

Climate change intro

All levels of government, residents, businesses and visitors must actively participate in addressing climate change. As a coastal city, Alexandria is particularly vulnerable to what is a real and urgent threat not only to the environment but to the economic wellbeing of the City. Reducing CO₂ emissions in all sectors is a key mitigation strategy. The City generates only about four percent of those emissions, while the remaining 96 percent is from residential and commercial buildings and transportation.

The residential and commercial built environment make up 21 percent and 36 percent for a total of 57 percent and the largest contributor to the City's profile. Transportation is second at 36 percent.

Insert CO₂e graphic

Old Town is already regularly subject to tidal and weather-related localized flooding. Rising sea levels and the increased frequency and intensity of storms will make localized flooding a more significant issue, impacting public safety, private property, and businesses. Resiliency planning and implementation at the waterfront and elsewhere, along with emergency operations, are key actions in the EAP 2040.

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The IPCC target is to be net zero or carbon neutral by 2050. To keep to the 1.5°C limit above pre-industrial levels requires substantial emission reductions and carbon sequestrations or negative emissions technologies.

Excessive carbon dioxide (and CO₂ equivalents) put into the atmosphere over pre-industrial levels have been trapping heat and resulting in new heat records and will continue to accelerate and trap heat for hundreds of years. The level of CO₂ in 2019 has reached 420 ppm.

Insert blue CO₂ ppm graphic

From National Aeronautical and Space Administration (NASA) report

The Intergovernmental Panel on Climate Change (IPCC), revised in January 2019, provides scientific information on the environmental, political and economic impacts of climate change as well as recommended high-level mitigation options.

The EAP 2040 is a plan of action. Most of those action are mitigations to reduce the City's share of contributions to climate change. The contribution of City emissions from various sectors of the community show that the majority are from the built environment, followed by transportation.

The urgency in the IPCC cannot be achieved by the City in isolation. It requires significant leadership at the state and federal level. The IPCC report provides a catalog of overall targets, among them:

- reduce greenhouse gas (GHG) emissions,
- increase the renewable share in electricity,
- reduce energy demand based on four different model pathways for the planet.

(add footnote to report)

Many activities require the use of fossil fuel during the transition to replacement technologies not currently available. Getting to the goal of carbon neutral requires substantial emission reductions, carbon sequestrations, negative emissions technologies such as aggressive tree planting and reforestation, and direct air capture of carbon using chemical reactions.

