

# Appendix A - Understanding Climate

## Climate Change

Climate change is defined as a change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards. Climate change has been attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.<sup>1</sup>

Intergovernmental Panel on Climate Change has stated that "Scientific evidence for warming of the climate system is unequivocal."<sup>2</sup> Climate change is unavoidable as the gases are locked into the climate system from past emissions.

The impacts of climate change will become more pronounced as we head towards 2050. That is why it is critical we continue to work to achieve our climate action goals. We must take action to mitigate these impacts today.<sup>3</sup>

Additionally, the actions that reduce greenhouse gas emissions are the same actions that are needed to improve health, livability and resiliency in our community.

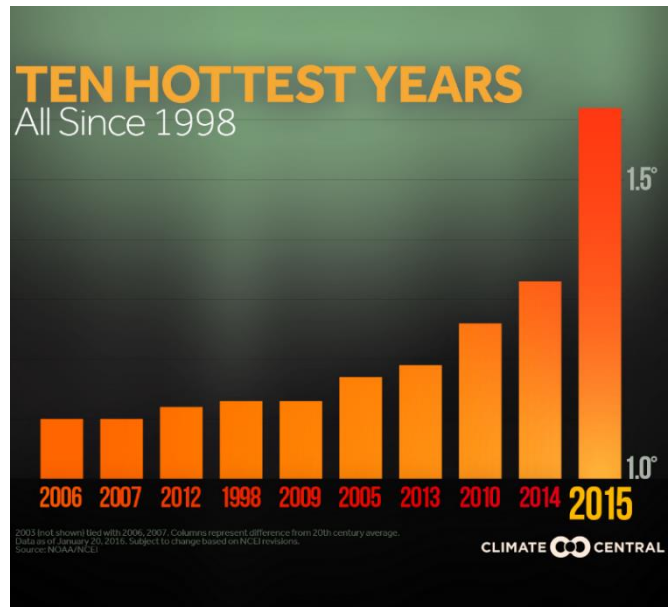
## Projected climate impacts for the Okanagan

The climate has already changed in the Okanagan. Locally, there has been an increase in extreme weather conditions including record snowfalls, wildfires, flooding, a level four drought and new record high temperatures.



Looking to the Okanagan in 2050, it is anticipated that there will be<sup>4</sup>:

- A temperature increase of 1.9 degrees
- 7% more precipitation, mainly due to an increase in rain in times when it is needed least
- Seasonal impacts which are anticipated to include:
  - 11% less summer rain
  - 14% less winter snowfall
  - 57% less spring snowfall



<sup>1</sup> <http://www.climatecentral.org/gallery/graphics/the-10-hottest-years-on-record>

<sup>2</sup> <https://www.ipcc.ch/>

<sup>3</sup> Province of BC. Climate Leadership Plan, 2016.

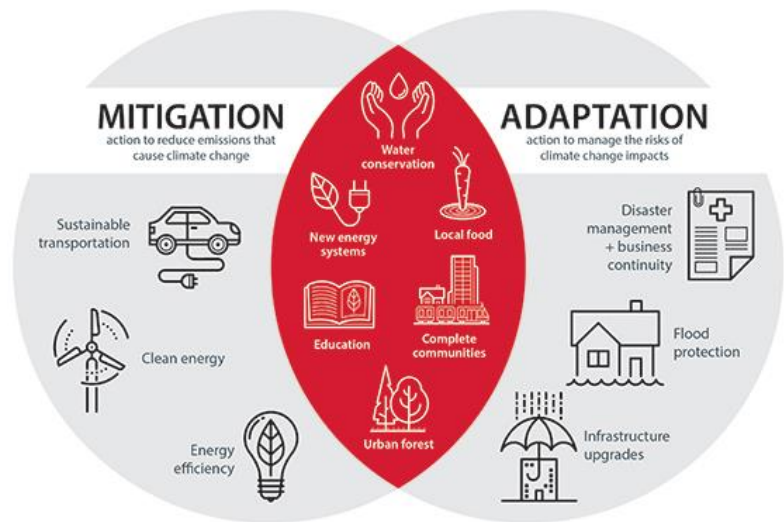
<sup>4</sup> <https://pacificclimate.org/analysis-tools/plan2adapt>

These changes could result in additional concerns including declining water supplies, reduced agricultural yields and health and social impacts.

## Mitigation versus Adaptation

**Climate Change MITIGATION** works to **AVOID** the risks of a changing climate by reducing the emission of greenhouse gases. Undertaking mitigation initiatives and identifying vulnerabilities will improve community resilience.

**Climate Change ADAPTATION** works to **MANAGE** the risks caused by climate change already locked in and from the potential for more severe changes in the future.



## Community versus Corporate Greenhouse Gas Emissions

**Community** Greenhouse Gas Emissions refer to the GHG emissions from Kelowna's residents and businesses and include transportation, buildings and waste. Community GHG emissions are estimated to make up 99% of the total emissions for Kelowna. The Community GHG emissions and actions to reduce those emissions are captured in the Community Climate Action Plan.

**Corporate** Greenhouse Gas Emissions include the GHG emissions from the City of Kelowna's corporate fleet and buildings (ie: City Hall). Corporate GHG emissions are estimated to be approximately 1% of the total emissions for Kelowna. The Corporate Energy and Emissions Plan, to be updated in 2017, identifies actions to reduce corporate emissions.