



Climate Change

in the City of Hamilton

What is Climate Change?

Climate change is long term change in average weather patterns due to large amounts of greenhouse gases (GHGs), such as carbon dioxide, methane, and nitrous oxide being released into earth's atmosphere. These emissions alter the chemical composition of the atmosphere and cause more greenhouse gas to be trapped in the air than the earth can handle.

Climate change can also be caused through natural processes, such as a change in the sun's strength, but it is mostly a result of human activities. Scientists agree that our increased use of fossil fuels and the large number of trees that have been cut down has dangerously increased the amount of greenhouse gases collected in our atmosphere.

Does climate change only result in a change in weather patterns?

The impact of climate change does not stop just with a change in weather patterns around the world. A change in climate will cause other problems such as rising sea levels, more extreme weather, putting more species at risk of extinction, more wide-spread diseases, and much more.



What is the City of Hamilton doing to address climate change?

The City of Hamilton has begun doing its part in addressing the amount of greenhouse gas emissions we let out. The City is committed to taking action on climate change. We are doing this by greening the cars and busses used by the City, diverting waste from landfills, reducing water use, using less energy in our offices, and improving land-use and transportation planning. Hamilton is a recognized leader in the use of advanced fleet technology that reduces fuel consumption and greenhouse gas emissions that cause climate change. We have the second-largest fleet of hybrid and other clean and efficient vehicles in Ontario and actively promote new fleet technology. The City also has a complement of 30 eco-friendly hybrid buses in its transit fleet.

What are some specific actions the City is taking?

Action on climate change is not one solution, but many actions combined. Some actions Hamilton is proud to be taking action on include:

- A Corporate Air Quality and Climate Change Plan, which is a long term plan of things Hamilton will do to improve air quality and fight climate change.
- A commitment to reducing greenhouse gas emissions of 2005 levels by 10% by 2012, and 20% by 2020.
- Plans to reduce the amount of pollution created by City owned vehicles and HSR buses by replacing current vehicles with more environmentally friendly options.
- Conducting an Air Pollutants and Greenhouse Gas Inventory to keep track of how much pollution is being released in Hamilton.
- A Growth Management Strategy called GRIDS that prevents building too far from the downtown core to decrease the time it takes for people to travel to and from the City, which not only reduces the amount of pollution that is released, but also protects natural heritage features to create liveable communities.
- Integration of air quality and climate change into the City's Official Plan to guide future land use planning decisions in the City that will protect the well-being of our natural resources and address climate change.
- Hamilton has an Idling By-law that means no one is allowed to leave their car or truck on without moving for longer than three (3) minutes.
- Hamilton's Green Fleet Implementation Plan has replaced 60 older fleet sedans and pickups, and 12 Hamilton Street Railway (HSR) buses with fuel efficient and low carbon emitting hybrid electric vehicles and buses.
- Hamilton's Corporate Energy Policy calls for energy reduction targets of 3.0% by 2009, 7.5% by 2012, and 20% by 2020 based on 2005 energy usage data. This target applies to each City Department or Division.
- Blue Box recycling and Green Cart programs that reduce greenhouse gases such as methane by diverting waste from landfills.
- Hamilton is a part of the Alliance for Resilient Cities (ARC) group which is a collaborative network of decision-makers that supports the efforts of local governments to identify the impacts of climate change, analyze adaptation options and develop action strategies to protect their communities.
- Supporting partnerships and community actions on climate change to reduce the City of Hamilton's carbon footprint such as The Climate Change Champions as well as The

Association of Municipalities of Ontario (AMO) Climate Change Task Force.

- Recognizing that more action should be undertaken on adaptation and mitigation of climate change.

What Can I Do?

All Canadians and Hamiltonians contribute to greenhouse gas emissions. In fact, the actions of individual Canadians account for about 28% of Canada's total greenhouse gas emissions. Take action and do your part by:

Saving energy and water at home:

- Turn down your thermostat by one degree
- Turn off lights not being used
- Look for products with the Energy Saving Recommended label
- Improve your insulation
- Install water efficient products
- Fix leaky taps

Carefully considering your transportation:

- Choose a fuel efficient car
- Try to reduce your car use
- Walk, bike or take transit
- Consider alternatives to taking an airplane or vacation locally

Recycling:

- Re-use and repair instead of buying new products
- Recycle more
- Compost

Greener Shopping:

- Bring shopping bags with you next time you go to the grocery store
- Buy fresh produce at a local Farmer's Market
- Look for locally grown or organic labeled foods
- Reduce your food waste
- Choose products that have a lower impact on the environment
- Buy products made from recycled material
- Buy durable goods

Everyone has a role to play in reducing our contributions to greenhouse gas emissions...

- At home
- At work
- At play



What are the various impacts of greenhouses gases and some examples of activities that create them?

Below is a chart that helps answer this question.

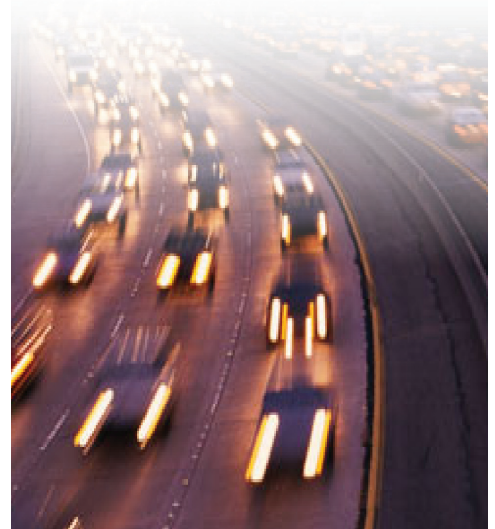
Table 1: Greenhouse Gases, their Atmospheric Lifetimes, and Global Warming Potentials.

The Global Warming Potential (GWP) is a measure of the amount of a greenhouse gas is estimated to contribute to global warming compared to carbon dioxide (CO₂) over a period of time.

Direct Global Warming Potentials (GWPs) relative to carbon dioxide (for gases for which the lifetimes have been adequately characterized). GWPs are an index for estimating relative global warming contribution due to atmospheric emission of a kg of a particular greenhouse gas compared to emission of a kg of carbon dioxide. GWPs calculated for different time horizons show the effects of atmospheric lifetimes of the different gases.

Greenhouse Gas	Examples of Human Activities that Create these Gases	Lifetime in the atmosphere	Global Warming Potential
Carbon Dioxide (CO ₂)	<ul style="list-style-type: none"> • Driving • Watching TV • Heating and cooling your house 	5 to 200 years	20 years
Methane (CH ₄)	<ul style="list-style-type: none"> • Mining fossil fuels • Landfills: failure to reduce the amount of garbage we produce • Livestock 	12 years	1,249 years
Nitrous Oxide (N ₂ O)	<ul style="list-style-type: none"> • Fossil Fuels • Use of synthetic fertilizers 	114 years	5,500 years
Sulphur Hexafluoride (SF ₆)	<ul style="list-style-type: none"> • Industry and factories 	3,200 years	30,200 years
Carbon Tetrafluoride (CF ₄)	<ul style="list-style-type: none"> • Refrigeration • Metal production 	50,000 years	78,000 years

Source: Centre for Science in the Earth System and ICLEI. Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments. 2007.



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