Carbon Budget Introduction

While the work on the Energy Benchmarking Program and the Integrated City Energy Map improves forecasting, shares data, and may inform planning and development decisions, it does not assign limits on greenhouse gas (GHG) emissions. As part of Canada's 2050 climate targets, Calgary's share of total emissions for the next 30 years can be quantified. It is possible to use a carbon accounting framework to assign an annual carbon budget designed to ensure Calgary reaches the national 2050 target. This report is requesting that Council direct Administration to report back on the feasibility of a carbon budget with the 2022 update to the Climate Resilience Strategy along with approval of $25,000 in funding to retain technical consulting expertise to assist with this work.

A carbon budget shows the impact of delaying reductions in emissions very clearly. This would allow Administration and Council to understand the "cost" of emissions associated with any project all the way through the project's lifecycle. Projects that are approved would need to have their GHG emissions entered against the carbon budget to meet climate outcomes for the year 2100. In this way, The City could be informed of how land development would be impacting the carbon budget. Development of a carbon accounting framework to establish a carbon budget has not yet been undertaken by Administration.

Other municipalities have begun to adopt carbon budgets. Some have started with their corporate operations (for example, City of Edmonton) with intent to include the broader community in the future. Others have initiated a city-wide sector-based carbon budget (e.g. Manchester, UK). Through a carbon budget, any project, strategy or initiative that will result in an increase in emissions, whether in the short or long-term, must be recognized as using up some of the remaining carbon budget. Both financial costs and emissions costs must also be accounted for.

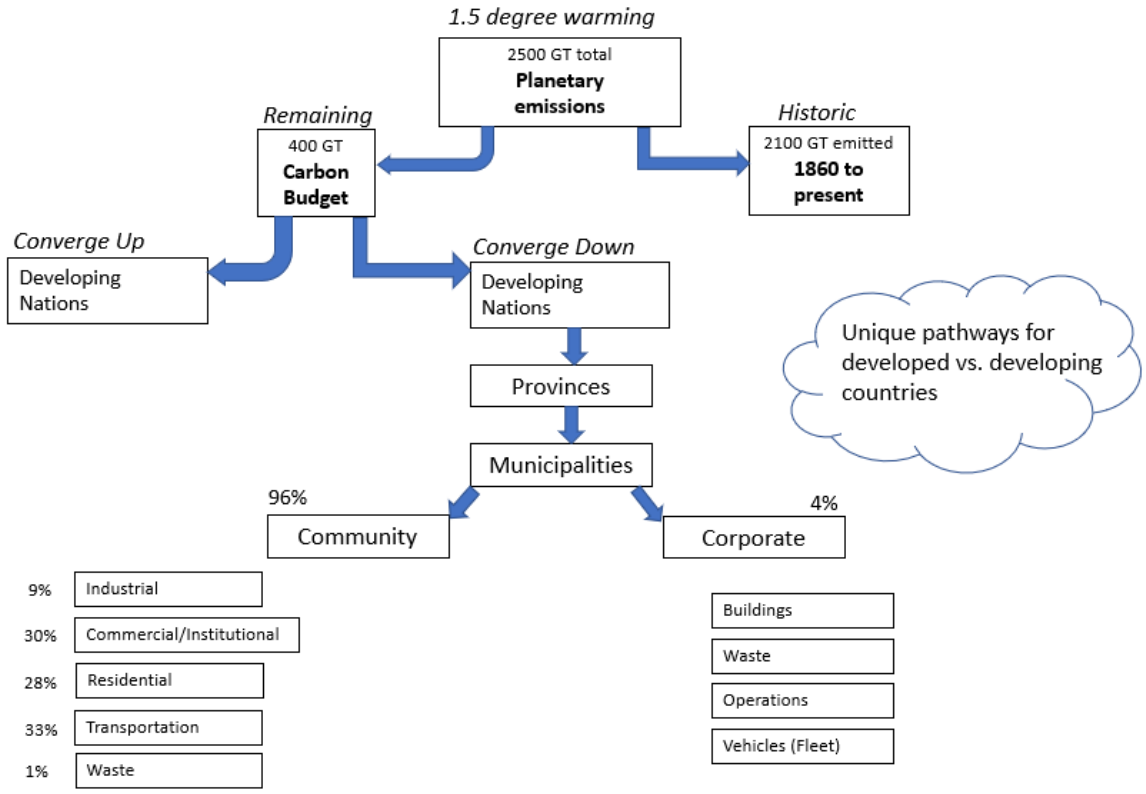
International Benchmarks

The chart below is a list of cities that have established carbon budgets and the dates at which they anticipate those budgets being exhausted based on historical trends and practices.

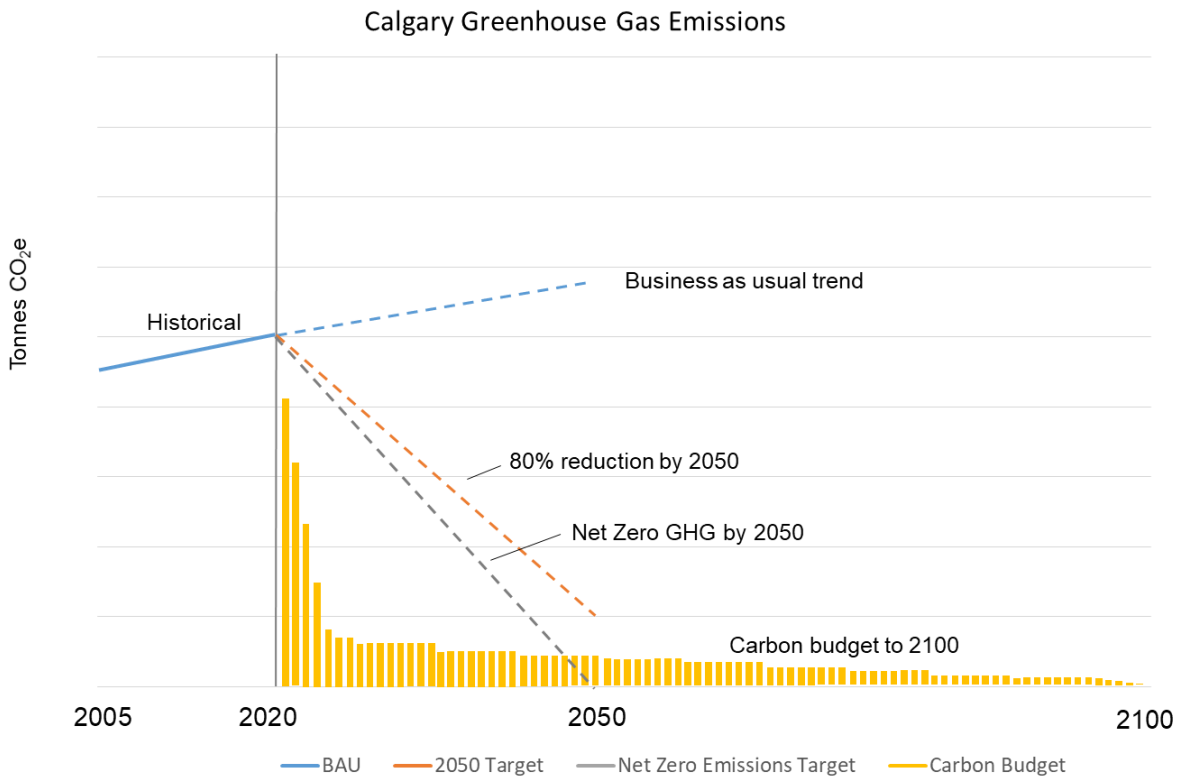
City	Carbon Budget Exhausted By Date
Windsor, Ontario	2029
Edmonton, Alberta	2028
Toronto, Ontario	2033
Vancouver, BC	In progress
Oslo, Norway	On track to net-zero by 2030
Frankfurt, Germany	2031
Manchester, UK	2028

The following flow chart depicts the maximum global emissions allotted to maintain 1.5 degrees Celsius warming. It removes the historic emissions from the total which leaves a carbon budget amount of 400 gigatons (GT) of emissions globally. Developing nations are permitted to increase emissions in order to meet economic equality while developed nations must reduce emissions. From the 400 GT amount a calculation would be derived to determine what the citywide carbon budget would be and/or the community (98%) share of that carbon budget. The chart also illustrates the percentage of emissions that the corporation (4%) is responsible for.

Intergovernmental Panel on Climate Change (IPCC) - Calgary Climate Resilience Strategy Carbon Budget



The chart below illustrates the relationship of GHG targets with a carbon budget (with hypothetical values). Calgary's GHG emissions trend has been upward since the baseline year of 2005, largely driven by population growth. Business as usual will see the trend continue. The City's current target is an 80 per cent reduction in emissions by 2050. However, Canada has set a national target of zero emissions by 2050. A carbon budget would consider total allowable emissions until 2100, and it would be up to The City and stakeholders to maintain that 'budget'. Like other Canadian cities, Calgary will use up the carbon budget within a short time under business as usual. This would prompt a re-consideration of development and energy for Calgary. It would be part of a bigger conversation across Canada to develop technologies, policies, and funding to meet the carbon budget goal. There is now a rapid shift globally by the industrial, investing, and finance sectors to support this direction.



A carbon budget would prompt a re-consideration of development and energy for Calgary. It would be part of a bigger conversation across Canada to develop technologies, policies, and funding to meet the national carbon budget goal. Canadian cities could benefit from a national standard approach to creating their carbon budgets, and work is underway to develop a methodology. This consistency would make it easier to calculate, compare, and possibly fund solutions across the country. Outside of government, there is also a shift happening globally in the industrial, investment and finance sectors to support this direction.

Council is scheduled to receive a presentation from the Canadian Urban Sustainability Practitioners during the Calgary Climate Symposium on 2021 March 26. This session will provide further context on using carbon budgets across Canada and the relationship to climate-related financial disclosure.