

Climate Adaptation Progress Made and Underway

The Climate Resilient Edmonton: Adaptation Strategy and Action Plan has 11 Goals and 18 Strategic Action in five interconnected paths:

- **Science and Evidence Based Decision Making** - This path is the underlying foundation of Edmonton's approach to climate change adaptation; it influences all other strategy pathways. This path sets forward goals and actions to support: science and evidence based decision making; climate resilient infrastructure and built form; and communities, households, institutions and residents who are more prepared for impacts and opportunities from the changing climate.
- **Preparing for Changing Temperatures** - This path sets forward goals and actions to support adapting to increasing temperature and preparing for more frequent drought conditions.
- **Preparing for Changing Precipitation** - This path sets forward goals and actions to support adapting to potential changes to the water supply and to flooding impacts that changing precipitation may bring.
- **Preparing for Changing Weather Extremes** - This path sets forward goals and actions to increase the resilience of the electricity and fuel systems, and to support Edmontonians as they prepare for, respond to and recover from changing weather extremes.
- **Preparing for Changing Ecosystems** - This path sets forward goals and actions to support the protection of ecosystem goods and services Edmontonians rely on for maintaining quality of life, and to improve the resilience of food systems and urban agriculture.

Since the Strategy and Action Plan was developed in 2018, and adopted by Council in 2020, implementation has been underway and includes:

- Beginning to integrate climate science and evidence into policy and decision making processes:
 - Development of the City's first integrated Climate Resilience Policy (C627).
 - Development of new climate modeling tools.
 - Establishment of the CitiesIPCC Legacy Research Grant Program to contribute to the [Global Research and Action Agenda on Cities and Climate Change Science \(Research Agenda\)](#), developed when Edmonton hosted the first ever IPCC Cities and Climate Change Conference. The Grant was designed to support research that would aid Edmonton in its science-based, climate-related decisions

for both mitigating greenhouse gas emissions as well as to help the City to adapt to a changing climate.

- Incorporating climate risk into various City risk and financial processes (including being only the fourth city in Canada to disclose climate related risks and information as part of Financial Reporting, through the Task Force on Climate-Related Financial Disclosures process).
- Expanding the mandate of the Energy Transition Advisory Committee to include adaptation and resilience. The expanded Energy Transition and Climate Resilience Committee has recruited new members to broaden expertise to include climate resilience.
- Developing a change management approach to support implementation of both the Adaptation and Energy Transition strategies within the City of Edmonton and become a climate resilient corporation.
- Beginning to integrate climate resilience into planning and development processes
 - Assessing and mapping climate vulnerabilities for 280 Edmonton neighbourhoods.
 - Conducting wildfire and urban heat risk mapping.
 - Completing an initial (Phase 1) assessment on the impacts of climate change on water security in the Edmonton Metropolitan Region.
 - Proposing changes in the Zoning Bylaw renewal including: Development in flood risk areas continues to be limited and flood proof design is required; Maximum site coverage of impermeable surfaces for low density residential developments will continue to be limited; More urban agriculture allowed without the need for permits; Natural areas will continue to be preserved and on-site landscaping to include diverse plant material and incentivize the preservation of trees.
 - Beginning to advance climate resilient community planning and development, starting at a District scale, as part of District Planning.
- Preparing infrastructure
 - Integrating climate resilience into the City's asset management plans - Conducting detailed Public Infrastructure Engineering Vulnerability Committee (PIEVC) Protocol assessments to identify climate risk and adaptation actions as part of asset management planning.

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- Researching regional tree vulnerabilities to climate change and developing a guide to urban forest management in a changing climate.
- Researching regional climate change impacts on the number and types of invasive species and pests and developing actions for Integrated Pest Management planning.
- Supporting residents, businesses and communities to advance climate resilience action.
 - Preparing Homeowners:
 - Sharing information through displays, workshops and handouts at events such as home shows, Resilience Festival and Get Ready in the Park.
 - Developing a [Climate Resilient Virtual Home](#) - an interactive platform that provides a road map to help homeowners and builders improve the climate resilience of homes, and an accompanying [guide](#).
 - Developing an Edmonton-specific [Climate Change Almanac](#) webpage to showcase how Edmonton's climate has changed over the years and how it will continue to change.
 - Developing adaptation content for the [Change Homes for Climate Guide](#) and the [Change Habits for Climate Guide](#), and creating short informational videos on home adaptation improvements through the [Change for Climate Tiny Explanations](#) video series.
 - Delivering the [Change for Climate Lunchbox Series](#), a series of one-hour sessions on the basics of climate change, and what residents can do to mitigate, adapt to, and prepare for climate change in Edmonton.
 - Sharing [stories and information](#) through the monthly Change for Climate newsletter.
 - Preparing Institutions and Businesses:
 - Delivering a climate change risk planning workshop for members of the Corporate Climate Leaders Program. This workshop introduced the fundamentals of assessing climate related risks to their businesses, and how to prepare for those risks. There is commitment to continue to build adaptation capacity with this audience on an annual basis.
 - Supporting a discussion with members of the Energy Transition Leadership Network on the expected climate change risks and impacts for Edmonton, and introduced ideas for planning and preparing for those impacts.

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- Development of an interactive [Climate Resilient Business Tool](#) and associated guide to help small and medium enterprises undertake a climate risk assessment and identify adaptation actions to take to mitigate climate risks to their businesses.
- Preparing Communities:
 - Delivering a three-part workshop series for the Edmonton Federation of Community Leagues on Adapting Community Leagues for Climate Change. These workshops have been delivered virtually since 2020.
 - Preparing [resources for teachers](#) who wish to have local information to discuss how Edmonton's climate has and is changing, and how schools can participate in adaptation efforts.
 - Completing research on community vulnerability and resilience of older adults and immigrants in a changing climate.
 - Conducting research to inform planning for resilience hubs that can act as shelters and resource centers during extreme climate events.
 - Working with the University of Alberta to map climate resilience amenities (such as splash pads) onto an augmented reality app.

Administration will continue to implement the Adaptation Strategy and advance work to make Edmonton a more climate resilient community. Further direction and funding will determine which actions are taken and the pace of implementation for 2023 to 2026.

Flood Mitigation

EPCOR in collaboration with the City of Edmonton has also been advancing work to make Edmonton more flood resilient. EPCOR's Stormwater Integrated Resource Plan (SIRP) presents the path forward to mitigate stormwater flooding risk in Edmonton. SIRP focuses on five investment themes:

- Slow - slow the entry of stormwater into the drainage network by absorbing it in green infrastructure such as low impact development (LID) and holding it in ponds. This represents the largest investment theme.
- Move - move excess water from areas at risk. This prioritizes investment in low lying locations.
- Secure - EPCOR works to help secure individual properties in higher risk areas against sewer backups, inflow infiltration and flooding. This includes rehabilitating the gray infrastructure in those areas and making improvements to existing outfalls and control gates to secure properties from flooding during high water level events.

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- Predict - predict and manage the movement of stormwater through smart sensors and technologies.
- Respond - respond through fast rollout of flood barriers, traffic diversions, and public communications to protect life, safety and property. This includes the development of emergency response stations located throughout the City.

Major accomplishments of implementation of this strategy to date includes:

- Identification of 31 dry pond locations, which are currently moving through the concept design phase. Four of these locations are in the design and/or community engagement phase.
- Construction was substantially completed in 2021 for Malcolm Tweddle, Parkallen and Tawa dry ponds.
- Low Impact Development (LID) design standards were developed and approved for use by developers for both greenfield and infill development.
- LID installed in 23 project locations, including a large feature that was installed across from the Farmers Market in Old Strathcona. This LID project has been positively received by businesses and residents in the community. There is an expectation that in 2022, 45 green hectares will be added across the City. A large number of these LID installations are completed as part of City-led Neighbourhood Renewal Projects, demonstrating a shared commitment with EPCOR to achieving climate resiliency.
- Continued drainage system expansion and rehabilitation projects are underway.
- Construction is progressing to retrofit outfalls to provide additional protection to residential homes.
- More than 1,000 manholes have been relined in 2020 and 2021, in order to reduce inflow and infiltration.
- Additional resources have been hired by EPCOR to support property owners through flood inspection and backwater subsidy programs.
- Underpass warning systems have been identified, and installation of these has begun.
- Intensity duration frequency (IDF) curves have been updated to include an additional five years of rain gauge data.
- EPCOR has purchased two mobile flood response trailers. These barriers can be deployed at multiple locations as required.
- The SIRP program was recognized as a leader in sustainability, receiving a Canada Clean50 award in 2021.

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EPCOR will continue to implement the SIRP strategy. In addition, EPCOR is currently undertaking work to flood proof the water treatment plants. Combined, this work all advances Edmonton towards being a flood resilient community.