

CITY OF OTTAWA KEY CLIMATE CHANGE INITIATIVES (2015-2018 Term of Council)

Overview

- The City's 2015-2018 Strategic Plan included two specific objectives:
 1. Supporting an environmentally sustainable Ottawa (implement priority projects that protect property, land, air and water for City residents)
 2. Reduce long-term costs through planned investment and staging of diversion and conservation strategies (demonstrating sustainability and fiscal responsibility in planning, maintaining and renewing utility services and assets through City-led actions and municipal partnerships)
- The City has a proactive environmental strategy that targets an 80% reduction in GHG emissions by 2050.
- It is working toward this target and increased climate resiliency in future growth and development through its Air Quality and Climate Change Management Plan, Official Plan policies, its energy transition strategy (Energy Evolution) and a variety of specific energy conservation and environmental initiatives.
- This is a cross-departmental effort, involving multiple departments in collective and individual projects.
- Key initiatives range from applying an energy conservation and climate resiliency lens to City policies, to greening operations, to collaborating with local and international partners to achieve meaningful results in GHG emission reductions and becoming a low-carbon economy.
- The progress made to date, with many results on track or exceeding targets, demonstrates the City's deep commitment to tackling climate change head-on.
- The City is also taking a proactive approach to protecting and preserving its natural assets for future generations through initiatives such as the Ottawa River Action Plan and the Urban Forest Management Plan.
- The initiatives completed or underway have the added benefit of making Ottawa a cleaner and environmentally-responsible community and one that protects and enhances its natural features.
- Some of the things we are doing (for example, converting to LED lighting, greening our fleet and buildings) are also reaping economic benefits in terms of cost savings for our City operations.
- The City is also working on increasing the City's capacity for climate resilience through important initiatives such as updating floodplain mapping and community flood risk profiles to better position vulnerable areas for future environmental stresses.

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Note re department acronyms used below:

CSS	Community and Social Services department
ICS	Innovative Client Services
PIED	Planning, Infrastructure and Economic Development department
PWES	Public Works and Environmental Services department
OPH	Ottawa Public Health
RCFS	Recreation, Cultural and Facilities Services department

Policy Framework

Air Quality and Climate Change Management Plan (PIED)	<ul style="list-style-type: none"> • Sets framework for how Ottawa will mitigate and adapt to climate change • City is on track to meeting short-term GHG emission reduction targets • Five-year review and update expected by the end of 2019
Official Plan Renewal (PIED)	<ul style="list-style-type: none"> • Revised OP in 2021 • Supports reduction of GHG emissions and increased resiliency planning • Builds energy and climate resiliency in future growth/development
Energy Evolution: Ottawa's Community Energy Transition Strategy (PIED)	<ul style="list-style-type: none"> • Identifies corporate and community actions needed to drive 80% reduction in GHG emissions by 2050 • Final report expected by the end of 2019 • The 2019 City budget included Council direction to direct any Hydro Dividend Surplus that exceeds projections in the Long-Range Financial Plan to corporate initiatives that improve energy efficiency, conservation or renewable energy for the 2018-2022 Term of Council
Ottawa River Action Plan (PIED)	<ul style="list-style-type: none"> • In progress • 17 individual projects aimed at enhancing and protecting the health of the Ottawa River • Includes the Combined Sewage Storage Tunnel project

Specific City Initiatives

Combined Sewage Storage Tunnel (PIED)	<ul style="list-style-type: none"> • Project to reduce the frequency of combined sewage overflows to the Ottawa River, add redundancy to downtown sewer system and reduce risk of basement flooding in Glebe/Centretown – to be in operation in 2020 • Climate change was factored in by upsizing the Tunnel storage volume by 72%
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	<ul style="list-style-type: none"> • Reduce volume of combined sewage overflow to the Ottawa River by up to 43,000 m³ (18 Olympic-sized swimming pools) • Reduce frequency of overflow events from approximately 28 to 2 • Reduced risk of flooding for 7,000 residential and 150 non-residential properties
O-Train Confederation Line (Transportation Services)	<ul style="list-style-type: none"> • 34 electric-rail vehicles, replacing ~ 175 buses with zero-emission vehicles • Reduce GHGs by ~ 94,000 tonnes and criteria air contaminants by 4,500 tonnes per year by 2031 • Project operational in 2019
O-Train Stage 2 Extensions (Transportation Services)	<ul style="list-style-type: none"> • Confederation Line extensions will be fully electric, with an additional 38 Alstom Citadis Spirit light rail vehicles (72 total) • Trillium Line vehicles to meet Tier 4 emissions standards under <i>Canadian Environmental Protection Act</i> • Reduce GHGs by 110,000 tonnes and air contaminants by 3,000 tonnes over a 25-year period • Key maintenance and storage facilities will be LEED certified • Project began in 2019
Procurement of Electric Buses (Transportation Services)	<ul style="list-style-type: none"> • Working closely with electric bus manufacturers to improve greenhouse gas emissions • \$6M funds were identified in the Capital Works in Progress (WIPs) and reallocated to procure electric buses and any required infrastructure • Anticipated that the procurement process to acquire two electric buses will begin in 2020 • As part of the Transportation Master Plan (TMP) update, a white paper will be produced on the potential future evolution of the OC Transpo bus fleet from diesel buses to lower-emission or zero-emission vehicles
Bus, diesel train and electric train simulators (Transportation Services)	<ul style="list-style-type: none"> • Installed 2017-2018 • Reduces diesel and energy consumption • Estimated GHG avoidance of ~ 30,000 kg/year for bus/diesel train simulators + additional savings for electric train simulator

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Adaptive Traffic Control – Innes Road Project (Transportation Services)	<ul style="list-style-type: none"> • Using artificial intelligence (AI) technology as part of a traffic flow management system • Increased efficiencies in travel time, stop reductions and overall delays • Initiative is ongoing – results anticipated in Q1 2020 • Partial funding through Advanced Traffic Management Systems (ATMS) Capital and in 2020 expanding the project to Hunt Club in the vicinity of Prince of Wales Drive and Riverside Drive.
Community Energy Innovation Fund (PIED)	<ul style="list-style-type: none"> • One-time funding for community-based projects supporting Energy Evolution strategy • 8 organizations received funding for projects to be completed by August 31, 2020
Hydro Ottawa Dividend Surplus (2018) (PIED)	<ul style="list-style-type: none"> • Actions at City sites to reduce GHG emissions and energy consumption • 8 projects implemented by PIED and RCFS • Driving GHG reductions beyond usual payback criteria + secondary benefits (upgrades to bird-friendly lighting and reduced maintenance costs)
Green Building Policy (PIED)	<ul style="list-style-type: none"> • Target - new City buildings >500 m² at least LEED certified – targeting LEED Gold • Ongoing since September 2005 • Currently 27 LEED certified buildings (including 5 LEED Gold, 12 LEED Silver) • Lansdowne is Ottawa’s first green LEED community
Corporate Electric Vehicle Charging Station Policy (PIED)	<ul style="list-style-type: none"> • Supports use of electric vehicles through charging stations/infrastructure on City property • Ongoing since December 2017
Electric Vehicle Charging Stations at City facilities (RCFS)	<ul style="list-style-type: none"> • To encourage the public to adopt electric vehicles • Installation by outside contractor who received provincial funding (free to City) • Six sites = seven Level 2 outlets; six DC Fast chargers
Mainstreaming Climate Change Resilience in Wet Weather Infrastructure planning and design (PIED)	<ul style="list-style-type: none"> • To achieve consistent and persistent improvements in the performance of wet weather infrastructure (sewer design, separation, extraneous flow removal and retrofits) • Lower risk of basement flooding

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	<ul style="list-style-type: none"> • Key risk reduction measures standard in new housing developments
Energy Reduction Program capital investments in facilities (2015-2018) (RCFS)	<ul style="list-style-type: none"> • Reduce energy use and costs, delivering a 5.5 year simple payback over 4 years (2015-2018) • Reduced GHGs by >800,000 kg annually through 105 lighting, 35 building automation, 42 mechanical and 5 water projects
Energy Management Investment Strategy (2019-2022) (RCFS)	<ul style="list-style-type: none"> • Reduce energy use and costs, delivering an 8-year simple payback • Annual investment over 4 years (2019-2022) • Expected reduction in GHGs by 3 million kg annually (fully achieved by 2023) • Includes lighting controls, building automation systems, mechanical and HVAC improvements, and water initiatives
Solar panels on City buildings (RCFS)	<ul style="list-style-type: none"> • Clean local renewable energy being created and used within the City • 3,500 kW of solar panels installed at 8 sites • Installed by Energy Ottawa (now Envari) who is renting 7 City roofs + City-owned panels at Glebe garage
Various other facility upgrades to improve energy efficiency (RCFS)	<ul style="list-style-type: none"> • City Hall outdoor lighting upgrade • Jim Durrell facility lighting upgrade • Vestibule heating, ground source heat pump to replace propane at Carp mess hall
Fleet Vehicle Greening (ICS)	<ul style="list-style-type: none"> • Acquisition of hybrid, electric or alternative fuel vehicles ongoing • 103 hybrid vehicles (43 additional on order) and 1 plug-in hybrid (Volt) to date • First 4 fully electric vehicles to be acquired in 2019 • 4 electric ice resurfacers • 7 electric forklifts • Municipal Fleet's overall target GHG reduction 2013 to end of 2018 = 5%; actual = 10.4%
Fleet Use of Green Vehicle Technologies (ICS)	<ul style="list-style-type: none"> • Telematics in snow plow trucks to track idling as part of a comprehensive idling reduction campaign • 7 new cargo vans outfitted with aftermarket hybridization systems • 7 new pickup trucks outfitted with aftermarket hybridization systems • Anti-idling devices installed on entire ambulance fleet

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	<ul style="list-style-type: none"> • Working with different departments to pilot telematics devices and further explore this technology, with a view to tracking/reducing idling
EcoDrive Projects (Transportation Services)	<ul style="list-style-type: none"> • Using Connected Autonomous Vehicle (CAV) technology to leverage existing traffic infrastructure and reduce fuel consumption and GHG emissions • To permit drivers to adjust their driving behaviours when approaching a traffic signal by providing timing information to vehicles • 2 projects <ul style="list-style-type: none"> ○ EcoDrive I (in collaboration with Transport Canada, MTO, and Carleton University – completed early 2018) ○ EcoDrive II (to be completed by Q1 2020)
OttawaRideMatch (Transportation Services)	<ul style="list-style-type: none"> • Free online ride-matching service pairing up potential carpoolers based on work hours and home/workplace locations • Sign-ups increasing (2018 = 4,296 registered users)
TravelWise for Workplaces (Transportation Services)	<ul style="list-style-type: none"> • TravelWise Action Plan identified the most effective policies and programs to increase sustainable commuting to the workplace • 9 workplaces participating, including <ul style="list-style-type: none"> ○ CHEO – new carpool policy ○ Ottawa Hospital – shuttle service upgrade with rack and roll ○ IKEA – increased secure bike parking ○ Park of Commerce – added EV charging stations
Various other programs/policies encouraging use of alternative modes of transportation, including cycling and walking (Transportation Services)	<ul style="list-style-type: none"> • Increased safety (measures include Pedestrian Crossover Program; Safer Roads Ottawa Program, Accessible Pedestrian Signal Program, Pedestrian Safety Evaluation Program, Cycling Safety Evaluation Program and Temporary Traffic Calming Measures Program) • Encourage commuter cycling <ul style="list-style-type: none"> ○ Annual Bike to Work Month – in 2018, 4,033 participants; 141,580 kg of GHG emissions avoided ○ Ring-and-Post Bike Racks at Bus Stops (50) and Bike Racks at City facilities (1,300)

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	<ul style="list-style-type: none"> • Ottawa Cycling Plan, to strengthen and support cycling in the City – ~ 117 km of new cycling facility added to the City’s network during previous Term of Council and new bike maps were developed with the NCC and City of Gatineau for public distribution • Ottawa Pedestrian Plan – ~ 7.3 km of new sidewalks (constructed as stand-alone projects) added during previous Term of Council • Reduces fuel consumption and GHGs
Solid Waste Mater Plan (PWES)	<ul style="list-style-type: none"> • 30-year plan to set strategic direction for how waste is managed in Ottawa • Phase 1 of the plan to be presented in early 2020 • Will incorporate a variety of waste management strategies and policies, such as increasing both curbside and multi-residential waste diversion and waste prevention and reuse strategies. All options will consider GHG impacts, and opportunities will be explored to minimize Solid Waste’s carbon footprint. • Will consider current regional, national and global waste contexts – such as the move toward individual producer responsibility and single-use plastics
Electrical Reliability and Co-generator Replacement Project (PWES)	<ul style="list-style-type: none"> • Project design in progress • The business case has been completed • The Council Report to secure funding to proceed was approved at Council on October 23, 2019 • Expected to improve reliability/redundancy of ROPEC’s electrical distribution system • Lower GHG emissions, provide increased utility savings and improve climate resiliency (allow ROPEC to operate independent of the utility grid in the event of a catastrophic failure)
Streetlight conversion to LED (Transportation Services)	<ul style="list-style-type: none"> • Complete project to convert 58,000 streetlights to LED by July 2020 • LED technology reduces City streetlight energy consumption by 64% and street light maintenance costs by 50% • Cumulative Energy savings = 35,246,852 kWh (\$4.46 million), representing a reduction of 2,715 metric tons of GHGs
Traffic signal conversion to LED (Transportation Services)	<ul style="list-style-type: none"> • Replace all incandescent bulbs with LEDs • Reduce energy consumption and maintenance costs

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	<ul style="list-style-type: none"> • Ongoing – over 83% of signalized intersections have been upgraded as of Q1 2019 (goal is to complete conversion by end of this Term of Council)
Tree Planting Programs (PWES)	<ul style="list-style-type: none"> • Trees in Trust; Schoolyard Tree Planting Grant Program; Parks and Streetscape Tree Planting Program; Green Acres Program; Commemorative Tree Program • Increase forest cover; enhance City streets, parks, facilities; mitigate climate change
Urban Forest Management Plan (PWES and PIED)	<ul style="list-style-type: none"> • 20-year plan • Structured approach to protecting/enhancing forest into the future • Includes Tree By-law review, completion of tree inventory, forest canopy cover analysis, tree planting/establishment guidelines
Residential Protective Plumbing Program (PWES)	<ul style="list-style-type: none"> • Grants to homeowners to reduce the risks of flooding including backwater valves and back-up power for sump pumps.
Energy Efficiency improvements//GHG reductions for social and supportive housing (CSS)	<ul style="list-style-type: none"> • Reduce energy consumption, GHG emissions and maintenance costs (replacing doors, windows, insulation and heating systems with higher energy efficiency rating components) + improve residents' physical comfort <ul style="list-style-type: none"> ○ Under Social Housing Improvement Program (SHIP) and Housing and Homelessness Investment Plan (HHIP) (provincial funding) – estimated annual natural gas savings of 20% for heating components + additional savings from building component upgrades ○ Funding under Social Housing Apartment Retrofit Program (SHARP) for 150+ unit high-rise apartments – estimated annual natural case savings of 12.5% and electricity savings of 8%; estimated GHG reduction 900 tonnes/yr ○ Funding under Social Housing Apartment Improvement Program (SHAIP) for 100-150 unit high rise apartments – estimated annual natural gas savings of 9.3% and electricity savings of 13%' estimated GHG reduction 700 tonnes /yr ○ Action Ottawa Capital Funding for Affordable Housing encourage/facilitate development of units that exceed Building Code standards for energy efficiency and GHG emissions – funding for 2 completed projects + one underway
Health promotion videos and website on need to	<ul style="list-style-type: none"> • To raise awareness of the connection between climate change resiliency and built environment and the need for involvement and action to build healthier communities

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create climate resilient built and natural environments (OPH)	<ul style="list-style-type: none"> • Other municipalities, agencies and public health units have adopted and branded them across Canada
Public education and awareness related to climate change (OPH)	<ul style="list-style-type: none"> • To raise awareness and educate community partners and the public about individual and collective actions to address climate change risks • Presentations on topics such as health equity and climate change, food waste, climate change and extreme weather, Ottawa’s response to climate change and extreme weather, and climate change and the built environment • Active living initiatives that encourage residents to engage in sustainable, active transportation including walking, cycling and transit. • Dissemination of information on prevention strategies for vector-borne diseases which are anticipated to increase with a changing climate e.g. West Nile and Lyme disease. • Audiences include residents, City staff, and public health units across Ontario
City of Ottawa Interagency Extreme Weather Plan (OPH)	<ul style="list-style-type: none"> • To maintain an integrated community plan that will protect the health of the population in Ottawa in extreme hot and cold temperature events and poor air quality events • Reduce illness and deaths associated with extreme heat, cold and poor air quality events • Work with service providers that represent people at risk of poor health outcomes during extreme weather events • OPH staff assist service providers to develop policies for extreme weather events on extremer heat and cold, and poor air quality
Climate change health vulnerability assessment (OPH)	<ul style="list-style-type: none"> • Assist in identifying priority health issues in Ottawa and in developing a climate change adaptation plan based on local health needs • Identified by the Ontario Ministry of Health and Long-Term Care as an activity to be conducted by Public Health Units
Emergency response during extreme weather events (OPH)	<ul style="list-style-type: none"> • Support people at risk of poor health outcomes and reduce illness and deaths associated with extreme heat and cold events, and help people recover from other extreme weather events.

Collaborating with Others	
Global Covenant of Mayors for Climate and Energy (PIED)	<ul style="list-style-type: none"> • World's largest coalition of mayors promoting/supporting voluntary action toward a low-carbon economy • Ongoing since 2016 • Participating cities must meet certain requirements,, including setting and tracking GHG emission reduction targets
Low Carbon Cities Canada (LC3) partnership	<ul style="list-style-type: none"> • LC3 – partnership between seven municipalities and the Federation of Canadian Municipalities (FCM) to achieve ambitious local climate action • City of Ottawa letter of support December 7, 2018 • Funding identified in the federal budget March 2019
EnviroCentre's Carbon 613 program (PIED)	<ul style="list-style-type: none"> • Made-in-Ottawa, target-based sustainability program for businesses • Ongoing since 2016 • Participants must set and track GHG reduction targets
NRCan Infrastructure and Gold Readiness Working Group (PIED)	<ul style="list-style-type: none"> • Develops best practices for expansion of electric vehicle (EV) charging infrastructure • Currently focused on multi-residential buildings • Potential to save millions on costs of installing charging infrastructure
Regional Climate Projections (PIED)	<ul style="list-style-type: none"> • Joint project with National Capital Commission (NCC) and Environment and Climate Change Canada • Generate local climate projections to 2100 for National Capital Region • To be completed in 2020 • Will be used to inform a City Vulnerability Assessment and Climate Resiliency Strategy
Flood risk analyses (PIED)	<ul style="list-style-type: none"> • To understand and reduce potential flooding risks • Ongoing - led by Infrastructure Services in collaboration with Conservation Authorities • Floodplain mapping updates + community flood risk profiles inform emergency preparedness and flood mitigation and response efforts
Agricultural grants through Rural Clean Water Program (PIED)	<ul style="list-style-type: none"> • To support farmers to adapt to drought conditions and build economic resiliency to climate change • 16 types of environmental projects – delivered by Conservation Authorities on behalf of the City