4 DISCUSSION

This inventory identified 11.8 million MTCO2e of GHG emissions resulting from community activities within the jurisdictional boundary of Fairfax County in 2006.

As shown in Table 8, direct (Scope 1) and indirect (Scope 2) energy emissions each accounted for about half of the total: 5.7 and 6.1 million $MTCO_2e$, respectively. Passenger vehicles literally drove on-road transportation to dominate Scope 1 emissions, at 3.9 Million MTCO2e. Residential natural gas use was a distant second at 0.9 million$MTCO_2e$. Electricity consumption by commercial (3.4) and residential (2.6) sectors accounted for nearly all Scope 2 emissions. These four GHG sources will likely be the most critical for county GHG managers to track and understand over time.

Table 8: Fairfax County GHG emissions inventory results

GHG Emissions Sources and Scope – Million MTCO2e	
Stationary Sources	2006
Residential Buildings	
Direct Emissions (Scope 1)	**0.9**
Energy Indirect Emissions (Scope 2)	**2.6**
Commercial/Institutional Facilities	
Direct Emissions (Scope 1)	**0.4**
Energy Indirect Emissions (Scope 2)	**3.4**
Industrial Energy Use	
Direct Emissions (Scope 1)	**0.2**
Energy Indirect Emissions (Scope 2)	**0.1**
Subtotal – All Stationary	**7.6**
Mobile Sources	
On-Road Transportation	
Direct Emissions (Scope 1)	**3.9**
Railways	
Direct Emissions (Scope 1)	**---**
Energy Indirect Emissions (Scope 2)	**0.1**
Off-Road	
Direct Emissions (Scope 1)	**0.4**
Subtotal – All Mobile	**4.4**
TOTAL	**11.8**

Passenger vehicles' GHG emissions increased 4% over the 2006 – 2010 time frame. The spatial pattern was not uniform, however: locally registered vehicles' emissions increased 2% while transient vehicles' GHGs rose 6%.

Residential electricity use also produced 6% more GHGs in 2010 than in 2006. Emissions from residents' natural gas grew more dramatically, over 13%. By contrast, GHGs from commercial electricity fell between 1 and 2% during this period.

The net impact of these changes was reported in Table 1. Scope 1 emissions increased steadily by 5% after 2006, while Scope 2 emissions remained within 1% of the 2006 baseline level. Hence, overall county emissions increased by around 3% by 2010. Still, population growth of 4% meant that county emissions per resident started to decline.

Subsequent years' GHG inventories should clarify whether or not this per capita decline indicates a new trend in energy efficiency and conservation. Either way, local population trends are an important consideration for tracking and anticipating the trajectory of GHG emissions over time.