Environment and Climate Review

The Edmonton Design Committee's (EDC) principles of urban design have a variety of environmental sustainability and climate resilience implications. A detailed description of how their application could interact with environment and climate to support The City Plan directives is shown in the table below:

Climate resilience	
Consideration**:** Advancing climate resilience through the new proposed principles of urban design of: ● authentic and meaningful; ● healthy and inclusive ● attractive and human-scaled ● connected and walkable; ● resilient and sustainable; ● vibrant and thriving	Implication: Cities lock in future urban greenhouse gas (GHG) emissions that contribute to climate change through the choices in urban design and land use, among others.[1] Transitioning to a low carbon City requires embedding low-carbon objectives in all aspects of City design, planning, construction and management to achieve climate resilience. Operationalization and application of these EDC principles of urban design in alignment with the city's growth plan will support decarbonization efforts by promoting higher density and low-carbon living arrangements.
Consideration: The proposed EDC principles of urban design support the built environment that integrates mixed-use developments, transit oriented development (TOD), multi-modal movement of people, and green infrastructure. The City could consider ongoing inclusion of climate interactions as the EDC principles are refined.	Implication: The transportation sector in Edmonton accounts for approximately 30 per cent of city-wide GHG emissions. Reducing auto-dependency would support the City's target of 50 per cent of all trips being made by transit and active transportation by 2040 in Pathway 3 of the Community Energy Transition Strategy. Increased participation in active and public

[1] Lwasa, et al. (2022). Urban systems and other settlements. In IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. doi: 10.1017/9781009157926.010

	transportation is a key mechanism to meet the carbon neutrality goal by 2050. The proposed EDC principles of urban design can continue to advocate for climate adaptation measures such as Low Impact Development (LID), native plants, urban tree canopy, and other forms of natural infrastructure as the principles are refined.[2]
Urban design with health co-benefits	
Considerations: The ***healthy and inclusive*** principle could be broadened to encompass the protection of vulnerable populations from the health impacts of climate change through design considerations.	Implication: Climate change is a human health risk amplifier.[2] It affects human health in various ways including: worsening cardiovascular and/or respiratory diseases due to higher temperatures; and mental health impacts from increased stress due to environmental conditions or extreme weather events (i.e. stress, anxiety, and depression). While everyone is at risk, the most vulnerable individuals will bear a disproportionate burden of these impacts, if they are unable to adapt and protect themselves against climate change. One way of ensuring a wide range of adaptation to climate change is to design a healthy and inclusive built environment that fosters urban design measures that can lead to physical and mental health benefits against climate change.[1] The ***healthy and inclusive*** principle encourages the EDC to consider the design of private developments and public spaces that are safe, accessible and welcoming for all cultures, incomes, ages, abilities and

[2]City of Edmonton (2018). Climate Resilient Edmonton: Adaptation Strategy And Action Plan. Accessed from: https://www.edmonton.ca/sites/default/files/public-files/assets/Climate_Resilient_Edmonton.pdf?cb=1717776244

	genders. This principle will consider how the built environment can minimize health impacts as the climate changes.

Linkages to The City Plan:

1.4.1 Support Edmontonians' transition to a low carbon future in their daily lives.

1.4.2 Ensure Edmonton's air, land and water are safe and clean.

4.4.1 Support a low-carbon mobility system.

4.4.1.1 Encourage a shift to transit and active transportation options.