Municipal Greenhouse Gas Inventories and Climate Action Plans

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

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Produced By: CERE
Presented By:
**PADEP**

Local Government Greenhouse Gas Pilot Program

- **Grant Recipient**
  Township of Wilkins
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- **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
### Municipal Profiles

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Area (sq. miles)</th>
<th>Population (2000)</th>
<th>Miles from Pittsburgh</th>
<th>Total CO$_2$e Emissions (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilkins</td>
<td>2.8</td>
<td>6,900</td>
<td>11</td>
<td>96,737</td>
</tr>
<tr>
<td>Forest Hills</td>
<td>1.5</td>
<td>6,800</td>
<td>7</td>
<td>84,342</td>
</tr>
<tr>
<td>Penn Hills</td>
<td>19.0</td>
<td>50,000</td>
<td>10</td>
<td>401,676</td>
</tr>
</tbody>
</table>

- **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 (CACP) 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 (CO$_2$e)
  - Data used is for base line year 2008
Wilkins Township

Government GHG Emissions by Source

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

77%

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

53%

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

- 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

0% 17% 19% 18% 46%

**Community GHG Emissions by Source**
- Electricity, 32698
- Gasoline, 26088
- Natural Gas, 24493

30% 31% 39%

- 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

- 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

**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 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

- 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
Penn Hills has the largest population and the greatest aggregate GHG emissions.
Wilkins has the second largest population, but the highest Per Capita Emission
Further GHG Emission Recommendations

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