YORK REGION

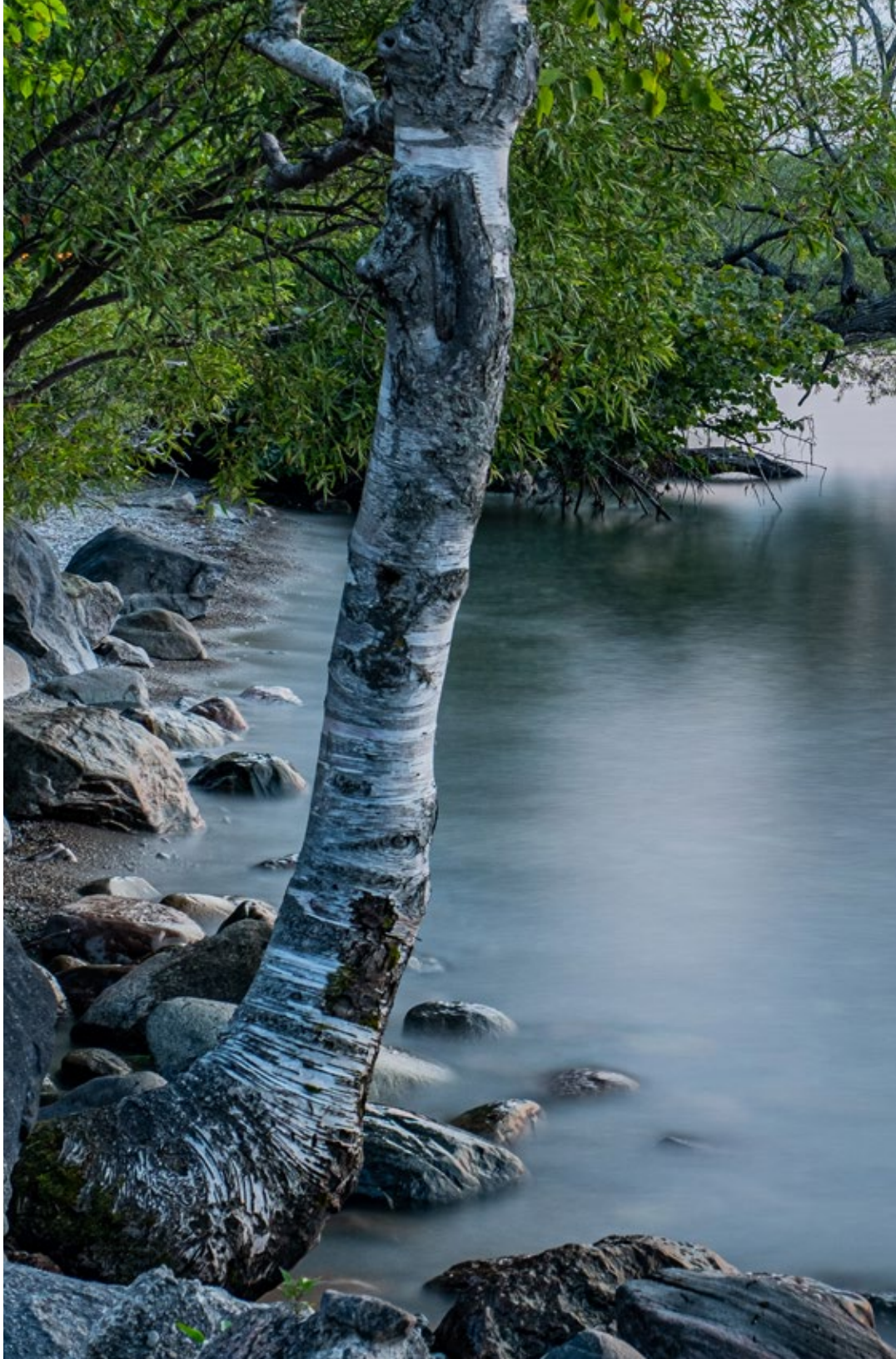
CLIMATE CHANGE ACTION PLAN

SEPTEMBER 2022

York Region

LAND ACKNOWLEDGEMENT

We acknowledge the land we are meeting on today is located on the traditional territory of many Indigenous peoples such as the Anishinaabeg, Haudenosaunee, Huron-Wendat and Métis peoples and the treaty territories of the Haudenosaunee, Mississaugas of the Credit First Nation and Williams Treaties First Nations. This land is now home to many diverse Indigenous peoples. York Region is located within the boundaries of the Nanfan Treaty, Treaty 13 and the Williams Treaties. There are also other land claims and treaty rights involving portions of York Region that have not been resolved. The Chippewas of Georgina Island First Nation is a Williams Treaty First Nation and the closest First Nation community to York Region.



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City of Markham

Regional Councillor
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City of Markham

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City of Vaughan

Chairman & CEO
Wayne Emmerson

A Message from York Region Chairman and CEO and Members of Regional Council

Climate change is a critical issue requiring the participation of residents, businesses and governments to ensure a sustainable future. Climate change has both immediate and long-lasting impacts on our infrastructure, health care, human services, emergency services, natural systems and the economy. Changes to the climate are also impacting how we deliver programs and plan for the future of our communities.

York Regional Council recognizes the importance of addressing climate change and has long been committed to taking action to mitigate the impacts and improve climate resiliency. Building sustainable communities is a key priority of our 2019 to 2023 Strategic Plan, with a focus on protecting and sustaining the natural and built environment to reduce our ecological impact.

Through current actions, York Region is reducing greenhouse gas emissions, piloting electric buses and integrating climate change considerations into infrastructure design and asset management.

Aligned with principles of sustainable urban development, this plan addresses climate mitigation and adaptation from a corporate and community perspective. By working with all levels of government and other key stakeholders we are providing benefits to residents and businesses to create sustainable communities that continue to thrive under changing climate conditions.

Mayor
John Taylor
Town of Newmarket

Regional Councillor
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Regional Councillor
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Town of Newmarket

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Gino Rosati
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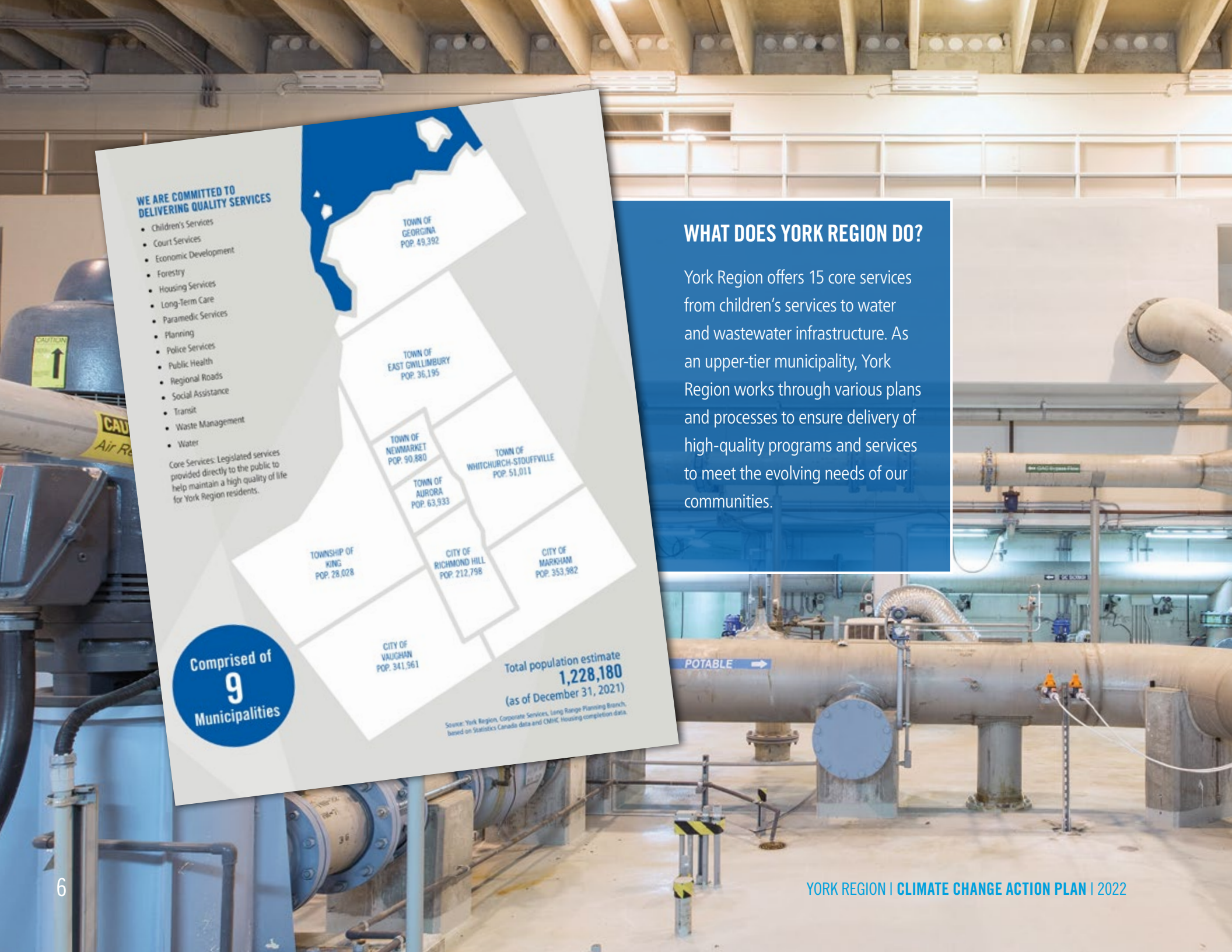


WHAT DOES YORK REGION DO?

York Region offers 15 core services from children's services to water and wastewater infrastructure. As an upper-tier municipality, York Region works through various plans and processes to ensure delivery of high-quality programs and services to meet the evolving needs of our communities.

INTRODUCTION

The Intergovernmental Panel on Climate Change determined the need for urgent action to reduce carbon emissions by 2030 to avoid catastrophic climate change impacts. The need for urgent action is equally significant for Canada, Ontario[1] and York Region. Canada's climate is projected to warm at twice the global rate and this accelerated pace of warming is anticipated regardless of the emissions scenario resulting from human activity. [2]

York Region has already experienced effects of climate change with higher average temperatures, increased extreme heat and rainfall and more extreme weather events.[3]

As a result of this warming, York Region has experienced the following impacts:

- Blacklegged ticks that can spread Lyme Disease are increasing in York Region as a result of warmer temperatures[4]
- Extended season for road maintenance as a result of less predictable patterns for snow and ice storms
- Heat island effect in areas of increased urbanization
- Flooding as a result of extreme rain events[5, 6]
- Power outages and tree loss as a result of ice storms
- Increased capacity needs of wastewater infrastructure to adapt to more extreme weather events

These and other impacts are expected to increase in frequency with further warming of our climate.

York Region recognizes the need to address climate mitigation and adaptation from both corporate and community perspectives. This commitment is identified in the York Region Official Plan and Vision. Initial efforts to address climate change occurred through implementing the Sustainability Strategy in 2007 and Corporate Clean Air Strategy in 2008.

The York Region Climate Change Action Plan (Action Plan) builds upon foundational work and key policies that have guided climate-related action at York Region. Through this Action Plan, York Region continues to expand the use of a climate change lens on its own activities and inspires others to do the same. The Action Plan:

- Outlines projected impacts of climate change on York Region
- Describes and prioritizes actions needed in three priority areas:
    - Resilient Communities and Infrastructure,
    - Low Carbon Living, and
    - Supporting an Equitable Transition
- Identifies the role York Region will play in implementing actions, and
- Provides a framework for all levels of government, businesses and communities to work together

The intent of these actions is to maintain residents' and workers' quality of life, minimize disruptions to the natural environment, avoid significant costs over the coming decades and to ensure communities in York Region continue to thrive under changing climate conditions.

Photo courtesy of Sjoerd Witteveen/Torstar

CLIMATE CHANGE and its POTENTIAL IMPACTS on YORK REGION

CLIMATE CHANGE is HERE

Climate change occurs when long-term weather patterns are altered through natural or human causes. Global warming, a rise in the average global temperature, is one aspect of climate change.

Scientific evidence shows human activity is a major contributor to climate change. Burning fossil fuels releases carbon dioxide and other heat-retaining gases into the atmosphere. The build up of these gases creates a "greenhouse" effect that raises temperatures globally and has other profound climatic effects.[7]

Canada's climate has warmed and will continue to warm in the future, driven by human influence. Canada's Changing Climate Report identifies Canada's climate has been and is projected to continue warming at twice the global rate.[2] Effects of widespread warming are evident in many parts of Canada and are projected to intensify in the future.[2]

Any benefits resulting from climate change, such as longer growing seasons and increased agricultural yields, will be outweighed by long-term changes in York Region's climate from both warming and more extreme weather events. Impacts from the changing climate have already begun and are expected to continue:

- According to data from Lake Simcoe Region Conservation Authority, average annual air temperature in northern York Region has increased by 1.1 °C over the last 30+ years, starting in the 1980s
- Over the last 30+ years, southern Ontario, including York Region, saw more frequent and powerful rain and snowstorms, greater temperature volatility and more episodes of extreme heat.[5] One example of a dangerous storm includes a thunderstorm on May 21, 2022, which resulted in downed trees, hydro lines, and power outages. York region spent resources working with municipal partners to resume services and clean up communities.[8, 9]
- On June 23, 2017, Jan 11, 2020 and September 22, 2021, more than 60 mm of rain fell in less than 12 hours, causing overflows of sewage and basement flooding, requiring significant operational efforts to address.[5,6]
- In December 2013, an ice storm across eastern North America resulted in widespread and prolonged power outages and 27 deaths. York Region spent $20 million in clean-up costs. Subsequent ice storms in March 2016 and April 2018 were less severe but still required municipal resources to clean up communities.

There are significant benefits to acting quickly to prepare for climate change including: avoiding future damages and associated costs, new jobs through transition to a low-carbon economy, improved air quality by reducing greenhouse gas emissions, and delivering co-benefits to vulnerable populations and businesses.

CLIMATE will CONTINUE to CHANGE

Climate-related impacts under high and low-emission scenarios project two very different futures for Canada.[2] Scenarios with substantial and rapid warming illustrate the effects that continued increases in greenhouse gas emissions will have in Canada. Limited warming will only occur if Canada and the rest of the world substantially reduce greenhouse gas emissions meaning everyone has a role to play.

Climate change projections[3] predict that by 2050, if present trends continue, York Region could expect to experience:

- An increase in annual mean temperature by approximately 3.3°C
- A longer growing season by as much as 30 days
- A 59+ mm increase in annual average precipitation with more precipitation occurring in the winter months
- More than three times as many days above 30°C (34.4 days a year versus the current 9.8) and several days that exceed 40°C annually
- More frequent rain, hail, freezing rain and snowstorms
- A 33% increase in the frequency of heavy precipitation

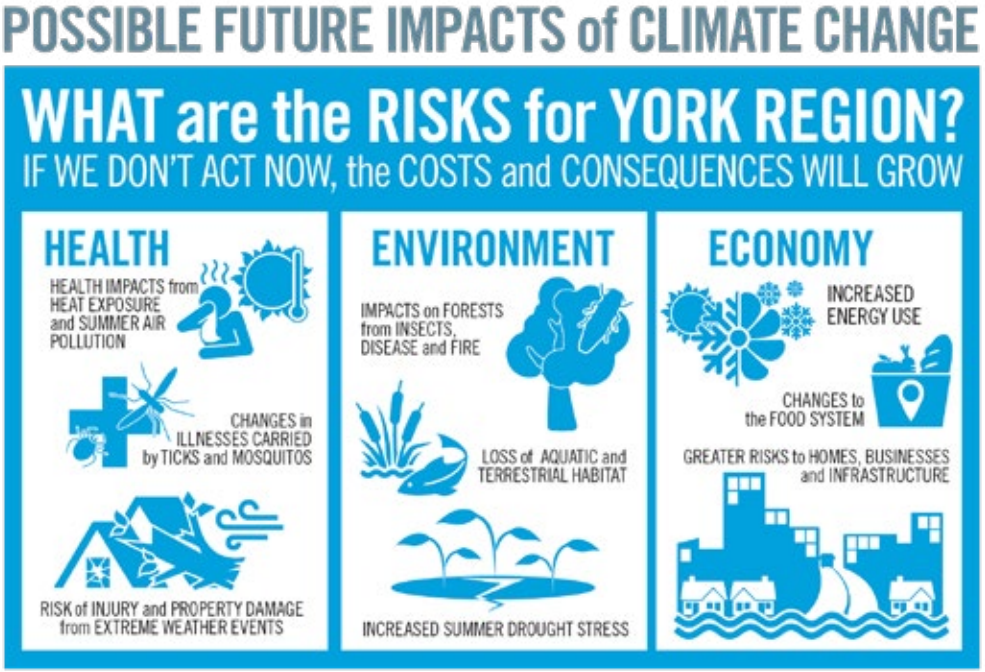
ASSESSING FUTURE IMPACTS

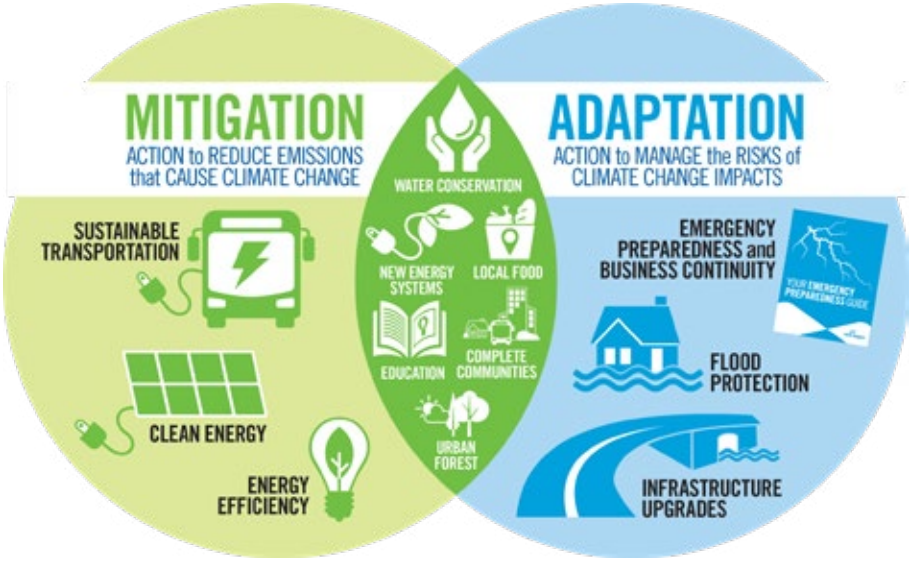
Impacts of climate change could be costly. Residents and businesses could face increased costs of recovery from more frequent power outages and damage to property caused by flooding, hail, ice, snow and wind.

Transportation networks may face additional challenges due to road closures or difficult driving conditions. Farmers may need to adjust their operations as some crops may no longer be grown effectively in York Region.

Rising temperatures may negatively impact health through more extreme heat events and the spread of mosquitoes and ticks which may carry disease.

Tourism, particularly ice fishing on Lake Simcoe, may suffer due to warmer winters and less ice cover.





BRINGING TOGETHER MITIGATION and ADAPTATION

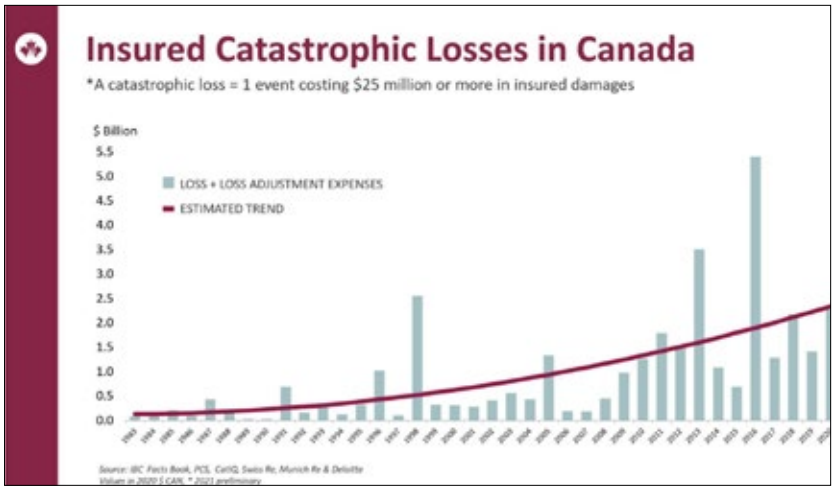
Addressing climate change calls for two approaches: mitigation and adaptation. Mitigation refers to reducing greenhouse gas emissions to slow human-induced global warming. Even with substantial mitigation efforts, York Region, will continue to feel and need to adapt to climate change impacts. Adaptation refers to taking action to reduce negative impacts associated with existing and future climate change.

Integrating efforts to mitigate and adapt is the most effective way to manage climate change risks. The Intergovernmental Panel on Climate Change suggested this approach as an efficient way of making communities more resilient over the long-term by building both types of action into strategies, plans and policies. The graphic gives examples of actions related to mitigation, adaptation, or both.

Low impact development provides a good example of how adaptation and mitigation benefits can be achieved at the same time. In low impact development, natural processes and landscaping are used to manage stormwater and the greenery stores carbon providing mitigation benefits.

In addition to being more cost-effective, integration of mitigation and adaptation makes actions more attractive to stakeholders by providing opportunities to address multiple priorities or achieve multiple co-benefits and may increase eligibility for federal and provincial funding opportunities.

ACTING NOW to AVOID HIGHER COSTS LATER



This graph from the Insurance Bureau of Canada shows rising expenses resulting from natural disasters occurring more frequently, at least in part due to climate change.[10] Large scale annual losses due to natural disasters are becoming increasingly commonplace, and in recent years, expenses often exceed $1 billion CAD per year.[10] In 2021, severe weather events in Canada caused insured losses of $2.1 billion.[10] The cost of responding to extreme weather events is estimated to range from 5% to 25% of Canada's gross domestic product.[11]

The National Round Table on the Environment and the Economy estimates that, at a national level, the economic costs of failing to address climate change risks could be between $21 and $43 billion a year by 2050. Ontario would incur the largest absolute economic impact.11

Building on existing actions and making new investments to give York Region greater climate change resiliency will help minimize the high costs and severe impacts of inaction.

Research and real-world experience show the benefits of being proactive:

- The Round Table Report concluded that "adapting to climate change is both possible and cost-effective," citing return on investment as great as 1:38 for some adaptation actions (that is, every $1 invested now results in $38 of savings later)
- The Canadian Federal Disaster Mitigation and Adaptation Fund is a $2-billion, 10-year program to help communities build infrastructure needed to better withstand natural hazards such as floods, wildfires, earthquakes and droughts. To qualify, proposed projects must show an expected return on investment ratio of more than 2:1. York Region has already applied to and received funding through this program.

WORKING TOGETHER is VITAL

Regional and local municipal governments are leading the way to address climate change in Canada through municipal policy and citizen engagement. Strategic partnerships and collaboration around climate change are essential to improving community resiliency. York Region is positioned to facilitate co-ordinated and co-operative action on many fronts that bring benefits to households and businesses, create more sustainable lifestyles and maintain a thriving community.

CLIMATE CHANGE ACTION PLAN

HOW the PLAN was DEVELOPED

York Region has undertaken the following to support development and implementation of the Action Plan:

- Commissioned Regional climate projections
- Conducted a corporate risk scan to identify the most likely and severe risks the Region faces from climate change under current forecasts. This scan identified the following priority risks:
  - Significant costs resulting from damage to Regional buildings, roads, wastewater systems, street trees and other infrastructure
  - More disruptions to services, including communications, energy, water and wastewater, and transportation
  - Higher demand for emergency shelter, housing, medical and social supports, particularly for vulnerable populations
  - Greater and more complex demands on emergency services
- Engaged staff across the corporation to identify emerging climate-related initiatives and concerns, helping to determine priorities for corporate actions in the Action Plan
- Engaged local municipal staff to identify opportunities for alignment and partnership on climate initiatives
- Hosted a community climate change workshop to discuss potential impacts of climate change with community stakeholders, obtain feedback on impacts being felt on the ground, and seek input into roles, responsibilities and actions at the community-wide scale
- Updated the Corporate Energy and Conservation Demand Management Plan to identify actions to reduce corporate emissions in alignment with Vision
- Launched an engagement campaign to obtain feedback on the draft Action Plan from the public, local municipalities, Indigenous communities, conservation authorities and stakeholders, helping to determine updates to the March 2020 draft version of the Action Plan

Community greenhouse gas emissions reduction targets will be identified, through the York Region Energy and Emissions Plan, and aligned with provincial and federal targets and Vision.

The York Region Community Energy and Emissions Plan will be aligned with, and support, existing municipal energy plans and the Regional Official Plan.

Photo courtesy of Toronto and Region Conservation Authority

PLAN BUILDS on a STRONG FOUNDATION

York Region Council has shown leadership in addressing climate change by endorsing the Sustainability Strategy in 2007 and Corporate Clean Air Strategy in 2008. Council's commitment is further outlined in the York Region Official Plan and Vision.

This Action Plan builds on previous work and existing Regional directions and initiatives:

- **Land use planning.** Decisions in this area have enormous impact on how new and existing communities will manage climate change impacts. York Region is already taking action through its Official Plan to ensure more complete communities are built, which offer a wealth of benefits for climate change mitigation and adaptation. These include reduced reliance on automobiles, applying low impact design approaches, incorporating trees and green spaces and fostering a stronger sense of community. The award-winning New Communities Guidelines support implementation of the Official Plan in these areas. York Region has demonstrated leadership by piloting the draft Sustainable Building Policy building on experience with green building programs such as LEED and the Living Building Challenge. York Region has Sustainable Development through LEED, a sustainable building incentive program to encourage leadership with development industry partners.
- **Infrastructure and asset management.** The Region relies on more than 19 billion worth of assets to deliver important services such as water and wastewater, waste management, transit and roads, often in partnership with local municipalities. Several programs are in place to plan and manage Regional infrastructure, including master plans for transportation, water and wastewater, and waste management, a corporate asset management plan, business continuity plans and a climate change risk assessment (for transportation and water and wastewater). York Region increasingly recognizes the key role green infrastructure plays in both mitigating and adapting to climate change. and is looking at asset management, including the update to the Green Infrastructure Asset Management Plan, and planning practices through a climate change lens

- **Natural heritage and forestry.** Natural systems help to mitigate and adapt to climate change. Ecosystem-based approaches provide multiple benefits, including carbon sequestration, regulating climate, improved air quality and water storage, and enhanced well-being of residents and workers. They provide these benefits in very cost-effective ways. York Region has demonstrated a commitment to protection, enhancement and restoration of green spaces. The Region has put in place forward-thinking programs for forest management, urban forestry, green infrastructure asset management, and land securement preserving and restoring natural areas.
- **Emergency management programs and plans.** York Region and its municipal partners work together on emergency management programs and plans. Annual Hazard Identification and Risk Assessment is undertaken to identify significant threats and considers climate trends and future climate projections as part of this process.
- **Enterprise risk management.** Corporately, York Region has an Enterprise Risk Management practice that facilitates the identification of potential risks that could impact the services York Region delivers from an operational and strategic perspective. Recognizing climate change as a strategic risk, York Region's Enterprise Risk Management practice considers climate trends and future climate projections as part of this process.
- **Waste management.** Circular economy has the potential to increase resilience to climate change by extending the life of materials and products and decreasing dependence on raw materials, which allows for greater adaptability and flexibility. As an economic system focused on elimination of waste and continual use of resources, the circular economy aims to:
  - Reduce waste and the negative environmental impacts associated with waste;
  - Reuse, repair, repurpose, and recycle used products and packaging;
  - Maximize capacity and efficiency of waste processing technologies
  - Improve environmental, economic, and social outcomes; and
  - Prioritize access over ownership where consumers collaboratively share, use, and focus on what the product provides rather than the product itself

Through the SM4RT Living Plan, York Region and its local partners continue to show leadership by pursuing waste reduction targets through innovating and inspiring behaviour change resulting in less waste. In particular, the Region has created a commitment to reduce waste through a circular economy system.

- **Economic development.** Services provided by the Region include market intelligence and innovation, business investment, small business start-up, export development, location selection assistance, local business connections and providing access to government funding programs.

  With good farmland and proximity to large urban centres, the Region boasts a food system that extends from growing and harvesting crops and livestock to processing and transporting food to consumers. York Region is committed to protecting its agricultural sector and local food opportunities, and its Agriculture and Agri-food Strategy supports innovation in the agricultural sector, including improved farming practices and greater use of technology. Applying a climate change lens to this strategy is increasingly important as farmers feel the impacts of a longer growing season, drought, less winter protection and more extreme weather.

- **Community supports.** Often in partnership with others, York Region provides community supports to those in need through programs for housing, public health, paramedic services, childcare and children's services, and services for seniors, including a Seniors Strategy.

  Climate change can exacerbate challenges for vulnerable residents and may result in increased need for services and supports.

- **Energy management.** The Energy Conservation and Demand Management Plan, updated in 2019, aims to mitigate climate change by reducing greenhouse gas emissions under York Region's control and influence. A particular focus is transit and corporate fleet operations, which account for more than 60% of York Region's total emissions. Other sources include energy needed for water and wastewater systems and to heat Regional buildings. The goal of the plan is to reduce emissions by approximately 60,000 tonnes a year by 2051 compared to 2014. The plan sets a goal of net-zero corporate greenhouse gas emissions by 2051.

This Action Plan continues to integrate and build on these existing initiatives.

HOW this ACTION PLAN will be IMPLEMENTED

The Action Plan identifies actions across a range of areas identified as priorities from a climate change perspective. Actions were prioritized by building on existing programs and services, and leveraging existing partnership and funding opportunities.Each action identifies:

- **York Region's Role** as either the Lead in implementing the action or as a Partner supporting implementation of the action.
- **Potential Partners** York Region might work with to implement the action. This is not an exhaustive list and identification of potential partners does not obligate the Region or Potential Partners to a partnership or work associated with an action. Any future roles will be determined collaboratively.
- **Action Type** indicating whether the action is aimed at mitigating climate change impacts (Mitigation), adapting in preparation for change (Adaptation), or both.
- **Action Area** indicating whether the action influences York Region's operation (Corporate), has a larger community-scale impact (Community), or both.
- **Identified Tasks** to be initiated and/or linked into existing programs over the next five years, with anticipated start and end dates.

OUTCOMES and PRIORITY ACTION AREAS

This plan aims to achieve the following **outcomes:**

- **Reduce Greenhouse gas emissions** with a long-term goal of becoming a net-zero Region by 2050
- **Increase resilience and capacity of the Region** to withstand and respond to current and future climate events

Achieving the outcomes involves three **Priority Action Areas:**

- **Resilient Communities and Infrastructure**
- **Low Carbon Living**
- **Supporting an Equitable Transition**

These Priority Action Areas align with York Region's Vision to achieve strong, caring, safe communities through focus on: Economic Vitality, Healthy Communities, Sustainable Environment and Good Government.

Each Priority Action Area has several actions associated with it, as outlined in the following sections.

PRIORITY ACTION AREA 1: RESILIENT COMMUNITIES and INFRASTRUCTURE

The following priority action area supports increasing capacity to adapt. The Region will continue to guide and encourage the creation of complete communities. The Region will also work to ensure infrastructure systems are built and maintained for both the current and future climate.

COMMUNITY RESILIENCY ACTIONS:

ACTION 1	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Integrate climate change considerations into existing and new municipal planning and development tools (e.g. climate change by-laws, development guidelines)	Lead	Local Municipalities and Development Industry	Adaptation and Mitigation	Community

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Ensure climate change policies are integrated into local Official Plans	Underway	2023
Continue to work with local municipalities to support sustainable development programs	Underway	On-going
Support and advocate for low carbon energy and net-zero emissions by 2050	Underway	On-going
Identify financial and land use planning tools to support regional and local Community Energy Plans	2023	2025
Assess the feasibility of identifying community resiliency improvement areas in Official Plans	2024	2025

ACTION 2	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Conduct a vulnerability and ecosystem services assessment on natural systems and integrate adaptive and mitigative actions into watershed planning	Partner	Local Municipalities, Conservation Authorities and Provincial Government	Adaptation	Community

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Assess the vulnerability of natural systems to the impacts of climate change	2024	2025
Identify the ecosystem services natural systems provide that mitigate the impacts of climate change	2024	2025
Explore opportunities to conduct the vulnerability assessment in partnership with Conservation Authorities and local municipalities	2024	2025
Identify actions to mitigate the impacts of climate change and integrate these actions into watershed plans and related strategies.	2025	2026

COMMUNITY RESILIENCY ACTIONS:

ACTION 3	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Adapt and respond to introduction, establishment, and migration of invasive species	Partner	Local Municipalities, Conservation Authorities, Provincial Government, First Nations and Indigenous Communities	Adaptation	Community

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Develop an internal Invasive Species Program Plan	Underway	2022
Implement the Invasive Species Program Plan to monitor and manage impacts of current and future invasive species	Underway	On-going
Trial additional street tree species to improve resiliency to invasive species	Underway	On-going
Coordinate an Invasive Species Technical Working Group	Underway	On-going
Complete the York Region Forest Studies including an assessment of the prevalence of invasive species, in partnership with local municipalities and Conservation Authorities	Underway	On-going

ACTION 4	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Enhance building energy and water performance in new and existing buildings through performance targets and benchmarking within the community	Partner	Local Municipalities, Utility Companies, Businesses and Development Industry	Mitigation	Community

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Continue to work with local municipalities to standardize sustainable building requirements across York Region	Underway	2025
Support local municipalities in developing and implementing building retrofit programs.	Underway	On-going
Support funding applications that support research, education or training to advance sustainable building guidance or practices	Underway	On-going
Continue to advocate at the federal and provincial level for energy efficiency codes to mandate net-zero construction	Underway	On-going
Demonstrate York Region's leadership and share lessons learned through implementation of sustainable building policies and adaptation plans	Underway	On-going
Collaboratively produce a guideline for sustainable building incentive programs	2023	2025

ROBUST INFRASTRUCTURE ACTIONS:

ACTION 5	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Adopt corporate emission reduction targets and guidelines for low-carbon infrastructure construction	Lead	Local Municipalities, Industry Associations and Conservation Authorities	Mitigation	Corporate

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Complete the draft Sustainable Building Policy	Completed	2025
Pilot the Sustainable Building Policy by applying it to new construction projects	Underway	2026
Continue to reduce the carbon footprint of pavement infrastructure through the pavement preservation lifecycle strategy and use of lower-carbon asphalt	Underway	On-going
Conduct a study to evaluate approaches to quantify lifecycle GHG emissions and reduction opportunities for water and wastewater infrastructure	2023	2024
Establish report templates to integrate GHG reduction and climate change mitigation considerations into the assessment, design and construction of water and wastewater infrastructure	2023	2024
Develop and implement decision-making criteria to help decision makers regularly consider low emission alternatives in construction projects	2023	2025
Establish an annual reporting process for infrastructure design and construction projects that incorporate GHG reduction opportunities	2025	2026
Develop low-carbon construction practices for all road construction works	2025	2026

ROBUST INFRASTRUCTURE ACTIONS:

ACTION 6	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Undertake climate change vulnerability and risk assessments on all Regional infrastructure, systems and assets using a common methodology	Lead	Local Municipalities, Development Industry, and Conservation Authorities	Adaptation	Community and Corporate

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Continue to incorporate adaptive design into new and upgraded Regional infrastructure such as water, waste water, roads and facilities	Underway	On-going
Continue to leverage available asset management grants	Underway	On-going
Establish data governance for maintenance and on-going data operations, centralize geospatial infrastructure data and incorporate climate data into infrastructure mapping	Underway	TBD
Develop and apply an infrastructure risk-criteria, based on level of service, for Regional infrastructure and identify high risk assets, asset systems and infrastructure intense areas	Q2 2023	2025
Conduct research on asset specific adaptation strategies informing updates to operational procedures and business planning	Q3 2023	2025

ACTION 7	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Prioritize infrastructure and asset repairs in climate vulnerable areas	Lead	Local Municipalities, Conservation Authorities and Community Agencies	Adaptation	Community and Corporate

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Update the Corporate Asset Management Strategy and Policy to include climate change considerations	Underway	2024
Assess interdependency and cascading impacts between regional and local infrastructure systems, utilities, and natural systems to identify areas of high vulnerability	2023	2024
Incorporate the Regional Public Works Commissioners of Ontario (RPWCO) Climate Resilience Roadmap approach into asset repair prioritization	2023	2024
Adjust service area asset management plans to prioritize renewal and repair in areas of high vulnerability	2024	2026

PRIORITY ACTION AREA 2: LOW CARBON LIVING

Reduced greenhouse gas emissions are critical to mitigating climate change, and also offer near-term benefits to the Region and its residents and workers, like improving local air quality.

Low-carbon living also relies on changing attitudes about how we purchase, use and dispose of consumer goods, and food.

While Regional actions are important, the Action Plan recognizes actions by individual residents, workers and business also needed to achieve net-zero greenhouse gas emissions and zero waste by 2050.

Actions below will help support and accelerate the move to reduced carbon emissions in the way we live, work and play.

REDUCING EMISSIONS ACTIONS:

ACTION 8	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Establish community-wide greenhouse gas emission reduction targets	Lead	Local Municipalities, Community Stakeholders, Businesses and Development Industry	Mitigation	Community

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Continue to engage with the Local Municipal Climate Change Working Group to collaborate on common actions	Underway	On-going
Engage with internal and external stakeholders to prioritize proposed community actions and interim targets	2023	2024
Review the York Region Official Plan to determine if policy updates are required to implement the Community Energy and Emissions Plan	2024	2025
Work with local municipalities to develop or update Municipal Energy Plans to align with targets set in the Community Energy and Emissions Plan	2024	2026

REDUCING EMISSIONS ACTIONS:

ACTION 9	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Increase use of more sustainable modes of transportation, such as walking, cycling and transit, and community adoption of electric and low-emissions vehicles	Lead/Partner	Local Municipalities, Provincial Government and Businesses	Mitigation	Community and Corporate

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Continue sustainable mobility programs and initiatives including expansion of cycling and walking routes, active transportation projects, and alternative commuting programs.	Underway	On-going
Continue Regional fleet electrification and installation of electric vehicle charging infrastructure	Underway	On-going
Continue to adopt the use of pavement preservation to extend the lifecycle of pavement assets and track greenhouse gas emissions reduction throughout the lifecycle of the pavement program	Underway	On-going
Review and update the Roads Climate Change Action Plan to ensure alignment with current Regional plans and existing climate change work	January 2023	2025
Implement a series of climate change adaptation and mitigation initiatives under the Implement the Transportation Master Plan Program regarding fiscal and environmental sustainability	January 2023	2027

FOOD SYSTEMS ACTIONS:

ACTION 10	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Promote a sustainable and local resilient food system	Lead/Partner	York Region Federation of Agriculture, Agriculture Industry, York Region Food Network, Local Municipalities, Business Improvement Areas, Chambers of Commerce and Conservation Authorities	Adaptation	Community

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Continue to implement organic waste reduction and resource recovery actions from the SM4RT Living Plan	Underway	On-going
Support and promote locally grown food and agricultural products	Underway	On-going
Update the Agriculture and Agri-Food Strategy to include climate change elements	2023	2024
Implement the Agriculture and Agri-Food Strategy 2.0	2024	2027
Work with industry, experts, and community partners to identify climate change impacts to the agricultural and food system including critical supportive infrastructure for food storage and distribution	2024	On-going
Support business-to-business partnerships across the food value chain to reduce or re-purpose food waste locally to create circular food economy	2025	On-going
Provide education and awareness support for food and farming organizations including local farm groups, agri-tourism, start-up businesses, farm-gate sales, food incubators and accelerator hubs	2025	On-going

CIRCULAR ECONOMY ACTIONS:

ACTION 11	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Support waste prevention and circular economy practices in York Region	Lead/Partner	Local municipalities, Conservation Authorities, Academic Institutions, Community Stakeholders, Businesses and Residents	Mitigation	Community

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Provide funding through the Circular Economy Initiatives Fund to non-profit community organizations for programming that reduces waste or advances the circular economy	Underway	2024
Develop single use item/plastics reduction programming and education campaigns for businesses and the community	Underway	2024
Establish a circular economy working group to guide external action areas such as food system sustainability, reuse and sharing, and community capacity building	Underway	2024
Explore and pilot new reuse programming at depots such as expanded textiles/donations and bike reuse	Underway	2025
Continue to implement circular programs from the SMART Living Plan with a focus on action areas identified in the Circular Economy Roadmap	Underway	On-going
Leverage curbside and depot waste audit data to identify impactful opportunities for promotion/education/pilots in support of the circular economy	Underway	On-going
Incorporate climate change messaging into waste reduction and circular economy programs	2023	On-going

ACTION 12	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Identify and advance opportunities to apply a circular economy approach to Regional programs and projects	Lead	Local municipalities, Conservation Authorities, Academic Institutions, Community Stakeholders, Businesses and Residents	Mitigation	Corporate

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Conduct a feasibility study of water reuse opportunities at six sites within the Region	Underway	2023
Conduct a baseline waste flow study to identify opportunities to reduce waste and increase circularity	2023	2024
Explore a sustainable procurement framework and the opportunity to incorporate circular economy principles	2023	2025
Establish a knowledge hub for ongoing staff engagement and learning about circular economy	2023	On-going
Work with stakeholders to identify pilots and develop guidance to track and increase reuse/diversion in the disposal of surplus assets process	2024	2026
Explore opportunities to pilot circular economy construction principles into capital projects	2025	On-going

PRIORITY ACTION AREA 3: SUPPORTING an EQUITABLE TRANSITION

It is important to assess climate risks and opportunities while working to ensure the health and prosperity of all Regional residents, workers and businesses. Climate change impacts will not affect every resident or every area the same way. Having more information about specific vulnerabilities will be essential in developing the right responses to differing climate change impacts.

The priority actions below aim to support an equitable approach to addressing climate risks and opportunities while working to ensure the health and prosperity of people and businesses.

PREPARED and RESPONSIVE YORK REGION ACTIONS:

ACTION 13	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Include the most severe and likely climate-related risks in Enterprise Risk Management practice	Lead	All Departments	Adaptation	Corporate

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Review and update risk registries by operational group	November 2022	2024
Collaborate with internal departments during the risk registry update process to identify possible climate risk	January 2023	2023
Incorporate a climate focus into Enterprise Risk Management using Business Continuity Planning and Hazard Identification Risk Assessment, with assistance and guidance from Emergency Management	April 2023	2025
Launch a new risk registry tool to replace the Excel spreadsheet methodology	May 2023	2023
Load risk registry information and produce draft reports including prioritization and action plans	May-September 2023	2024
Include risk registry information in the Operational Risk Management services stewardship report	January 2024	2025
Present an Enterprise Risk Management report to the Senior Management Team that includes and highlights the most severe and likely climate risks as part of the Enterprise Risk Management framework	March 2024	2024

PREPARED and RESPONSIVE YORK REGION ACTIONS:

ACTION 14	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Integrate future climate information and adaptation planning into York Region's Emergency Preparedness Plans and Business Continuity Plans	Lead	All Departments and Conservation Authorities	Adaptation	Corporate

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Integrate available climate change data into the annual York Region hazard identification and risk assessment methodology	Underway	On-going
Identify Regionally owned/operated at-risk critical infrastructure	Underway	On-going
Integrate severe weather considerations into business continuity plans	Underway	On-going
Incorporate severe weather event scenarios into York Region emergency exercise and emergency management training	2023	On-going

ACTION 15	YORK REGION ROLE	POTENTIAL PARTNERS	ACTION TYPE	ACTION AREA
Co-ordinate strategies York Region and its partners can undertake to increase community resilience and emergency preparedness	Lead	Local Municipalities and Conservation Authorities	Adaptation	Community and Corporate

IDENTIFIED TASKS	ANTICIPATED START DATE	ANTICIPATED END DATE
Coordinate meetings with local municipal Community Emergency Management Coordinators	Underway	On-going
Support local municipalities to prepare for, respond to, and recover from severe weather events	Underway	On-going
Develop targeted public awareness and education campaign focusing on personal preparedness for severe weather event emergencies	Underway	On-going
Educate York Region residents on household preparedness for disasters and emergencies	Underway	On-going
Engage community stakeholders in emergency exercises	2023	On-going

LOW CARBON ECONOMY ACTIONS:

ACTION 16	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Update existing procurement policies to specify climate-related performance targets	Lead	All Departments	Mitigation	Corporate
IDENTIFIED TASKS			**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Integrate available climate change data into the annual York Region hazard identification and risk assessment methodology			Underway	On-going
Identify Regionally owned/operated at-risk critical infrastructure			Underway	On-going

LOW CARBON ECONOMY ACTIONS:

ACTION 17	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Generate awareness and understanding of climate change impacts amongst vulnerable economic sectors and promote programs that support businesses to increase resiliency and transition to low-carbon economy	Lead	All Departments, Local Municipalities, Business Improvement Areas, Chambers of Commerce, Industry Associations	Adaptation and Mitigation	Community

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Promote green technology and low-carbon business enterprises in York Region	Underway	On-going
Undertake research to identify sectors and businesses that are most vulnerable to understand climate change impacts on York Region's economy and educate business leaders on risks related to climate change	2024	2025
Generate awareness on climate change impacts and demonstrate business case for implementing climate smart initiatives (e.g. food waste reduction)	2024	On-going
Support businesses in the transition to a low-carbon economy by promoting existing partnerships and programming	2024	On-going
Partner with academia and the private sector to support the circular-economy in alignment with the SM4RT Living Plan	2024	On-going
Collaborate with post-secondary education and vocational training partners to support development of training for low carbon economy workers, trades, and construction practices	2025	On-going
Engage industry leaders and innovators to share best practices and solutions to demonstrate business value and encourage participation	2025	On-going

SUPPORTING RESILIENCE ACTIONS:

ACTION 18	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Complete the York Region Climate Change and Health Vulnerability Assessment and share the findings with internal and external stakeholders	Lead	Local Municipalities, Provincial/Federal Agencies, and Community Stakeholders.	Adaptation	Community

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Post the Climate Change and Health Vulnerability Assessment on the Regional website for public access	Completed	On-going
Share results of the Climate Change and Health Vulnerability Assessment and other related research with relevant internal and external stakeholders	Underway	2023
Identify and monitor existing sources of climate-health data (e.g., extreme heat, vector-borne disease, Rapid Risk Factor Surveillance System).	Underway	On-going
Review existing literature to identify adaptation strategies which support reduced climate-related health outcomes	2023	2024

SUPPORTING RESILIENCE ACTIONS:

ACTION 19	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Apply an equity lens to prioritizing and supporting climate mitigation and adaptation actions	Partner	Local Municipalities, Conservation Authorities, Academic Institutions and Community Stakeholders	Adaptation	Community and Corporate

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Develop a framework for considering equity in climate mitigation and adaptation actions	2023	2024
Build relationships with the public and community groups who are most vulnerable to the impacts of climate change (e.g., partner with community service organizations)	2023	On-going
Integrate equity considerations in climate change risk assessments and adaptation planning	2023	On-going
Partner to address climate vulnerabilities in priority neighbourhoods (i.e., TRCA SNAP program)	2024	On-going

ACTION 20	**YORK REGION** ROLE	POTENTIAL **PARTNERS**	**ACTION** TYPE	**ACTION** AREA
Continue to build relationships with First Nations and Indigenous communities around resilience	Partner	First Nations and Indigenous Communities, Local Municipalities	Adaptation	Community

IDENTIFIED TASKS	**ANTICIPATED** START DATE	**ANTICIPATED** END DATE
Support neighbouring Indigenous communities with their adaptation plans	2023	On-going
Continue to build relationships with First Nations and Indigenous Communities through ongoing engagement activities, building on collaboration initiated through engagement on the Regional Official Plan, Water and Wastewater Master Plan and Transportation Master Plan	2023	On-going
Provide a transparent view of York Region services and current climate change actions	2023	On-going

NEXT STEPS

Implementing the Action Plan requires the creation of innovative and strong partnerships to enable collaborative climate action. It also requires a commitment to educating and engaging the Region's residents, businesses, local municipalities and others.

To support implementation of the Action Plan, York Region will:

- Develop performance indicators to track climate change indicators, greenhouse gas reduction, adaptive action and implementation of Actions and identified tasks outlined in this plan.
- Develop communication and education strategies on the impacts of climate change and strategies for reducing greenhouse gas emissions and increasing resiliency in the community to support the implementation of the Actions outlined in this Plan.
- Develop or acquire the best available data and information needed to integrate climate change considerations into all decision-making.

The Action Plan has been developed as a living document. Although the impacts of climate change are already being felt, its long-term consequences continue to evolve and the effects of mitigation efforts are still uncertain. As the plan rolls out, the Region and its partners will learn lessons and gain new information and knowledge.

York Region and its partners need to be flexible and agile when implementing this Action Plan given that the climate landscape including the legislative framework is continuously evolving. An agile approach will allow the Region to fine-tune identified actions and add new ones to take advantage of opportunities, adapt to unexpected events and trends, and learn from other leading jurisdictions. The Action Plan will be monitored annually, and progress will be reviewed and communicated every four years to ensure continuous improvement.

APPENDICES

DEFINITIONS

Adaptation: The process of adjustment to actual or expected climate and its effects, in order to moderate harm or take advantage of beneficial opportunities

Circular Economy: A circular economy eliminates waste and pollution and conserves resources. It is a shift from a throw-away to a circular mindset that extends the life cycle of goods, food and resources through better design and continuous reuse, so nothing goes to waste. In a circular economy, instead of industries, manufacturers and consumers taking and using resources for a short period of time and then disposing of them, they will be kept in use. Innovators will design products that are more durable, reusable, repairable and recyclable. This circular shift will lessen impacts on the environment, allowing its resources to recover and regenerate.

Climate: Climate is usually defined as the average weather or, a statistical description of climate variables such as surface temperature, precipitation and wind over an extended period of time ranging from months to thousands or millions of years. The recommended period for averaging these variables is 30 years, as defined by the World Meteorological Organization.

Climate change: Climate change refers to a change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing factors, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.

Climate Change and Health Vulnerability Assessment: A study undertaken to better understand how York Region communities may be vulnerable to the impacts of climate change from a health perspective.

Co-Benefits: The benefits that occur in addition to a single prioritized policy goal. In the context of this Plan, these are other benefits that result from a specified action over and above those directly tied to climate change mitigation and adaptation which can increase plan effectiveness.

Co-Harms: Unintended or incidental effects resulting from adaptation and mitigation efforts and can range from being small to highly significant.

Equity: The principle of fairness in burden sharing and is a basis for understanding how the impacts and responses to climate change, including costs and benefits, are distributed in and by society in more or less equal ways. It is often aligned with ideas of equality, fairness and justice and applied with respect to equity in the responsibility for, and distribution of, climate impacts and policies across society, generations, and gender, and in the sense of who participates and controls the processes of decision-making.

Emission Scenario: An emission scenario describes a possible future evolution of emissions of greenhouse gases, and other climate drivers. They assist in climate change analysis, including climate modelling and the assessment of impacts, adaptation, and mitigation. The likelihood of any single emissions path described in a scenario is highly uncertain.

Greenhouse Gases: Greenhouse gases are gases in Earth's atmosphere that trap heat. They let sunlight pass through the atmosphere, but they prevent the heat that the sunlight brings from leaving the atmosphere. The main greenhouse gases are carbon dioxide, chlorofluorocarbons, methane, nitrous oxide, and water vapour.

Intergovernmental Panel on Climate Change: The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change

DEFINITIONS CONTINUED

Low Carbon Economy: A low carbon economy is an economy based on the reduction of greenhouse gas emissions.

Mitigation: A human intervention to reduce sources or enhance sinks and sequestration of greenhouse gases.

Model: Climate models are developed and used at climate research institutions around the world to make projections of future climate, based on future scenarios of emissions and concentrations of greenhouse gases and aerosols.

Net Zero Emissions: Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Where multiple greenhouse gases are involved, the quantification of net zero emissions depends on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential, and others, as well as the chosen time horizon)

Resilience: The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.

Urban Heat Island: An urban area or metropolitan area that is significantly warmer than its surrounding rural areas due to human activities. The main cause of the urban heat island effect is the change in land cover from pervious to impervious land surfaces.

Vulnerability: The tendency or susceptibility to be adversely affected by climate change. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

Watershed Planning: Planning that provides a framework for establishing goals, objectives and direction for the protection of water resources, the management of human activities, land, water, aquatic life and resources within a watershed and for the assessment of cumulative, cross-jurisdictional and cross-watershed impacts. Watershed planning typically includes: watershed characterization, a water budget and conservation plan; nutrient loading assessments; consideration of climate change impacts and severe weather events; land and water use management objectives and strategies; scenario modelling to evaluate the impacts of forecasted growth and servicing options, and mitigation measures; an environmental monitoring plan; requirements for the use of environmental best management practices, programs, and performance measures; criteria for evaluating the protection of quality and quantity of water; the identification and protection of hydrologic features, areas and functions and the inter-relationships between or among them; and targets for the protection and restoration of riparian areas. Watershed planning is undertaken at many scales and considers cross-jurisdictional and cross-watershed impacts. The level of analysis and specificity generally increases for smaller geographic areas such as subwatersheds and tributaries.

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CONTACT INFORMATION

For more information on York Region's Climate Change Action Plan, please call 1-877-464-9675 or visit york.ca/climatechange

YORK REGION

CLIMATE CHANGE ACTION PLAN

SEPTEMBER 2022

York Region