

# Nether Providence Township

## Greenhouse Gas Audit

### Executive Summary

This document presents the results of a detailed audit of greenhouse gases emitted within the Township, in accordance with our responsibilities under the Cool Cities program endorsed by the Board of Commissioners in December, 2007. At that time, the Commissioners created the Energy Committee, with the following goals:

1. Measure the greenhouse gases that the township generates.
2. Establish greenhouse gas reduction targets.
3. Develop an action plan to achieve these reduction targets.
4. Implement the action plan.
5. Monitor and report on the plan's progress.

This paper reports the results of item #1 above.

### Methodology

An accurate inventory of the entire township greenhouse gas emissions (GGE) is a crucial first step in the process because it provides an understanding of baseline energy usage, allows for comparison of alternative scenarios, illustrates energy savings opportunities, and demonstrates progress towards meeting an emissions reduction goal. To achieve this accurate inventory<sup>1</sup>, the Energy Committee utilized the ICLEI (International Council for Local Environmental Initiatives) CACP (Clean Air & Climate Protection) software to analyze the data. GGE emanates from three primary<sup>2</sup> sources within Nether Providence:

- Residential
- Commercial
- Municipal, including schools

Each one of these sources has distinct components: utility usage, heat, transportation, and waste. To accumulate all this data, members of the Energy committee sought information from the DVRPC (Delaware Valley Regional Planning Committee) for energy usage from transportation-related activities, and for residential and commercial electricity and natural gas<sup>3</sup>. For residential waste data, Opdenaker Trash Removal provided actual usage<sup>4</sup>. Residential heating oil data was

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<sup>1</sup> The committee used 2005 as its base year.

<sup>2</sup> A fourth category, other (i.e. religious institutions), accounts for a very small percentage of the whole.

<sup>3</sup> PECO Energy provided this information for the Township as a whole.

<sup>4</sup> Opdenaker collected 16.8% of all residential waste in 2005; this number was then extrapolated to cover all residential waste.

obtained from Wilson Oil<sup>5</sup>. Municipal data was received directly from the township and the Wallingford-Swarthmore school district.

## Results

The chart in Figure 1 shows how the energy used in the residential and commercial sectors translates into CO2. Gasoline for transportation causes **43%** of the CO2 emissions, with residential heating second at **23%** and electricity close behind at **17%**.

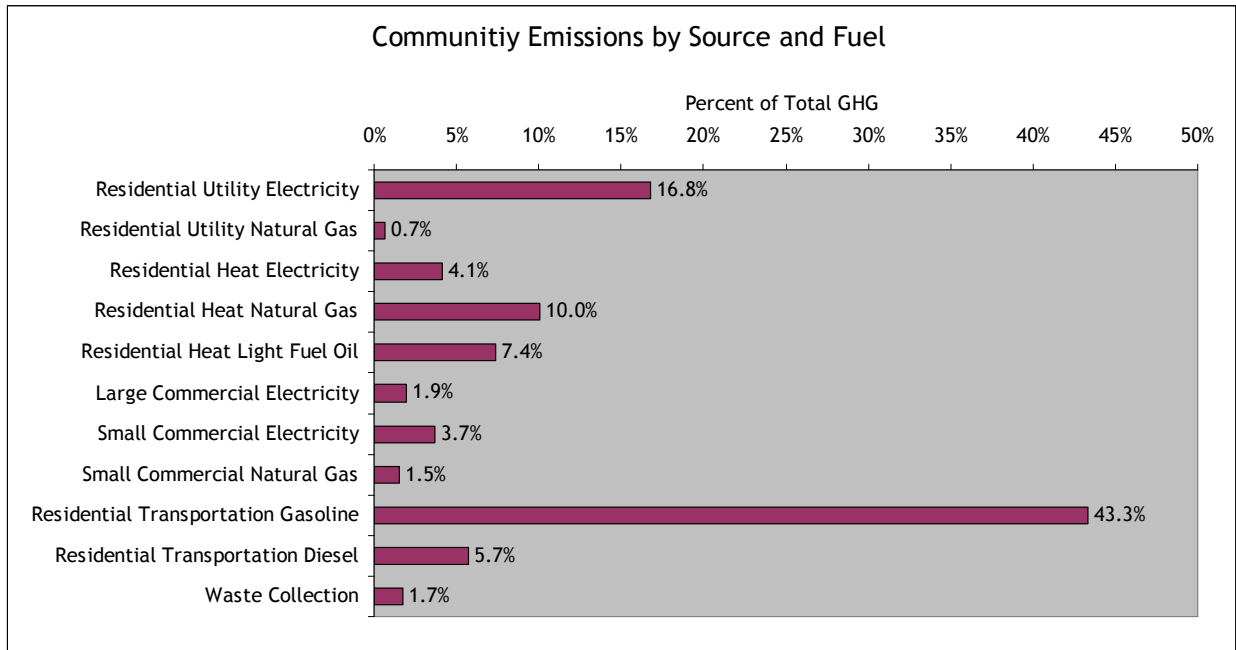


Figure 1.

The next graph (Figure 2) illustrates energy usage for the municipal sector. Here we see that school bus transportation (diesel) accounts for 14% of the total municipal GGE, and electricity for school buildings nearly half. Overall, total building usage represented **81%** of the emissions while transportation-related activity comprised approximately **19%**. To put this in dollars and cents, the NP taxpayers paid nearly \$1.1 million to power municipal buildings and vehicle fleet. As a comparison, Haverford Township spent \$1.14MM in similar expenses.

<sup>5</sup> Wilson serviced 22.5% of the residents; again data was extrapolated.

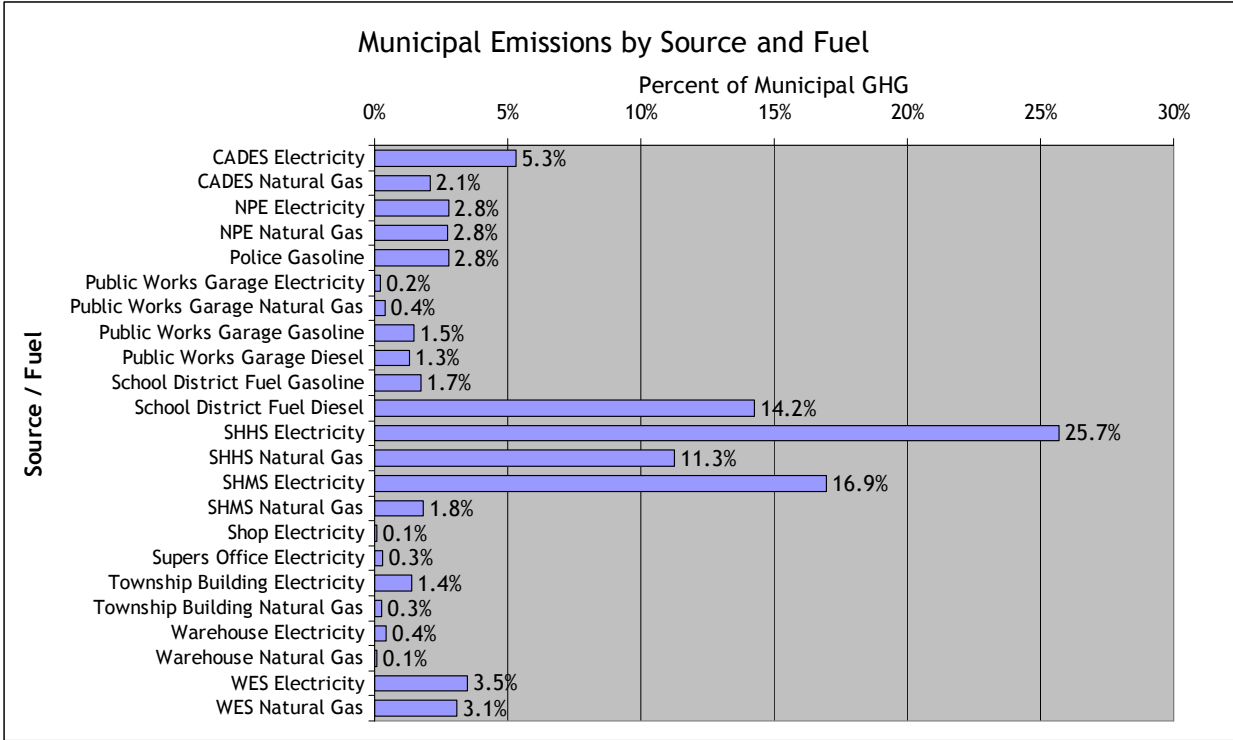


Figure 2.

By category, fully **88%** of the CO<sub>2</sub> emissions from the Township were generated by its residents (Figure 3), either from transportation or home usage (heating, lighting, refrigeration, laundry, cooking, etc.) This reflects our demographic of being primarily a residential community.

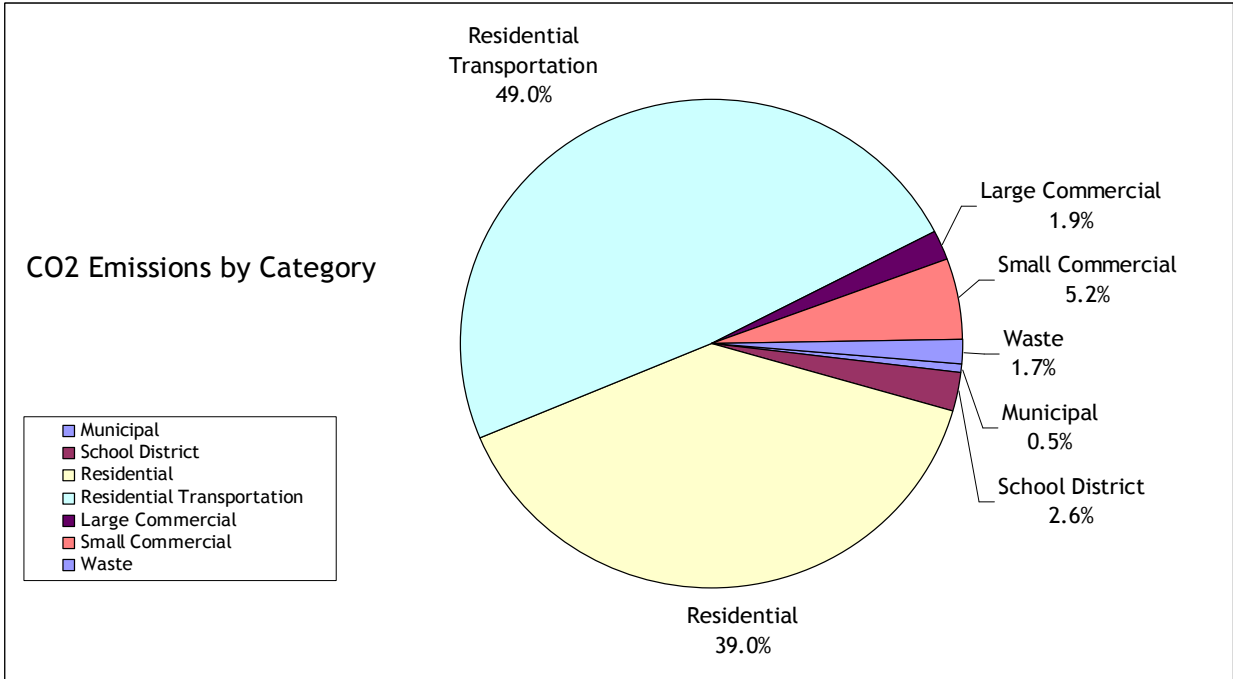


Figure 3.

In the aggregate, the township generated 163,764 tons of CO<sub>2</sub> in the year 2005. This translates into 11.5 tons of CO<sub>2</sub> per resident or 33 tons per household. How does this compare to other townships in the commonwealth of Pennsylvania? Haverford and Lower Makefield (Bucks County) townships have both completed a similar GGE inventory and their numbers are 8.9 and 11.5 (per resident) and 21.7 and 31.8 (per household), respectively; see accompanied table. Haverford is a more densely populated area and thus those residents have the ability to travel less, thereby reducing their gasoline usage.

## **Next Steps**

The next step in this process is to determine GGE reduction targets. ICLEI has some reduction targets from their research that may be of benefit to the Township. Concurrently, the energy committee will begin to identify potential new emission reduction measures for energy savings and GGE. These may include energy efficiency, clean energy, vehicle fuel efficiency, alternative fuel use, trip reduction strategies, waste reduction, and others. To the degree where possible, these measures will be quantified to learn which ones will provide the “biggest bang for the (taxpayer) buck.” Once a group of measures have been chosen, the committee will develop an action plan to implement and monitor these changes.

The NP Energy Committee will continue to advise and support the Township Manager and Township Board of Commissioners in the quest for further energy reductions.

Respectfully submitted,

Nether Providence Energy Committee  
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