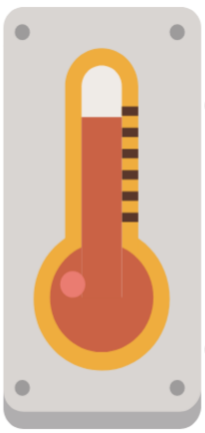
Hamilton

# CITY OF HAMILTON
# FUTURE CLIMATE PROJECTIONS



10.4°C
**2021-2050**

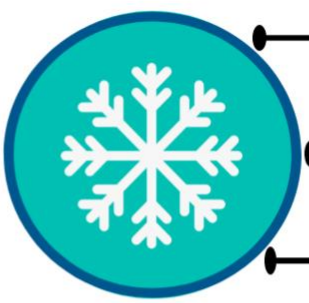
12.5°C
**2051-2080**

8.3°C
**Annual Baseline**

## ANNUAL MEAN TEMPERATURES

Mean temperatures are projected to increase annually and in every season.

## SEASONAL MEAN TEMPERATURES

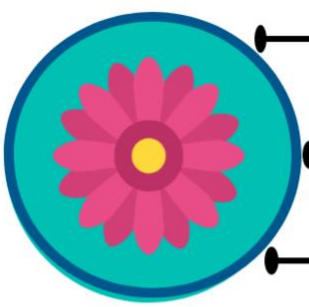


0.8°C
**2051-2080**

-1.6°C
**2021-2050**

-3.9°C
**Baseline**

**WINTER**
**December-February**

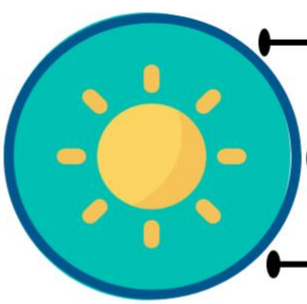


10.4°C
**2051-2080**

8.5°C
**2021-2050**

6.7°C
**Baseline**

**SPRING**
**March-May**

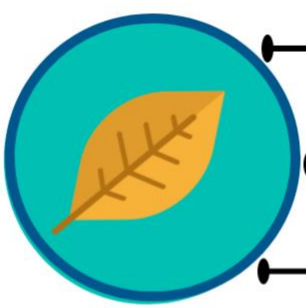


24.5°C
**2051-2080**

22.3°C
**2021-2050**

20.1°C
**Baseline**

**SUMMER**
**June-August**



14.3°C
**2051-2080**

12.3°C
**2021-2050**

10.1°C
**Baseline**

**FALL**
**September-November**

## HEATWAVES

Heatwaves are defined as three or more days in a row which reach or exceed 30°C. Sustained heat exposure can have significant impact on the health of individuals including heat stroke and even death.

In Hamilton, the length of an average heatwave is expected to increase.

**3.8 → 8.4 DAYS**

by the year 2080.

## TROPICAL NIGHTS

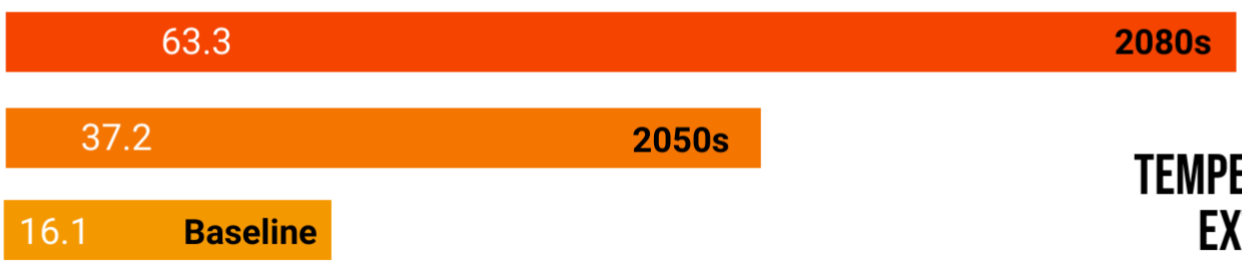
Typically cooler nights can mitigate exposure to extreme heat, however, an increased number of tropical nights eliminates the possibility for relief and magnifies health risks, especially to vulnerable populations such as infants, older adults, and those who work outdoors.

Night-time temperatures above 20°C are expected to see a fivefold increase by 2080.

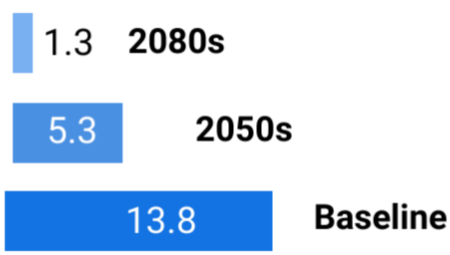
## TEMPERATURE EXTREMES

More hot days, fewer cold days.

### DAYS AT OR ABOVE 30°C




### DAYS AT OR BELOW -15°C



## FREEZE-THAW CYCLES

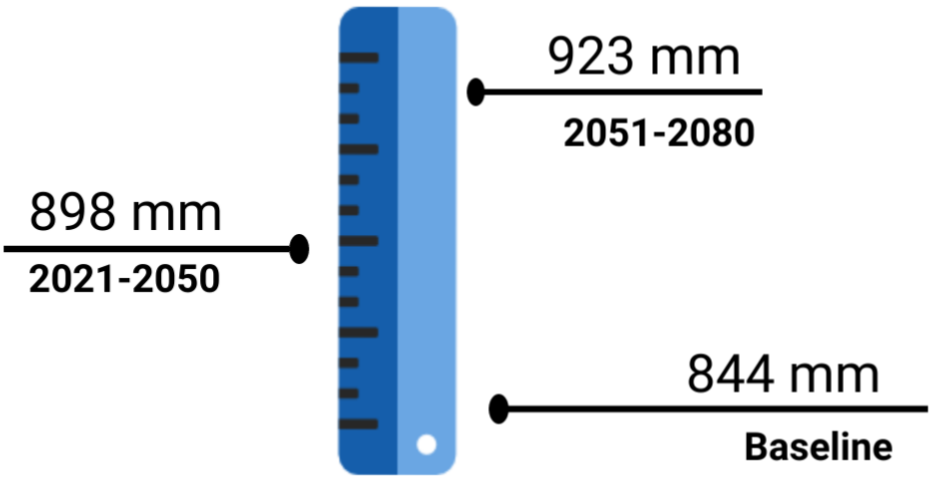
A decrease in freeze-thaw days is expected.

### DAYS WITH FREEZE-THAW CYCLES

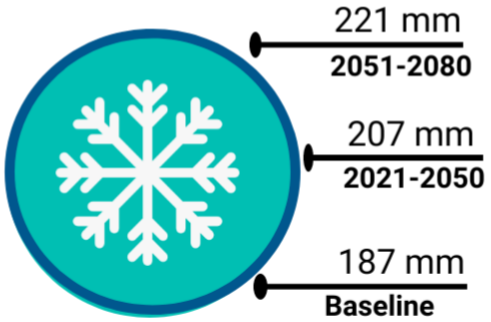

Baseline | 2050s | 2080s

## ANNUAL MEAN PRECIPITATION

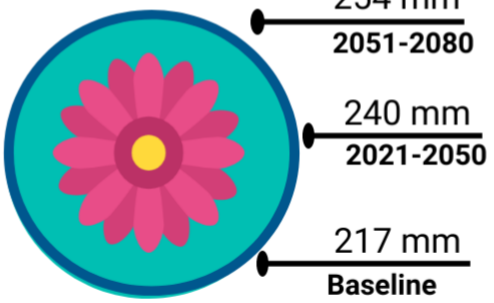
Increased precipitation can cause flooding, damage to infrastructure, and decreases to water quality.



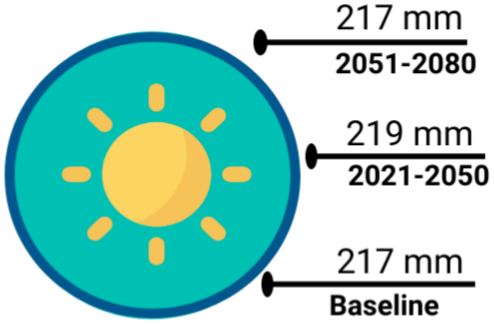

## SEASONAL MEAN PRECIPITATION



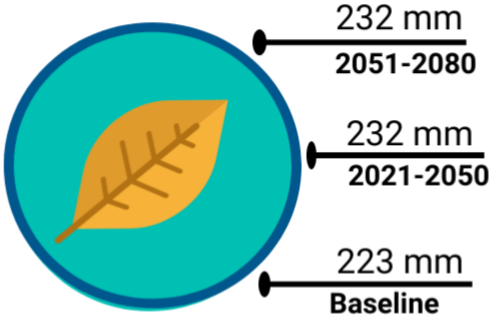

**WINTER**
December-February




**SPRING**
March-May




**SUMMER**
June-August




**FALL**
September-November


Precipitation will fall at a faster rate (mm/h)


Shorter storms will have an increasingly high intensity


Return periods of heavy storms will shorten, meaning increased frequency

# PRECIPITATION EVENTS

Precipitation events in general are projected to become more intense and extreme.

For Instance, 100-year rainfall events will see precipitation rates increase substantially from baseline in Hamilton.
5-minute downpour rates shown

189.76 mm/h
**Baseline**

214.53 mm/h
**2050**

209.35 mm/h
**2080**

**Sources:**

Health Canada. (2011). *Adapting to Extreme Heat Events: Guidelines for Assessing Health Vulnerability*. Ottawa, ON. Retrieved from http://www.hc-sc.gc.ca/ewh-semt/pubs/climat/adapt/index-eng.php (XiX)

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