

FRAMING OUR FUTURE



A PLAN FOR
**SUSTAINABILITY
& RESILIENCE**
IN CANADA'S CAPITAL REGION



The Project Partners

City of Ottawa
City of Gatineau
National Capital Commission

Lead Consultant

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An Executive Summary of this Plan is available in French. The City of Ottawa will translate the Plans in their entirety once they are received by Council.

Un sommaire exécutif de ce plan est disponible en français. La Ville d'Ottawa fera traduire intégralement les plans une fois qu'ils auront été reçus par le Conseil.

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Our Vision

Quality of life.

Quality of place.

Today and for the future.

We aspire to a future where the outstanding quality of life we are known for can be maintained indefinitely without undermining the health and stability of natural systems. We are committed to creating a future where people can flourish through a strong economy and a vibrant, creative culture and where our relationship with the natural world is one of respect and stewardship.

Foreword

Choosing our Future is an initiative of the City of Ottawa, in partnership with the City of Gatineau and the National Capital Commission, to guide Canada's Capital Region towards a more sustainable, resilient and liveable future. Inspired by goals for economic prosperity, social well-being, culture and identity and a healthy environment, *Choosing our Future* proposes strategies that position the region to thrive in a changing world.

Almost every aspect of our communities will likely change over the next 50 years. The forces of change include a shifting global economy, resource scarcity and rising energy prices, a changing climate, new population dynamics, and unforeseeable events such as ice storms and other natural disasters. New technologies will change everything from how we communicate with each other to how we heat our homes. While many of the changes ahead are unclear, we can make choices today that build more sustainable communities, resilient in the face of change and offering residents a highly desirable quality of life.

Three Plans¹ were developed to guide the Partners:

- The *Sustainability and Resilience Plan* is an overarching plan that identifies a long-term vision and set of goals which speak to all dimensions of sustainability—economic, social, cultural and environmental. A set of strategies outlines the broad directions to be pursued to achieve these goals over the long term, while examples of actions show specific ways to implement the strategies now and in the future.
- An *Energy and Emissions Plan*, a sub-plan of the *Sustainability and Resilience Plan*, focuses on increasing renewable energy and reducing energy demand. It describes a comprehensive approach to reducing greenhouse gas emissions through land use as well as strategies for buildings, energy supply, transportation and waste. This Plan also provides direction on reducing energy costs for citizens, businesses and institutions.
- The *Risk Prevention and Mitigation Plan*, also a sub-plan, combines sustainability planning with long-term risk management. It assesses the effects of long-term risks on our communities and describes how the *Sustainability and Resilience Plan* mitigates or prevents them. It then considers the vulnerabilities we may still face and recommends additional measures for Ottawa's emergency management program.

These Plans build on the spirit of cooperation shared by the Partners in the initiative. They are intended to provide a common framework to guide the Partners' decisions on major plans, policies and programs going forward. The Plans are also a call to action—an invitation to organizations, businesses and individuals across the Region to get involved in the process of making the transition to a more sustainable community.

¹ Available at <http://www.ottawa.ca>



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Executive Summary

Introduction

A Plan for Sustainability and Resilience in Canada's Capital Region is a strategic plan to guide our way towards a sustainable, liveable and resilient future. The Plan was developed to address proactively the challenges of the 21st Century. Almost every aspect of our communities will likely change in the course of the next 50 years. These changes will be brought about by forces such as a shifting global economy, resource scarcity and rising energy prices, a changing climate, new population dynamics, and unforeseeable events such as ice storms, and other natural disasters. New technologies will change everything from how we communicate with each other to how we heat our homes. While many of the changes ahead are unclear, we can make choices today that build more sustainable communities that are resilient in the face of change and offer residents a high quality of life. Rising to these challenges will require us to think and act differently about how communities in this Region are planned, designed and built, and about the choices all of us make. Achieving a sustainable future requires that we make smart, informed choices that consider long-term impacts.

The Plan is the result of an unprecedented three-year partnership between the City of Ottawa, City of Gatineau and the National Capital Commission. These organizations have collaborated to ensure long-term economic prosperity, healthy communities, ecological integrity and cultural vitality in Canada's Capital Region. This Plan, along with its companion *Energy and Emissions Plan* and *Risk Mitigation and Prevention Plan* will help the Region's Partners make the necessary choices and navigate a path to a successful future, guided by a set of principles and goals developed early in the initiative.

A Five-Step Process

The project team used a five-step process to develop the Plan you are now reading:

- **Defining our Sustainability Challenge:** First, a series of *Forces* and *Foundation Papers* was prepared to explore some of the issues, challenges and broad opportunities that the future will likely bring. These, along with presentations from a series of experts and thinkers were used to inform discussions at a public "Futures Forum".

- **Establishing our Vision:** Work with advisory groups, public and staff helped the team develop and refine a *Vision Statement* and a set of *Goals and Principles* that describe long-term direction for the Region and how we should move forward to reach our goals. A *Sustainability Baseline Report* was prepared to measure our current performance in key areas of sustainability. The report highlights our strengths and areas where we need to continue to improve.

- **Exploring Possible Approaches:** The project team used modeling to explore the implications of some of the strategies (land use changes, transportation network improvements, building efficiency improvements, waste management) to understand their impact on future energy use and GHG emissions as the Region’s population grows.

The modeling showed that by applying the best practices from across North America, the Region could keep household energy spending constant and achieve a 40% reduction from 2008 levels of greenhouse gas (GHG) emissions by 2060. If left unchecked, current trends point to a Region with much higher energy spending and growing GHG emissions.

With the help of hundreds of public ideas contributed on-line, the Project team developed a preliminary set of potential strategies for achieving our goals.

- **Choosing our Path Forward:** Using the modeling results as a partial guide, the team developed a series of Discussion Papers describing the most promising set of strategies mainly based on North American best practices. A series of workshops were used to test and refine the strategies, making them more applicable to the Capital Region.
- **Creating our Plan for Action:** Finally, the work was assembled along with recommended implementation measures as a Draft Plan that was reviewed by all three Partners.

Strategies

A set of strategies, organized under 10 themes, form the core of the Plan and are summarized below:

1. MANAGE GROWTH AND DEVELOPMENT



It is projected that over the next 50 years, the Region’s population will grow by approximately 50%, reaching 1.8 million by 2060. The following strategies will ensure that the Region can accommodate this growing population along with the necessary jobs and businesses while keeping energy and infrastructure costs in check and protecting farmland, natural systems and rural areas:

- Maintain a compact region;
- Build complete neighbourhoods and communities;
- Redevelop office areas on the rapid transit system, including federal office complexes, as mixed-use areas;
- Retrofit the suburbs;
- Protect the integrity of rural areas;
- Improve greenfield development;
- Increase housing choice and affordability; and
- Encourage design excellence.

2. ENCOURAGE SUSTAINABLE MOBILITY



How we travel around the Region affects our pocketbook, our health and our quality of life. With complementary development and investments in transit, cycling paths and well-designed sidewalks and public spaces, we can increase our use of transit, walking and cycling while reducing the total public cost of travel. Strategies we can pursue include:

- Integrate land use and transportation systems;
- Expand mobility options;
- Improve interprovincial connections; and

- Facilitate the transition to vehicles using alternative power.

3. ENCOURAGE HIGH PERFORMANCE BUILDINGS AND RENEWABLE ENERGY

Buildings account for 75% of the energy used in the Region and oil prices are predicted to rise somewhere between 40% and 130% by 2020. Strategies to make buildings more efficient and keep energy spending under control include:

- Strengthen retrofit opportunities in residential and non-residential buildings;
- Improve energy and emission performance of new buildings;
- Promote small-scale renewable energy projects;
- Facilitate development of district energy that is cost effective, low emission, and high efficiency; and
- Examine opportunities to develop large-scale renewable energy projects.

4. PROTECT AND RESTORE GREEN AND NATURAL SYSTEMS

Ensuring the integrity of the Region's natural heritage will require careful growth management as well as strategies to:

- Continue to conserve large natural areas and strengthen connections between them;
- Continue to build a greenspace network in villages and urban areas;
- Promote habitat restoration and species recovery; and
- Control the spread of invasive species.

5. PROTECT WATER AND MANAGE INFRASTRUCTURE

The Region is blessed with abundant water resources and the Ottawa River provides good-quality water to municipal water systems. Future risks include extreme weather events related to a changing climate. In addition, recent studies have indicated the importance of managing growth-related infrastructure to ensure municipal costs and taxes are kept under control. Strategies include:

- Protect the sources of our drinking water;
- Improve the resiliency of urban watersheds;
- Increase energy efficiency and water conservation; and
- Account for the lifecycle costs of infrastructure.

6. NURTURE CULTURE AND IDENTITY

The diversity of cultures, rich arts and heritage scenes, exceptional festivals and fairs and sense of place are some of the Region's strongest assets. To nurture these assets we should:

- Design and build creative cities that foster innovation;
- Cultivate cultural leadership and partnerships;
- Use public art and the built environment to strengthen sense of place; and
- Foster a sense of connection and belonging.

7. SUPPORT SOCIAL DEVELOPMENT

The Region must be a place that supports the health, opportunity and basic needs of its people. Strategies that can ensure long-term success include:

- Focus on prevention of health and social problems;
- Increase community-based initiatives;
- Improve social inclusion, engagement and participation; and
- Promote flexible and adaptable use of space.

8. BUILD A SUSTAINABLE ECONOMY

The Region is already a leader in innovation and high technology. Strategies that could help the Region continue to lead the way in sustainable economic development include:

- Lead the greening of businesses and other organizations;
- Attract new businesses, industries and other organizations that are at the leading edge of sustainability;
- Better integrate business within communities;
- Enhance support to local businesses, organizations and social enterprise; and
- Explore different ways of measuring economic and overall success for the Region.

9. MANAGE MATERIALS AND SOLID WASTE

The Region currently diverts about 40% of residential waste. We can build on this success through the following strategies:

- Focus on reducing waste generation as our first priority;
- Aggressively divert residential waste to recycling, composting and re-use facilities; and
- Increase the municipal role in waste reduction and diversion in the industrial, commercial & institutional (ICI) sector.

10. SUPPORT LOCAL FOOD AND AGRICULTURE

As the world population grows and energy prices increase we may continue to see rises in food prices that out-pace the rate of inflation. To better ensure affordability, increase resilience as well as bolster the Region’s cultural and economic success, the following strategies can be applied:

- Protect agricultural land;
- Advance local food economies;
- Support new farmers;
- Celebrate food;
- Grow and process food in villages and the urban area;
- Make sure everyone has enough nutritious food to eat; and
- Increase food-system efficiencies.

Implementation

The 10 broad strategic areas of the Plan form a framework for creating a more sustainable, liveable, resilient Region—a Region that can weather the challenges of the future and remain prosperous, green and humane. Many people have asked how these strategies will be implemented. What specifically will the three Partners do to make progress on these multiple fronts? Each strategy is accompanied by example actions that suggest a possible way forward. So, the Plan will be a guide for making decisions and for implementing more specific actions, initiatives, detailed plans and projects.

The project team recommends a series of priority actions listed in the last chapter of the Plan organized around the principal stakeholders that play an important part in the implementation process: local government, senior levels of government, development community, community groups, community agencies, and residents.

COLLABORATION AMONG PROJECT PARTNERS

Working together on selected strategies and actions would benefit the Partners and the Region as a whole. Areas where these strategies could be found include:

- Planning and transportation and infrastructure projects;
- Watershed and natural heritage planning;
- Waste management; and
- Economic development, culture and tourism.

CATALYST PROJECTS

The Plan proposes catalyst projects that will accelerate implementation of multiple strategies. These catalyst projects provide learning and innovation opportunities and can build knowledge and capacity in the community. The four proposed catalyst projects, described in Section 6.3 are:

- Demonstrating Sustainability;
- Sustainable Community Makeover;
- Open Water Project; and
- Complete Streets.

A Call to Action

These Plans were developed to provide strategic direction to the Partners, recognizing that each will use the Plans in a way that reflects its responsibilities and current priorities. The initiative also reinforced that implementation requires the collective efforts of the community, including the many members who participated in developing the Plans.

Achieving sustainability will require collective and individual action and a shift towards more sustainable choices and behaviour. Increasing awareness and providing opportunities to participate are key to successful implementation. Catalyst projects can create a focal point for action and plan implementation, while ongoing monitoring can chart our success.

How to Read this Plan

Section One introduces the five-step, collaborative process the initiative followed. Concepts and innovations reflected in the initiative are also described.

Section Two explains why we need this Plan. It presents our region, describes the challenges that lie ahead and a rationale for action.

Section Three presents the principles and goals that directed development of the three Plans.

Section Four is a current snapshot of how well we are performing on many sustainability measures.

Section Five is the main part of the Plan and presents the sustainability path. It identifies key strategies and examples of actions that can help move us towards our vision. It is organized around 10 themes that represent the areas where the Partners can affect change.

Section Six explains how the Plan will be implemented and is a call to action that describes how the Plans will be used and the role of collaboration, public awareness and education, monitoring and reporting.

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1 Introduction

1.1 Our Pathway to the Future

The 20th Century was a century of progress for most people in Canada's Capital Region. As Canada embraced a multitude of people from around the globe, we enjoyed growing prosperity, improved health, and greater access to education. The Region also benefitted from an abundance of green space, parks and protected areas, and a beautiful location where three rivers come together.

The 21st Century is bringing new challenges and opportunities to cities and nations around the world. Canada's Capital Region needs to maintain its quality of life while meeting long-term challenges that stem from global forces such as:

1. A growing and changing population;
2. A shifting global economy;
3. Technological changes;
4. A changing climate;
5. Resource scarcity and rising energy prices; and
6. Sudden shocks such as earthquakes and floods.

Those communities that manage to prosper in this century will be those that plan for change and make sustainable choices; not only to adapt to changing circumstances but also to seize new opportunities as they arise. Three Plans have been prepared to guide the Partners:

The **Sustainability and Resilience Plan** you are now reading is a plan for the Region that identifies shared principles, long-term goals, and key strategic directions to ensure the future of the Region is sustainable, resilient, and liveable;

The **Energy and Emissions Plan** focuses on strategies and actions that can help reduce our energy spending and use of fossil fuels, and in doing so improve our environment, health, and quality of life;

The **Risk Prevention and Mitigation Plan** examines the risks and vulnerabilities that the Region faces and describes strategies to address these.

1.2 Our Approach

OUR COLLABORATIVE PROCESS

Beginning in 2008, the three Partners worked together on a 50-year vision and long-term goals for a sustainable, liveable, and resilient Region and strategies to achieve it. Throughout the process, the Partners drew on the knowledge and ideas of organizations and individuals throughout the Region. The project team was guided by the Natural Step Framework.¹

A FIVE-STEP PROCESS

A five-step process (illustrated in **Figure 2**) was followed.

- **Step One – Defining our Sustainability Challenge:** A series of papers explored the forces of long-term change, including a changing climate, unforeseen and sudden shocks such as extreme weather, an older and more diverse population, changes in the economy and technology, and resource scarcity.
- **Step Two – Establishing our Vision:** Guiding principles and goals for the Region were developed through public events such as the Foresight Workshop (2008), Visioning Charrette (2008) and the Futures Forum (2009).
- **Step Three – Exploring Possible Approaches:** Over 2010 – 2011, initial ideas were developed and modeled to see how they could achieve project goals. Many ideas were proposed by businesses, academics, community leaders, staff and others at meetings and at the public Sustainability Summit in 2010.
- **Step Four – Choosing our Path Forward:** From these initial ideas a set of strategies was developed that represents the best path forward, along with examples of supporting actions and catalyst projects. Strategy

Workshops in 2011 provided opportunities for consultation with the Partners, staff and the community. An online consultation also yielded detailed and practical ideas for action.

- **Step Five – Creating our Plan for Action:** Finally, all these elements were brought together into the development of three integrated Plans.



Figure 1: Participation in the Initiative Involved Residents, Staff, Stakeholders.

¹ <http://www.thenaturalstep.org/en/canada>

SUSTAINABILITY is commonly defined as meeting the needs of the present without comprising the ability of future generations to meet their needs.

At the core of the sustainability challenge is the need to manage our consumption of resources so that we can continue to prosper and ensure the quality of life now and in the future. Sustainability has four interrelated dimensions—economic, cultural, social and environmental.



LIVEABILITY refers to the quality of life experienced by residents, employees, and visitors. It includes a community that is safe, secure, beautiful, and healthy, and supports neighbourhood interactions and opportunities for recreation, cultural expression and entertainment.

RESILIENCE is the capacity of a system such as a city or region to withstand stress and undergo change and still retain its basic function and structure. Stresses can take many forms including significant demographic change with long-term impacts, changes in ecological, economic, as well as sudden shocks such as natural disasters.



Innovation and Leadership

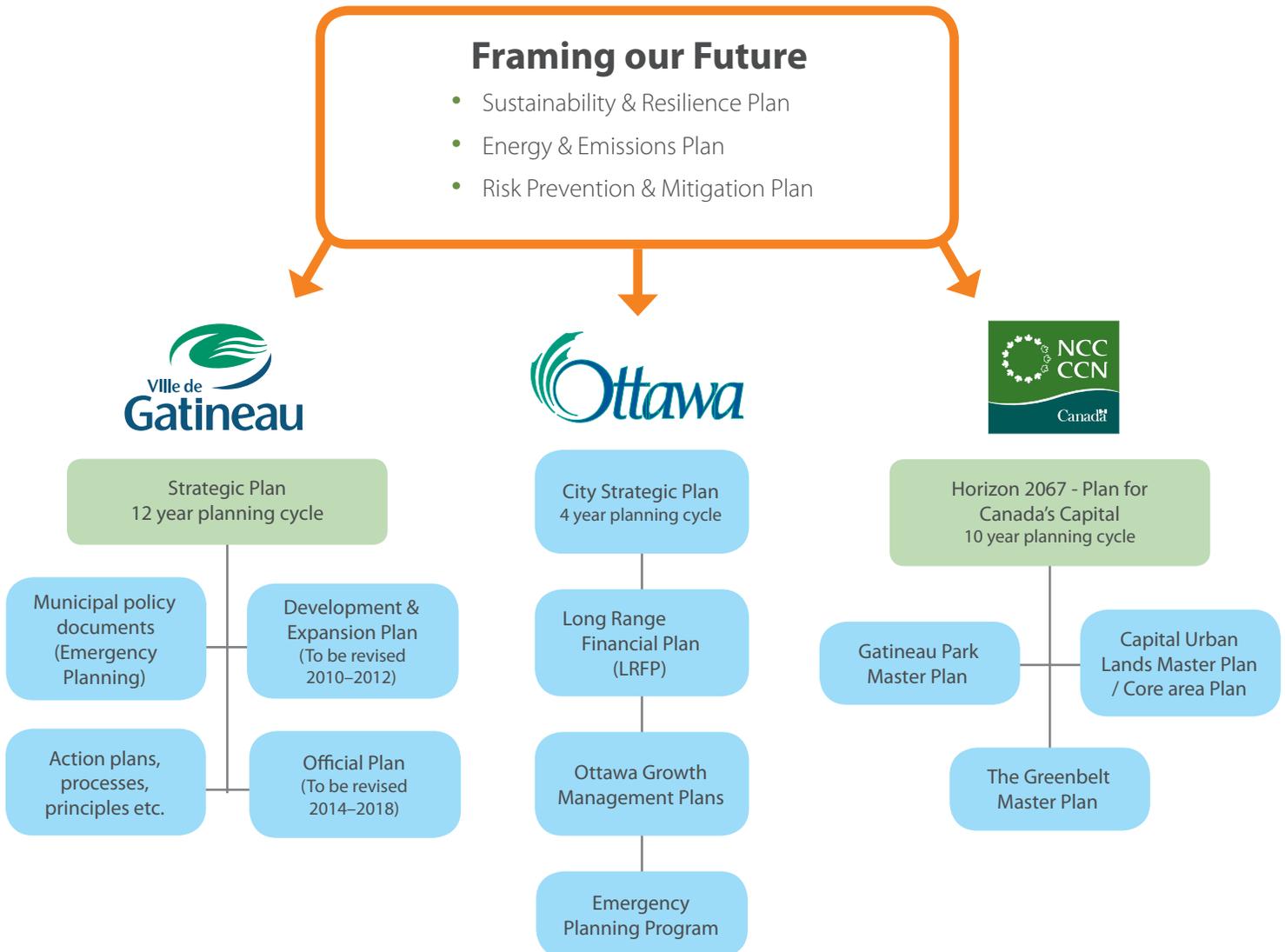
While many cities are involved in long-term and sustainable planning, this initiative is set apart by its depth and far-reaching approach. Some unique aspects include:

- An extended time horizon;
- A systems approach based on the four dimensions of sustainability: economic, social, cultural and environmental;
- Resilience as a foundation for sustainability, addressing prevention, mitigation, and overall management of risk;

- Strong analytical modelling to help understand the energy and GHG emission consequences of different strategies; and
- Collaborative and regional-scale planning that spans various levels of government, two provinces and two official languages.

When completed, the three Plans will serve as a North Star for the three Partners—to guide us into the future and make sustainable choices that achieve our sustainability goals over the next 50 years.

Figure 4: The relationship of *Choosing our Future* to other Plans



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2 Context

2.1 Our Region – Our Home

Part of what makes Canada’s Capital Region unique is its context: it spans two provinces, Quebec and Ontario; and includes the two major municipalities of Gatineau and Ottawa plus five smaller and more rural municipalities on the Quebec side which are part of the regional municipality, les Collines-de-l’Outaouais. Canada’s Capital area was first inhabited by the Algonquin Nation and the Region is located within what is considered traditional Algonquin territory.

The Region’s cultural identity is multi-faceted. It is a national capital on an international stage, and a hometown community for 1.2 million people. It shares two official languages, French and English, and is deeply rooted in Aboriginal history and heritage. The Region is also a major centre for the visual and performing arts. All of this creates a dynamic cultural milieu, resulting in a truly cosmopolitan experience with European charm and flair, contrasted with the accessibility, atmosphere and charm of a smaller centre.

GEOGRAPHY AND ENVIRONMENT

With an area of 4715 km²—almost as large as Prince Edward Island—the Capital Region ranges from urban

neighbourhoods to rural settlements and wilderness landscapes.

The Ottawa River meets its major tributaries, the Gatineau River and the Rideau River, below Parliament in the heart of the Capital Region. The rivers create a shared history for the Region, with the long portage around the Chaudière Falls serving as a meeting place where Algonquins traded with others from outside their territory and later with European fur traders.

South of the Ottawa River, prime agriculture land makes up about half the area with the balance marked by scrub, forests and wetlands that provide rich wildlife habitat. North of the Ottawa River, the Gatineau River flows through the Canadian Shield within its southern reaches in the Capital Region. Along the western edge of the Gatineau watershed, Gatineau Park is home to hundreds of species of animals just 15 minutes from Parliament Hill.

The federal government, the City of Ottawa and the City of Gatineau have protected a rich endowment of natural features in the Region. Major protected areas include the 4000 ha Richmond Fen in the south, the largest wetland in the Region, and the Mer Bleue Bog in the east, recognized by the United Nations as



Figure 6: Municipalities within Canada's Capital Region (credit: NCC)

internationally significant. In addition to Gatineau Park, the federal government owns a Greenbelt encircling much of urban Ottawa with a 20,000 ha open area of farmlands, forests and wetlands.

More important than these individual features, however, is the entire interrelated system of woodlands, creeks and other natural features that together perform a range of natural functions, and provide habitats for a variety of plants and animals.

A Capital City by the Numbers

Over 90 km of wide, scenic roads flanked by landscaping link historic sites, recreation areas and other significant locations along the NCC's Capital Parkway Network.

Over 430,000 visitors enjoy the three-week Winterlude celebration and the world's largest skating rink. This is almost as many as the 460,000 attracted to Canada Day at multiple sites in the Region.

More than 125 countries have diplomatic representation in the capital, along with international and national organizations.

ECONOMY

From its early origins in the fur and timber trade, Canada's Capital Region has grown into a thriving metropolis with an international presence. The federal government has brought with it the country's top talent in leadership and innovation. With four universities and several major federal research facilities, the Region leads the country in terms of research, new technology, and policy development.

In 2010 nearly 134,000 people were employed by the federal government in the Region—about one of every five workers¹. While federal employment provides some buffer against downturns in the

¹ Statistics Canada. Federal Government Employment, Wages and Salaries, September 2010.

economy, it has also created vulnerabilities common to single-industry towns.

Canada's Capital Region has also emerged as a centre of technology employment, partly as a result of early pioneering companies such as Computing Devices of Canada and because of the presence of the National Research Council (NRC), which supports a cluster of high-tech employers.

POPULATION

Ottawa and Gatineau together make the fourth largest metropolitan area in Canada, with a population of 1.2 million. With natural increase² accounting for only one-third of the Region's population growth in recent years, current trends indicate that the Region will experience natural decline some time during the 2030s and future growth will depend on international immigration³.

Unlike many large Canadian cities, the Region has a large population of young people—45% of the population is under 35 years of age.

Ottawa is home to the third fastest growing urban Aboriginal population in Canada and the largest urban Inuit population outside of the North. Fifty per cent of the estimated 35,000 Aboriginals in the Ottawa area are under the age of 24.

The opportunities and quality of life in the Capital Region have made it an attractive destination for talent from all over the world and the population is becoming increasingly diverse. About one in five residents are foreign born. Almost half the Region's residents (44%) speak both English and French, one of the highest proportions outside of Quebec.

Median incomes for families and individuals were among the highest in the country in 2009⁴, yet the

² Natural increase is the difference between total births and deaths in the Region

³ Growth Projections for Ottawa, 2006-2031: Prospects for Population, Housing and Jobs report for public consultation. City of Ottawa. Planning and Growth Management. http://www.ottawa.ca/residents/statistics/new_growth/projections/index_en.html

⁴ Statistics Canada. The Daily. Family income and individuals income, related variables: Sub-provincial data <http://www.statcan.gc.ca/daily-quotidien/110628/t110628b1-eng.htm>

Region has its share of poverty. About one in four households spends more than 30% of its gross income on housing, potentially reducing spending on other essentials.

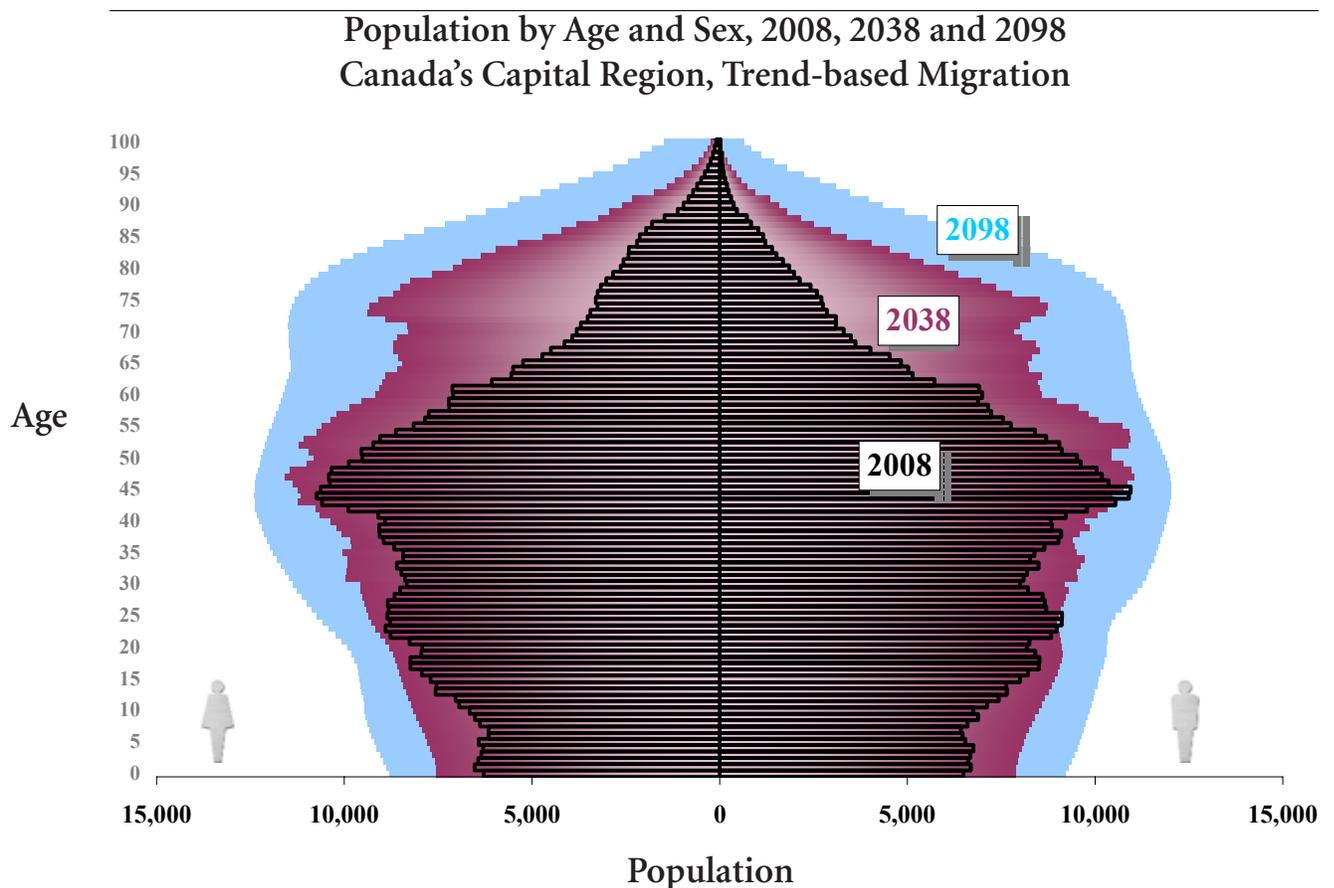
2.2. Why is this Plan Important?

Several trends and forces of change will create challenges and opportunities for the Region over coming decades. If we want to maintain our quality of life now and for future generations, we need to make decisions now that take these forces of change into account. Some of these forces are described below.

1. A GROWING, CHANGING POPULATION

Over the next 50 years it is anticipated that the Region will grow from 1.2 million to approximately 1.8 million people. The percentage of the population over 64 is expected to double from 12% today to 20% in 2030 and 25% in 2060 (refer to **Figure 7**). The talent and energy of these seniors will be felt in all areas, along with the need to maintain health and social supports. With declining birth rates in Canada, the Region's future labour supply will depend on immigrants from Africa, Asia and Latin America. Our future prosperity and success will depend on our ability to attract these newcomers and find a place for them in the economy and society.

Figure 7: Demographic Change in Canada's Capital Region (Urban Futures 2009)¹



¹ Source: Urban Futures Ltd. A Context for Change Management in the National Capital Region. Sept 2009. Report prepared for *Choosing our Future*.

2. A SHIFTING GLOBAL ECONOMY

In today's economic environment, we are tied to a global economy and the effects of global recessions. In Canada, and in the Region, our economic health is also strongly tied to that of the United States, our major trading partner.

There is also a risk that the Region will be out-competed for talent by the BRIC⁵ countries, if potential immigrants and companies seek opportunities there rather than here. As standards of living improve in the developing world, more would-be immigrants may choose to seek their fortune at home.

3. TECHNOLOGICAL CHANGES

Technology has the potential to create significant benefits and to help address future challenges. For example, new energy and vehicle technologies have the ability to vastly reduce air contaminants and greenhouse gas emissions, reduce our reliance on foreign sources of oil, and generate local economic opportunities.

However, technology can also create or exacerbate vulnerabilities. For example, while the efficiency of electronic equipment has been steadily improving, the use of more and more gadgets and larger screens has created greater overall demand for electricity and generated more waste as technology hardware is replaced.

4. A CHANGING CLIMATE, RESOURCE SCARCITY AND RISING ENERGY PRICES

The most recent International Panel on Climate Change report (IPCC 2007a) concluded that global emissions of greenhouse gases need to peak before 2015, with 50% to 85% reductions below 2000 levels by 2050, if we are to avoid climatic tipping points that will cause dangerous disruptions, such as severe agricultural collapses, water shortages, droughts and sea level rise.

Indications are that the climate of Canada's Capital Region will become warmer, with more extreme

weather events in the form of heavy rains, ice storms, and prolonged heat spells. Major challenges for municipalities include stormwater management and emergency response to extreme weather that potentially disrupts travel, communications and energy supplies. Vulnerable individuals will need special care during heat spells and other emergencies.

In addition to the changing climate, there are mounting energy supply challenges. The International Energy Agency's *World Energy Outlook 2008* indicates global energy demand will increase 45% between now and 2030⁶. As demand is rising, easily accessible, low-cost supply is diminishing. With the global demand for energy increasing at a much faster rate than the supply, all societies are facing future energy scarcities unless a transition can be made to alternative forms. As well, increases in how much we pay for energy and what kinds of energy we use will have far-reaching effects on our transportation choices, building and neighbourhood design, and industrial processes.

5. AFFORDABILITY

The Region's future success will also depend on maintaining affordability for businesses, households and government. Recent studies have illustrated the importance of maintaining a compact region in order to ensure that the costs of infrastructure and municipal services can be kept in check⁷. And as energy prices increase, we need to find ways to keep building and transportation-related energy costs under control so that business and household costs are affordable.

6. SUDDEN SHOCKS

An increasingly interdependent world has created greater vulnerability to unforeseen events that have the potential to create significant consequences at home, such as sudden food price increases or energy scarcities. Other sudden shocks include weather-related events such as potential floods and ice storms.

⁵ BRIC - refers to Brazil, Russia, India, and China.

⁶ International Energy Association. World Energy Outlook 2008 Fact Sheet: Global Energy Trends.

⁷ Litman, T. 2011. Understanding Smart Growth Savings

2.3 Managing the Impacts

How will global changes affect our communities and our way of life in the future? Of the three levels of government, municipalities are the closest to home and best positioned to respond to many of the sustainability and resilience challenges noted above. Nonetheless, it will also require highly collaborative efforts engaging all levels of government, the private sector and civil society. The Partners cannot do it alone.

What tools do we bring to the table to not only manage change but also to seize opportunities to create stronger and more liveable communities? The City of Gatineau and the City of Ottawa, along with the National Capital Commission, manage or influence much of the infrastructure and many of the services needed to make our communities sustainable for future generations. These include:

- How we manage our land and how we travel;
- How we support the local economy;
- How we manage our waste;
- How we deliver a safe, clean supply of drinking water;
- How we feed ourselves;
- How we express and celebrate our culture and identity;
- How we provide for those who are vulnerable and need support; and
- How we design and construct our buildings.

These are the areas where we have the greatest ability to ensure a high quality of life in the face of change.

URBAN GROWTH AND TRANSPORTATION

Where we live and how we travel has far-reaching consequences for the environment, our own health, and even how much tax we pay. Historically, urban expansion has meant the loss of farmland and natural lands. Today, community plans emphasize intensification of existing areas and higher densities for new development. These Plans recognize that growth at the edge of the urban area means ongoing and

Ottawa Light Rail Transit



The Ottawa Light Rail Transit (OLRT) will be a catalyst for redevelopment and mixed-use areas which can be designed with a sustainable future in mind. From exploration of renewable and community energy possibilities, to connections with broader cycling and pedestrian systems, the OLRT will provide opportunities for sustainability beyond the obvious increased use of transit. The OLRT stations, maintenance yard and other infrastructure, as well as the construction process itself, will meet high standards in terms of sustainable design, waste management, and energy efficiency.

The OLRT will also make it easy for users to access the system by cycling and walking, and encourage physically active mobility. Opportunities to model sustainable design such as use of green roofs/walls and small scale renewable will be pursued.

Just as the Rideau Canal, which started as a transportation engineering innovation, later transformed to a recreational waterway and has now become UNESCO World Heritage Site*, the implementation of light rail will also transform our region - our sense of place and how we connect – socially, economically and culturally.

* <http://www.rideau-info.com/canal/world-heritage.html>

increasing costs for taxpayers for existing and newly-added infrastructure.

With municipalities facing an increasing infrastructure deficit, there is a call to reduce the costs of growth going forward and ensure that development is both energy and cost efficient over its lifecycle.

Transportation is the fastest growing energy consumer in Canada, fuelled by private automobile use. Automobiles remain the most convenient form of transportation in areas where homes and workplaces are developed at low densities and separated by long distances—a pattern of development common in the post-war period.

In order to curb the use of private automobiles, we need to make walking, cycling and transit more efficient and attractive forms of transportation. Development of new rapid transit in the Region will be a turning point for how we travel and build communities. The higher densities of jobs and housing expected around the stations can also support a mix of services, creating liveable communities.

Delivering more comfortable, fast, and affordable transit will also support increased walking and cycling as both systems plan for good pedestrian access and complementary cycling facilities. Walking and cycling are already viable forms of transportation in many areas of the Region, especially in the inner-city areas of Ottawa where separated cycling lanes were initiated in 2011.

NATURAL SYSTEMS

The Region embraces a variety of natural landscapes, including spurs of the Canadian Shield, extensive forests and wetlands, and major river valleys. Current conservation, regulation and planning measures provide a good base for strengthening stewardship of these resources.

Urban and rural development potentially have several negative impacts on the environment. Road and service networks disrupt wildlife corridors in the Greenbelt and rural areas. Farming and all types of

development can result in chemical and physical alteration of rivers, streams and wetlands and the subsequent loss of aquatic habitat. Forests are cleared for resource development and housing in rural and urban areas.

Gatineau Rapibus



Construction is underway in Gatineau on a new rapid-transit bus system that will operate in a dedicated 12 km corridor. The system will have 10 stations and a parallel cycling pathway, which will allow cyclists to combine trips with transit, storing their bicycles in secure racks. A project of the Société de transport de l'Outaouais (STO), Rapibus will improve travel time for riders and enable easier, more rapid access to the main employment, academic, recreational and commercial activity areas.

MATERIALS AND WASTE

Following years of steady improvement, the Region now diverts about 40% of residential waste through municipal recycling and composting programs. However, 60% of residential waste still ends up in landfills. Furthermore, waste from industrial, commercial and institutional uses accounts for the larger share of waste in the Region, an estimated 60% to 70% of the total. Diversion rates for this type of waste are low and most is hauled to distant landfills.

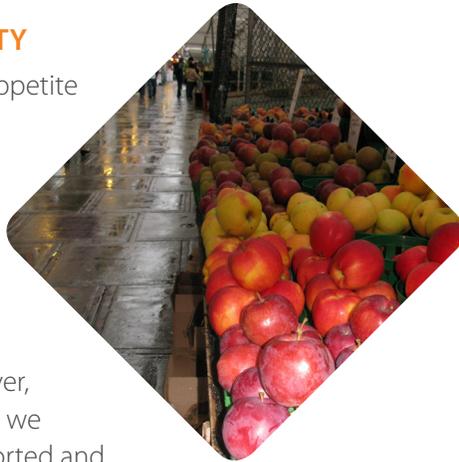
In an era of rising energy prices and potential shortages of resources of all kinds, reducing our resource consumption and waste makes sense.

WATER AND WASTEWATER INFRASTRUCTURE

Conservation of potable water in the Region has increased with the introduction of more efficient plumbing and appliances in our homes and the reduction of water losses within the system. Such improvements to date have helped defer capital spending on infrastructure and curb the consumption of energy to treat and distribute water and collect waste. However, the cost of building and maintaining infrastructure will continue to increase as we service new communities on the urban periphery. Ongoing development in our urban areas is also increasing the area of pavement and other hard surfacing and creating major changes in the quality of water that eventually flows into our creeks and rivers. More intense rainfalls in the future may worsen these impacts as well as overburden infrastructure designed for smaller volumes. At the same time, a warmer and drier climate may dry up smaller creeks and wetlands and reduce groundwater volumes, which could affect water supplies for private wells, as well as associated ecological systems.

FOOD SECURITY

The increasing appetite for local foods at home and in restaurants has helped local food producers increase and diversify their products. However, most of the food we eat today is imported and requires a great deal of energy to process, transport, distribute and sell. As energy prices rise there is a risk that food prices will also increase, affecting affordability and adding to the Region's vulnerability.



Concern about rising energy and food prices coupled with loss of agriculture land has prompted many communities to take a broad look at the security of their food supply—to increase their ability to produce more of their own food, and to ensure that everyone can afford a nutritious diet and has the skills to prepare it.

There are opportunities to strengthen the security of our food supply now and in the future, by developing local food production and distribution systems, supporting new farmers as the farm population ages and retires, reducing our waste and finding new and innovative ways to grow and celebrate food in our communities.

CULTURE AND IDENTITY

A vibrant arts and culture scene encourages social connections, sparks creativity, and strengthens our regional identity and our identity as Canada's Capital Region. This is a large part of the quality of life for residents, which helps attract and retain human and financial capital.

The Capital Region has a strong sense of place that stems from a variety of sources: the presence of national and local art galleries and museums, an outstanding natural setting, and the cultural diversity that has developed alongside the original inhabitants, the Algonquin Nation. As the Region grows and changes, new outlets can be found to express our increasing cultural diversity, to recognize and celebrate Aboriginal heritage and to broaden participation in public life. Unique neighbourhood identities can be preserved even as communities change. Creative industries can be nurtured and places found to foster collaboration and innovation.

SOCIAL DEVELOPMENT

Social sustainability is about whether people can meet their basic needs and achieve their individual potential as well as contribute to the overall well-being of their communities. It is linked to the concept of social capital⁸ which is a key component of a preventative approach to health and community well-being.

Trends that may challenge social development in the Region, such as employment, housing options and

⁸ Though no single agreed to definition exists, the concept of 'social capital' refers to such things as the value of connections within and between social networks, the level of participation in civic activities, and the role of cooperation and confidence to get collective or economic results.

cultural integration, also provide the focus for the opportunities we can pursue⁹.

Increased global competition, among other trends, is contributing to a widening gap between rich and poor. The effects of this growing inequality are compounded by the high cost of housing and transportation. It is expected that energy consumption will become more costly, putting further pressure on those living on low incomes.

For many newcomers and visible minorities, it is difficult to find work despite having good credentials. Recent losses in support for integration or settlement programs such as counselling and English or French as a second language training only serve to exacerbate this problem.

As a region we can make choices that will improve the quality of life for all income groups, by committing to poverty reduction and to helping people achieve greater self-sufficiency. Affordable housing in complete communities, opportunities for recreation, leisure and civic engagement for those in urban, suburban and rural areas can improve health and build social capital.

BUILDINGS AND ENERGY SYSTEMS

Over recent years, the Region has seen an increase in the proportion of multi-unit dwellings (apartments and townhouses), coupled with steadily increasing building code standards. These have led to better energy efficiency in the building sector. At the same time, there are many older buildings in the Region that were constructed when energy efficiency standards were lower. These represent a great opportunity for retrofits that can save building owners money over the long term and generate jobs in the Region.

With energy prices expected to at least double over the next 30 years, and with uncertainty over the future supply of oil and gas, households and businesses face a mounting challenge to manage energy costs.

⁹ Maxwell, Judith, Looking Down the Road: Leadership for Canada's Changing Communities, Canadian Policy Research Networks, October, 2006

Quebec's ongoing commitment to affordable, low-emission hydro electricity and Ontario's commitment to green energy have been complemented by supportive actions and initiatives at the local level including solar panel installation and renewed interest in district energy at high-density development nodes.

ECONOMIC DEVELOPMENT

The Region has achieved great economic success and has attracted and nurtured a highly educated workforce and innovative businesses and research centres. To continue to attract talent we will need to maintain and enhance the quality of life in the Region and ensure there are ongoing opportunities for newcomers.

The large amount of federal government employment leaves the Region vulnerable to government down-sizing and job cuts. This vulnerability could be mitigated by continuing to diversify the economy.

While traditional measures of economic growth will continue to be important, new measures of sustainability that take a more balanced approach to measuring economic and community progress may also become important.



2.4 Affordability and Long-Term Value

Many of the challenges noted above will have financial implications for the Region and they cannot be addressed by simply increasing municipal budgets. The Region's future success will depend on addressing these challenges while maintaining affordability and building long-term value for businesses, households and government.

Land use patterns have various implications on costs for consumers and society. A region that uses smart growth (compact, mixed, transit-oriented development) tends to reduce public infrastructure and service costs and reduces direct and indirect transportation costs. This has been demonstrated through a recent City of Ottawa study¹⁰ and analysis by various researchers including a good summary by Todd Litman of Victoria's Transportation Policy Institute.¹¹

Smart growth favours reduced impervious surface area (land covered by buildings or pavement) which reduces stormwater management costs and heat island effects.¹² Compact development also reduces the capital and operating costs associated with roads, utility lines, garbage collection, emergency services, and school transport. Smart growth increases the efficiency of travel, reduces per capita costs to own and operate vehicles, and reduces road and parking facility costs.¹³ In addition, neighbourhoods with the choice of walking, cycling and transit can improve households' economic resilience due to the presence of more affordable transportation options, making them better able to respond to unexpected financial changes such as fuel price increases or income losses.¹⁴

10 Hemson, 2009. Comparative Municipal Financial Analysis. Report for the City of Ottawa

11 Litman, T. 2011. Understanding Smart Growth Savings, Victoria Transport Policy Institute. June 17, 2011

12 The heat island effect refers to the effect of urban development on air temperature, warming air above the temperature of surrounding rural areas. Causes include large, dry areas such as pavement and lack of trees and water in cities.

13 Litman, T. 2011. Understanding Smart Growth Savings, Victoria Transport Policy Institute. June 17, 2011

14 *Ibid.*

Benefits of smart growth are also found in the increased availability of land to be used for more productive purposes such as farming as well as the provision of ecosystems services such as water filtration and purification, biodiversity and natural flood control.

Due to the savings and benefits resulting from the more efficient provision of public infrastructure and services, improved transportation accessibility, co-location efficiencies, and reduced per capita land consumption, smart growth also favours economic development with increased productivity, wages, business activity, property values and tax revenues¹⁵.

Smart growth typically provides direct savings in development costs borne by the municipality of between \$5,000 to as much as \$75,000 per unit¹⁶. This is compared to infrastructure provided for dispersed development beyond the urban boundary. In addition to this are savings related to incremental operations, maintenance and service costs. One study found that sprawl increases local road lane-miles 10%, annual public service costs about 10%, and housing costs about 8%, adding about \$13,000 per dwelling unit¹⁷.

The relationship between density and public costs are not entirely straightforward. Actual costs depend on the specific location and the type of provided services.

An examination of municipal costs and development patterns for the City of Ottawa found that net per capita municipal costs tend to be lowest inside the Greenbelt. While this area benefits from existing infrastructure, there is also the need to account for potential earlier replacement costs¹⁸. In addition, the form of new development inside the Greenbelt may not sufficiently address the full range of housing needs required to meet the needs of a diverse population. Urban areas outside the Greenbelt (suburban development) were found to be the least efficient, while rural areas tend to have high servicing costs but also high property assessments.

15 *Ibid.*

16 *Ibid.*

17 Burchell and Mukherji. 2003. In Litman, *Ibid.*

18 Hemson, 2009. Comparative Municipal Financial Analysis. Report for the City of Ottawa

The current system of development fees, utility rates and property taxes conflicts with many of the objectives of sustainable development because it encourages consumers to choose more sprawled locations. The system fails to accurately represent the location-related cost differences present in different development patterns.¹⁹ This discussion of costs and affordability is important in any discussion of sustainability. But, it is only part of the picture. While we need to be sensitive to increasing public expenditures, there is also the potential of rising household and business costs that need to be factored in.

Expected energy price increases will increase the cost of living for many residents, especially those who commute long distances by car or who live in housing that is not energy efficient. The cost of food and most consumer goods would likely increase as well, once higher production and transportation costs are factored into prices. Businesses will face similar pressures as both capital and operating costs increase.

2.5 Modelling the Future

Charting a course towards a sustainable future starts with an understanding of where we are now and what could be achieved in the future. To help build this understanding, the project modelled current and future land use and transportation patterns, building types, energy supply, and solid waste management—all areas that the Partners have the ability to influence.

The maps at the end of this section (**Figure 8** and **Figure 9**) represent two possible patterns of urban growth for the Region. The first map illustrates new growth between now and 2060 if recent patterns of growth continued. The second map shows what the pattern of new growth could look like if we adopt best practices such as a much more compact urban form and transit oriented development. They explore the implications of different choices made today with respect to the amount and cost of energy

used in the Region and the amount of associated greenhouse emissions.

Using HB Lanarc-Golders's Community Energy and Emissions Modelling and Planning Tool (CEEMAP), a 2007 baseline and two futures for the Region were modeled to illustrate the historic trend from the 1980s and 1990s as well as a best practice future. The *Energy and Emissions Plan* provides a full description of the modelling assumptions and outcomes.

Drawing on best practices that align with the strategic directions in this Plan, the modelling illustrates how the Region could achieve a 40% reduction in GHG emissions by 2060, along with other economic and social benefits. Since most future growth could be accommodated in current urban areas, the public costs of services and infrastructure is less than would be anticipated with more land-extensive patterns. Less household spending on energy—spending which typically leaves the regional economy—could result in more spending in the local economy.

Some of the model outputs for 2060 include:

- Overall the total housing mix shifts to about one-third single detached in 2060 from about one-half in 2007. New units are about 5% smaller;
- Much of the new housing is built through intensification and the density of dwellings almost doubles by 2060;
- More extensive rapid transit and more focused growth doubles the share of the population within 5 km of a rapid transit station in Ottawa and increases by a third in Gatineau;
- More buildings are retrofitted for energy efficiency, up to 2.5% of the housing stock annually by 2020; and
- More new buildings include building-scale renewable energy, such as solar panels, and 1 of every 6 new buildings is connected to district energy.

19 Blais, P. "Perverse Cities: Hidden Subsidies, Wonky Policies and Urban Sprawl". Toronto, UBC Press.

The modelling is a useful illustration of the nature of the changes that could potentially reduce our energy use as well as achieve related benefits such as reduced household spending and public costs; increased physical activity and better public health; new economic activity; and other benefits. The modelling is not predictive, since the future of a regional area is complex and depends on many unknowns. Nor is the modelling prescriptive, since it is possible that many different pathways could be taken to achieve the same outcomes. However, it is helpful as an example of one set of changes and assumptions that could lead the Region to a more sustainable future.

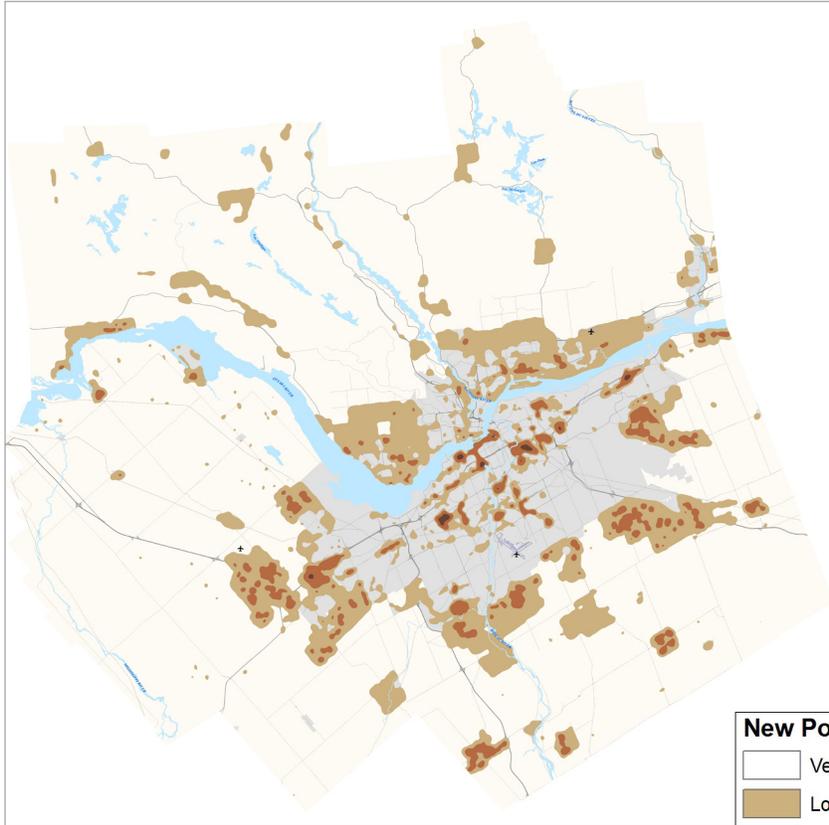


Figure 8: Historical Trend – Growth Projection 2060

- Growth occurs outside urban boundary
- 26% through intensification of residential land
- One-half of all housing is single-detached

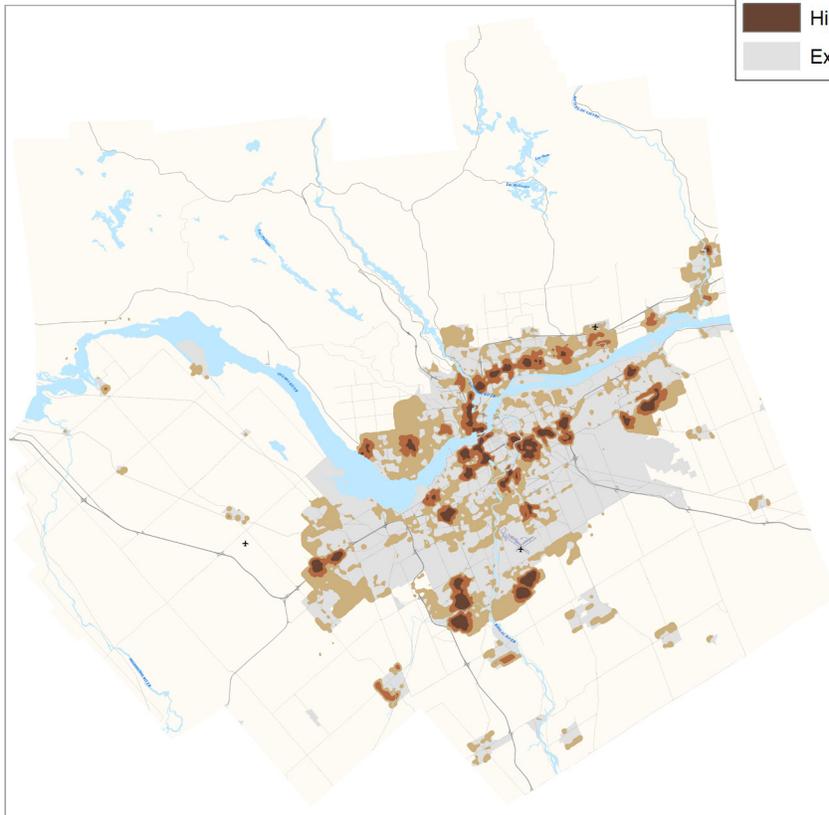
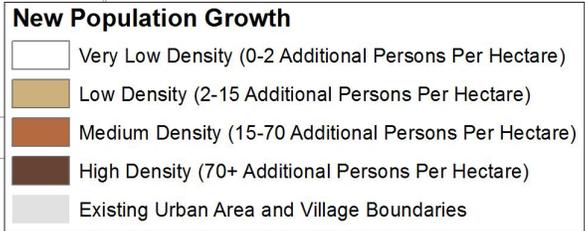


Figure 9: A Sustainability Best Practices Approach – Growth Projection 2060

- Most growth occurs inside urban boundary around rapid transit stations
- 48% through intensification of residential land
- One-third of all housing is single-detached

2.6 A Rationale for Action

The challenges and trends identified here are significant and point to the need for a clear roadmap to navigate the road ahead. While society has made progress in terms of improved efficiency, most of the progress we have made in terms of energy efficiency (buildings, technology, vehicles) has been out-weighted by growth (i.e. more people earning more money and spending it on more vehicles, larger homes, more gadgets, higher levels of consumption, more travel). If we are to have continued economic growth, we must figure out how to reduce energy and material consumption throughout everything we do.

As Canada's Capital Region, we are well-positioned to show leadership to the rest of the country and the world.

In many areas, the Region is already on the right track and has made significant progress towards addressing these challenges. New Bus Rapid Transit and Light Rail Transit systems in Gatineau and Ottawa, a trend towards housing intensification and better approaches to stormwater management are some of the initiatives that provide a foundation for future success.

However, as we look at the long-term challenges to the Region, there is a need to do more to ensure that Canada's Capital Region can weather the changes ahead. In the early part of this process, the following principles and goals were developed to guide us towards success.



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3 Principles & Goals

The six broad principles and 12 goals that guided the *Choosing our Future* initiative were developed collaboratively with the community. Together, the principles, goals, and the vision statement included at the beginning of this Plan are a collective expression of the Region's desired future. They directed development of the three Plans and will support decision-making in the future.

3.1 Principles of Sustainability

Diversity & Creativity

We recognize the inherent value of every person and the value of diverse perspectives. We will support opportunities for all residents to lead healthy, creative, and fulfilled lives.

Local & Global

While the sustainability and liveability of our communities is important, we are aware that our actions and choices will have impacts elsewhere, and we will act accordingly. While we recognize that we will continue to be part of a global community, we will work towards greater self-reliance as an important facet of resilience in the face of change.

Learning & Cooperation

We will pay attention to how human and natural systems work and collaborate with one another to develop shared solutions. We will recognize those businesses and individuals who work towards a more sustainable community.

Integration of Systems

Each decision will reflect an understanding of the interconnections among the economy, society, culture and environment. We will design systems and structures that achieve multiple objectives.

One Planet

We recognize that there is no reasonable substitute for many of nature's services, such as purifying water, cleaning air and providing renewable resources. Therefore, we will live within the Earth's capacity to support us with resources and to absorb our waste. We will live off the interest of natural capital rather than deplete it.

Long-Term Thinking

To ensure that our communities are resilient and that we can sustain our ecosystems and quality of life for generations to come, we will consider the long-term implications of our actions and decisions and prepare ourselves for changes to come.



Figure 10: Overview of the Goals for a Sustainable, Liveable, Resilient Region

3.2 Goals

Each of the goals illustrated in **Figure 10** is described in more detail below.

Health and Quality of Life

All residents enjoy a high quality of life and contribute to community well-being

Our communities are healthy, safe, secure, accessible, and inclusive places, where all residents have the opportunities required to enjoy a high quality of life and be involved in community life.

Biodiversity and Ecosystem Health

Ecosystems are healthy, protected and support biodiversity

The Region continues to fulfill its traditional ecological functions, supporting connected habitats, regulating water and nutrient cycles, and providing food and shelter to all species living in the Region. Residents value biodiversity and ecosystem health and understand the interconnectedness between humans, other species, and the ecosystems in which we all live.

Economic Prosperity

Economic prosperity supports residents, community well-being, and ecological health

Wealth is generated with a fraction of today's material and energy throughput and with respect for the limits of planetary ecosystems and resources. The Region's economy supports regional self-reliance, good jobs for residents, and contributes to a high quality-of-life for all residents. Residents and businesses also support responsibly-produced goods and services from around the world.

Connectivity and Mobility

Walking, cycling, and transit are residents' first choices for transportation

Through careful land use planning, the need to travel long distances has been greatly reduced because jobs and most of our daily needs are provided in complete, liveable communities. Transportation networks are well-connected between and within communities, minimizing environmental impacts, moving residents and goods safely, efficiently, and affordably, and encouraging social interaction. Residents choose walking, cycling and transit and mobility is enhanced by electronic communications, good planning and urban design.

Energy

Energy is used efficiently and supplied from green, renewable sources

Energy is used efficiently and responsibly in the Region and comes from a diverse portfolio of resources that are renewable, low-impact, and contribute to local economic development. The Region also manages demand for energy through community planning, transportation initiatives, and building design.

Culture and Identity

Cultural vitality and diversity contribute to the Region's strong identity

Ethnic diversity, artistic expression, and distinctive cultural heritage are supported and valued, contributing to a strong sense of place, identity, inclusivity and meaning. The culture of the Region reflects a strong ethic of community and sustainability.

Water and Wastewater

Water resources are cherished, conserved and protected

Regional water demand and management is consistent with the Region's available water resources and meets the needs of ecological systems and other species. Wastewater and pollution are managed effectively so that the Region's water supports natural aquatic ecosystems as well as our needs for fresh drinking water.

Materials and Solid Waste

Waste is reduced towards zero

Waste is reduced to the point where it can be managed in the Region without compromising human and ecological health.

The use of virgin materials is greatly reduced because waste is used as a resource (recycled) wherever possible.

Housing

Housing options are green, healthy and meet the needs of the whole community

A variety of housing options provide affordable, attractive and accessible choices for all residents. This range of housing choices exists within every community and allows people of various abilities and incomes to live in a community throughout various life stages. Housing is energy-efficient, healthy, and attractive, and uses sustainable building materials and practices.

Climate Change

The Region adapts to a changing climate

The Region makes deep emission reductions and ensures that it can adapt to deal with the impacts of climate change.

Food and Agriculture

The local food system is sustainable and provides residents with healthy and affordable food

The Region's farmers, working on a well-protected, highly productive land base, produce a great variety of foods using diverse, sustainable practices. While residents consume food from outside the Region as well as modest amounts from urban areas, the Region's farms and the local food system provide residents and businesses with a high-quality, healthy, and affordable supply of food.

Governance and Decision-Making

Decision-making is open, informed and inclusive

All voices in the Region are heard, and each resident has the opportunity to collaborate and help set shared directions that are open, informed, and characterized by accountability and equity. As a region we can make decisions effectively and efficiently while fostering a shared sense of ownership and pride in our collective sustainability journey. We are a model for other regions and we share our knowledge openly in the hope that others will learn from our progress.

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4 Where Are We Today?

4.1 Baseline

Overall, Canada's Capital Region has cause to celebrate its current achievements, as measured in the 2011 Sustainability Baseline Report²⁰. The people in Canada's Capital Region are one of its greatest assets. The Region's residents are exceptionally well-educated and many are bilingual and engaged in their communities, which supports economic and cultural sustainability. However, improvements in many areas need to continue if we are to achieve our goals.

The 2011 Sustainability Baseline compares our current performance against our past or the performance of similar Canadian cities.

Sixteen indicators describing social, economic, cultural and environmental aspects of sustainability are included in the 2011 Sustainability Baseline Report.

Indicators were chosen because they:

- Reflect activities that the Partners can potentially change or influence;
- Relate to the goals; and
- Use measurable data that are available, easily accessed, and consistently reliable.

The baseline is expected to evolve over time and additional data will be used as part of the monitoring process, to reflect goal achievement.

A summary of the baseline indicators is presented on the next page.

²⁰ Available at <http://www.ottawa.ca>

Table 1: Baseline Indicators for Canada’s Capital Region

Related Sustainability Goal	Indicator	Current Performance	Improve*	Continue to Improve	Celebrate
CONNECTIVITY & MOBILITY	Percentage of residents who walk or cycle to work:	almost 9%		✓	
HEALTH & QUALITY OF LIFE	Percentage of residents aged 15 and over with less than a high-school education:	almost 20%		✓	
HOUSING	Households paying 30% or more of their income on housing:	almost 25%	✓		
ECONOMIC PROSPERITY	Percentage of residents aged 20 – 24 who are participating in post-secondary education, 2010:	Ottawa, 50%; Gatineau 41%			✓
ECONOMIC PROSPERITY	Percentage of residents who are immigrants from another country:	approx. 20%		✓	
GOVERNANCE & DECISION-MAKING	Rates of volunteerism:	50%			✓
CULTURE & IDENTITY	Percentage of residents who are bilingual in both English and French:	44%			✓
CULTURE & IDENTITY	Per capita spending by municipal governments on festivals and grants to non-profit organizations:	\$6.47 (2009 – Ottawa) and \$3.86 (2009 - Gatineau)		✓	
FOOD & AGRICULTURE	Consumption of agricultural land :	approx. 50% of land added to urban area since 1988	✓		
CLIMATE CHANGE	Greenhouse gas emissions per capita:	7.5 tonnes (2008)	✓		
ENERGY	Daily vehicle kilometres travelled per capita:	17.8 km (2005)		✓	
ENERGY	Percentage of residents who commute by transit:	almost 20%		✓	
HOUSING	Apartment construction as a percent of new housing:	30% (2010)		✓	
MATERIALS & SOLID WASTE	Residential waste diversion:	40% Ottawa, 34% Gatineau		✓	
WATER & WASTEWATER	Average number of litres of water used per person per day:	decreasing.		✓	
BIODIVERSITY & ECOSYSTEM HEALTH	Water quality rating of the Ottawa River entering and leaving the Region:	good to excellent		✓	

*Compares current performance against past performance or performance of similar Canadian cities



5 Strategies & Actions: The Sustainability Path

This section identifies key strategies and actions that can help move us towards our vision and achieve our goals for a sustainable, resilient and liveable region. The strategies represent broad, long-term directions to pursue, while the examples of actions illustrate the ways to start implementing the strategies now. While some strategies and actions represent new directions, others continue to build on best practices, or “seeds of sustainability” already in place in the Region. The challenge is to find new ways to initiate or accelerate implementation.

The strategies are presented in 10 theme areas such as water, social development and the economy. They represent areas where the Partners have the ability to create change and move towards our goals. The Partners cannot act alone, however. Following a sustainable path towards the future requires the support of individuals, the community, business organizations, and others to be fully realized.

The sustainable path has the following 10 themes:

1. **Manage Growth and Development**
2. **Encourage Sustainable Mobility**
3. **Encourage High Performance Buildings and Renewable Energy**
4. **Protect and Restore Green and Natural Systems**
5. **Protect Water and Manage Infrastructure**
6. **Nurture Culture and Identity**
7. **Support Social Development**
8. **Build a Sustainable Economy**
9. **Manage Materials and Solid Waste**
10. **Support Local Food and Agriculture**

5.1

Manage Growth and Development



Principles for building communities for the 21st century are a departure from post-war suburban forms. Introduced as smart growth or new urbanism, the principles include:

- Develop compact neighbourhoods with a mix of housing, employment, and services;
- Invest in walking, cycling and transit to increase transportation choices;
- Include diverse housing types and affordable housing in each community;
- Build in existing communities to make efficient use of land and infrastructure;
- Provide greenspace and protect natural areas;
- Protect agriculture land;
- Engage residents in building distinct communities²¹

Or as Larry Beasley expressed in the NCC's Capital Conversation in Victoria, smart growth equates clustered density; mixed-use; diversity; secure open space; place making; quality; uniqueness; alternative transportation; green construction; alternative infrastructure and local inputs and food.²²

The benefits of smart growth are a considerable incentive:

- More convenient access to work, schools, and other daily activities;
- Greater choice in housing and transportation and more diverse, inclusive communities;
- Reduced public costs for transit, infrastructure and services;
- Health benefits of reduced emissions and an active lifestyle that includes walking and cycling;
- Reduced energy consumption and residents' costs for housing and transportation;
- Preservation of agriculture land and the natural heritage system of forests, wetlands and rivers, since less land is used for development;
- Help attract and retain a talented workforce.

The challenge is to create smart growth on the ground, to build it as new communities or to weave it into the existing urban fabric.

²¹ See, for example, Smart Growth and Growth Management in Ontario. Ontario Professional Planners Institute

²² Beasley, L. 2011, "A National Spirit In A National Place: Towards A New Plan For Canada's Capital" Capital Conversation, Victoria, October 28, 2011

SEEDS OF SUSTAINABILITY



Ottawa

- Sustainable development is the over-arching goal of the current Ottawa Official Plan and other master plans. The Plan includes detailed policies on intensification, design, and other components of sustainable development. Intensification is increasing in the city, averaging about one-third of new urban housing since 2000 compared with about one-quarter between 1998 and 2001.
- Ottawa offers the **Planning Primer Program** to help residents participate more effectively in the land-use planning process, as intensification and community change occurs. The program also helps build a good working relationship between residents and the City.

Gatineau

- The Plan d'urbanisme (Urban Development Plan) specifies the creation of complete urban villages with a range of housing types and local services, intensification of areas around public transit, and the reinforcement of industrial and service commercial areas as centres of employment.

NCC

- The NCC is preparing a new plan for Canada's Capital—Horizon 2067—which provides guidance to all NCC Plans and for federal lands within the Region.
- The Greenbelt Master Plan sets out the roles of the Greenbelt and the kinds of land uses, character and visitor experiences it will offer.
- The NCC also collaborates on the planning and the development of the Capital with the federal family, especially Public Works and Government Services Canada.

Strategy 1: Maintain a compact region

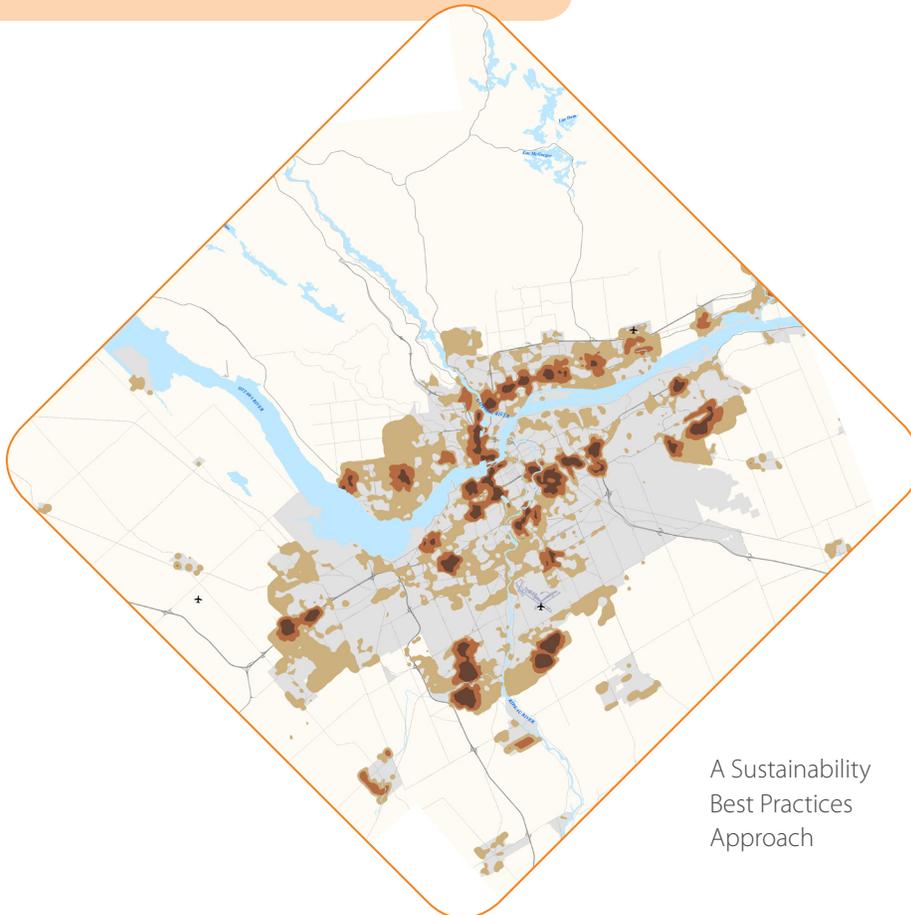
This strategy involves keeping the Region's urban area compact and limiting urban boundary expansions.

The overall form and pattern of the Region's settled areas, is perhaps the most important sustainability and resilience consideration. Not only can maintaining a compact regional settlement pattern reduce impacts on valuable agricultural, natural and rural lands but it can also reduce municipal infrastructure costs. And, by making transit and active modes of transportation more efficient and attractive, this strategy can reduce the energy used and energy costs in the Region.

Examples of actions that support this strategy include:

- Continue to pursue current policies to minimize urban boundary expansions by accommodating most growth through intensification and redevelopment along mainstreets and around rapid transit stations, as well as through sensitive infill in established communities
- In Ottawa, explore the merits of working with the Ontario government to develop a regional growth plan under the Places to Grow Act similar to such plans in southern Ontario²³
- Continue to invest in existing roads, water, wastewater, transit facilities and other infrastructure so that it can support redevelopment

²³ For more information, see the Ontario Ministry of Infrastructure. <https://www.placestogrow.ca/index.php>



A Sustainability Best Practices Approach

Strategy 2: Build complete neighbourhoods and communities

The flip side of maintaining a compact region is to enable the development and redevelopment of high quality, complete communities. This strategy involves creating highly liveable, complete communities where people are able to meet most of their daily needs within their neighbourhood. These complete communities centre around higher-density, mixed-use areas on an expanding network of rapid transit stations and along main streets on key arterial corridors. Residents living within these areas or within walking or cycling distance have easy access to shops, services, offices and transit connections to other areas. Outside these areas, neighbourhoods will continue to develop as liveable communities with their own unique mix of parks, schools, facilities and housing options.

The downtown areas of Ottawa and Gatineau are the cultural and economic heart of Canada's Capital Region and the political centre of the country. Maintaining the health of this vital area is a priority for all the Partners. Overlooked by Parliament Hill, the downtowns offer diverse opportunities for employment, entertainment, and shopping. One factor in their success has been the growing number of people living within and adjacent to the area, who give life to its streets and support its businesses, events and activities. Maintaining the downtowns as vibrant areas means there needs to be diverse places to live within and around these areas.

Examples of actions that support this strategy include:

- Continue to invest in existing roads, water, wastewater, transit facilities and other infrastructure so that it can support redevelopment
- Revisit zoning and parking requirements on main streets and in mixed-use areas to ensure that the densities in approved community plans can be achieved as-of-right, without amendments to the zoning
- Implement plans for distinct neighbourhoods in and around the downtown areas of Ottawa and Gatineau that accommodate singles, couples, and families with children. Support a variety of housing at a range of prices plus well-designed open space and convenient services
- Look for opportunities to anchor new communities around institutions such as museums, hospitals, universities and colleges that are well-served by transit, and develop these areas as complete communities of their own
- Continue to involve communities in plans and proposals for development that increase the range of services, employment opportunities and housing in established communities



Strategy 3: Redevelop office areas on the rapid transit system, including federal office complexes, as mixed-use areas

Rapid transit stations represent our best opportunity to develop truly mixed-use and compact areas with excellent transit service. Some stations, such as Baseline and Woodroffe in Ottawa, are developing along these lines. Federal office complexes and other office areas that are located on or near rapid transit stations are prime candidates for this type of redevelopment. These areas could accommodate significant housing and employment growth in the Region, increase ridership on the rapid transit system and create liveable neighbourhoods clustered where people are already working. Redevelopment of federal land will require federal leadership and support for sustainable development.

Examples of actions that support this strategy include:

- Continue to pursue redevelopment of areas on the rapid transit system. New jobs, restaurants, shopping and services within the office areas could be introduced to serve the larger community, while new housing would help maintain activity there and reduce the need for some employees to travel. Continue to seek partnerships with the federal government and the private sector to redevelop these areas
- Explore opportunities for building-scale and larger systems to increase energy efficiency, including use of renewable energy and district energy, especially where district energy systems now operate. Also look for opportunities to demonstrate other sustainable practices, such as reducing waste and water consumption



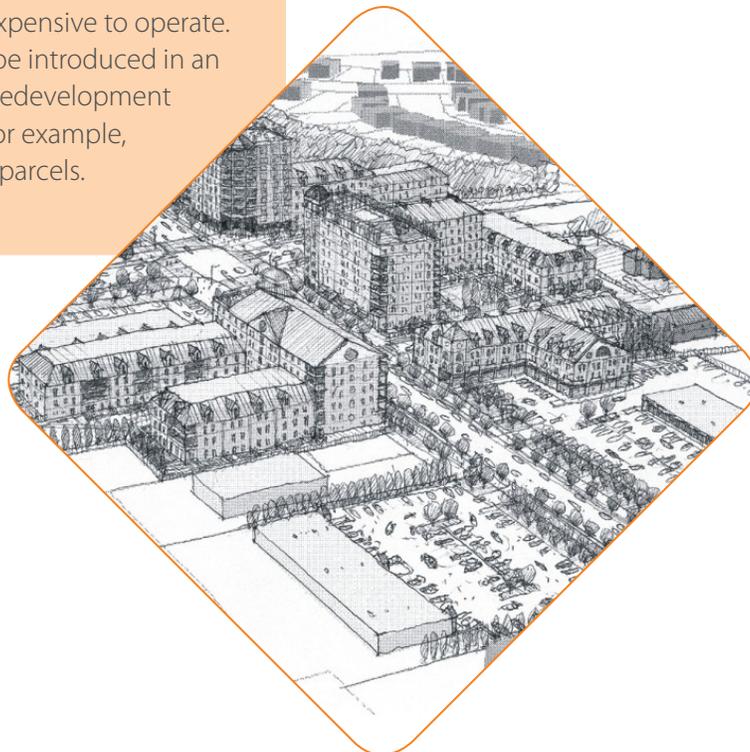
Strategy 4: Retrofit the suburbs

Much of the city of 2060 is already developed with roads, housing, shops and offices. If we are to contain the size of the future urban area, we will need to find ways to retrofit low-density areas so that they can accommodate more households and better support walking and cycling. This will involve taking a close look at some of our post-war suburbs, and finding opportunities to add new development without negatively impacting the characteristics of these areas.

On the 50-year horizon, land-extensive office and shopping areas may become obsolete and as land values rise, opportunities may also arise to rebuild these areas as unique places. The biggest challenge will be to change the street and block pattern in areas where roads are curved and designed primarily for vehicle traffic. Roads last longer than buildings and once they are established, they affect many aspects of how a community functions well into the future. A road pattern featuring short blocks and numerous intersections provides direct routes to destinations and makes it easier to walk or cycle. It also allows for more efficient transit, with more direct routes that are less expensive to operate. Such a road pattern could be introduced in an area in the future through redevelopment of large commercial sites, for example, or consolidation of smaller parcels.

Examples of actions that support this strategy include:

- Continue to intensify suburban town centres as community nodes focused around rapid transit stations. Review zoning and parking requirements for the town centres to make sure that the densities envisioned in current plans can be accommodated as-of-right, without amendments to the zoning
- Over time, transform post-war suburbs into more convenient, pedestrian and bike-friendly neighbourhoods with more connected street patterns and direct access to good transit service
- Encourage low-profile infill development and density in the form of secondary suites and small apartments above garages to boost density without creating major change in character and feel
- Redevelop parking lots and under-used commercial and retail sites with a mix of uses at higher densities to increase options for housing, employment, and services
- As part of the long-term planning for water, wastewater and stormwater management services, consider the capacity of systems in post-war suburban areas and identify any measures needed to support increased development



Strategy 5: Protect the integrity of rural areas

The option to live in the rural area is part of the Region's appeal. Many villages have agricultural roots and function as service centres for surrounding farms. These villages are now connected to the Region and the world through information technology which has the potential to redefine rural lifestyles.

While most growth in the Region should continue to occur in the urban area, rural living is part of the Region's heritage and diversity. Focusing rural growth within existing village boundaries and maintaining a distinct edge between developed and non-developed areas allows rural communities to grow in a more sustainable manner.

Country lots also accommodate rural housing, but are more land-intensive than villages. They have a considerable impact on the natural environment, especially where they require the clearing of land and the filling of wet areas. Concentrations of country lots take on the appearance of residential villages, but lack services and most travel is by private automobile. As measures to intensify urban areas increase, it will be important to monitor rural development for signs that housing demand has shifted in the rural area. Regulations on country lot development may be needed to support achievement of a compact pattern of development.

The rural area also needs to thrive economically and could benefit from a plan that enhances the rural areas' strengths including tourism potential and further development of the agricultural sector.

Examples of actions that support this strategy include:

- Continue to plan for modest growth in the rural area and focus it in villages
- Through planning policy, zoning and development controls, encourage sensitively designed, appropriately-scaled new mixed-use development in villages that can be supported by available servicing
- Ensure that policies locate services in villages and support economic, social and cultural opportunities so that residents of villages and surrounding areas are able to live, work and play within their community
- Allow for a broader range of commercial uses and home-based businesses in villages
- Continue to examine options for rural infrastructure systems—private services, extensions of central municipal services, and stand-alone communal services for water and wastewater. Monitor technological advances to see if they open new, affordable options to villages where servicing is an issue
- Create a "Rural Prosperity Plan" that builds on the strengths of rural areas including tourism, agriculture and food



Strategy 6: Improve greenfield development

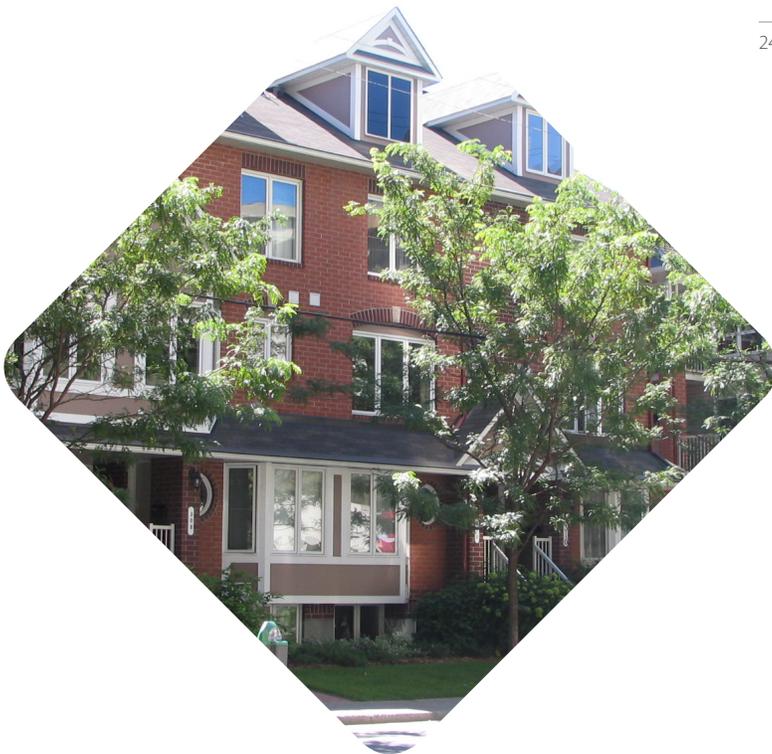
Even with a strong overall intensification agenda, there will be demand for new housing to be built on undeveloped urban land. Such greenfield development is an opportunity to take the next step in suburban community design in the Region, exploring the middle ground between single-detached and apartment densities and delivering a mix of unit types. New communities are full of potential to become distinctive places in their own right that meet the highest standards of design and environmental performance.

Greenfield development also provides an opportunity to coordinate transit service and development, so that development is phased in blocks with the density to support good transit and good transit is provided from the outset. This coordination will also support the development of community focal points such as commercial and retail services and public facilities early in the evolution of new areas.

Examples of actions that support this strategy include:

- Work with proponents of new greenfield developments to meet the highest standards of design and sustainability performance, provide for the daily needs of residents, and create true, complete communities. New third-party standards such as LEED-ND (neighbourhood development) can help in the development of these standards²⁴
- Explore opportunities to provide incentives for more sustainable residential development. For example, waive fees for secondary suites in new single-detached houses. This action increases potential for future intensification and allows owners to choose whether to finish the suite for family members or rental income
- Continue to explore new ways to fund and price municipal services so that development in new suburban land pays the full lifecycle cost. Where necessary, press the provinces for legislative changes that strengthen the municipalities' ability to pay for infrastructure
- Provide quality public transit and transit-supportive development early in the development of new communities to establish transit as the preferred mode of travel

²⁴ The Canada Green Building Council operates several certification systems that provide third party review and verification of green building and community design initiatives. LEED (Leadership in Energy and Environmental Design) ND (Neighbourhood Development) is a comprehensive rating system for neighbourhood design. www.cagbc.org for more information



Strategy 7: Increase housing choice and affordability

Everyone needs housing that is safe, stable and affordable. Yet in 2006, almost one-quarter of the Region's households spent more than 30% of their gross income on housing, exceeding the affordable housing benchmark. Affordability issues are especially widespread among tenants, single-parent families, and singles who live alone.

Most housing is produced by the private sector for the ownership market. The private sector builds very little purpose-built rental housing because the market rents that tenants can afford to pay do not cover the costs of constructing or operating the building. The affordability of housing built by the private sector is the product of:

- Demand – income levels, economic and job growth, population growth, desirability of the community/region, and investor speculation.
- Supply – Material and labour costs, land cost and supply, cost of municipal water and wastewater services and other infrastructure, municipal administrative procedures and approval times.

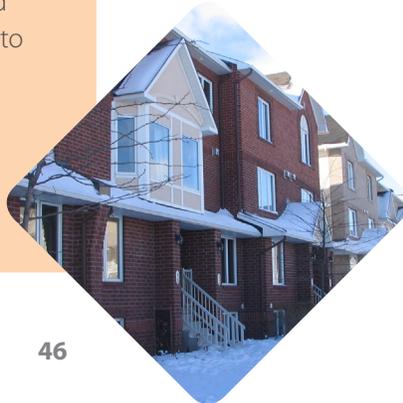
As Canada's Capital Region and other metropolitan areas struggle to contain their urban boundaries, there is a concern that restricting the supply of land will lead to higher land costs and ultimately, higher housing costs. However, these pressures can be offset by facilitating intensification and redevelopment, early pursuit of increased housing densities and construction of a greater variety of unit types and sizes including smaller units, which are typically more affordable.

Social housing that is affordable for the lowest income groups is supported by all three levels of government, with different roles and programs in Quebec and Ontario. Strengthening this sector requires increased and ongoing funding to build new affordable units, to provide rent supplements to more households in need, and to repair the aging social housing stock. In addition, persons with physical disabilities and/or complex needs require supports to maintain housing.

Examples of actions that support this strategy include:

- Increase the supply of housing in locations such as the central area or near rapid transit where transportation costs are low, yielding an affordable transportation and housing package²⁵
- Increase the supply of the types of housing that are likely to be more affordable, such as secondary suites, small lots and homes, and modular houses
- Reduce the cost of development by adopting such measures as alternative engineering and transportation standards, efficient use of new and existing infrastructure, and faster review of development applications
- Continue to lobby the federal and provincial governments for increased and ongoing resources for affordable social housing and the support systems that vulnerable people need to live in the community
- In Ottawa, continue to lobby the Government of Ontario for policies and legislation to enable municipalities to require affordable housing for low- and moderate-income households in new housing developments
- Explore ways to prevent the loss of affordable rental housing through demolition and redevelopment and to require replacement of affordable units when they are demolished
- Develop a strategy to ensure the long-term preservation of valuable affordable housing stock in both the public and private sectors through rehabilitation and upgrades

²⁵ Ray Tomalty and Murtaza Haider Housing Affordability and Smart Growth in Calgary. Final Report. City of Calgary. Plan-It. August 2008. Reviews strategies for affordable housing and experience in various municipalities.



Strategy 8: Encourage design excellence

Intensification works best when it is well-designed. As some neighbourhoods redevelop with new housing and commercial areas, they can become more attractive if design is used to create places with their own distinct identity and attractive landscaping, lighting and other features that make the area safe and convenient for transit, walking and cycling.

Great design is something that attracts talent and tourists to the area. Building a shared understanding of the key elements of good urban design and the qualities and amenities required for a successful neighbourhood is a key opportunity for the Region to demonstrate how it values its unique qualities and physical assets.

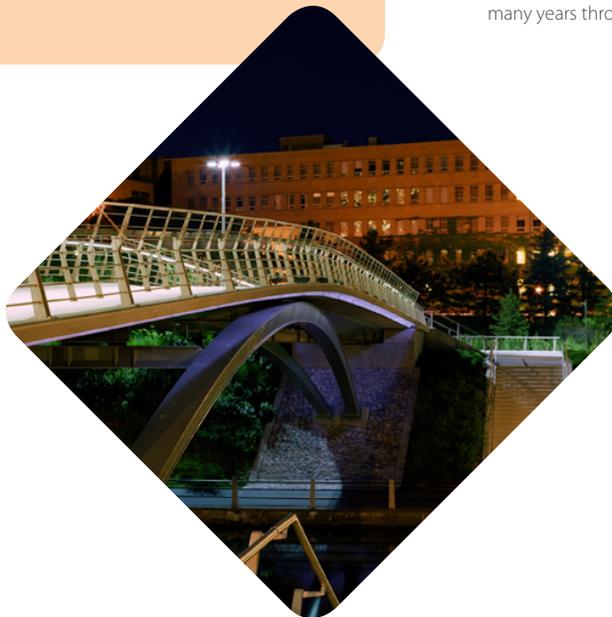
There are different places within the Region—the urban core, older urban neighbourhoods, new suburbs, arterial commercial streets, and the farms, rural acreages and villages of rural areas. The unique qualities of these different places can be preserved and celebrated in any plans to manage growth in the future.

“Jane’s Walk” in Ottawa and other Canadian cities are sponsored by communities that love their neighbourhoods and want to share their history, culture, and design with others.

Examples of actions that support this strategy include:

- Improve the overall standard of public space and building design in urban and rural areas and create a culture that stimulates design excellence from all proponents
- Capitalize on the outstanding natural and open space features in the Region by planning selective infill and intensification opening onto the Central Experimental Farm, the Greenbelt, the Gatineau Hills and the Region’s major rivers. Revisit the Central Experimental Farm and Greenbelt to see if there is untapped potential for greater public use
- Continue to develop and use design advisory panels, peer review and design guidelines
- Leverage the expertise in universities and colleges in the Region by forming partnerships to address urban design issues and implement advanced building technologies
- Engage residents, businesses, artists, and others in design charrettes when planning for redevelopment of large sites or neighbourhood intensification. Have designers explain the design challenges of the project and the concepts and principles that can be used to address them
- Continue to build design awareness among professionals, community leaders and others through ongoing opportunities to learn about leading-edge design and to discuss local examples²⁶

²⁶ Professional associations have been developing design awareness for many years through sponsorships of conferences and lecture series.



5.2

Encourage Sustainable Mobility



The daily commute is a reality for many of us. Whether this is a long drive alone in a car, a bicycle ride on a pathway, a walk through local neighbourhoods, or a quick bus ride, how we travel affects our quality of life and our experience of living in our neighbourhood and interacting with other people. When coupled with complementary development, investments in transit, bicycle lanes, and well-designed sidewalks and public areas can increase our use of transit as well as walking and cycling.

These investments can also reduce the total public cost of travel. A 2003 study of the public costs of different ways of travelling in Ottawa found the following cost per passenger trip:

- Car driver: \$2.50
- Transit user: \$1.76
- Cyclist: \$0.24
- Pedestrian: \$0.10

The public costs included construction, maintenance, land value, enforcement, unaccounted accidents, air, noise and water pollution.²⁷

Such investment also improves energy consumption,

²⁷ Costs for different transportation modes. Report to Transportation Committee and City Council. 2010/04/28. <http://ottawa.ca/calendar/ottawa/citycouncil/occ/2010/04-28/trc/01-ACS2010-CCS-TRC-0006.htm>

air quality, and human and environmental health.

Road transportation represents approximately 30% of all energy consumed in Canada. Most of our transportation systems are dependent on diesel and oil, which means the Region is vulnerable to fuel supply interruptions and price increases. Vehicle electrification (including plug-in hybrid electric—PHEV—and full electric vehicles—EVs) presents an opportunity to improve transportation energy efficiency, reduce greenhouse gas emissions and other air pollutants, decrease oil demand, and reduce operation and maintenance costs.

Currently, connections between the two transit systems on both sides of the Ottawa River are not as fluid as they could be. There is an opportunity to make this transition seamless, with integration between Ottawa and Gatineau transit further enhancing the options for efficient and effective transportation in the Region.

Similarly, there are gaps in the cycling and multi-use pathways developed by the municipalities and the NCC.

Most goods in the Region are moved by heavy truck. The impacts of truck travel can be reduced by rerouting the truck network away from downtown, reducing wear on street infrastructure, noise pollution, and improving overall “liveability.”

Ottawa

- Ottawa is on track to open the first portion of an extensive 43 kilometre Light Rail Transit (LRT) network by 2018. This first increment will include 13 new LRT stations along 12.5 kilometres of electrified track between Tunney’s Pasture and Blair Stations. This will include a 2.5 kilometre long tunnel with three underground stations serving the downtown area. The ultimate plan is to extend LRT service beyond the Greenbelt to Kanata, Orleans and Barrhaven after the initial network has been established.
- City of Ottawa’s 2008 Transportation Master Plan identifies investment in rapid transit and active transportation as plan priorities.
- Ottawa Moves (*in progress*) will draw on opportunities arising from the new underground LRT through downtown to improve surface conditions for pedestrians and cyclists.
- City of Ottawa is piloting a segregated bike lane.

Gatineau

- The Rapibus project in Gatineau will connect Gatineau to downtown Hull, with links to Ottawa, using exclusive lanes for buses. It will also have an adjacent bicycle path.
- City of Gatineau’s November 2008 Action Plan for Implementing Environmental Policy contains commitments to reduce vehicle traffic, improve public transit, and encourage active transportation modes.

NCC

- NCC has developed a network of multi-use pathways that provide great recreational and commuting opportunities throughout most of the Region.
- NCC’s Capital bike- share service has become a permanent transportation option.
- NCC’s Strategic Transportation Initiative (STI) supports provincial and municipal goals for smart growth and integrated transportation planning.

Strategy 1: Integrate land use and transportation systems

Land use and transportation work together. Neighbourhoods with medium or higher densities of housing and jobs create the population needed to support quality transit service. A mix of shops and services in these areas enables residents and employees to walk or cycle short distances as part of their daily routine. Walking, cycling and transit are also supported by a pattern of small blocks that allows people to follow direct routes. Walking and cycling are further enhanced by design features such as wide sidewalks, bicycle lanes, landscaping, and other features that create attractive public areas.

The approach to designing streets is changing. While streets have been viewed in the past primarily as a means of moving vehicles, many are now viewing streets as large public spaces that need to serve all the people who use them, as public spaces that can become places in their own right²⁸.

Compact, mixed-use, and pedestrian- and transit-oriented development also creates environmental and health benefits. This pattern has been linked with reductions in GHG emissions by 24% – 50% compared to conventional suburbs with typical low-density single-use residential developments and cul-de-sacs²⁹.

28 See, for example, Los Angeles County, 2011. Model Design Manual for Living Streets.

29 CMHC, 2000. Research Report - Greenhouse Gas Emissions from Urban Travel: Tool for Evaluating Neighbourhood Sustainability

Examples of actions that support this strategy include:

- Complete strategic plans for the areas surrounding rapid transit stations in the urban area and amend the zoning bylaw as necessary to permit a range of uses and densities that are appropriate for these prime locations. Provide direct access to the station for cyclists and pedestrians
- Develop design standards for complete streets that respond to the needs of all users and include such elements as transit and bicycle lanes, landscaping, frequent crossing opportunities and places to sit. Pilot these standards in several locations, such as along portions of traditional mainstreets or along collector roads in new suburbs
- Use future energy consumption as a criterion for evaluating land use and transportation plans
- Support expanded LRT service to town centres outside of the Greenbelt when the planned density there reaches a level that can support the service
- Expand Sunday bicycle days on federal parkways by piloting road closures on connecting roads to allow pedestrian and cycling access. Combine these closures with temporary bylaws that permit restaurants and stores to expand into the public space and that create new outdoor event areas and meeting places



Strategy 2: Expand mobility options

The design of our streets is a major factor in our choice of transportation mode. If streets are safe, comfortable and interesting, and directly connected to our destinations, then walking and cycling become realistic, preferred four-season choices and transit becomes a more attractive option for longer trips. Expanding these options could substantially reduce single-occupancy vehicles trips.

In addition to air quality improvement and reduced reliance on fossil fuels, walking and cycling and other active transportation modes can reduce obesity and improve levels of cardiovascular fitness. Active transportation contributes to an individual's overall well-being by providing opportunities to interact with our neighbours and the environment.

High-speed rail connecting Ottawa with Montreal and Toronto would reduce highway traffic, energy consumption and emissions as well as boost the regional economy.

Examples of actions that support this strategy include:

- Support the extension throughout the urban area of short-term bicycle rentals similar to the service in the central area in 2011. Promote car-pooling and car-sharing, in rural and urban communities
- Identify streets intended for extensive pedestrian and cycling use and make them priorities for sidewalk and streetscape improvement
- Support the development of a pedestrian and cyclist ferry across the Ottawa River, with connections to rapid transit and cycling and pedestrian pathways
- Make Canada's Capital Region a cycling tourism destination by completing cycling routes connecting major tourism destinations in the central area, with links to routes extending well into the rural area. Sponsor cycling events for tourists and residents alike
- Increase the number of bike racks and benches along community main streets and throughout downtown. Treat these as an opportunity to display public art
- Help residents and visitors navigate throughout the urban area by providing signs, e-communication links and maps that connect transit, cycling and pedestrian routes and that show major destinations
- Lobby senior governments for creation of a high-speed rail linking Ottawa to Montreal and Toronto
- Ensure that public transit, pedestrian routes, and public spaces are physically accessible to all users



Strategy 3: Improve interprovincial connections

Travel between Ottawa and Gatineau make up 10 percent of the trips that occur during the morning rush hour³⁰. Traffic increases are expected to warrant at least one additional bridge crossing by 2031. Led by the federal government, the Partners and other parties are currently evaluating possible bridge locations. A primary consideration in the evaluation is each location's suitability as a truck route. Restrictions on four of the five roadway bridges across the Ottawa River have channelled truck traffic onto the Macdonald-Cartier Bridge and King Edward Avenue in Ottawa. This pattern has resulted in inefficient truck circulation and environmental impacts on communities adjacent to King Edward Avenue, in the form of noise, dust, vibration and vehicle emissions.

30 TRANS National Capital Region Travel Trend Study, 2011, <http://www.ncr-trans-rcn.ca/index.php?toc=content&ID=213&lang=en>

Examples of actions that support this strategy include:

- Build a new interprovincial bridge and reroute truck traffic from downtown Ottawa streets and neighbourhoods
- Continue to explore options for new rapid transit connections between Ottawa and Gatineau



Strategy 4: Facilitate the transition to vehicles using alternative power

Our future transportation system can potentially accommodate compact and emission-free automobiles, especially if we start planning for them now. Electric and plug-in hybrid vehicles require special charging infrastructure at homes, businesses, transportation hubs and major transportation corridors. In anticipation of the wave of new vehicles that will be coming onto the roads, local governments in coordination with vehicle manufacturers, utility companies and other interest groups have developed guidelines and codes for EV charging infrastructure.

In the short term, higher purchase prices and range limitations will make EVs a niche market option for urban dwellers and an attractive second car alternative. Over a 10-20 year time horizon, however, a combination of technological innovation, policy evolution and market forces will likely result in EVs becoming more common in commercial and residential sectors.

Examples of actions that support this strategy include:

- Advocate for Federal and Provincial improvements to vehicle efficiency standards through municipal organizations such as the Federation of Canadian Municipalities
- Continue to pursue transit vehicle emissions to near-zero and monitor developments and advances in fuel-cell technology and alternate vehicle power sources
- Continue to improve municipal fleet efficiency by phasing out less efficient vehicles
- Encourage new development to include charging facilities for battery-electric and plug-in hybrid vehicles
- Provide preferred parking spots for low-emission vehicles, plus reduced parking rates in municipal parking structures and street meters
- Encourage new gas stations to include rapid electric vehicle charging infrastructure and alternative fuel



5.3

Encourage High-Performance Buildings and Renewable Energy



The buildings we live and work in, the way we heat our homes and shops - these are everyday choices that have large implications for household spending, comfort, and greenhouse gas emissions. Buildings are the largest consumer of energy in the Region, ahead of transportation, and are also the greatest source of greenhouse gas emissions³¹. Strategies to improve building efficiency and produce low-carbon energy locally can increase local resilience and sustainability. Energy-efficient buildings and low-carbon energy also help to reduce air pollution and GHGs, improve air quality, and increase the liveability of our communities.

There are regulatory and market gaps that create significant barriers to improved energy efficiency in buildings and increased use of renewable energy. Municipalities have an opportunity to encourage partnerships and local capacity building to fill these gaps.

In the short term, low energy prices can create long payback periods and tend to discourage investment in alternate energy supplies. Better education and

information for consumers as well as suppliers can help increase use of alternate energy technologies. Combining the incentives offered by the providers of electricity, oil and natural gas into one attractive package would make it easier to coordinate action among energy providers and increase consumer uptake.

Approximately 50% of energy use and emissions are influenced by municipal decisions³². Local governments are therefore important players in the energy and emissions field. However, municipal powers under provincial enabling legislation are limited. Responsibility for building standards (regulations) and energy policy rests with senior governments. A key opportunity for municipalities is to lead by example on public buildings, and to help residents and businesses take full advantage of senior government opportunities, such as money to fund major programs. Through such actions municipalities can significantly influence building performance and the use of renewable energy.

Municipalities can also use energy consumption

31 This is less true in Gatineau compared with Ottawa, since buildings in Quebec are largely powered by hydroelectricity which produces fewer GHGs than other energy sources.

32 Torrie, Ralph. (1998) Municipalities Issue Table Foundation Paper prepared for the Canadian Government's National Climate Change Process

to evaluate policies on growth management. By monitoring energy consumption in the community, municipalities can develop a baseline and quantify the success of land use and transportation policies over time to create more compact, transit oriented communities that use less energy.

Energy Modelling

Modelling completed for the *Energy and Emissions Plan* creates a compelling picture of possible opportunities and benefits of the range of strategic directions and actions from an energy and GHG emissions perspective (see the *Energy and Emissions Plan* for more detail).

With energy prices expected to at least double over the next 30 years, and with uncertainty over the future supply of oil and gas, households and businesses face a mounting challenge to manage energy costs. The best practices described in this Plan have the potential to avoid \$2.6 billion in energy expenditures annually by 2040. This is money that can stay in the community. Reducing reliance on fossil fuels and imported energy also helps to buffer the Region against these challenges, putting us in a better position to weather the uncertainties over energy cost and supply.

If the actions outlined in this Plan are not taken, the modelling points towards an increase in GHG emissions of 10% between 2007 and 2060 (replacement of aging vehicles and buildings with more energy efficient stock tends to balance population growth). However, by applying best practices, it is possible to reduce GHGs by 40% between 2007 and 2060 in those sectors under the most direct municipal influence (transportation, waste, and buildings). Opportunities for deeper cuts are also likely to emerge as new technologies and practices develop over the coming decades. These reductions will have multiple benefits such as reduced spending on energy, more active lifestyles, and cleaner air.



Ottawa

- City of Ottawa and Energy Ottawa are creating a renewable energy campus near Trail Road Waste Facility by adding solar energy fields to the existing waste-to-energy demonstration facility (Plasco) and landfill gas to energy (PowerTrail) operations.
- City of Ottawa has two small-scale rooftop solar installations on existing buildings, plus an agreement with Energy Ottawa to install solar photovoltaics on up to 20 of the City's largest rooftops.
- Energy Ottawa operates two run-of-river hydroelectric stations at Chaudiere Falls. They do not interrupt river flow and are EcoLogo-certified by Environment Canada.
- City of Ottawa has a Corporate Green Building Policy, which requires the application of LEED when building new City buildings.

Gatineau

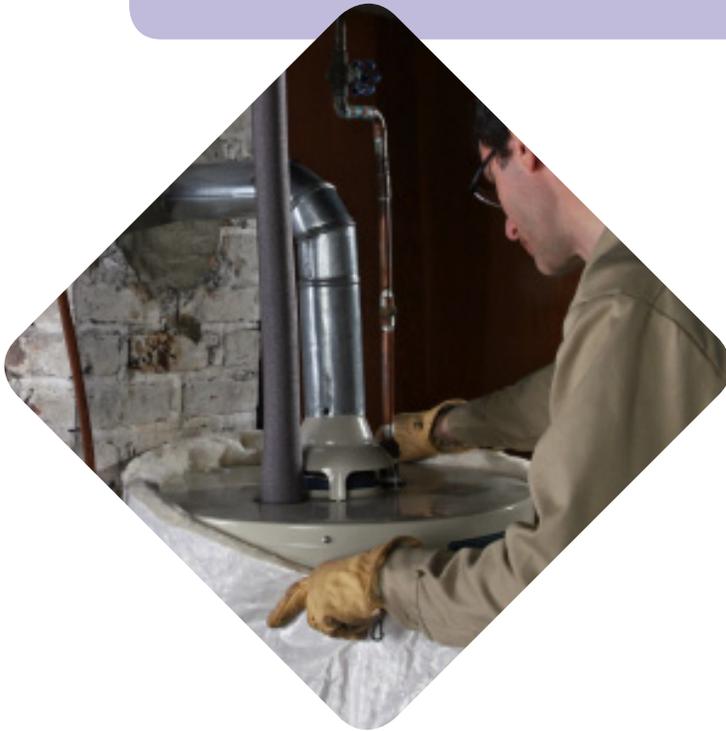
- City of Gatineau has a LEED Corporate Building Policy, and incentives for LEED certified homes.
- City of Gatineau offers residential subsidies where priorities are given to existing buildings eligible for LEED or Novoclimat certification.

NCC

- National Capital Commission has a LEED Gold Corporate Building Policy.

Strategy 1: Strengthen retrofit opportunities in residential and non-residential buildings

For decades to come, the greatest share of energy consumption and GHGs from the building sector will be from buildings that exist today. Although senior government and utility companies provide retrofit programs, a consistent and ongoing approach would improve performance gains. Measures to improve energy efficiency can be cost-effective because of the long-term savings in energy expenditures.



Examples of actions that support this strategy include:

- Promote the conservation programs of utilities and senior governments through key leverage points, e.g. building permitting office or local utility, neighbourhood planning initiatives
- Examine the potential for new initiatives to complement or reinforce retrofit incentives and financing. This could include assessing potential for a financial mechanism to support local commercial/residential retrofits. Research could evaluate appropriateness of different instruments (e.g. on-bill financing and local improvement charges) for effectiveness and administrative burden
- Develop a coordinated program building on existing support for low-income households in market and social housing. Stronger partnerships among municipalities, community organizations, senior governments, and utilities could strengthen services for renovation and retrofit, conservation education and utility payment assistance
- Develop a targeted retrofit program focusing on residential towers, a high energy intensity building sub-sector
- Promote energy management training for building managers and landlords in commercial, institutional, and multi-unit residential buildings. Successful collaboration could include building owners and managers, local colleges, and municipalities. Municipalities could promote such programs through their green building initiatives

Strategy 2: Improve the energy and emission performance of new buildings

Energy-efficient new building policies can enable builders, developers and building owners and tenants to take advantage of technological innovations to avoid unnecessary emission growth and energy consumption in the next generation of buildings. While responsibility for regulating higher-performance buildings rests with senior government, municipalities have a range of policy and action opportunities at their disposal to support higher-performing buildings.

Net Zero Energy buildings generate as much energy as they use. Net Zero Energy Blocks or Neighbourhoods contain the right combination of commercial and residential uses such that surplus energy—usually heat—is produced and shared by adjacent buildings. All buildings have reduced operating costs and are buffered from energy price increases.



Examples of actions that support this strategy include:

- Continue to promote green buildings through the development review process through tools such as design guidelines, a green building checklist that encourages higher-performance in envelope, lighting, HVAC, passive design, and location, and recognition of environmental performance through an express development review processes
- Promote existing utility and senior government programs targeting energy efficiency in new construction at key points during the municipal building permit and development review process
- Seek enhanced authority from the provincial government to require stronger energy performance in the building sector
- Examine existing policies and procedures and remove unintended barriers to low carbon building construction. Refine or establish policies and procedures to enhance opportunities
- Work through associations, unions and trade schools to strengthen interest and knowledge in high-performance building planning, design and construction
- Identify and pilot the green building incentive(s) likely to work best in each municipality
- Encourage expansion of green loans and other innovative financing mechanisms in the private sector, designed to recognize green building benefits and pay back
- Look for opportunities to develop a Net Zero Block as a pilot project in a partnership with municipal, federal, and private partners

Strategy 3: Promote small-scale renewable energy projects

Small-scale renewables include heat or power for new and existing buildings at the building or site scale. The power opportunities focus on Ottawa, given that Gatineau now enjoys lower cost and lower-emission hydroelectricity relative to Ottawa. Many of the policy tools are similar to those that would be used for promoting energy efficient buildings, e.g. permitting, rezoning applications, and sustainability checklists.

Examples of actions that support this strategy include:

- Conduct a high-level evaluation of the potential for small-scale renewable energy in the Region and share the outcome with community organizations, homebuilders, and building owners and managers. Build connections and synergies among government, green technology sectors/suppliers, and utilities
- Promote existing programs for small-scale renewable energy through the development review and building permit processes and continue to leverage public facilities and assets for building-scale renewable installations
- Develop a solar ready pilot project, consisting of builder guidelines developed in collaboration with the Province and the building industry, preliminary promotional materials, and incentives for builders interested in the standard



Strategy 4: Facilitate development of district energy that is cost effective, low emission, and high efficiency

The infrastructure associated with current Federal District Energy systems situated at sites across Ottawa and Gatineau is nearing the end of its life and is in need of being upgraded. The Federal government will be exploring options for refurbishing these systems in 2012.

This process will consider options for optimizing the system, improving efficiency, and reducing carbon intensity. Promoting combined heat and power systems may be attractive in Ottawa due to higher electricity costs in Ontario compared with Quebec. The federal government has recently mandated that new buildings/system replacements be designed to a low temperature building standard, a measure which would help facilitate district energy systems and renewable energy integration.

Currently, district energy systems serve many federal buildings. There is potential that new systems could provide reliable, cost effective, low carbon heating and cooling services to commercial and residential buildings beyond these existing areas.

There may also be opportunities in other high-density, mixed-use development nodes. These opportunities can be explored and encouraged through feasibility assessments and by incorporating district energy measures into development design and site planning.

Examples of actions that support this strategy include:

- Collaborate with Public Works and Government Services Canada to explore opportunities for extending low carbon, low emission district energy systems into new and existing commercial, institutional and residential areas
- Assess the potential for low carbon or combined heat and power district energy systems in areas redeveloping as mixed-use centres and other development areas and initiate feasibility studies where potential exists



Strategy 5: Examine opportunities to develop large-scale renewable energy projects

There is a range of renewable energy potential in Canada's Capital Region that could be secured in a sustainable manner. Renewable energy opportunities include new small-scale hydro-electric generation and ongoing development of larger solar installations. Other examples include wood waste and other forms of biomass (a renewable energy source from living or recently-living organisms); heat pump technologies such as geo, water and air heat exchange; and waste heat recovery.

Examples of actions that support this strategy include:

- Evaluate and promote geo-exchange potential in the Region and identify optimal policy and planning tools to take advantage of this resource. Evaluate and promote sustainable hydro opportunities
- Quantify local/regional biomass feedstocks including those from the local forest industry and wood waste (e.g. trees lost to the Emerald Ash Borer); evaluate demand opportunities; and examine the most appropriate energy generation technologies
- Examine potential for a program to identify and use waste heat in commercial, industrial and institutional sectors (e.g. data centres, grocery stores, rinks, sewage mains, food processing). The program could consider future land use and development planning to co-locate heat sources and sinks



5.4

Protect and Restore Green and Natural Systems



Human health depends in large part on the health of the ecosystems that supports us. Healthy ecosystems support vital ecological processes and provide essential human needs such as clean water and air. For example, natural areas filter and cool surface water flowing into creeks and rivers and sequester carbon dioxide, thus mitigating effects of greenhouse gas emissions. Gatineau Park and the Greenbelt are recognized as major natural assets, while small parks and woodlots in the urban area bring home the value of greenspace. Healthy ecosystems rely on biodiversity, or broad genetic variability, and a wide range of ecological processes to sustain them through all types of disturbances.

Urban growth and rural development have resulted in the loss of forests, wetlands and other natural features, as well as changes in water quality and quantity. In rural areas, development and competing land uses, including aggregate resource extraction, agriculture, road and service networks, informal recreational use, and other human activities, have impacted the connections within the natural heritage system. While many of the Region's major forests and wetlands remain largely intact, the features that remain in urban areas, villages and some parts of the rural area are small and any connections to other habitat areas are

along narrow corridors. Such habitat supports a limited number of plants and animals.

A thoughtful strategy can minimize further fragmentation of our green and natural systems and gradually repair the connections.

There are opportunities to actively involve residents and organizations in stewarding public greenspaces. For instance, a number of invasive species threaten the health of natural systems by killing native species or outcompeting native species for habitat and resources. Some of these may be controlled through strong stewardship partnerships and public education and action.



Ottawa

- Development of a Water Environment Strategy in 2012 to ensure the health of the three watersheds within Ottawa. The strategy will combine the knowledge and capacity of the municipality's three conservation authorities, municipal departments and other organizations to align priorities and deliver consistent approaches to environmental challenges.
- Ottawa's Official Plan (2009) identifies the natural heritage system at the municipal scale and provides the policy basis for protecting it.

Gatineau

- Gatineau's Urban Plan (*Plan d'Urbanisme*) describes and maps valuable ecosystem components within Gatineau and lays out the framework for protecting these from development.

NCC

- The NCC intends to designate all 28 of the high-value ecosystems defined in its 2007 Valued Ecosystems and Habitats study as "conservation lands" in its plans by 2012.
- NCC adopted an Environmental Strategy. Building a Greener Capital in 2009 pursuing five major objectives: reducing waste; enhancing biodiversity; preventing pollution; leading in environmental practices; combating climate change.

Strategy 1: Continue to conserve large natural areas and strengthen connections between them

Many of the natural areas that are the most valuable at the regional scale are already protected through public ownership and municipal land use policies and plans. However, urban and rural development often results in the loss of woodlands and wetlands and there is potential for further losses as the Region's population grows. In the rural area, there is also a lack of municipal controls such as tree-cutting or site-alteration bylaws to manage losses of wetland and forest.

The Partners can work with private property owners, land trusts, conservation authorities and other levels of government to actively steward our natural spaces. Where the natural system has become fragmented, we can look for opportunities to repair and strengthen connections.

Examples of actions that support this strategy include:

- Continue to base planning decisions for rural and urban communities on watershed and subwatershed plans that document existing conditions, assess the impacts of land use in the area, and recommend measures to protect and enhance the natural system
- Continue to increase data sharing among environmental planners, regulators and the public to enrich our understanding of natural systems and to inform plans and policies
- Create a municipal plan for land adjacent to the Greenbelt that recognizes its potential as a major natural asset. Use the Plan to increase public access to the Greenbelt and to connect the Greenbelt with adjacent parks and natural areas
- Continue to develop Conservation Management Plans for publicly-owned conservation lands that allow for sustainable recreational use while protecting the natural features and functions within the area
- Develop a comprehensive approach to the protection of the natural heritage system in rural areas that includes current public acquisition programs and senior government tax breaks plus an expanded range of stewardship tools such as conservation land trusts
- Map major wildlife corridors connecting both sides of the Ottawa River and extending outside the Region to connect with other habitat areas. Develop a strategy to preserve the corridors using the tools above
- Preserve or restore connections between natural areas by incorporating ecopassages into road construction projects. Ecopassages allow animals to cross the road safely on overpasses or in tunnels



Strategy 2: Continue to build a greenspace network in villages and urban areas

Residents and visitors alike value the green image of Canada's Capital Region. This image is created in part by the variety of green and open spaces within the urban area, from the large lawns on Parliament Hill through to the remnant woodlots that frame our communities. These open spaces together form a green network ranging from parks that are used for recreation, through to natural lands with greater biodiversity and more complex ecosystems. This green network provides many benefits by cooling the urban area when temperatures increase, slowing the runoff of rainfall and snowmelt, providing opportunities for relaxation and active recreation, and creating habitat for a variety of plants and small animals. In many communities, greenspaces are important landmarks and attractive design features.

Given the rising cost of development land, it is increasingly difficult for municipalities to protect remaining woodlots and other natural features in villages and the urban area through acquisition. As densities increase, so will pressures on remaining natural areas. The ecosystem values and other benefits of these sites need to be fully considered in determining their use.

As communities grow through intensification, it will be important to preserve open space, provide amenities that make it more attractive and usable, and link it to other greenspaces. Good urban design can find these connections as well as create new pocket parks and green streets.

Examples of actions that support this strategy include:

- Continue to work with developers and property owners to identify opportunities to create or enhance greenspaces and the greenspace network during the development review process
- Consider the full environmental and social benefits of small natural urban areas in municipal decisions to buy property in the urban area. Once these areas are approved for development, they can never be replaced
- Where surplus municipal land has potential to serve as greenspace in villages and the urban area, consider using it for this purpose without charge to park and open space budgets
- Encourage backyard stewardship and biodiversity through promotion and education. Develop and promote a guidebook and online resources to assist homeowners to naturalize their properties
- Look for new opportunities to develop or maintain natural areas in public parks and adjacent to stormwater management ponds and other public infrastructure. Consider land exchanges, easements, incentives, and design approaches that create small areas of natural habitat
- Make sure that communities surrounding natural areas are aware of their ecological functions and enlist their help in maintaining them



Strategy 3: Promote habitat restoration and species recovery

In some cases where ecosystems have already been lost or damaged there may be the potential for restoration and enhancement. This can take the form of restoring the natural channel of urban creeks or creating new forests or wetlands on marginal farmland. In Ottawa, watershed and subwatershed studies identify areas where natural features can be restored or enhanced and recommend site-specific actions or widespread practices (i.e., buffering of agriculture drains and other watercourses) to address these. Ongoing monitoring of surface water quality in the municipality provides one set of indicators of the health of watercourses.

In addition to restoring habitat, some species at risk may require special programs or management to slow or reverse declines in the health of local populations.

Examples of actions that support this strategy include:

- Continue to work to clarify provincial and municipal roles and responsibilities for preservation of species at risk and their habitat
- Continue to implement restoration measures recommended in watershed and subwatershed plans, in consultation with conservation authorities, landowners and other parties
- Continue to support rural property owners as stewards of their land, in partnership with provincial agencies, by providing technical advice and incentives such as grants for tree-planting and other improvements
- Use the review of development applications as an opportunity to show property owners how their property fits within a natural heritage system and to discuss preservation and restoration opportunities
- Demonstrate leadership in environmental stewardship by incorporating measures for the protection and recovery of species at risk in management plans for public conservation lands, where warranted



Strategy 4: Control the spread of invasive species

Problematic invasive species including emerald ash borer, reed canary grass, buckthorn, swallow-wort (dog-strangling vine) and zebra mussel have already been introduced to the Region. Several other species, such as the Asian long-horned beetle, pine shoot beetle, and various species of carp have been identified in other regions and can be expected to arrive here in the future if their spread is not controlled. Managing invasive species requires public education, removal programs, and sometimes regulation to restrict the introduction or spread of invasives. In some cases, this may require ongoing management programs.

Examples of actions that support this strategy include:

- Strengthen existing provincial and federal controls on invasive species by adopting municipal regulations on additional species that are threatening natural areas in the Region
- Control invasive species on public property as part of ongoing maintenance activities
- Enlist the help of park users and groups from nearby communities to combat invasive species in these areas on an ongoing basis and ask for their input on other invasive species that should be controlled
- Sponsor an annual invasive plant removal day to increase awareness of the issue and to educate property owners and residents about what they can do to combat invasives



Emerald Ash Borer (Source: USFS Region 5 on Flickr)

5.5

Protect Water and Manage Infrastructure



Carefully managing our water resources is fundamental to the health of humans and aquatic ecosystems in the Region. Some of the earliest public health initiatives focused on creating clean, safe, reliable drinking water systems and this remains a core responsibility of municipal governments throughout most of the world. Water is also critical to supporting healthy ecosystems in wetlands, creeks and rivers and within adjacent lands.

A changing climate and urbanization present challenges for our water system. Changes in precipitation patterns as a result of a changing climate could result in potential reductions in stream and river flows and groundwater levels, and the anticipated increase in intense rainfall events will stress existing drainage systems not designed to accommodate such events. In addition, the increase in hard surfaces resulting from urbanization reduces the ability of rainfall to soak back into the ground. The resulting higher runoff volumes in receiving streams cause increased flooding, erosion and damage to aquatic habitat. Pollutants washed off from these hard surfaces also degrade water quality, impairing habitat and recreational uses.

Stormwater management best practices (many of which are now being practiced in the Region) can mitigate some of these impacts— for instance,

providing more permeable surface in new developments, using bioswales to filter run-off, and retention ponds to allow for water infiltration and groundwater recharge. Natural features such as woodlots and wetlands also help absorb surface water and reduce the need for infrastructure.

Managing the demand for water using regulation, incentives, education and technological advances in plumbing fixtures and other water efficient products can help reduce the load on an aging water, storm and sanitary sewer systems. Developing these opportunities can delay the significant costs associated with system upgrades.

Finally, recent studies have shown that infrastructure in low-density development, village expansions and major developments on the edge of the urban area are expensive to install, service and operate, and can often result in higher costs for taxpayers and the municipal government³³. There is an opportunity to restructure development charges to encourage more efficient patterns of development and ensure they cover all of the costs of infrastructure associated with growth.

33 Litman, T. 2011. Understanding Smart Growth Savings



Ottawa

- In 2010 a decrease in water consumption in Ottawa plus upgrades to the system helped defer two major treatment plant expansions scheduled in the next 10 years.
- The City of Ottawa and three conservation authorities have partnered with the Ontario Soil and Crop Association to offer farmers grants for projects that improve water quality on their land.
- The City of Ottawa is protecting the health of the Ottawa River for generations to come through an ambitious spending program of \$252 million. The Ottawa River Action Plan will deliver 17 projects to improve the health of the river and fulfill a commitment to reduce to zero the number of combined sewer overflows in the average year. The initiative will not only create safer beaches for the community, but will also put in place a long-term strategy to safeguard the river and its tributaries.

Gatineau

- The City of Gatineau has recently completed three major master plans: a waterworks master plan, a plant master plan, and a sanitary sewer master plan.
- Gatineau's Action Plan for Implementing Environmental Policy (APIEP) identifies many actions covering water, wastewater, and stormwater.

NCC

- The NCC hosted the Ottawa River Summit in August 2010, in collaboration with the Ottawa Riverkeeper and the cities of Ottawa and Gatineau. This one day event brought together municipal and First Nations leaders to discuss and share information and experience regarding the Ottawa River watershed.

Strategy 1: Protect the sources of our drinking water

The Ottawa River provides a clean and ample source of drinking water for most residents, piped to their homes through central municipal systems. In rural areas, groundwater is the source of drinking water pumped from private, individual wells and a few communal wells.

Ontario's Source Water Protection³⁴ initiative has made a good start on protecting the Ottawa River as a source of drinking water in the Region. The City of Ottawa has completed technical studies and risk mitigation on the water intakes at Lemieux Island and Britannia, which serve the Ottawa municipal system. The next step is to establish a joint approach to protecting this resource on both sides of the river.

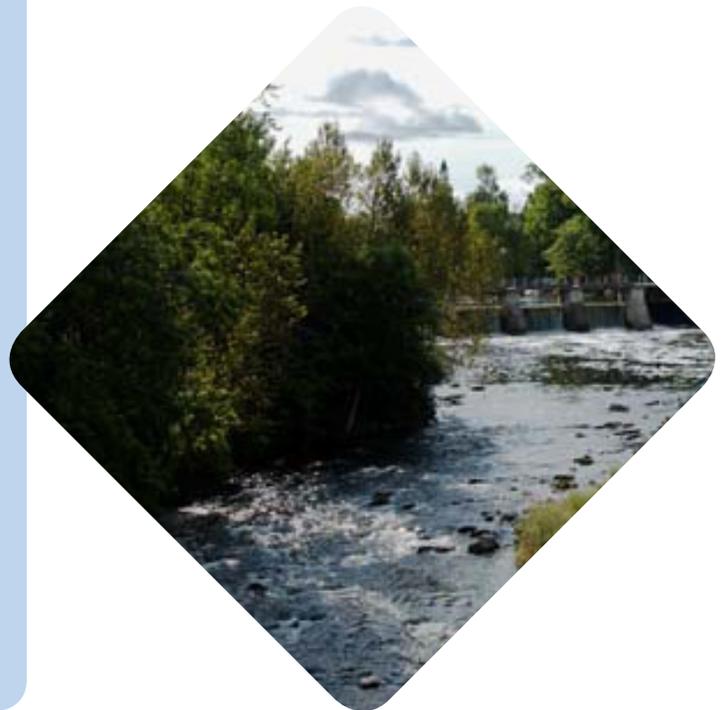
Private wells are under provincial jurisdiction and are the owner's responsibility. Municipalities have a role in terms of health promotion and approval of new development on private wells. Wells provide a direct connection between the surface and groundwater supplies and therefore are a potential route for contaminants. Proper installation, maintenance and decommissioning of private wells are keys to safeguarding rural groundwater supplies.

Canada's Capital Region is the largest urban area in the Ottawa River watershed, which covers an area about twice the size of New Brunswick. The Partners and others in the community have completed various initiatives in the past, such as the Summit on the Protection of the Ottawa River sponsored by the Ottawa Riverkeeper and the NCC in 2010, which brought together municipal and First Nations leaders. Full stewardship of this resource, however, requires sustained and ongoing collaboration.

³⁴ Ontario Ministry of Environment. Source Water Protection. <http://www.ene.gov.on.ca/environment/en/subject/protection/index.htm>
This initiative is preparing plans to protect groundwater and surface water sources of municipal drinking water throughout the province, including Carp, Richmond, Munster, Greely and Vars.

Examples of actions that support this strategy include:

- Establish ways for the municipalities to share information about the Ottawa River watershed with each other and the community
- Create a working group with provincial and municipal representation from Ontario and Quebec to prepare a source protection plan for all municipal water intakes from the Ottawa River
- Seek partnerships with other communities and stewardship organizations within the Ottawa River watershed to develop an approach to ongoing watershed management. Build on on-going work to develop Ottawa's Water Environment Strategy, a partnership with Conservation Authorities to coordinate watershed management the within municipality
- Continue to provide free well water testing and information about proper well maintenance
- Consider options for expanding the municipal role in private wells, in consultation with other agencies and the provincial governments, and report on the costs and benefits of each



Strategy 2: Improve the resiliency of urban watersheds

The increased intensity and magnitude of rainfall events anticipated as part of a changing climate will further stress drainage systems, receiving watercourses and groundwater resources. While this is an issue in both urban and rural areas, it is especially critical in the urban area where development typically increases the area covered by roads, buildings and other impermeable surfaces. Many green measures to control runoff are effective and less expensive than engineered solutions. These include, for example, using rain barrels, directing downspouts to planted areas, and planting rain gardens of water-loving plants in depressions to capture and filter rainfall.

Examples of actions that support this strategy include:

- Continue to study groundwater systems and review the current groundwater policy and legislative framework for additional opportunities to protect groundwater from pollution and overuse
- Prepare for the effects of more intense rainfall arising from a changing climate by identifying appropriate standards for new infrastructure and measures for adapting existing infrastructure
- Implement plans to retrofit older communities that were built with limited stormwater management facilities or that need upgrades to existing facilities, so that the new measures provide the same level of protection to surface waters as provided in newer communities. Consider the effects of potential increases in development as part of these plans
- Develop a stormwater best practices manual and follow practices to reduce the volume of runoff in existing and new development (e.g. increase the area where water can soak into the ground)
- Continue to monitor new technologies for porous pavement and sidewalks and share this information with the development and construction industries, professional associations and others
- Increase efforts to significantly increase urban tree canopy to compensate for the loss of ash trees to the emerald ash borer and improve overall water quality



Strategy 3: Increase energy efficiency and water conservation

Reducing the energy used by the water system will reduce the greenhouse gas emissions associated with infrastructure and increase resiliency to energy price fluctuations. This can be done by designing more energy-efficient infrastructure systems, in particular wastewater treatment systems and water pumping systems that can use renewable energy. Water conservation can also result in energy and emissions reductions by reducing water flows and therefore pumping and treatment requirements.

Examples of actions that support this strategy include:

- Continue to pursue opportunities to reduce energy consumption and emissions from water and wastewater infrastructure through use of efficient technologies, energy recovery, or renewable energy sources
- Explore options to use greywater at the building and site scale for approved, non-potable uses as a means of reducing the use of treated, potable water. Greywater is washwater from baths, showers, hand basins and washing machines, and does not include human waste
- Increase efficient water use in residential areas by creating incentives such as grants for rain barrels and continuing to provide public information on water-wise landscaping and rainwater harvesting. Consider regulations such as lawn watering schedules if there is a need to reduce peak demand
- Create incentives for positive action in the building and development industries through recognition via awards and promotion
- Continue providing incentives for existing development that incorporates measures to reduce water use



Strategy 4: Account for the life-cycle costs of infrastructure

The cost of providing, maintaining and replacing water and sewer infrastructure has become a major issue for local governments struggling with constrained tax bases.

Recent studies have shown that low-density development outside the existing urban area is more costly to service, maintain and replace³⁵. Furthermore, current development fees, utility rates and taxes generally do not reflect these location-related cost differences. Therefore, deciding where and how to fund water and wastewater infrastructure has important long-term implications for municipal fiscal health.

35 Litman, T. 2011. Understanding Smart Growth Savings

Examples of actions that support this strategy include:

- Continue to develop measures to recover the actual cost of servicing new communities at the edge of the urban area
- Protect the capital invested in public infrastructure over the long term by protecting, maintaining and replacing it in keeping with best practices for asset management



5.6

Nurture Culture and Identity



Culture is about arts and heritage, sense of place, diversity, and language, and is essential to understanding our past and imagining the future. It is also the connective tissue linking the other dimensions of sustainability – social well-being, economic prosperity and environmental health. Nurturing cultural vitality and diversity will contribute in significant ways to our sense of identity, creativity, social inclusion, shared values, innovation and economic vigour. When people participate together in cultural activities, it builds social capital.

Our history, geography and people combine to create a unique culture and identity in our communities and in the Region. The duality of being the Canada's Capital Region as well as home to all those who live here makes for a unique cultural identity, one in which not only local residents, but Canadians from all over can enjoy. The Region has the unique ability of being able to draw from the founding nations (Algonquin/Aboriginal, French and English) as well as from many immigrant cultures. Aboriginal cultural landscapes are of particular importance in the preservation and development of distinctive places.

Being Canada's Capital Region, many of our national institutions are located in this region, including those profiling our heritage, arts and culture. While this creates competition for local art and cultural activities for funding and audiences, it also increases the appeal

of the Region as a place to develop talent, to start an enterprise, and to visit as a tourist.

The Region's increasing diversity is a key ingredient in nurturing a dynamic arts and cultural scene. Inclusion of all backgrounds and walks of life will help to form a shared sense of identity and attract and retain our youth as well as talent from around the world.

Neighbourhood, place-based or grassroots initiatives to encourage exploration of the arts, culture and local heritage can create opportunities for residents to be creative contributors - regardless of background or status. Cultural and creative districts and clusters can bring revitalization and rejuvenation to neighbourhoods and other geographic areas.

Canada's Capital Region has a strong bilingual identity with both official languages spoken by an increasingly diverse population from all parts of the world. Supporting bilingualism not only in the work place but through community programs, services and cultural activities celebrates our history while also harnessing the creativity and innovation associated with this increasing cultural diversity.



Ottawa

- The City has initiated a Cultural Value Mapping and Value-based Information System; a database of cultural information linked to demographic, ecological tourism, and other information. This system will provide greater access to culture and will be used to highlight the value of culture and encourage tourism by identifying the locations of cultural facilities, and support grant applications.
- An initiative to support the effective integration of immigrants economically, socially and culturally is a priority for 2012.
- In 2010, Ottawa was named the top North American City in its size category by the International Festivals and Events Association.
- Approval of a renewed Action Plan for Arts, Heritage, and Culture (2013 – 2018).

Gatineau

- Gatineau has various policies and programs on culture and diversity, and an Immigrant Settlement Program.
- There is a commitment to the development of major cultural events that provide unique cultural programming or events.

NCC

- The NCC hosts major festivals and events such as Winterlude, Canada Day, and Mosaika Sound and Light Show.
- The NCC protects a variety of heritage structures, archaeological sites and artifacts, sites of national significance and cultural landscapes.
- The NCC has archives and related heritage programs.

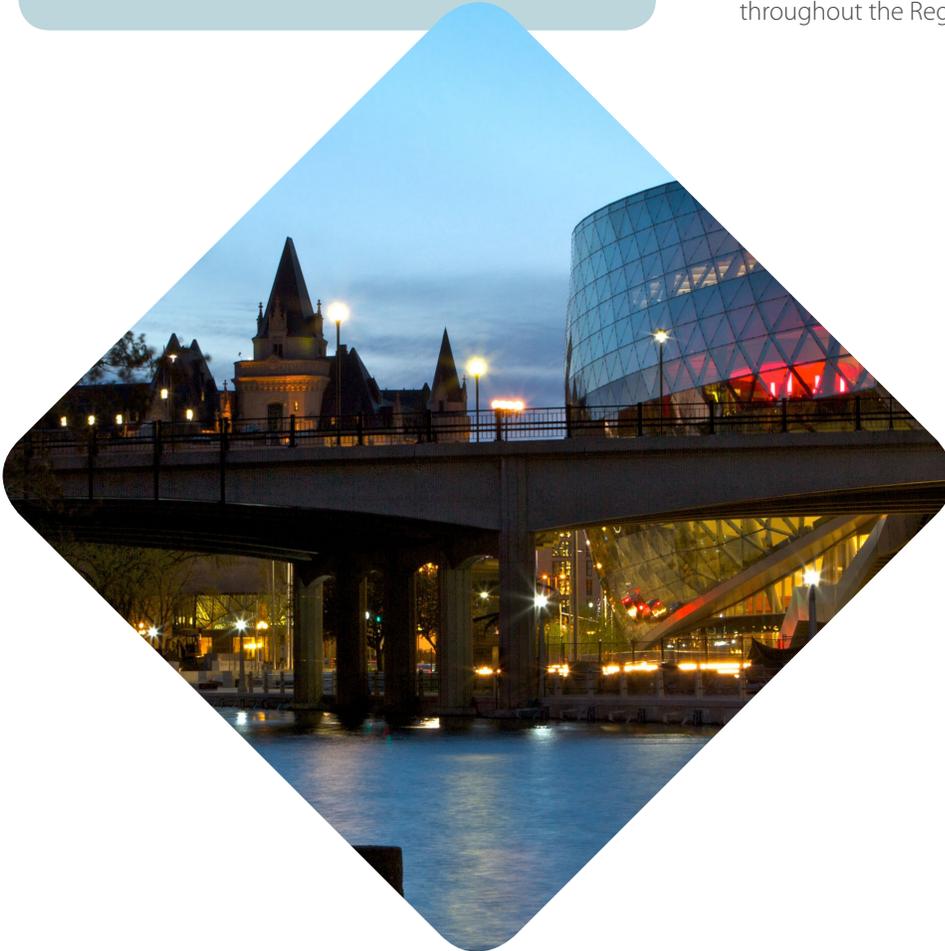
Strategy 1: Design and build creative cities that foster innovation

How we design and build our region can foster new and innovative connections among business, government, the community, arts and heritage.

A strong regional identity along with natural beauty, creativity, and diversity is critical to attracting the kind of talent, tourism and businesses that keep our economy strong. Creative industries will play an increasingly important role in our economy. Broadly defined, these are industries that depend on people who can combine different ideas and pieces of information to create innovative new products, and perhaps even new industries or sectors.

Examples of actions that support this strategy include:

- Foster and promote creative hubs where artists, designers, entrepreneurs and innovators in communications, technology and other areas can easily connect with one another. The hub is a physical space as well as a virtual space that uses new technologies for creative expression and business connections
- Use the hub concept as a way showcase creative collaborations that are distinctively 'national' as well as 'regional'
- Facilitate the evolution of cultural districts into generators of creative economic activity by providing financial incentives or other community improvement resources
- Create a single membership card that provides discounts and information about all types of cultural events throughout the Region



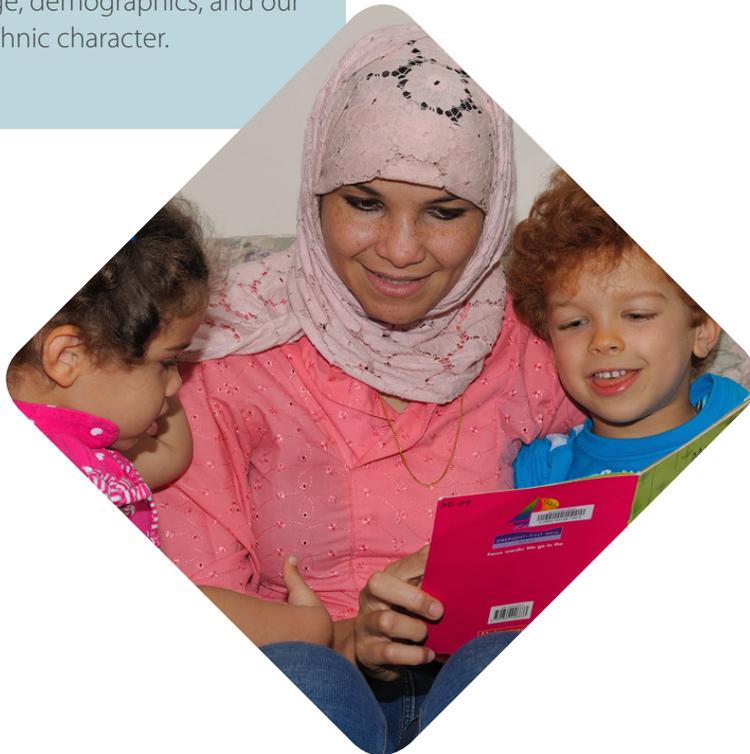
Strategy 2: Cultivate cultural leadership and partnerships

As recognition of cultural identity as the fourth dimension of sustainability grows, so does the need for leadership—leadership that fosters the creation of cultural frameworks similar to those that exist for the environment, the economy and social development. No one group or level of government can successfully promote and encourage the expression of our cultural identity. Our best results are achieved when leadership includes many stakeholders—all levels of government and groups in society including non-profit and for-profit artistic and cultural groups, as well as the educational and business sectors.

While leadership is critical, so is the creation and nurturing of partnerships that reflect the diversity in our heritage, demographics, and our artistic, cultural and ethnic character.

Examples of actions that support this strategy include:

- Champion connections between regional and national culture, economic development and tourism across the Region
- Look for opportunities to make links between businesses and cultural groups to increase private sector support of local culture
- Strengthen efforts to bring local and national arts, heritage and cultural players together to identify opportunities for collaboration in planning, promotion and program delivery
- Encourage festival organizers to hold events on both sides of the river



Strategy 3: Use public art and the built environment to strengthen sense of place

Public art, whether in the form of outdoor sculpture or temporary performance, helps us understand our relationship with our natural and built environments and heritage.

Places can influence social behaviour through the design of space. Public spaces such as parks, plazas, roadways and sidewalks, can be designed to invite culture and nature into everyday life. They can also reflect our values and strengthen our cultural connections to each other and to place, environment and history.

The built environment reflects our values and attitudes, making its design and ultimate form (from architecture to land use patterns) a cultural act.

Examples of actions that support this strategy include:

- Foster collaboration among planning professionals and cultural professionals to influence land use patterns, building and public space designs to fuse beauty and meaning into elements of the built environment
- Expand notions of both local and national heritage to emphasize intangible cultural elements such as stories linked to physical sites by capitalizing on evolving communications technologies
- Retrofit streets and urban public spaces with design elements for recreation and play such as climbing elements, musical/sound sculpture, giant chess, gardens, and pavement art reflecting various cultures. Incorporate design that is sensitive to micro climates to encourage year-round use
- Focus street design and retrofits on the people who use them, recognizing that while streets are used for moving vehicles, streets are also for moving people and are spaces, even destinations in and of themselves



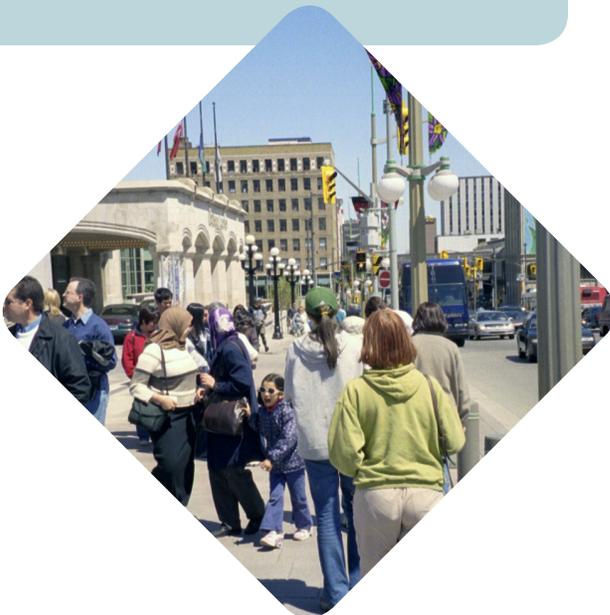
Strategy 4: Foster a sense of connection and belonging

Nurturing an awareness and connection to the broader cultural identity of the community, of being part of Canada's Capital and its Aboriginal heritage, are key ingredients of our sense of belonging.

Cultural distinctiveness is not limited to different ethnic groups. Identifying with a neighbourhood or a specific geographical area is part of the culture of a place. Many people associate with a neighbourhood, block, street or building within their community. Each of these spaces can develop its own unique identity that can boost residents' sense of belonging—and lead to shared community identity and values.

Future population growth in the Region will be primarily from immigration. Creating a welcoming environment for cultural and artistic expression, and opportunities to participate in neighbourhood activities is a key ingredient to promoting belonging.

When the community is involved in how the public spaces they use evolve, it strengthens their sense of place.



Examples of actions that support this strategy include:

- Build a First Nations Centre on Victoria Island to celebrate the culture of Canada's Aboriginal peoples
- Strengthen efforts to preserve, protect and commemorate the Region's rich architectural heritage through legislation, grants, and interpretive programmes
- Work with individual communities to produce locally inspired infrastructure, signage, and building character guidelines as part of planning processes or infrastructure renewal
- Bring the cultural sector into program delivery, partnering with it to celebrate either cultural, religious or national events/festivals
- Use participatory arts as a vehicle for community development and citizen engagement to increase understanding and participation in the democratic process
- Develop initiatives that encourage and support current and emerging cultural and ethnic groups to express themselves
- Offer grants to neighbourhoods for projects that improve their appearance, build social connections, and capture local history. Provide opportunities for neighbourhoods to add unique features along community streets that help define these streets as a part of the community's overall identity
- Facilitate experimentation through "pop-up" projects. Pop-ups are temporary projects, relatively easy and inexpensive to implement, that demonstrate alternative or additional uses of civic spaces and infrastructure. Give interested residents, businesses and organizations City assistance in implementing their own "pop-up" ideas

5.7

Support Social Development



Supporting social development means continuing to build the supports and relationships that create quality of life for all in the community. It involves helping people meet their basic needs and reach their individual potential, as well as encouraging them to contribute to their communities. It is also about relationships — the level of cooperation, cohesiveness and reciprocity which build social capital. There are a variety of issues to consider including poverty, crime and safety, health, equality, inclusion, sense of community, recreation, and housing.

Supporting social development begins with a good understanding of the social determinants of health³⁶. Individuals' levels of income, education and social inclusion are linked to their health, quality of life and overall ability to contribute to community well-being. Health improves with increases in socio-economic status, and socio-economic status improves with education. It follows that supporting social development begins with programs that improve employment and training opportunities, support access to post-secondary education, increase social inclusion, and address other social determinants of health. Such programs enable people to meet their basic needs and are truly preventative in nature.

Achieving our individual potential also requires the ability to participate in the arts, culture, recreation or other leisure pursuits. Social development means providing these opportunities for a diverse cross-section of the population, encompassing all age groups, all genders, the able-bodied and differently-abled, all sexual orientations, all income groups, all language groups, all cultures, and those in urban, suburban and rural areas.

Community engagement and leisure activities that provide opportunities for social inclusion can be the stepping-stone from individual contributions to the well-being of the community. For many, increased time spent at work and commuting means less time for family and community life. For others, physical infirmity, the inability to speak either French or English, or low levels of income are barriers to social inclusion, including participation in the democratic process. When these barriers are overcome, we all benefit as a society from the contributions of all community members.

Local governments are often the most knowledgeable and responsive level of government to address community needs and promote social development. In areas where senior government has the primary

36 For more information about the determinants of health, see the Public Health Agency of Canada at <http://www.phac-aspc.gc.ca/ph-sp/determinants/index-eng.php#determinants>

responsibility, such as health care and affordable housing, municipalities need funding shifts from senior governments to local governments and the freedom to act within the broad policy framework of the senior partners. In turn, municipalities need to engage communities to define their diverse and unique needs and to help deliver programs to meet them.

The presence of social capital is being recognized for its role in prevention. The value of social relations, and the conditions that create, maintain and develop connections within and between social networks can lead to greater civic engagement, community health and community-based solutions.

SEEDS OF SUSTAINABILITY

Ottawa

- Community Health and Resource Centres (CHRCs) work with their communities and the City of Ottawa to deliver the Community Development Framework.
- The City has various municipal policies, plans and programs related to housing and homelessness, immigration, social recreation, and healthy communities.
- The City for All Women Initiative works to provide opportunities for women.

Gatineau

- Gatineau has a Centre de santé et de services sociaux (CSSS).

NCC

- The NCC has an Openness and Transparency initiative.

Strategy 1: Focus on prevention of health and social problems

Many of the Region's current social programs address what are often seen to be insurmountable problems such as poverty, homelessness, and support for the frail and elderly and other vulnerable people.

Various municipal programs, such as crime prevention, health promotion and training and employment development take a preventive approach. However, a stronger focus on prevention and a long-term, system-wide view of these problems would more fully recognize the relationship between different systems, build on social capital and help focus resources where they would be the most effective. For example:

- An integrated, system-wide approach to increase incomes for the un- and under-employed could be achieved through improving education outcomes, enhancing labour force participation and providing affordable housing.
- The frail and elderly could remain in their homes longer by adopting an 'aging-in-place' strategy with the needed supports and services, and
- More social interaction and health improvements could be achieved by providing safe opportunities for walking and cycling in urban and rural communities.

Examples of actions that support this strategy include:

- Increase awareness of the importance of social infrastructure. Social infrastructure includes the organizations, services, and social structures that support a healthy society
- Strengthen the local not-for-profit sector's ability to provide services that respond to community needs
- Continue to support economic development strategies that include opportunities to combine on-the-job experience with education
- Provide support for programs and facilities, such as bicycle lanes and community gardens, which emphasize developing positive relationships and healthy lifestyles featuring exercise, good nutrition, and other aspects of good health
- Create streets that are safe and convenient for all users, and include benches and meeting places as well as safe cycling facilities



Strategy 2: Increase community-based initiatives

Communities differ in terms of their mix of people, range of businesses and community organizations, and community services and facilities. It follows that the people who live in individual communities are best able to define their issues, their resources, and the most effective responses.

More recent approaches to service provision recognize the benefits of problem identification, resolution and program delivery at the neighbourhood level³⁷. These community-based approaches are more successful when linked to broader plans and resources that lead to greater efficiencies and opportunities to learn from others' experiences. When organizations collaborate and work together on issues, it can increase the impact of their resources. By maximizing access to the resources available through a larger network, community outcomes are improved.

37 An example of this is the Community Development Framework in Ottawa, a new approach to coordinating and delivering municipal services to communities http://ottawa.ca/residents/cdf/index_en.html.

Examples of actions that support this strategy include:

- Continue to support Gatineau's Plan on Social Development, and look for ways to integrate lessons from this approach into other areas
- Build on Ottawa's pilot projects between the health department and parks and recreation department to encourage exercise and healthy living among immigrant communities and vulnerable populations
- Create opportunities for community liaison staff from police, health, recreation and other areas to work together and with the community
- Broaden participation in community-based initiatives by involving a broader range of interests (e.g., business, cultural, education)
- Enhance partnerships with community-based organizations to deliver social, community health, recreation and cultural programs
- Provide tools and assistance to communities to identify ways to enhance community vitality and resilience by building on local assets (physical, social, economic, cultural, etc.)



Strategy 3: Improve social inclusion, engagement and participation

Local governments can help ensure all residents have access to housing and services and an opportunity to participate in local government decisions. Involving residents in decision-making will help to:

- Ensure that government leaders and administrators are accountable;
- Reflect the values and expectations of the community; and
- Make good use of residents' creativity, knowledge and skills.

The ability to participate in decision-making and other community activities increases when residents live within complete communities and when financial and other barriers to participation are addressed. Good, affordable public transit enables participation by seniors, youth, people with low-incomes and others. For those isolated due to mobility challenges, the use of community outreach and social media can facilitate participation. Social media also open new channels to mobilize virtual groups for local or global action and potentially will change the way we all communicate and engage.

Examples of actions that support this strategy include:

- Provide a mix of workspaces, services and housing types and tenures, including affordable housing, so that singles and families and a range of income groups can be accommodated in complete communities
- Review policies at recreational facilities to increase access to programs for all residents, especially people living on low income, those with differing abilities, and new immigrants
- Demonstrate inclusion by reviewing corporate hiring practices to create more opportunities to support cultural and ethnic diversity in filling summer, internship, and permanent positions
- Leverage emerging communications technology to increase engagement in the community
- Expand translation services for non-official languages
- Develop an on-line forum to connect different communities in the Region to seek creative solutions to social, cultural, environmental and economic issues
- Create a Capital Youth Strategy that addresses the opportunities and challenges facing youth in areas such as education, employment, and opportunities to volunteer and become involved. Open channels for a voice for youth in discussions of diversity and other public interests



Strategy 4: Promote flexible and adaptable use of space

Our communities are diverse and changing, so it is important to create adaptable, flexible structures and spaces that can meet the needs of a variety of people over time.

Flexible or adaptable housing, for example, is housing designed to accommodate additions or creation of secondary suites for rental income or multi-generational families. Adaptable neighbourhoods with a mix of housing allow seniors to choose smaller and more convenient homes and to walk to nearby stores and services. Parks support team sports as well as toddler play, school band concerts and community gardens, while sidewalks and other public spaces include places to sit, to play chess, to enjoy public art. Streets can be temporarily closed to traffic for festivals and events.

If we build more flexible and adaptable communities now, we will be better positioned to handle rising energy prices, an aging population, and other potential changes tomorrow.

Examples of actions that support this strategy include:

- Review current open space, park and public rights-of-way standards for barriers and opportunities for a greater range of uses, including cultural exhibits and activities, permanent or temporary events and potentially also renewable energy or other infrastructure for environmental sustainability
- Work with planning or architecture schools and the development community on designs and municipal policies that facilitate a mix of housing types within the same block or small area and that create spaces that invite interaction and activity
- Look for opportunities to create neighbourhood hubs in schools or in under-utilized municipal spaces, to increase community use for gatherings, recreation, community gardens, arts and cultural activities. This will also enhance safety and security during off-peak hours
- Create and maintain a web-based inventory of community assets for use by the public and local groups for recreational, leisure or cultural pursuits



5.8

Build a Sustainable Economy



Our future prosperity will depend on our ability to make better use of our resources, including energy, materials, infrastructure and natural assets - in short, a shift to a greener economy. Local governments have a pivotal role to play in this transition, since their decisions influence the way we live, move, consume energy and water, and manage waste. Building a sustainable economy means we continue to prosper while maintaining a high quality of life and reduce our impact on the local and global environment.

Currently, the production and consumption that drives our economic growth can come at the expense of the natural environment. In other words, we are using up our natural capital to generate wealth. Future prosperity depends on how the Region continues to sustain a healthy economy, stay competitive, and maintain a high quality of life, while addressing the twin challenges of diminishing cheap energy and a changing climate.

Demographic changes ahead—such as an aging population—have numerous implications, including rising health care costs and potential labour shortages. As the quality of life improves in developing nations, North America may lose its competitive edge to attract and retain global talent.

Canada's Capital Region is well-positioned in this regard, with its strong base of knowledge workers and ability to attract investment dollars with its natural and cultural assets. The federal government is an economic anchor that attracts talent, and brings cultural assets and international linkages. Ottawa has also been a hot spot for emerging technologies, research and education and there are a number of industry associations, research institutions and a wide variety of non-governmental groups that, in partnership with local government can make significant progress towards a prosperous, green economy.

Global shortages, most notably for energy, water, food and building materials combined with higher transportation costs due to energy prices, could lead to increased prices for resources and products. Part of a successful response will be to engage and nurture our own resources and local talents toward social and environmental innovation. While municipalities have little control over how businesses operate, they can provide strong encouragement for a more sustainable economy if they create the conditions where sustainable businesses can thrive.



Ottawa

- Ottawa's 2010 economic development strategy, "Partnerships for Prosperity," acknowledges the need and includes initiatives to continue to green Ottawa's economy and to promote equity, both of which are important for attracting and retaining businesses and a knowledge workforce.

Gatineau

- Gatineau Strategic Economic Development Plan (2010 – 2014) is based on a mission to stimulate the economy using an integrated development perspective that is sustainable and includes the collaboration of partners to support the growth of businesses as well as the social economy of the Region.

Innovations throughout the Region

- A biomass conversion plant converts forest waste into natural resin products, co-polymers, liquid fuel and green energy.
- Highly efficient solar conversion systems suitable for residential, commercial and institutional uses are being developed.
- Waste energy recovery facilities ideally suited to industrial and institutional applications.

Strategy 1: Lead the greening of businesses and other organizations

Many businesses in the Region have already shown leadership in reducing energy and emissions and developing innovative technology to address sustainability issues. We can build on this success. Given their high-profile in the community, the Partners can send a powerful message of commitment to other organizations in the Region. The Partners can lead by example in their corporate practices and create market demand for green services and products through their purchasing power.

Some businesses need help to integrate sustainability objectives and targets into their business: strategic plans, product or service design, production, marketing, facilities, distribution, and reporting. Profit and non-profit enterprises are looking for advice on how to do this and how to realize the benefits.

Examples of actions that support this strategy include:

- Nurture a culture of sustainability. Adopt corporate standards that go beyond best practice for green buildings, fleet management, telecommuting and green procurement. Publicize the savings, efficiency improvements and other benefits of these corporate greening initiatives and work to assist others in adopting similar practices
- Provide information to businesses on how and where to access tools, grants and information to help with the transition to increased sustainability. The Region has many businesses and organizations that can help in this regard. Raise awareness with Invest Ottawa, Business Improvement Areas, Chambers of Commerce, and others
- Create a grant program or introduce incentives to encourage local Business Improvement Areas (BIAs) to undertake green initiatives. Work with BIAs and neighbourhood organizations (where BIAs do not exist) to help green local businesses



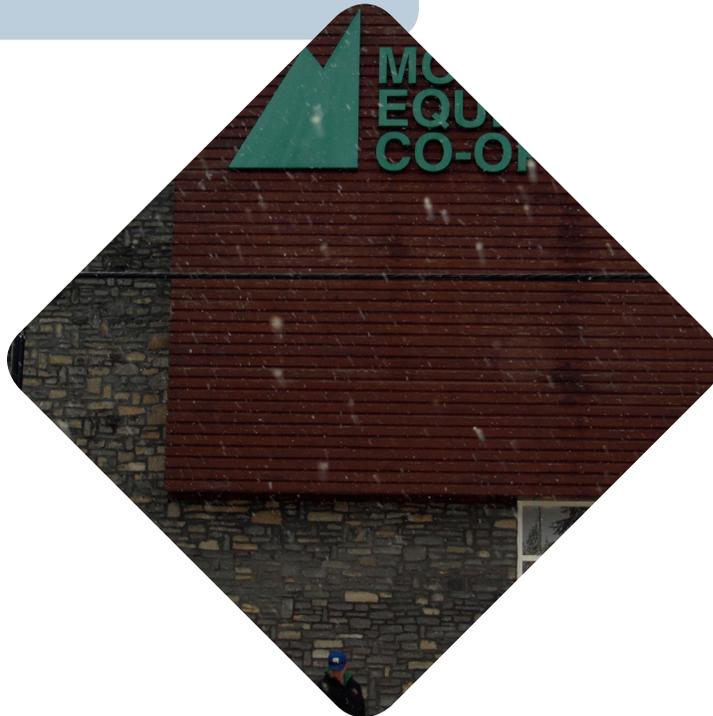
Strategy 2: Attract new businesses, industries and other organizations that are at the leading edge of sustainability

The Region's economy is dominated by government and the high-tech sectors—it is a thriving centre for the knowledge economy. Building on this enviable position, we can continue to diversify our economy and attract businesses that contribute to sustainability. This could include businesses and jobs aimed at reducing energy use, water consumption, material use, and greenhouse gas emissions.

There may be opportunities for individual businesses to form relationships or networks to improve their performance and profitability by making productive use of wastes (e.g. waste heat, wastewater, and waste materials).

Examples of actions that support this strategy include:

- Continue to develop a liveable, sustainable region that will attract talented workers and businesses
- Target, attract and support green sector businesses. This might include developing incubator centres for start-up businesses
- Explore opportunities for eco-industrial networking where businesses can co-locate and share their resources so as to reduce their environmental impact. For example, a business such as a data processing centre that creates waste heat could co-locate with a business that can use that heat in its own operations. The waste heat could be used to support a small district energy system



Strategy 3: Better integrate business within communities

Single-use business parks tend to be located far from other activities, resulting in a car-oriented, isolated workplace. Create attractive opportunities for appropriate businesses to locate in within communities rather than setting up business in business parks.

Examples of actions that support this strategy include:

- Expand the concept of mixed-use to more parts of the Region, permitting more businesses and housing to be integrated within existing and new communities well-served by transit
- Encourage and develop guidelines for live-work developments
- Examine individual business parks for opportunities to integrate more closely with surrounding neighbourhoods, while protecting a sufficient amount of employment land
- Examine partnerships between communities and businesses where mixed-use buildings can be used for libraries or other neighbourhood needs



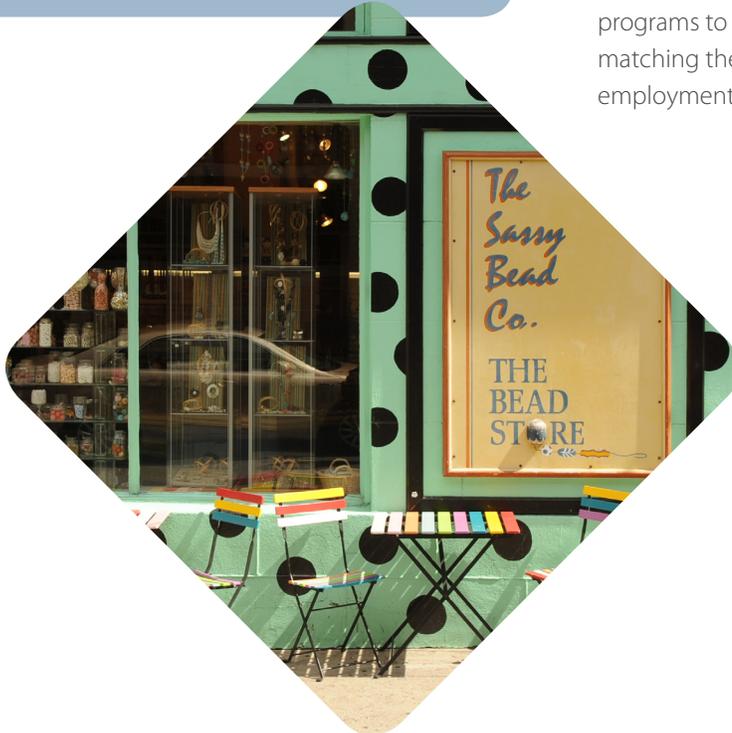
Strategy 4: Enhance support to local businesses, organizations and social enterprise

Most of the products that are consumed in the Region are imported. Locally-owned businesses, which are not necessarily dependent on local resources but benefit the local economy, typically spend more of the revenues and profits locally. Enterprises that use local resources, which are not necessarily locally-owned contribute more to the local economy by creating demand for local goods and services.

As labour costs in developing economies rise and transportation costs increase due to higher energy prices, there is an opportunity to market the advantages—economic and environmental—of local spending.

Examples of actions that support this strategy include:

- Create a Rural Prosperity Plan for the Region, strongly linked to agriculture, recreation, and tourism
- Manage forestry, limestone and sand and gravel resources in the rural area on a sustainable basis, to support the rural economy and the natural environment
- Promote a buy local campaign and connect this to green procurement criteria in corporate purchasing
- Continue to explore partnership options to create social enterprises. A social enterprise is a business that operates as part of a non-profit organization in order to increase its revenue stream and serve its broader goals. For example, Causeway Work Centre in Ottawa does catering, grounds keeping, and bicycle recycling as social enterprises, in addition to its programs for people with significant barriers to employment
- Explore opportunities to tie employment and training programs to growing economic sectors, such as matching the construction industry's needs with employment programs for at-risk youth



Strategy 5: Explore different ways of measuring economic and overall success for the Region

In pursuit of a sustainable economy, the use of appropriate measures is important. Gross Domestic Product (GDP) is only one measure in terms of providing a picture of a truly prosperous economy. Indicators of social and economic well-being can supplement traditional economic measures such as GDP, to provide a more comprehensive picture of prosperity.

Examples of actions that support this strategy include:

- Advocate to Provincial and Federal government for standardized performance measures that go beyond GDP and support the efforts of academia and research institutions that are working in this area
- Adopt the Triple Bottom Line or a sustainability lens for municipal reporting and decision-making. Share the benefits and challenges with other organizations interested in broader measures of success
- Consider alternative indicators of success, such as the Canadian Index of Well-being, Ottawa's Vital Signs Report or Genuine Progress Indicator, to develop a unique measurement system to collect data on quality of life



5.9

Manage Materials and Solid Waste



How we manage our materials and solid waste has far-reaching environmental impacts. Typically, ‘downstream’ impacts such as pollution from waste disposal are addressed through such means as capturing methane gas emissions and leachate from landfills. However, we also need to consider ‘upstream’ impacts such as the extraction and processing of resources for manufacturing which can also have significant impacts—not only on land and water but also in terms of significant energy demand and greenhouse gas emissions. These can be addressed through waste reduction, reuse and recycling.

Achieving a high diversion rate³⁸ depends on individual households’ willingness and ability to change behaviour. Participation in recycling activities within apartments is low compared with single-detached houses. Lack of space to accommodate recycling collection indoors or outdoors at many buildings may be a contributing factor. In response, municipalities can focus on assisting in behaviour change and working with building owners to find solutions.

The low level of recycling in the industrial, commercial and institutional (ICI) stream is a challenge for local municipalities that have very limited authority in this area. Waste diversion is perceived as an additional expense for business and one that many avoid. Framing waste as a potential resource that can save or even make money is one strategy to address this; incentives and regulations in the areas that municipalities do control is another.

Finally, one of our major challenges is dealing with packaging wastes. Standards for the packaging that generates much of our waste are outside municipal government jurisdiction. It will take a combination of efforts from business, households and different levels of government to move towards our long-term goal of zero waste.

³⁸ Diversion rate refers to the percentage of the waste stream that is “diverted” away from landfill through recycling or re-use.



Ottawa

- City Green Bins are provided for collection of kitchen and other household organic waste. Townhomes are now served with Green Bins and the City is rolling out collection in apartments. The City is moving towards weekly collection of organics and recycling bins and bi-weekly collection of residual waste.
- The Take it Back! program assists retailers to take back materials for re-use, recycling, or disposal.
- Give-Away Weekends twice yearly allow residents to make use of unwanted goods.

Gatineau

- Collection of bagged garbage was reduced to bi-weekly collection in 2011 and a bylaw establishes fines for not participating in composting and recycling programs. A drop-off depot at the Ecocentre for household hazardous waste, electronics, and a number of other materials, as well as curbside collection of bulky items.
- Construction of a centralized waste transfer, sorting, and composting facility.

NCC

- As part its Environmental Strategy, the NCC is committed to hold carbon neutral signature events and programs, beginning with Canada Day 2010 and extending to Christmas Lights Across Canada, the Rideau Canada Skateway, and Sunday Bikedays.

Strategy 1: Focus on reducing waste generation as our first priority

Product and technological innovations have reduced the energy and material intensity of many consumer goods; however, the increasing volumes of goods that are used and discarded along with increasing consumer demand have outweighed many of these gains.

A number of measures can be taken to reduce our consumption patterns and the waste we generate, and to re-think our definition of waste so that it is viewed as a valuable resource. In addition to reducing waste generation, more can be done to design products that can be recycled and re-used when their initial life is finished. Municipalities have little influence over manufacturing processes but can work with other municipalities, the industrial, commercial and institutional (ICI) sector and senior government to facilitate change.

Examples of actions that support this strategy include:

- Work with senior governments, municipal associations, and industries to re-think product packaging. Encourage a cradle-to-cradle approach by industry to redesign products and processes to reduce waste before it is made, and plan for the re-use of materials
- Develop an education program for businesses, institutions and individual consumers about making sustainable choices in the purchase of goods and services
- Establish a green certification program for the ICI sector
- Award a Mayor's certificate for waste reduction/diversion performance

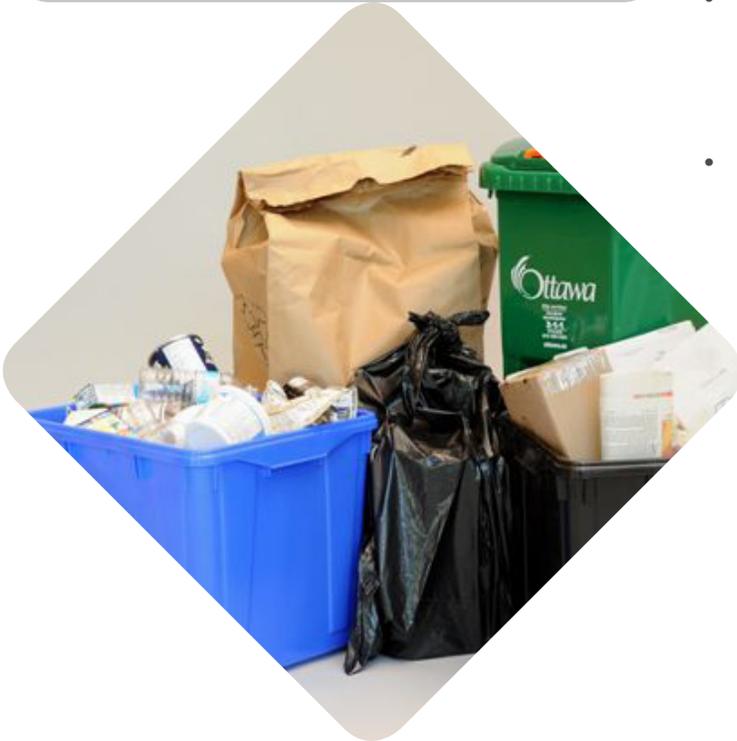


Strategy 2: Aggressively divert residential waste to recycling, composting and re-use facilities

Municipalities in the Region have programs in place to divert most of our household waste from landfills, but not all households are able or willing to use them. Non-residential buildings can contract for compost recycling from private companies, but many choose not to. A key part of the strategy could be to focus on the virtual elimination of all organics from landfills, which would dramatically reduce long-term landfill GHG emissions and allow energy, carbon, and nutrients to be recovered.

Examples of actions that support this strategy include:

- As markets for materials such as wood and asphalt are found, restrict disposal at landfills and divert the materials
- Use fees and charges to change behaviour. Where recycling facilities for a product exist, use disposal fees to make disposal the most expensive option
- Lead by example in municipal and NCC facilities and ensure there are recycling bins in sports arenas, parks, streets, and other areas used by the public
- Study the feasibility of waste disposal centres in neighbourhoods to collect materials that could be recycled but are not now part of the curbside program
- Consider increasing access to recycling facilities for household hazardous waste by recruiting more partners to collect the waste or by creating a permanent location for drop-offs
- Continue to support landlords with information about recycling and composting programs available for their tenants



Strategy 3: Increase the municipal role in waste reduction and diversion in the industrial, commercial and institutional sector

Waste from office buildings, stores and restaurants, and other components of the industrial, commercial, institutional (ICI) sector likely makes up about 60% of the total waste created in the Region and most of it is landfilled outside our boundaries. Waste in the ICI sector is regulated by the province and waste services are provided by the private sector.

The ICI sector faces many of the same challenges as residential waste reduction and recycling: lack of space on-site to store materials; lack of compliance with policies within the organization to sort and recycle; and lack of markets for recycled goods to make it economically feasible for industry to recycle. Economic factors have a big influence on whether businesses recycle or not. Too often, business only sees the cost of recycling, but there can be economic opportunities with waste, especially when businesses develop ways to reduce their waste or re-use it internally.

Examples of actions that support this strategy include:

- Lead by example through the use of municipal and NCC purchasing policies that require recycled content
- Expand the municipal role in waste management in the ICI sector, such as organics collection from restaurants
- Provide education for the ICI sector on Provincial requirements for waste reduction and separation of recyclable materials at source
- Develop a recognition program acknowledging those in the ICI sector who are achieving high waste diversion rates
- Explore expanding the system for collecting and recycling additional materials, possibly with the use of community drop-off depots



5.10

Support Local Food and Agriculture



Food and agriculture cut across all dimensions of sustainability. Food is cultural expression and the centerpiece of most celebrations. Food underpins the rural economy of the Region and figures largely in the spending of most households. Good food keeps us healthy but some households cannot afford a healthy diet.

How we typically grow, process, distribute and manage food in our home kitchens is energy intensive and there are opportunities across the board for more sustainable practices. In the last five to ten years, local governments have begun to more fully explore their role in enabling local, sustainable food and agriculture systems.

Protection of the agriculture land base is essential if we are to preserve long-term opportunities for food security. While planning regulations can help protect agricultural land, additional steps are needed to prevent the loss of soil quality and productivity due to certain agricultural practices and other practices such as topsoil removal and grading. In addition, supports may be needed to draw new farmers into agriculture as the farming population ages and the number of farms decreases.

The growing interest in local food is an opportunity to begin building a buffer against the volatility in global food prices and possible supply interruptions due to rising energy costs and bad weather. Support for local food may mean exploring ways to connect local food producers with consumers, including provision of distribution facilities and basic processing services such as washing, grading and packaging. It could also mean finding more ways to grow food in the urban area, as a way of building community, providing familiar foods for people far from their previous homelands, and creating additional nourishment for people on low incomes.

There is scope for greater efficiencies throughout the food system in terms of energy use and waste management. Sustainable agriculture practices that reduce the use of energy in food production also save money for food producers.



Ottawa

- Just Food and the University of Ottawa are leading a broadly-based plan to identify and address food security and other issues in the municipality. Savour Ottawa, an initiative spearheaded by Ottawa Tourism, Just Food, and the City of Ottawa, develops and promotes Ottawa and area as a premier culinary destination. Savour Ottawa celebrates local food production, verifies local producers, and helps link farmers to retailers and restaurants.
- Farmers' markets have greatly expanded access to local, fresh foods. Municipal funding and support for community gardens has also increased the number of gardens and participating residents.

Gatineau

- The City of Gatineau has an agricultural development program in place that aims to protect agricultural land, diversify agricultural activities, and provide support—including marketing—to sustain agricultural producers and encourage new ones.
- Gatineau has several food initiatives, including a "Table de Concertations" on access to food and a municipal food policy restricting sale of unhealthy food in municipal facilities.

NCC

- The National Capital Commission has a strategy to encourage more sustainable agriculture in the Greenbelt. In the next five years, 50 of the 60 current leases for agriculture land in the Greenbelt will come up for renewal. Many will be renewed with existing tenants. When farms become vacant, lease decisions will be based on a business proposal from applicants outlining how the land can be used for agriculture that supports more local food production, value-added production, or production that adds to the diversity of crops within the Greenbelt.

Strategy 1: Protect agricultural land

Agricultural land with good soil is the fundamental resource for resilient food and agriculture systems. Quebec's legislation to protect agricultural land requires permission from a provincial commission to change the use of any parcel of farmland. In Ontario, agricultural land is protected through the Provincial Policy Statement and in Ottawa's Official Plan and zoning. However, about half the land that the City of Ottawa has added to the urban land supply since 1988 has been agriculture land—a total of 1698 ha.

Protecting agricultural land through planning regulations is itself not sufficient. Agriculture land also needs to be protected through municipal bylaws on topsoil removal, dumping of foreign materials, and site alteration. As well, widespread adoption of sustainable agriculture practices is needed to reduce the amount of nitrogen from fertilizers and pesticide residue that enters our subwatersheds.

Examples of actions that support this strategy include:

- Advocate for stronger protection of agriculture land in the Ontario Provincial Policy Statement (review underway)
- Consider further restrictions or prohibitions on country lot development. If country lots are permitted, separate them from farms by establishing buffer zones on land surrounding agriculture areas
- Advocate for increased funding for sustainable agriculture practices through programs offered by provincial and federal partners



Strategy 2: Advance local food economies

Producers need to process, store, and market their product at good prices. In order for this to happen, local food infrastructure such as food processing, distribution and storage areas are needed to connect consumers and individual producers. In addition to infrastructure, local food economies would also be advanced through corporate commitments to buy local food and direct-marketing initiatives including farmers' markets and mobile food carts or outlets. Such initiatives will increase resilience, create greater local economic benefits, and reduce the energy and emissions associated with long-distance travel.

Examples of actions that support this strategy include:

- Review municipal regulations for small-scale food processing operations to remove barriers wherever possible, while still ensuring food safety
- Give local food a competitive edge in the corporate policies on food procurement and agreements with contractors providing food for the municipalities' day care centres, Homes for the Aged, and other facilities. Share the policies with school boards and other organizations that want to establish a local food policy
- In consultation with local food producers, market associations and others, increase local food production and consumption by creating additional markets, market trucks or other outlets for local foods. Work with producers to step up production as demand increases
- Create seasonal promotions of local food and food producers. Promotions could include local food selections in cafeterias or catering menus, food-related readings, and lunch-time speakers in work places on the role of local government in food and agriculture
- Promote farm-to-fork programs that connect hospitals and other organizations with individual farmers or networks of farmers who sell its partner local, fresh produce. Personalizing the link between producers and consumers increases awareness of local food



Strategy 3: Support new farmers

As the average age of farmers increases, attracting new farmers into farming will become essential. Allocating land for incubator and demonstration farms, partnering with educational institutions, and bringing food and agriculture into every level of education can create a new awareness and respect for farming. Farming could become a more attractive occupation as local food economies continue to grow, consumer interest in organic food and specialty products increases, and farming yields a higher economic return for the farmer.

Examples of actions that support this strategy include:

- Ensure municipal policies support the needs of farmers including farm-worker housing, allowance for agriculturally-related secondary businesses, and agricultural activities such as controlled burning
- Seek out creative partnerships between universities and colleges, community groups, and local governments to secure land for hands-on agricultural learning and creation of demonstration farms. These farms could include small plots and educational programs to help new entrants get a start in farming



Strategy 4: Celebrate food

Food and farming offer a major draw for celebration. By designing public spaces with community gathering space in mind, events like harvest festivals, farmers' markets, wine tastings, speaking events, and trade shows can become part of the culture and identity of the area. This provides a key opportunity to engage farmers, the public, chefs, academics, and others in celebrating the abundance of the Region.

Examples of actions that support this strategy include:

- Consider food celebration in the design and construction of parks and public facilities. Harvest tables in parks and communal outdoor kitchens are examples of ways to include food celebration in urban design
- Continue to promote fall fairs, farmers' markets, harvest festivals, food art, wine-tasting and local foods in shops and restaurants to help express and reflect the Region's identity as well as support local food businesses



Strategy 5: Grow and process food in villages and the urban area

Many local governments are supporting public interest in local food by allocating public land for community gardens and in some places requiring new multi-unit development to have small plots or rooftop gardens for residents. While the current role of urban agriculture in North America is largely about community-building and education, it is possible to imagine a future where small-scale farming plays a significant role in producing food for urban and village dwellers. Emerging technologies such as land-based aquaculture and vertical farms also offer options for producing food in these areas.

Examples of actions that support this strategy include:

- Encourage new high-density, multifamily developments to include garden space, food retail (e.g. grocery store, farmers market) and food celebration areas
- Update guidelines for landscaping public parks and open space to include edible landscaping such as blueberries or herbs and include the concept in options for landscaping plans for private development
- Inventory and assess urban agriculture opportunities on public and privately-owned land within the urban area and villages
- Prepare guidelines for how people can garden publicly-owned spaces such as lands around libraries, community centres and health facilities or on boulevards and traffic circles, or shared spaces in multi-unit housing. Guidelines could talk about what grows well in small urban spaces and who might be involved in the project



Strategy 6: Make sure everyone has enough nutritious food to eat

Food security exists when all people at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

However, in 2009/2010 6.8% of residents in Ottawa worried about not having enough to eat, limited the quality or variety of food eaten, or did not have enough to eat because of a lack of money. Food is a discretionary expense, compared with rent and utilities. Every month, 40,000 people access Ottawa's Food Bank.

Families and individuals who lack financial security probably also lack food security and are at risk of a range of health and social problems such as reduced learning, reduced productivity, and chronic disease³⁹.

Many organizations in Ottawa and Gatineau are working to improve access to food through a variety of activities: hot meals at drop-in centres, breakfasts and healthy snack programs at schools, food skills and nutrition classes in low-income neighbourhoods, community kitchens, and access to fresh fruit and vegetables through bulk purchasing.

39 Access to Healthy Food. Report to Ottawa Board of Health from Medical Officer of Health. http://www.ottawa.ca/calendar/ottawa/citycouncil/obh/2011/11-21/2_food%20security%20BOH%20report.htm

Examples of actions that support this strategy include:

- Lobby the provincial government to increase funding for affordable housing and improve access to food for low-income people, including increased social assistance and minimum wages to reflect the real cost of living
- Enhance and expand municipal programs to improve food security and strengthen and support partnerships within the community
- Support food-friendly neighbourhoods. Identify low-income communities where there are few places to buy or obtain affordable, nutritious foods. Work with residents, schools, businesses and agencies within these communities to develop a local food strategy



Strategy 7: Increase food system efficiencies

There is a significant amount of waste in our food and agriculture system. Household kitchens also produce food waste, although composting this material can offset this loss. Outside the kitchen, the fuel consumption associated with bringing in foods from far away that are or could be grown locally, or letting produce rot in the field because there is not enough storage space or processing facilities, are both areas where greater efficiency is possible.

Farmer-to-farmer outreach and education programs for reducing fossil fuel consumption and increasing efficiencies could help the agriculture sector develop a competitive advantage in the face of rising fuel prices while simultaneously decreasing GHG emissions associated with long distance travel and farm inputs.

Examples of actions that support this strategy include:

- Ask provincial and federal governments to support farmers' efforts to become less reliant on fossil fuels and make best practices information available to the agriculture community
- Ensure that all residences as well as institutions and commercial operations have access to composting programs





6 Implementing the Plan

This Plan has described a vision, goals and strategies to achieve a sustainable, liveable and resilient region. Many people have asked how these strategies will be implemented. What specifically will the three Partners do to make progress on these multiple fronts? This section outlines how the Plan is intended to be used, lists some high-priority actions and catalyst projects, describes areas of potential on-going collaboration and invites the support of other levels of government, stakeholders and the public in realizing the vision for the Region.

6.1 How will the Plan be used?

This Plan is a high-level, strategic document for Canada's Capital Region. Its purpose is to provide guidance to the City of Ottawa, City of Gatineau and the National Capital Commission (the Partners), to assist them with major decisions and funding priorities for policies, projects, plans, and programs. Each of the Partners will lead the implementation effort within its own organization, while recognizing the benefits collaboration can yield.

The Partners have already aligned major planning initiatives with the goals of *Choosing our Future*. These include:

- Horizon 2067: The Plan for Canada's Capital (NCC);
- Greenbelt Master Plan (NCC); and
- Corporate Planning Framework (Ottawa).

Each of the Partners has its own responsibilities, issues and priorities which together will shape the organization's agenda for action on sustainability. Some of the ways the Partners could choose to implement this Plan are listed below.

- Frame corporate planning and budget processes within the long-term goals and principles, and use them to guide official plans and major policy plans
- Embed the strategies as drivers in policy plans, such as the official plan or master plans
- Leverage each dollar invested in public services and capital projects to advance the strategies of this Plan
- Exercise leadership through corporate policies

- Use a sustainability lens to evaluate major programs, projects, and activities
- Engage in education, promotion, and partnerships with neighbourhoods, community and government stakeholders

The Plan is not prescriptive. It will be up to the individual Partners to act on it, integrating the goals and strategies into their own programs. While the Plan has a long horizon (50 years), it seeks change now through the actions and catalyst projects as well as ongoing progress towards the goals in the years ahead. This will require a sustained effort and leadership by the Partners, as well as broad public support.

The Partners are not able to deliver on some of the strategies and actions on their own. These Plans were built with input from many contributors, and success will be realized with their continued collaboration. Community groups, businesses and individuals will all have a part to play.

6.2 Priority Actions

While all of the strategies and actions presented in Section 5 are important, there are some that warrant special attention.

LOCAL GOVERNMENT PLANNING

- Re-visit land use policy (density targets, mixed-use, complete communities) as part of the review of the Ottawa's Official Plan and Gatineau's Plan D'Urbanisme to enable the implementation of the key strategic directions of this Plan
- Match the tightening up of the urban boundary with the facilitation of sensitive infill, use of vacant lands, and intensification and redevelopment around rapid transit stations, along mainstreets, and within low-density office areas and other under-used commercial land
- Intensification will require supportive strategies, including a strong policy base for affordable

housing in the face of a constrained land supply, and design excellence to ensure creation of attractive, liveable communities

- Intensification will also require increases in the capacity of existing water, wastewater and stormwater management services to support more people and buildings. This cost is expected to be less than the cost of new infrastructure at the edge of the urban area. On the whole, more people and buildings will be supported by our infrastructure investments
- Integrate cultural initiatives into program delivery and community development that will increase understanding and participation in the democratic process
- To support appropriate village growth, prepare in advance the conditions that will allow it to happen: policy, infrastructure plans, zoning, design guidelines, development controls that enable sensitive growth. Create a Rural Prosperity Plan strongly linked to agriculture, recreation and tourism and sustainable resource use
- Continue to develop measures to account for the full, lifecycle costs of municipal roads, transit, and other infrastructure and adopt policies that require new development to be financially sustainable for the municipality. Make long-term decisions that align level of service and capital investment with ability to pay
- Use a Triple Bottom Line or sustainability lens in municipal decision-making and reporting
- The available composting and recycling programs can divert 80% of residential waste if fully utilized. Push for this target
- Develop and implement a Neighbourhood Sustainability Program to advance sustainability at the neighbourhood level
- Place greater emphasis on prevention to enhance quality of life and social development

SENIOR LEVELS OF GOVERNMENT

- Work with the Federal Government to develop detailed plans to transform government office complexes on rapid transit lines into more complete communities
- Consult the Provincial Government about lessons learned from the “Places to Grow” initiative. What can we learn and potentially apply to the Region?
- Seek additional tools and incentives for green buildings and energy efficiency
- Advocate for standardized performance measures that go beyond GDP and support the efforts of academia and research institutions that are working in this area; consider alternative indicators of success such as the Canadian Index of Well-being
- Lobby for funding, tax incentives and additional tools for affordable housing, including methods to implement municipal incentives and requirements for affordable housing
- Give priority to prevention initiatives in social and health programs
- Advocate for stronger protection of agricultural land in the Ontario Provincial Policy Statement
- Ask for increased support for sustainable agriculture practices through programs offered by provincial and federal governments

DEVELOPMENT COMMUNITY

- Continue to work with homebuilders and developers to ensure that development achieves long-term objectives for sustainability, resilience and liveability
- Explore new ways to maximize use of existing infrastructure and developable land, and minimize requirements for new or upgraded infrastructure
- Continue to improve the environmental performance of new buildings and communities

RESIDENTS

- Continue to raise awareness of residents’ role in achieving our long-term goals. Illustrate how

individual choices about where to live, how to travel and what to throw in the trash collectively impact on our long-term sustainability. In Ottawa, use the Neighbourhood Sustainability Program to partner with communities on awareness and sustainable initiatives

6.3 Catalyst Projects

Catalyst projects can create a focal point for action. As the word “catalyst” implies, these projects can accelerate the change process by providing learning and innovation opportunities, establishing new standards of practice and creating excitement in the community.

Several catalyst projects are proposed to capture the imagination of the public and engage the business community, community groups and others.

Catalyst projects could be identified for virtually all of the strategies identified in this Plan. The catalyst projects listed below could provide a good start. These are cross-cutting projects, addressing several aspects of sustainability in their implementation.

These projects could be delivered by the Partners individually or collectively by a variety of public-private partnerships, and/or by different municipal departments.

Demonstrating Sustainability

Demonstrating sustainability means developing inspirational showcases for sustainability at all scales, from a plan to redevelop an obsolete commercial site to a vision for a new community. The years ahead will likely see development or redevelopment of large federal properties such as the former air force base Rockcliffe Park, construction of new municipal buildings, or revitalization of land around future rapid transit stations. The design of these projects offers potential opportunities to demonstrate sustainability in many dimensions, including:

- Green building design;

- Use of alternate energy systems;
- Mixed-use development, including community facilities, housing, and workplaces;
- Provisions for pedestrians, cyclists, and transit;
- Cost-effective servicing and transportation strategies; and
- Well-designed public spaces that feature public art.

Potential projects would be identified through consultations with the development industry and other levels of government. Community plans and development proposals could be screened for their potential to develop more sustainability features, and funding provided if necessary to test the feasibility of new energy technologies or complete other studies. Two or three projects (and willing proponents) could be selected to receive incentives such as priority treatment in the development review process and advice and support in securing available grants. Municipal land could be used as the foundation for a public-private partnership. Once under way, the projects could be used as examples in regional discussions with industry, developers, students, public sector staff, utilities and others on sustainable development.

Sustainable Community Makeover

The community makeover brings home the sustainability challenge by asking communities how they could become more sustainable and working with them to deliver their priority ideas at the community level. Working as a partnership, the municipality, local businesses, schools, cultural and recreation organizations and others could explore different ways a community could become more sustainable in any of the four dimensions: social, culture, economic or environmental. Depending on local priorities, the Partners could consider such elements as:

- Ways to increase walking, cycling and transit use by community members;
- An energy audit of the area to highlight how

to reduce energy used in transportation and in commercial and residential buildings and identify the potential for renewable energy or district energy retrofits;

- Potential opportunities to increase residential or employment density, or mixed-use;
- How to increase the amount of parks and public open space in the community and develop it for socializing, community gardens, public art or other purposes;
- Gaps in programs and services within the community and how these could be filled; and
- Creeks, forests and other features in the community and the potential for improvement.

The project would serve to empower communities as well as yield real improvements at the local level. Two or three pilot areas with potential could be selected so that a variety of components could be further developed. The pilot communities would complete a sustainability planning process that could include such elements as a community vision, design charrette, and priority-setting. Staff would help communities identify their own resources and link to existing public programs. The pilot projects could yield a suite of sustainability projects that could be made more generally available to communities after the pilot is complete.

Open Water Project

The Open Water Project increases our access to the streams and rivers that run through our communities and provides more things to do there. This project would find ways to increase residents' access to the water by reviewing physical connections to streams and rivers, identifying public land, and seeking opportunities for improvements. The project could also explore opportunities to educate children and others about water health, and help communities develop a sense of their culture and place by describing how the water was used in the past and how the community developed around it. This project would also look for ways to increase residents' enjoyment of the water by sponsoring events like

theatre, flea markets, or story-telling at major locations at the water's edge.

This project could be delivered through multiple municipal departments and community organizations. Several main events could be planned to tour established waterfront locations throughout the summer, along with private food vendors, portable tables and chairs, and other facilities needed to support activities. Corporate sponsorship could be sought to support these events, while other activities such as children's programming could be mainstreamed into current recreation programs. Communities could be asked to send proposals to the program, describing their situation and best solution, for further staff investigation.

Complete Streets

Complete streets are streets where all users of the public right-of-way are safe and share the space. In some areas, this means that more of the street is designed for pedestrians, with well-marked and frequent road crossings, centre medians, and places to wait comfortably for transit. Cyclists travel safely in their own lanes and have access to secure bicycle storage and other facilities. Transit has priority in the vehicle lanes and all vehicles travel at moderate speeds. Piloting sections of complete streets in the Region would help identify what design elements work well and how streets in different kinds of locations could be adapted.

A good set of design guidelines is needed to initiate this project, perhaps in conjunction with engineering and architecture schools in the Region. Pilot projects could be developed in several locations, such as new suburban communities, as part of a village mainstreet redevelopment plan, or as part of a scheduled road reconstruction. Potential for funding partnerships with businesses on commercial streets would be explored. Benefits include a safer environment for all users, increased walking and cycling and the health benefits they bring, and more attractive streetscapes that yield greater property values and higher business returns.

6.4 Cooperation Among Project Partners

A pattern of cooperation and partnership has developed among the three Partners. Ongoing examples include the Interprovincial Transit Study and the Interprovincial Crossing Study. Similarly, the TRANS committee, representing the NCC and both provinces and municipalities, has collected and analyzed regional transportation data since 1979.

While many strategies in this Plan can be implemented through the action of one Partner alone, working together on select initiatives would continue to benefit the Region as a whole. Areas where these initiatives could be found include:

- Transportation, transit and infrastructure;
- Watershed and natural heritage planning;
- Waste management; and
- Economic development, culture and tourism.

6.5 Community Support

This Plan needs the widespread support of individuals and organizations in the community to be fully implemented. As we progress from vision, goals and strategic directions towards implementation on many fronts, we need to draw on the ideas, energy and expertise to be found in all sectors of our community.

To inspire engagement and action at both the organizational and individual level, we need to:

- Celebrate our accomplishments and what we are already doing to move towards our sustainability goals;
- Showcase significant community and business achievements to recognize innovation and good work;
- Raise awareness of the implications of our lifestyle choices and consumption habits in terms of municipal and individual costs that, if changed, would lead to improved affordability

on many levels and better health and quality of life; and

- Build awareness of the value of living a more sustainable life-style and provide incentives to change.

6.6 Plan Monitoring and Reporting

It is important to monitor and report on progress in order to keep Plan implementation on track. Performance measurement could include measurement against the goals and indicators described in the Sustainability Baseline Report, supplemented by key indicators that provide a broader measure of success. These could include region-wide indicators or indicators taken from just one municipality, such as:

- Residential waste diversion rate;
- Number of new buildings with LEED certification; and
- Density of new development.

The baseline indicators described in Section 4.0 and other appropriate indicators could be monitored regularly with reports to keep the Partners and the public informed of progress towards the goals. This monitoring will provide the feedback necessary to understand whether or not sustainability strategies are being successfully implemented - what's working and what needs adjustment or re-thinking?

6.7 Conclusion: A Call to Action

This remarkable region is a Canadian success story. From its early roots as Algonquin territory, fur trading, and lumber trading centre, the Region has become a powerful seat of government and centre of high- tech innovation.

We have the ability to plan, design and operate our communities so that they continue to attract the best and brightest minds and most innovative organizations. We have the compassion to take care of the health and well-being of our people and our communities. We have the tools to reduce our environmental footprint and pursue patterns of growth that are affordable for future taxpayers as energy and resource prices increase.

This Plan is a guide towards a more liveable and prosperous future. It is not intended to be the last word on how we get from here to there. It outlines a sustainability path and it is a call to action; an invitation to the whole community to have conversations about our future and to get involved in the steps needed to get there. This Plan is for everyone—the Partners, community leaders, the public, businesses and other organizations. We invite you to be part of it. Because we are all needed to reach the future we decide on together.

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