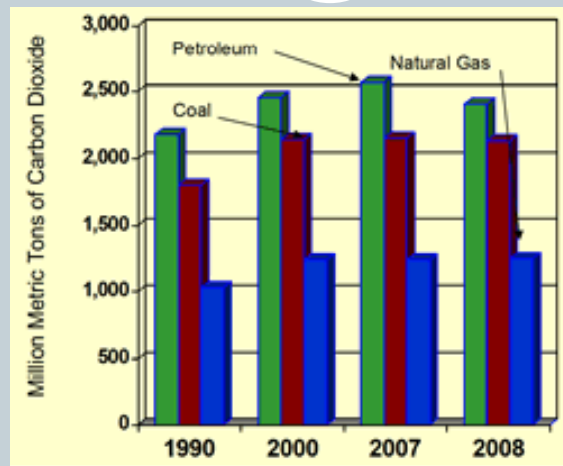


Municipal Greenhouse Gas Inventories and Climate Action Plans



U.S. Energy-Related Carbon Dioxide Emissions
by Fuel for Selected Years

September 15, 2010
Produced By: CERE
Presented By:

PADEP

Local Government Greenhouse Gas Pilot Program



- **Grant Recipient**
Township of Wilkins
Rebecca Bradley, Manager
- **Partner Municipalities**
Borough of Forest Hills
Steve Morus, Manager

Municipality of Penn Hills
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Municipal Outreach



- **Local Government GHG Emissions Pilot Program 2008**
 - Wilkins Township, Forest Hills, and Penn Hills
 - Joint municipal GHG emissions inventories
 - CERE: proposal writing, technical services
 - PADEP grant: \$47,786 for \$60,115 project
 - One of seven grants statewide

PADEP

Local Government Greenhouse Gas Pilot Program



- **Municipal Profiles**

Municipality	Area (sq. miles)	Population (2000)	Miles from Pittsburgh	Total CO ₂ e Emissions (tons)
Wilkins	2.8	6,900	11	96,737
Forest Hills	1.5	6,800	7	84,342
Penn Hills	19.0	50,000	10	401,676

- Land use: Suburban, principally residential, with one or more commercial strips
- Forest Hills: Significantly developed in 1920s; *Tree City USA* designee
- Wilkins and Penn Hills significantly developed post-WWII and in 1960s
- Landscape: Hills, valleys, ravines typical of western Pennsylvania
Considerable forested area

ICLEI's Clean Air and Climate Protection (CACCP) Software

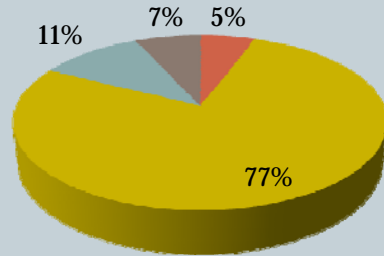


- ICLEI: Local Governments for Sustainability
 - Over a 1,000 registered users
 - Allows local governments to calculate and track GHG Emissions
 - Software calculates emissions into carbon dioxide equivalents (CO₂e)
 - Data used is for base line year 2008

Wilkins Township

Government GHG Emissions by Source

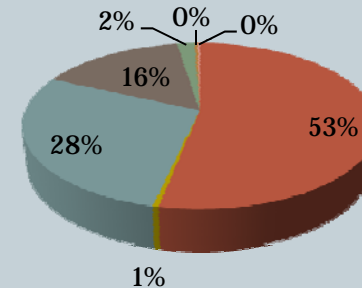
■ Diesel, 66 ■ Electricity, 908
■ Gasoline, 125 ■ Natural Gas, 80



- Wilkins is working to reduce its GHG emissions by:
 - converting traffic signals to LED
 - buying more fuel efficient vehicles for it fleet
 - replacing boiler with more efficient model

Community GHG Emissions by Source

■ Electricity, 50721 ■ Food Waste, 432 ■ Gasoline, 27099
■ Natural Gas, 14941 ■ Paper Products, 1864 ■ Plant Debris, 255
■ Wood or Textiles, 247

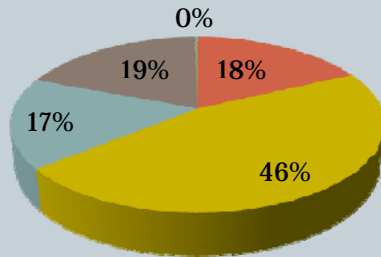


- Commuting habits play a large role in the community's gasoline consumption.
- Wilkins per capita emissions: 13.81 tons CO₂

Forest Hills Borough

Government GHG Emissions by Source

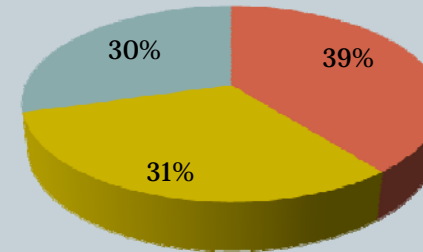
■ Diesel, 191 ■ Electricity, 490 ■ Gasoline, 178
■ Natural Gas, 201 ■ R-404A Blend, 3



- Forest Hills is working to reduce its GHG emissions by:
 - converting all traffic lights to LED by 2006
 - replacing all office lights with fluorescent bulbs
 - introducing a new fuel card system

Community GHG Emissions by Source

■ Electricity, 32698 ■ Gasoline, 26088 ■ Natural Gas, 24493

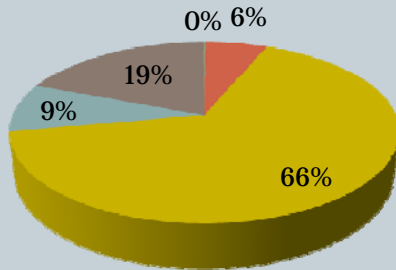


- Commuting habits play a large role in the community's gasoline consumption.
- Forest Hills per capita emissions: 12.19 tons CO₂

Municipality of Penn Hills

Government GHG Emissions by Source

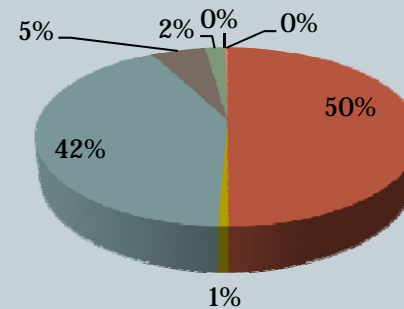
■ Diesel, 436 ■ Electricity, 4622 ■ Gasoline, 604
■ Natural Gas, 1335 ■ R-404A Blend, 10



- Penn Hills received a PADEP grant for energy efficiency to:
 - upgrade streetlights
 - upgrade Plum Creek wastewater treatment facility
 - replace a boiler in the senior center with a more efficient model

Community GHG Emissions by Source

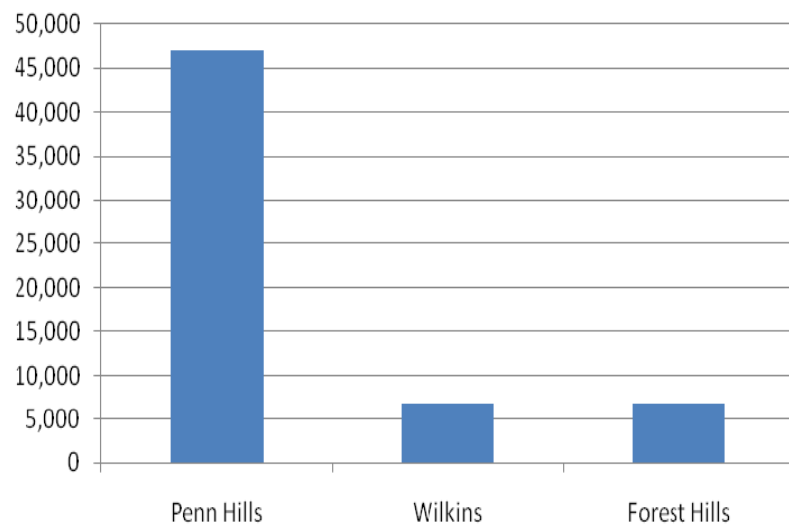
■ Electricity, 198085 ■ Food Waste, 2917 ■ Gasoline, 165263
■ Natural Gas, 21921 ■ Paper Products, 7629 ■ Plant Debris, -433
■ Wood or Textiles, -714



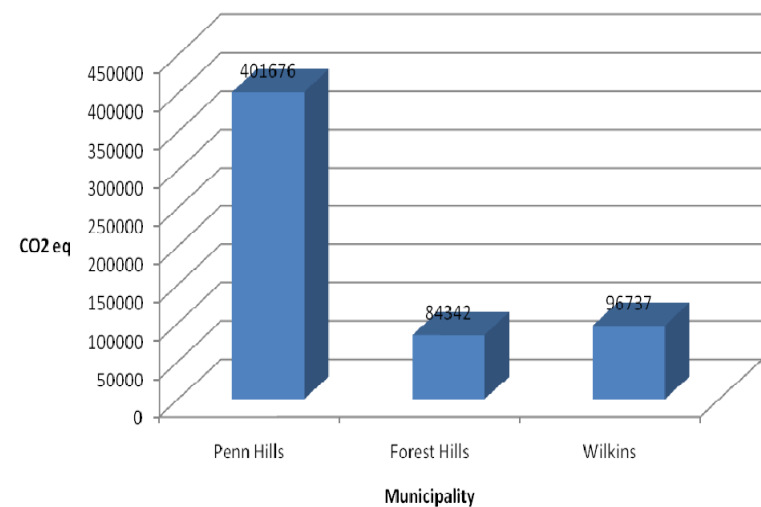
- Penn Hills's community sector produces an offset in its GHG emissions in the form of:
 - -433 tons CO₂ plant debris
 - -714 tons CO₂ wood textiles
- Penn Hills per capita emissions: 8.43 tons CO₂

Population vs. Total GHG Emissions

Population

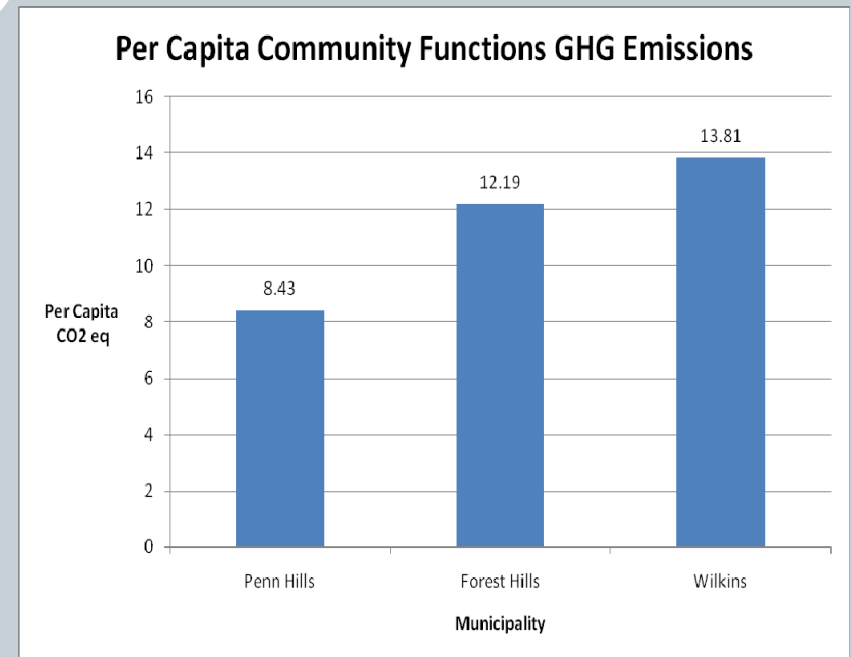
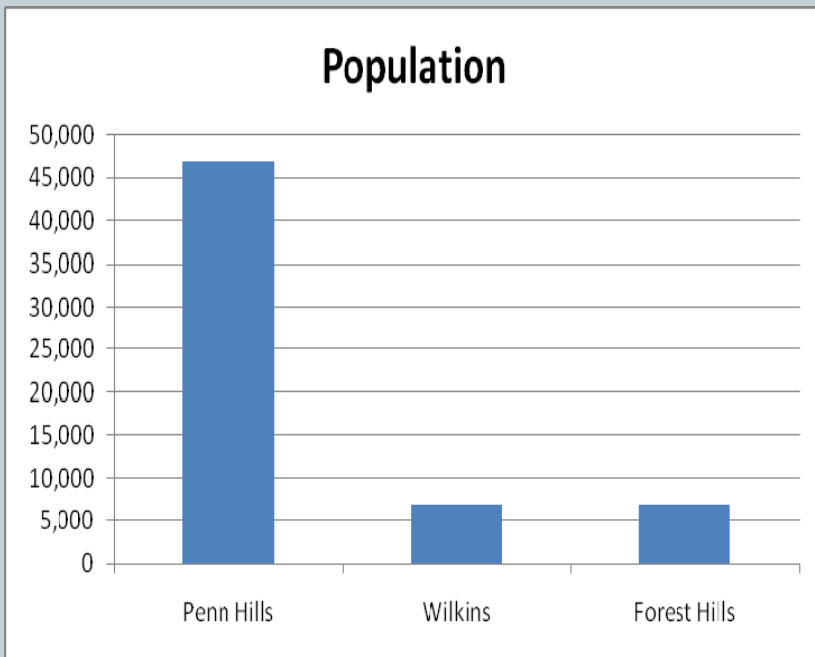


Total GHG Community and Government Emissions



- Penn Hills has the largest population and the greatest aggregate GHG emissions.

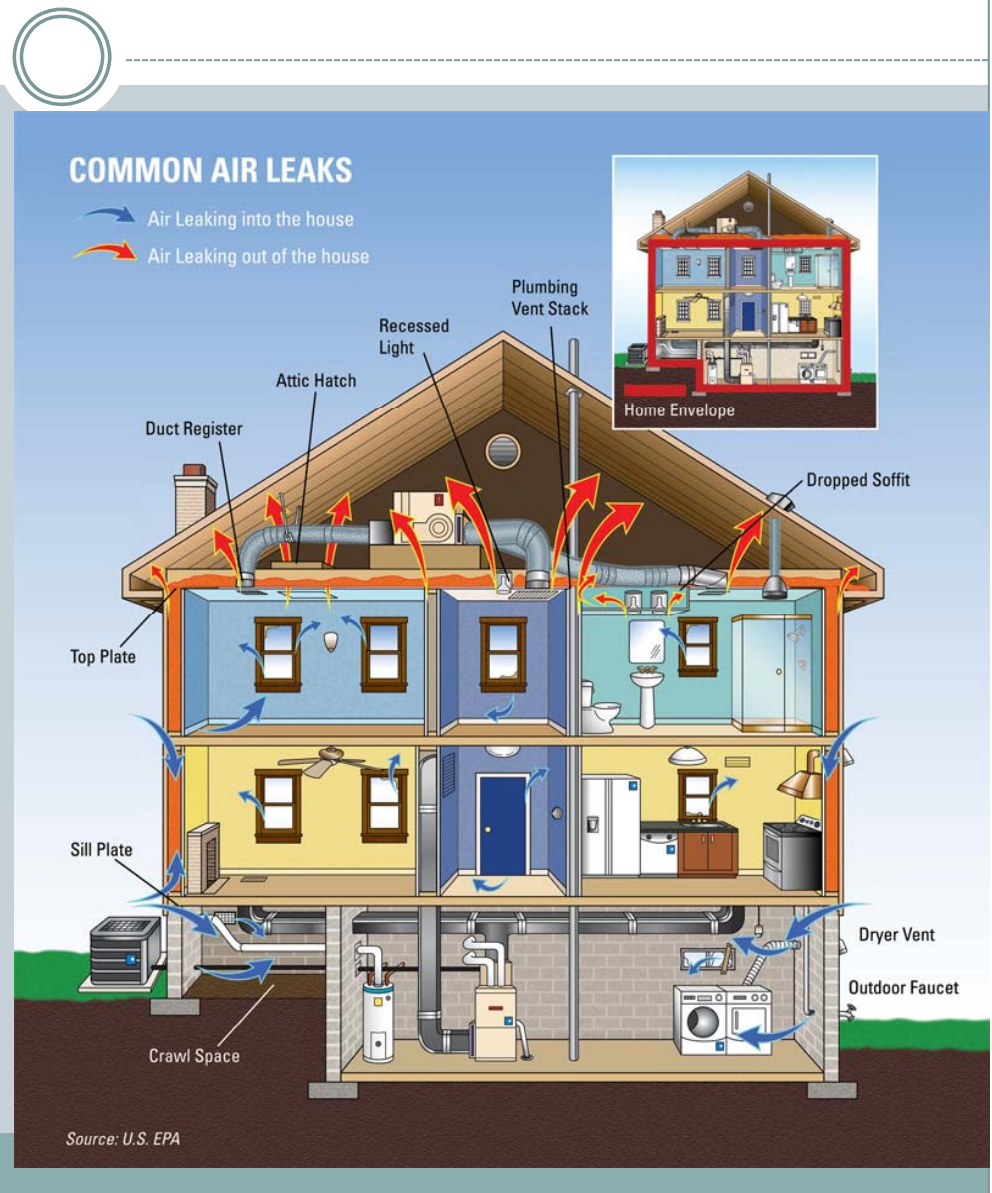
Population vs. Per Capita GHG Emissions



- **Wilkins has the second largest population, but the highest Per Capita Emission**

Further GHG Emission Recommendations

- Turn off lights and equipment when not in use.
- Replace incandescent bulbs with quality fluorescent lamps
- Control how much sunlight enters building
- Increase recycling habits
- Promote carpooling
- Utilize alternative fuels, such as biodiesel, in municipal vehicles



Learnings and Inventory Limitations



- Duquesne Light Company owns the street lights and reserves the right to upgrade bulbs.
- Data was not available from Wilkins about the township employees' commuting habits, thus compromising the accuracy of the inventory.
- Several assumptions were made about commuter vehicles:
 - Cars and light trucks used with averages taken
 - Gas engine averages used no diesel engine data used