

# CLIMATE CHANGE

Climate change, a consequence of heavy green-house gas emissions, results in warmer temperatures and more frequent extreme weather events, such as flood, fire, and drought.

## COSTS TO LOCAL GOVERNMENT AND BUSINESS

- Cities experience heat island effects (the temperature inside a city is higher than outside the city), extreme temperatures from climate change can intensify this.
- Impacts of climate change can be very costly to offset and repair, estimated costs to drinking water and wastewater utilities in the United States over <40 years range from \$448 to \$944 billion.

**Floods** create problems such as:

- Strains on sewage and storm water management systems, sometimes requiring expensive repairs and clean-up costs.
- Damage to infrastructure, buildings and roads.

**Extreme heat (fire and drought)** can result in problems such as:

- Increased disease and pest outbreaks that require expensive control measures.
- Increased demand for electricity to power indoor cooling systems.

## EXTREME WEATHER CAN DAMAGE:

Agricultural productivity and local food supply if fields flood or burn, or if plants cannot withstand extreme temperatures.

Water quality and quantity if floods contaminate water, or if drought reduces supply.

Transportation services if roads are flooded or power is lost, and more freeze-thaw cycles increase potholes.

Medical services if people suffer from heat stroke or other injuries resulting from flooding or fire.



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- Increased maintenance costs of urban trees and recreation fields, requiring more frequent watering (since 2002, trees in Edmonton have been lost at an increased rate, requiring more trees to be replanted and maintained).

## BENEFITS OF NATURAL AREAS

Maintaining existing natural areas (forests, grasslands, rivers and lakes) is more cost-effective than replacing lost ecological functions using infrastructure and technology.

## MITIGATING CLIMATE CHANGE

Mitigation refers to actions that prevent, reduce or offset the impact of climate change.

- The world's forests and oceans are sinks for carbon, sucking up about half of the carbon released each year from burning fossil fuels.
- Natural areas secure and recharge ground water, absorb rain water, regulate floods and protect against erosion.

## ADAPTING TO CLIMATE CHANGE

Adaptation refers to actions that minimize vulnerability to climate change.

- Natural areas protect against the impacts of climate change by buffering local climate and reducing impacts from severe climate events such as storms, floods, droughts and sea-level rise.
- Natural areas help communities, especially those in developing countries, adapt to the effects of climate change. They are often important sources for water, food and traditional medicines.

## WHAT POLICY MAKERS CAN DO

- Support the conservation and protection of existing natural areas to maintain their ecological integrity.
- Designate ecologically significant and sensitive lands for protection.



## EALT

The Edmonton and Area Land Trust works to mitigate climate change impacts by conserving existing natural areas.

Where appropriate, EALT takes steps to sequester carbon via habitat restoration, such as large scale tree planting.

EALT promotes education and positive action on natural areas and climate change.