For *BREATHE*, GIS is being used not only to inform the project maps and analyses, but also to provide the City of Edmonton with a tool to help make management decisions about the green network into the future.
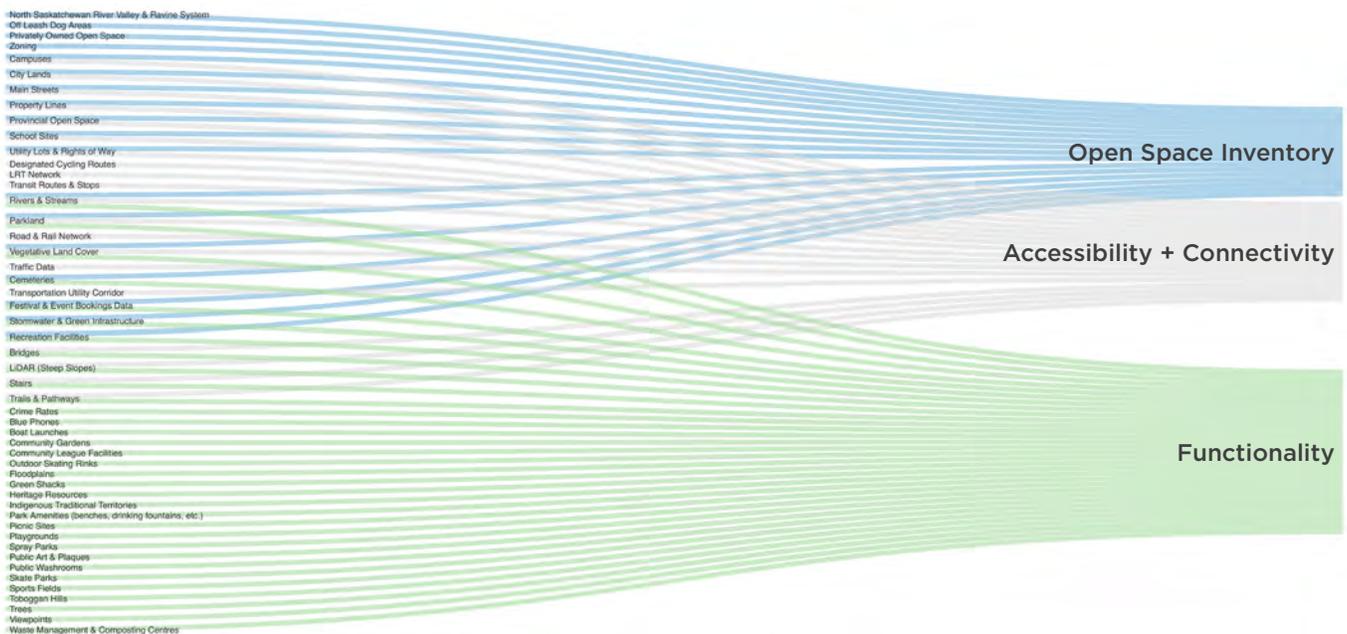

FIG. 5: Example Datasets Used for GIS Analyses

breathe