Climate Resiliency Study

Purpose:

The intent of a Climate Resiliency Study is to examine the risk and resilience of the development to a climate change related disruption or impact. The primary climate change risks in the City of Windsor are attributed to Extreme Heat (Urban Heat Island), Flooding, and Biodiversity loss. However, additional climate hazards may be identified due to location of the development or updated climate data.

Climate Resiliency Studies may vary in scope depending on the size, nature and intent of the development proposal, or the location of the proposal.

Where a Climate Resiliency Study is required, it shall:

1. Heat Island Reduction Brief

Within the Climate Resiliency Study, the heat island reduction brief should include factors influencing and opportunities to address the urban heat island. This may include but not be limited to:

I. Changes to permeable surfaces resulting from the development and associated impacts on heat retention and reflection.
II. Changes to vegetation cover and canopy and impact on heat island affects.
III. Changes to retention of storm water on the site and the associated impacts on-site and downstream.
IV. Measures taken to reduce the heat island effect including but not limited to:
    i. Maintaining or restoring tree canopy.
    ii. Provisions for shading.
    iii. Maintaining vegetative surfaces such as green or cool roofs.
    iv. Use of retained stormwater for water vegetation or water features.
V. This brief shall be supported by any required landscape plan.

2. Flood Reduction Brief

Within the Climate Resiliency Study, the flood reduction brief shall include:

I. A short summary of the findings from any required Stormwater Study, focused on Climate Change analysis, findings and solutions.
II. Measures taken to reduce risks in the event of flooding, including but not limited to:
    i. Location and protection of essential building components.

ii. Green infrastructure to complement existing infrastructure, including the requirement for innovative low impact development opportunities and best practices that minimize the risks associated with natural hazards.

III. This Study shall also review if the development occurs in a location that is at risk or vulnerable to other climate influenced natural hazards and measures that may be taken to reduce risk.

3. Sustainability Brief

It is the intent of the Sustainability Brief to understand any development's contribution to the over-arching sustainability objectives of the City beyond those encapsulated by the climate change studies. Where a Sustainability Brief is required, it shall include measures taken to promote:

I. Waste diversion, including recycling and organics.
II. Bird Friendly Architecture (ex. Windows and lighting).
III. Potential for local food production or pollinator habitat.
IV. Electric Vehicle Infrastructure.
V. Use of Environmentally preferable materials and products.
VI. Water and energy conservation, air quality protection and integrated waste management opportunities.
VII. Compact urban form that encourages walking, cycling and the use of public transit.
VIII. A development pattern where public parks, small-scale convenience retail and other appropriate neighbourhood servicing uses are provided within an approximate 5-minute walk from all residents.
IX. Alternative energy systems, renewable energy systems, district energy systems and distribution and demand management plans to accommodate current and projected needs of the community.
X. Innovative residential and public building designs that contribute to low carbon design, energy use reduction and natural resource conservation.
XI. Green infrastructure to complement existing infrastructure, including the requirement for innovative low impact development opportunities and best practices that minimize the risks associated with natural hazards.

Qualifications:

A Climate Resiliency Study and its various individual components may require a host of professionals with a variety of areas of expertise. All elements of a Climate Resiliency Study shall be carried out by qualified professionals with expertise in the appropriate area of study, to the satisfaction of the City.
