

# CLIMATE CHANGE MITIGATION STRATEGIES

For

Town of Thessalon

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**Infrastructure  
Solutions**

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# THE CHALLENGE

The climate is changing, both globally and locally, due to an increase of greenhouse gases (GHGs) released into the atmosphere.

***“Scientific evidence for warming of the climate system is unequivocal”.***

*Intergovernmental Panel on Climate Change*

The current warming trend is of particular significance because most of it is extremely likely (greater than 95 percent probability) to be the result of human activity since the mid-20th century. Most of the warming occurred in the past 35 years, with the five warmest years on record taking place since 2010. All of this has significant impact on our health, wellbeing, infrastructure, environment, and economy.

Ontario is expected to see an increase in annual average temperature of 1.5 to 7°C in the south of the province and 10°C in the Far North by the 2080s. Some of the projected impacts of climate change in Ontario include:

- Disruptions to critical infrastructure, including water treatment and distribution systems, energy generation and transmission and transportation due to more frequent extreme weather events;
- Lower Great Lakes water levels, which could compromise shipping and reduce hydroelectric output;
- More frequent water shortages, as summer temperatures and evaporation rates increase;
- Greater risks to public health from injury, illness and premature death from climate-related events such as extreme weather, heat waves, smog and the spread of diseases;
- Increased risk for remote and resource-based communities, which are already severely affected by drought, ice-dam flooding, forest fires and warmer winter temperatures; and
- Damage to Ontario’s ecosystems, through the combined influence of changing climate, human activities and natural disturbances like fire, outbreaks of insects and disease.

**Ontario’s Climate Change Action Plan is a five-year plan** that will help Ontario fight climate change over the long term. The areas of action in this plan cross a wide spectrum, and are broadly outlined as follows:

- Establishing a green bank that would help homeowners and businesses access and finance energy-efficient technologies to reduce greenhouse gas pollution from buildings.
- Creating a cleaner transportation system by addressing greenhouse gas pollution from cars on the road today, by increasing the availability of zero-emission vehicles on the road tomorrow, by deploying cleaner trucks, and making transit more available.
- Halting the ongoing rise in building-related emissions by giving Ontarians more choices, incentives and tools to make the right energy choice for their homes and businesses, by providing better information about energy use by buildings and homes, and by making new buildings increasingly energy efficient over time.
- Making Ontario one of the easiest and most affordable jurisdictions in North America for homeowners and businesses to install or retrofit clean-energy systems like solar, battery

storage, advanced insulation and heat pumps, while helping to protect and support low-income households, vulnerable communities and many renters from the cost impacts of carbon pricing.

- Supporting a carbon market that drives the lowest cost greenhouse gas emission reductions. Actions in this plan, supported by cap and trade proceeds, will help business and industry make investments that reduce greenhouse gas pollution. This will help save energy costs, improve productivity and global competitiveness, and protect and create jobs.
- Working in partnership with First Nations and Métis communities to address climate change, with actions guided by Traditional Ecological Knowledge, and helping to build capacity in these communities to participate in the economic opportunities that may arise from the actions.
- Building on progress, leading by example and acting on opportunities to make government operations carbon neutral. Ontario will achieve this by reducing greenhouse gas pollution across our facilities, operations and procurement.
- Ensuring natural, agricultural, and forested lands are used in ways that are efficient, sustainable and enhance the removal and storage of carbon from the atmosphere while working with Ontario's waste sector to leverage different practices and technologies to capture greenhouse gas pollution that would otherwise be released into the air.



This document deals specifically with adaptation to and mitigation of Climate Change. Adaptation to climate change involves undertaking activities designed to reduce and minimize the harmful consequences of changing climate, as well as leveraging opportunities that climate change may create. Mitigation of climate change involves actions which reduce the human contribution to climate change, specifically the reduction of greenhouse gas emissions. The action plan needs to be built on collaboration. The Town will have to work with people, businesses, industries, municipalities, environmental organizations and other partners to build a greener, more prosperous future.

## COMMUNITY AWARENESS AND ENGAGEMENT



Increasing community awareness and the level of engagement about climate change and its necessary “call to action” is a critical success factor in carrying out the initiatives to mitigate the effects of climate change. A strong education, awareness and engagement program is required which includes messages on the reality of climate change and its local impacts; ways to reduce greenhouse gas emissions; the need for informed decision making and action; and the opportunities for local actions in all sectors to make a difference. A successful program can be informed through market research which can identify the community residents and sectors motivations and barriers to desired sustainable behaviours. Information will need to be customized to reflect various target audiences and should build on existing educational campaigns.

Possible actions which will assist in community awareness and engagement include the following:

- Conducting market research to identify barriers and motivations for desired sustainable behaviours; creating a shared vision and conducting a coordinated campaign to build awareness;
- Formulating a committee involving volunteers from the community to implement the plans decided;
- Identify, map, engage and support existing programs in the community that support actions within the Community Climate Change Action initiative and determine tools that could be provided to assist them in their efforts;
- Liaise with corporate leaders and business associations to establish support for and participation;
- Develop and launch a central website (section in current website) that provides residents with one stop information, tools resources and support for community actions to reduce greenhouse gas emissions; and,
- Take regular feedback from the Community to ensure that the implementation of the plans is in direction of the Core Values of the Town.

# STRATEGIES

This Plan outlines four Climate Action Strategies - They are transportation, buildings, waste and energy alternatives. Within each strategy there are multiple focus area targets that can help to mitigate the effects of climate change. Four fundamental principles have been identified to provide guidance when setting actions for the climate action strategies.

1. Require sustainable land development.
2. Engage the community with education and resources.
3. Reduce regulatory barriers and provide incentives.
4. Lead by example in municipal operations.

## Transportation

The Town can conduct a sustainable mobility plan to better understand the community displacement habits and the most sustainable commute options for future years

### Transit

- Increasing residential carpooling will ensure lesser number of vehicles on the road leading to significant drop in the carbon footprint.
- Promote and spread awareness of International Car Free Day-September 22. Reducing single occupancy vehicle usage has broad societal and environmental benefits. Car Free Day is focused on the development of urban communities not dependent on single occupant automobiles for mobility. Car Free Day promotes public transit and active transportation as options to ever increasing levels of congestion and gridlock. On Car Free Day people are encouraged to travel to their places of work, school and shopping by means of public transit, cycling, skateboarding, rollerblading, carpooling and walking.

### Walking

- The Town can maintain and increase the availability of sidewalks to facilitate residents to walk to nearby places.
- Walk to school program – The Town’s schools can have regular “Walk to School program” and can promote a safe route to school. This will create the Climate change awareness in students and parents.

### Cycling

- The Town can promote cycling as it not only helps reduce emissions, but actions will contribute to improving the overall health and well-being of the community as well. Ensuring good road pavement condition and considering the improvement and construction of new cycle paths can help give a push to this initiative.
- Multi-use trails are also important to include when planning for movement of cyclists, pedestrians and many other forms of transport including strollers, scooters, and wheelchairs.

### Driving

- *Electric vehicles* - While transit, walking and cycling alternatives are an important part of the puzzle, changing vehicle technology to hybrid and electric

systems will help maintain traditional vehicle benefits while reducing emissions. Encourage and support use of electric vehicles, i.e. hybrid gas-electric vehicles in short-term, plug-in hybrid electric vehicles in mid-term and fully electric vehicles in long-term. Encourage, support and lead the development of an electric vehicle charging infrastructure.

- Encourage and support use of biodiesel for large fleet and trucks and hybrid power units for auxiliary power requirements for large fleet and heavy trucks.
- Community can be made aware of the benefits of the regular maintenance of vehicles. Changing the oil regularly will contribute to a cleaner engine and lower vehicle emissions whereas keeping your air filter clean will also protect the environment. Residents should regularly check the tire pressure. Tires that are underinflated by two pounds per square inch can cause a four per cent increase in fuel consumption.
- Anti-idling campaign - Reduce fuel consumption by discouraging car idling.
- Town can explore policy mechanisms for encouraging and supporting the reduction of greenhouse gas emissions from idling heavy trucks through adoption of anti-idling regulations similar to those implemented in the State of California, emission reduction technology purchase incentives and by supporting demonstration trials of such anti-idling technologies. Conduct a school anti-idling campaign which could include student engagement; parent education; education sessions with bus companies and operators via a week-long anti-idling blitz.
- Whenever possible, Town can lead by example by having “Low carbon meeting programs” and conducting meetings via webinars rather than driving.

## Buildings and Trees

- Plant a tree for tomorrow - Preserving and expanding tree planting and related naturalization programs can play a large role in countering the effects of greenhouse gas emissions through carbon sequestration. It also contributes to energy conservation because shading a building reduces cooling load, and, sheltering homes from winter winds cuts down on heating costs. Tree planting may also reduce snow clearing needs if roads are lined with trees to reduce snow coverage.
- Minor retrofits including lighting replacements - Encourage building audits and retrofits by replacing existing lights with LEED.
- Town can assist with facilitation of energy performance labelling, where appropriate.
- Energy efficient new building design – Town to explore other policy mechanisms for encouraging new green residential development such as requiring homes to exceed Energy Star rating, LEED Canada for Homes or requiring Energy Star certification a condition of draft site plan approval.

## Waste

- Promote local food and farming to change buying habits of consumers, businesses, government and institutions and increase the type and quantity of local food purchased.
- Reduce mailed advertising by joining Canada Post Red Dot Campaign.

- Recycling not only conserves natural resources but reduces energy consumption, saves landfill space, decreases pollution, cuts greenhouse gases and saves money! Awareness programs for residents will make them think twice about where they throw away their next empty can/bottle.

## Energy Alternatives

- Conserving energy and water are more important than ever. Even if you're not living in a drought-stricken region, cutting back on water use also means a lower utility bill and helps conserve a precious resource. Making residents aware of the benefits of reducing water wastage via flyers, community meetings, school programs etc. can help combat this issue over long term.
- Town can encourage the residential sector to:
  - Consider and use renewable energy where possible or other fossil fuel alternatives.
  - Installation of solar water heating units in institutions.
  - Light oil Heating system conversion to natural gas.
  - Conversion from propane to geothermal in residential heating system