

Penn Hills Greenhouse Gas Emissions Preliminary Data and Request for Input

Greenhouse gases (sometimes referred to as or heat-trapping gases) include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and chlorofluorocarbons (CFC) essentially trap heat in the atmosphere by absorbing it as it radiates from the earth. As the sun beams solar radiation onto the earth's surface, a share of that light energy is absorbed by the earth and re-radiated into the atmosphere as heat. Of the energy that is re-radiated, some is trapped by GHG in the atmosphere. As concentrations of GHG in the atmosphere rise, more heat is trapped. (Figure 1). While some level of GHG is essential for maintaining livable temperatures on the planet, excess levels lead to warming, that is predicted to have dramatic effects on the earth's climate, including impact on human health, damage to agriculture, extreme weather conditions like droughts, flooding and more intense hurricanes, and shrinking coastlines due to rising sea levels. Figure 2 illustrates how humans contribute to greenhouse gases. The United Nations Intergovernmental Panel on Climate Change (IPCC), has led to the resounding conclusion that "Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level." (*IPCC 4th Assessment Report, Summary for Policymakers*, 2007) There is high potential for leveling off and reducing GHG emissions, primarily coming from important mitigation sectors including energy supply, transportation, buildings/utilities, industry, agriculture and forestry.

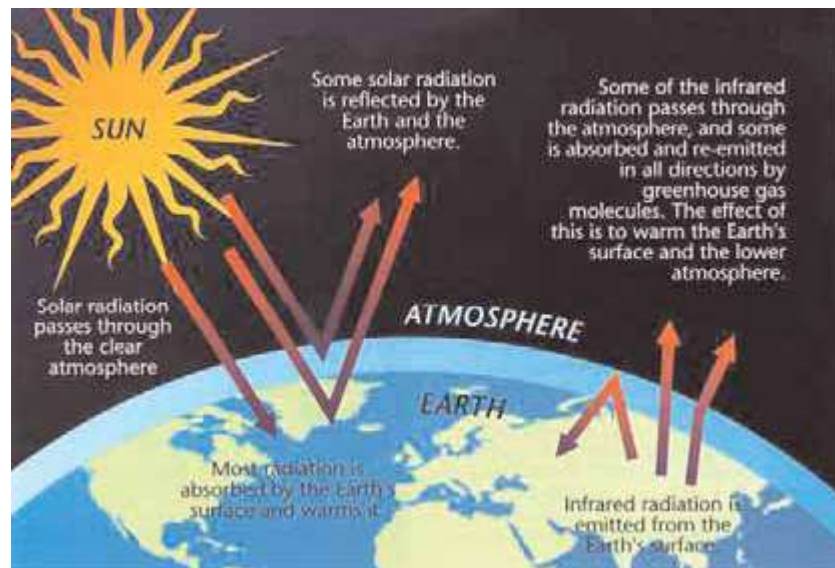


Figure 1: The Greenhouse Gas Phenomenon
Source: US Environmental Protection Agency

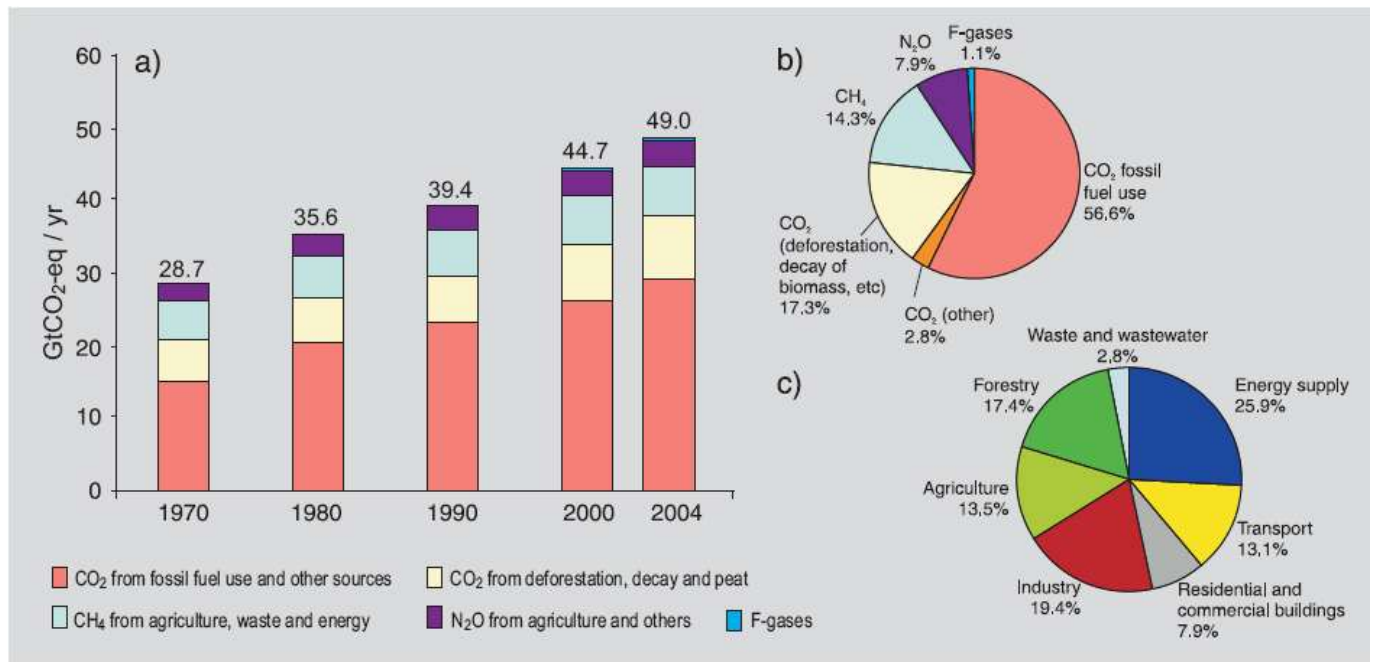


Figure 2: Global Anthropogenic GHG emissions

Source: Environmental Protection Agency

Based on preliminary data, Greenhouse Gas Emissions for Penn Hills in 2008 totaled 3,839 metric tons of carbon dioxide equivalent (CO₂e). The two graphs below illustrate total emissions and the breakdown of emissions by building and facility. The largest share of emissions, 37%, is from buildings and facilities, followed by 28% from streetlights and 25% from municipal fleet vehicles. To understand the significance of the numbers, city of Pittsburgh municipal emissions in 2003 amounted to nearly 250,000 tons CO₂e.¹

Want to help Penn Hills save money and become a greener community? Penn Hills is preparing an inventory of its greenhouse gas emissions and find ways to reduce emissions while saving money.

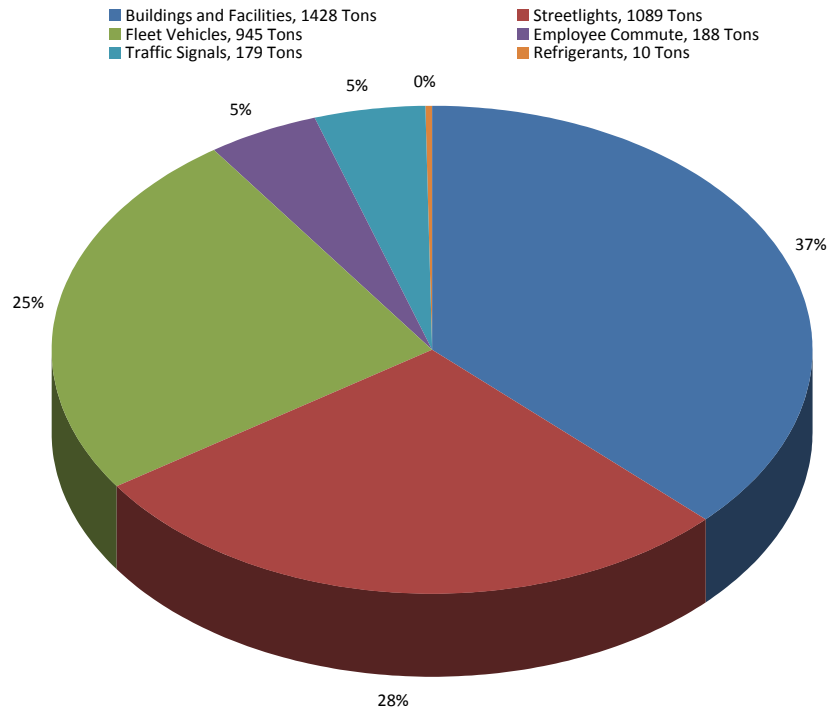
The project team² is seeking input from community members on ways that Penn Hills government, residents, and businesses can reduce their electricity, natural gas or gasoline usage. Examples include switching streetlights and traffic signals to more efficient LED bulbs, or upgrading heating and cooling systems. Please send ideas, questions, or comments to GradAssistCERE@gmail.com. The team looks forward to hearing from you.

¹ <http://pittsburghclimate.org/documents/PittsburghClimateActionPlan.pdf>

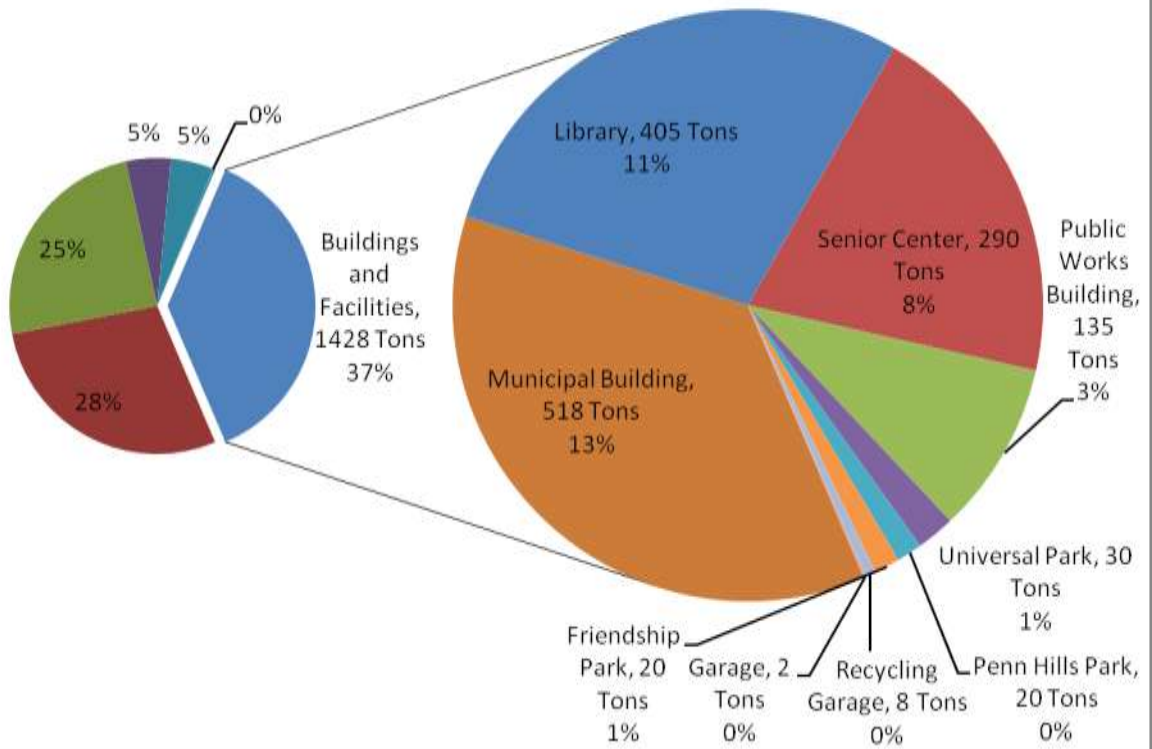
² This project is funded by a grant from the Pennsylvania Department of Environmental Protection. The inventory is being prepared by graduates students and faculty of the Center for Environmental Research and Education at Duquesne University.

Penn Hills Municipal GHG Emissions by Sector: 2008

3,839 CO₂e



Buildings and Facilities GHG Breakdown



Buildings and Facilities GHG Breakdown

