SCHENECTADY COUNTY
2010 Greenhouse Gas Emissions Inventory

In an effort to create a more energy efficient and sustainable community, Schenectady County initiated a Greenhouse Gas (GHG) emissions inventory and Climate Action Planning (CAP) process in July 2011. The GHG inventory assesses total energy consumption and GHG emissions from County buildings and operations, as well as from the community at large. The baseline year was selected as 2010 due to the availability of County operations energy data and 2010 U.S. Census data. This GHG inventory will help identify how the County can achieve reductions in energy consumption, costs, and GHG emissions. The CAP process will use the GHG inventory as a baseline against which future progress towards the targets can be measured. The CAP process includes a public outreach and communications component to engage the Schenectady County community, including the municipalities, in this important initiative.

Schenectady County GOVERNMENT

Schenectady County's government operations were responsible for the emission of 9,681 metric tons of carbon dioxide equivalent (CO_2e) in 2010. This is equivalent to the amount of carbon sequestered annually by 2,064 acres of pine forest.[1] The breakdown of emissions by sector is provided in Table 1 below. Buildings and other facilities were responsible for the greatest portion (62 percent) of GHG emissions, indicating that energy efficiency strategies in buildings are a potentially significant measure to consider within the County's Climate Action Plan. Emission sources in this inventory include electricity and natural gas used in County buildings and facilities, including the airport, and outdoor lighting. Also included are emissions from the combustion of vehicle fuel in the County's vehicle fleet, estimated emissions from personal vehicles used by employees for commuting, leaks of refrigerant gases from County vehicles, and emissions from solid waste generated by County operations. Solid waste emissions included both emissions from the disposal of solid waste at landfills[2] and emissions from the combustion of solid waste (of non-biogenic origin only) at waste-to-energy facilities.

[1] U.S. Environmental Protection Agency (US EPA). EPA Greenhouse Gas Equivalencies Calculator: http://www.epa.gov/cleanenergy/energy-resources/calculator.html

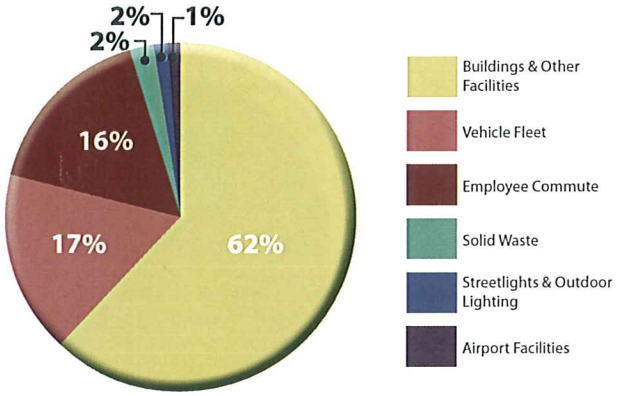
[2] Emissions from solid waste disposed of in landfills include all the methane waste deposited in 2010 is expected to produce over its decomposition cycle, which was estimated to be 73 years.

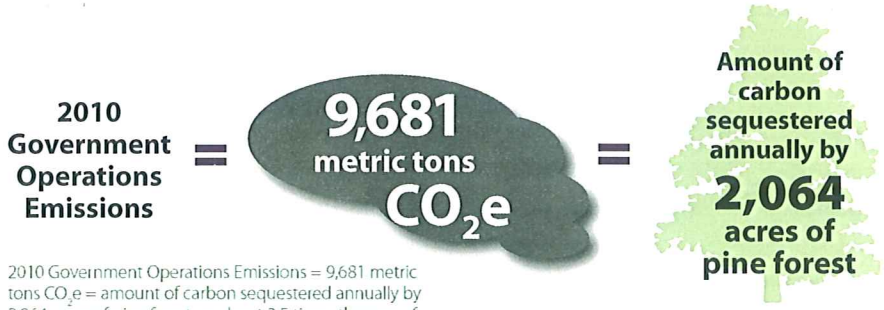
2010 COUNTY GOVERNMENT GHG EMISSIONS BY SECTOR

TABLE 1

SECTOR	TOTAL GHG EMISSIONS (METRIC TONS CO_2E)
Buildings & Other Facilities	6,021
Vehicle Fleet	1,627
Employee Commute	1,581
Solid Waste	215
Streetlights & Outdoor Lighting	138
Airport Facilities	99
TOTAL	**9,681**

FIGURE 1





2010 Government Operations Emissions = 9,681 metric tons CO_2e = amount of carbon sequestered annually by 2,064 acres of pine forest, or about 3.5 times the area of the City of Schenectady.

Schenectady County
COMMUNITY

The community inventory includes GHG emissions generated by Schenectady County's residents and visitors, businesses, and municipal and county operations. Sources of GHG emissions include: energy consumption in buildings and vehicles, solid waste disposed of in landfills and waste-to-energy facilities, fugitive emissions from leaking refrigerants in buildings and motor vehicles, the treatment of wastewater in septic and sewer systems,[3] and agriculture.[4] In 2010, community-wide GHG emissions in Schenectady County totaled 1,307,857 metric tons of CO_2e. This is equivalent to the total amount of carbon sequestered annually by 278,861 acres of pine forest.[5] GHG emissions from County government operations represented less than one percent of emissions from the community as a whole. As shown in Table 2 and Figure 2, building and street lighting energy use was the greatest source of GHG emissions across all sectors in 2010 (64 percent or 838,084 metric tons of CO_2e).[6] Within the buildings and street lighting sector, natural gas consumption accounted for the greatest amount of GHG emissions (395,233 metric tons of CO_2e or 47 percent of emissions). The next highest sector was transportation and motorized equipment, which contributed 27 percent or 348,706 metric tons of CO_2e.

[3] Emissions from wastewater treatment include methane escaping from septic systems, incomplete combustion of digester gas at wastewater treatment plants (WWTPs), and process nitrous oxide emissions from effluent discharge by WWTPs.

[4] The agriculture sector includes soils, manure, and enteric fermentation, and excludes emissions from farm energy use. Emissions from farm buildings are included in buildings, and farm equipment in transportation and motorized equipment.

[5] EPA Greenhouse Gas Equivalencies Calculator: http://www.epa.gov/cleanenergy/energy-resources/calculator.html

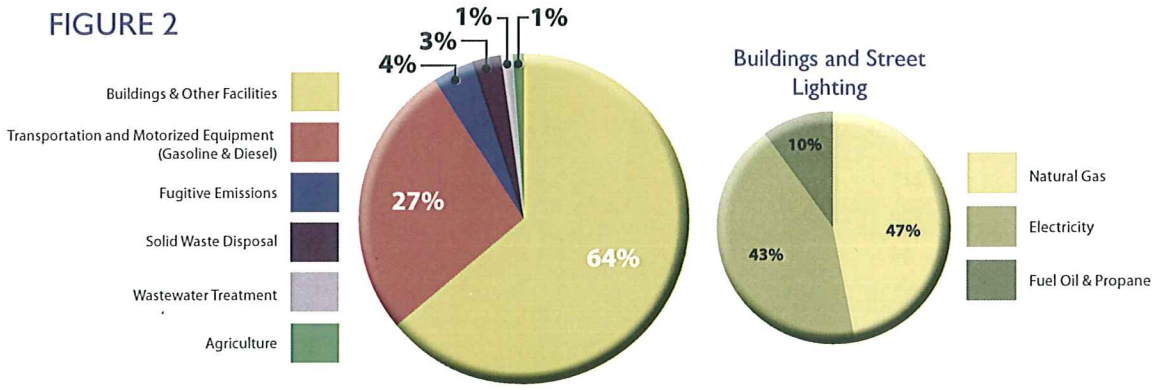
[6] The data in Table 2 include emissions from government operations shown in Table 1.

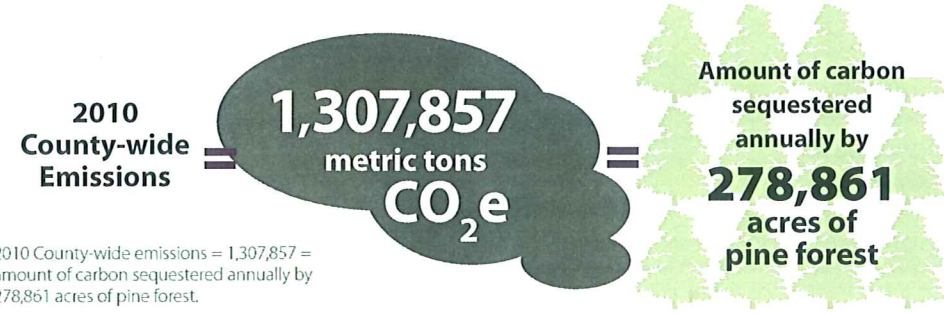
2010 COMMUNITY GHG EMISSIONS BY SECTOR

TABLE 2

SECTOR	TOTAL GHG EMISSIONS, CY 2010 (METRIC TONS CO_2e)
Buildings & Street Lighting	838,084
Natural Gas	395,233
Electricity	363,372
Fuel Oil and Propane	79,479
Transportation and Motorized Equipment (gasoline and diesel)	348,706
Fugitive Emissions	55,126
Solid Waste Disposal	43,160
Wastewater Treatment	13,676
Agriculture	9,105
TOTAL	**1,307,857**

FIGURE 2





2010 County-wide emissions = 1,307,857 = amount of carbon sequestered annually by 278,861 acres of pine forest.