IV. BROWARD COUNTY GOVERNMENT OPERATIONS – GREENHOUSE GAS EMISSIONS

Broward County Government Operations Greenhouse Gas Emissions

The Broward County Environmental Protection and Growth Management Department has compiled the Broward County Government Operations Greenhouse Gas (GHG) Emissions Inventory as part of the process to develop a Broward County Government Operations Climate Change Report. The main purpose of the inventory is to establish the baseline level of emissions from County government's GHG emissions and to monitor and track reductions.

The U.S. Mayors Climate Protection Agreement sets a baseline year of 1990 and a target year of 2012 to accomplish emission reductions. The baseline for the Broward County Government Operations GHG Emissions Inventory considers emissions from County government operations that occurred during fiscal year 1997 (October 1, 1996 – September 30, 1997). The year 1997 was chosen by the Task Force based on the availability of data and the desire for an accurate and reliable baseline. Broward County's target year of 2015 accounts for the adjusted baseline of 1997.

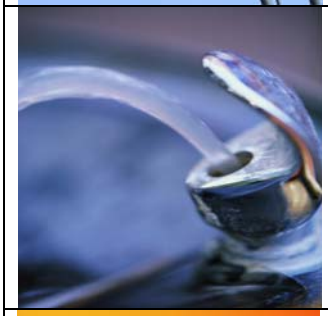
Broward County government has always taken a proactive role to reduce electricity and fuel use, promote alternative modes of transportation, and reduce waste generation and landfill disposal, actions which also reduce GHG emissions. This emissions inventory accounts for:

- GHG emissions in baseline year 1997;
- GHG reductions achieved by the County from 1997 to 2007; and
- GHG emissions forecast through target year 2015 without any emission reduction actions.

The Task Force chose the Clean Air and Climate Protection (CACP) Software as the methodology for the development of the GHG emissions inventory.

For purposes of the Greenhouse Gas Emissions Inventory and the Climate Change Report, emissions and emission reduction measures are divided into the categories presented below. For more detailed information, refer to Exhibit B – Broward County Government Operations Greenhouse Gas Emissions Inventory.

	Buildings/Facilities: All GHG emissions generated through the use of electricity and other fuel sources in the operation of buildings owned or leased by the County were considered for this category.
	Vehicle Fleet: All GHG emissions generated by the use of fuel for the operation of County owned or leased vehicles were considered for this category, including emissions from county passenger vehicles, vans, trucks, and fixed-route transit buses.

	<u>Employee Commute:</u> All GHG emissions generated by the commute of county government employees to and from their work were considered for this category. Average commute distances were determined by using a geographic information system (GIS) program.
	<u>Street Lighting:</u> All GHG emissions generated by the consumption of energy (usually electricity) by Broward County operated streetlights, traffic signals, and illuminated street signs were considered for this category.
	<u>Water/Sewage:</u> All GHG emissions generated by the consumption of energy (usually electricity) in water and sewage treatment plants and pump stations owned or operated by Broward County were considered for this category.
	<u>Waste:</u> All GHG emissions generated by the disposal of waste generated by Broward County government operations and unincorporated areas were considered for this category.

In addition to the above emissions inventory components, information was gathered about projects and actions in the areas of outreach and education; sustainability; green procurement; and other (see below). While not part of the inventory calculation model, greenhouse gas mitigation actions in these areas may produce measurable reductions. In addition, actions in these areas represent positive environmental practices and demonstrate stewardship.

	<u>Outreach & Educational Programs:</u> Programs included in the Report either target County employees or are presented by County employees and serve to provide information regarding resource conservation, stewardship, and best management practices.
	<u>Sustainability:</u> These are activities that may reduce the impacts of emissions by limiting development of new GHG sources, preserving and creating areas to sequester greenhouse gases, or promoting the operation of County facilities in a more energy-efficient manner.
	<u>Green Procurement/Green IT:</u> Through acquisition by the County of energy-efficient and environmentally-friendly products and services, the carbon footprint of County operations can be reduced often with little or no initial cost increase and with defined long term financial benefits.
	<u>Other Ideas:</u> In addition to reducing, reusing and recycling, County operations can begin "refusing" to operate as usual when more creative options exist to get the job done without compromising customer service, health or public safety. The opportunities are endless and the Task Force will continue to explore new options in all aspects of County operations.

1997 Baseline. In 1997, Broward County government operations used a total of 501,585,175 kWh of energy (including electricity and fossil fuel), generating 245,736 tonnes eCO_2 emissions.[8] The largest source of GHG emissions in County government operations is Buildings Operations and Maintenance with 106,349 tonnes eCO_2 emissions (43%), followed by Water/Sewage Treatment with 46,031 tonnes eCO_2 emissions (19%), and Vehicle Fleet Operation with 42,369 tonnes eCO_2 emissions (17%). The 1997 GHG emissions are summarized in Figure 1.

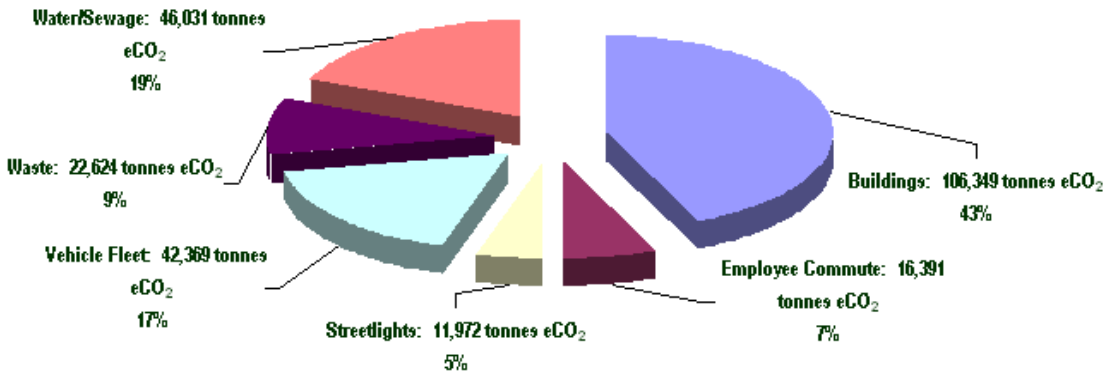


Figure 1. Baseline: Distribution of Greenhouse Gas Emissions from Broward County Government Operations by Source Category for Baseline Year 1997, (FY07: October 1, 2006 – September 30, 2007).

Reductions achieved from 1997 to 2007. Since 1997, Broward County has implemented measures that resulted in a reduction of 114,278,355 kWh annually and 62,491 tonnes eCO_2 emissions annually (Figure 2). The most significant reductions were achieved in some of the categories with the higher GHG emissions which are Vehicle Fleet Operations, Buildings Operation and Maintenance, and Waste.

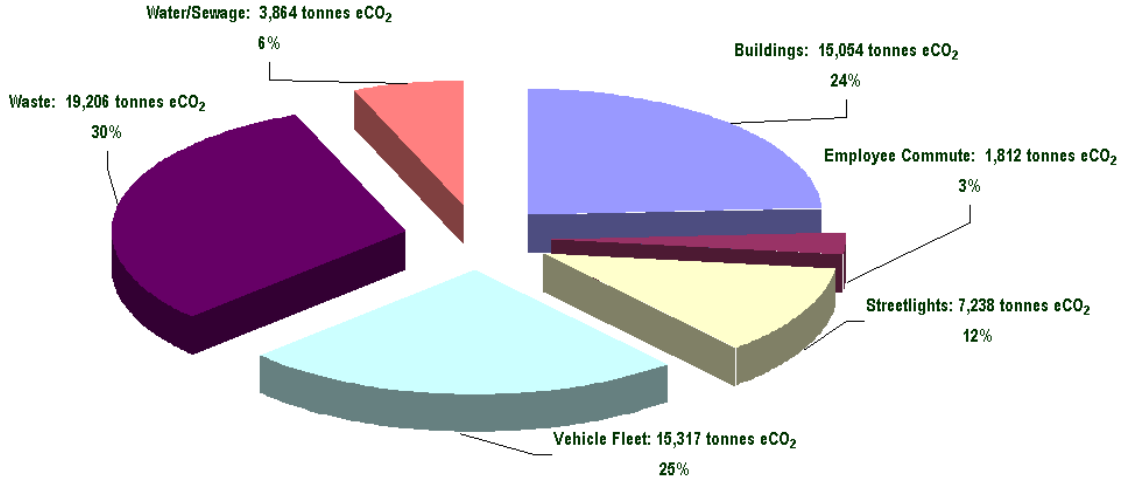


Figure 2. Reductions: Percentage of Yearly eCO_2 Reduction Due to Existing Measures by Source Category.

[8] In this emissions inventory, all values of GHG emissions are reported in metric tons (tonnes) of carbon dioxide equivalent (eCO_2).

Emissions Forecast through Target Year 2015. If Broward County took no action to reduce GHG emissions, based solely on County government operations growth from baseline year 1997, by 2015, Broward County would use an estimated 634,944,861 kWh of energy annually producing approximately 342,384 tonnes eCO_2 emissions a year. To meet the target of reducing GHG emissions by 7% below the 1997 baseline, by 2015, Broward County government operations must reduce emissions by 113,850 tonnes. Through existing measures, a reduction of 62,491 tonnes eCO_2 has already been achieved. Thus, additional reduction of 51,359 tonnes eCO_2 is required over the next seven years to meet the established target (Figure 3).

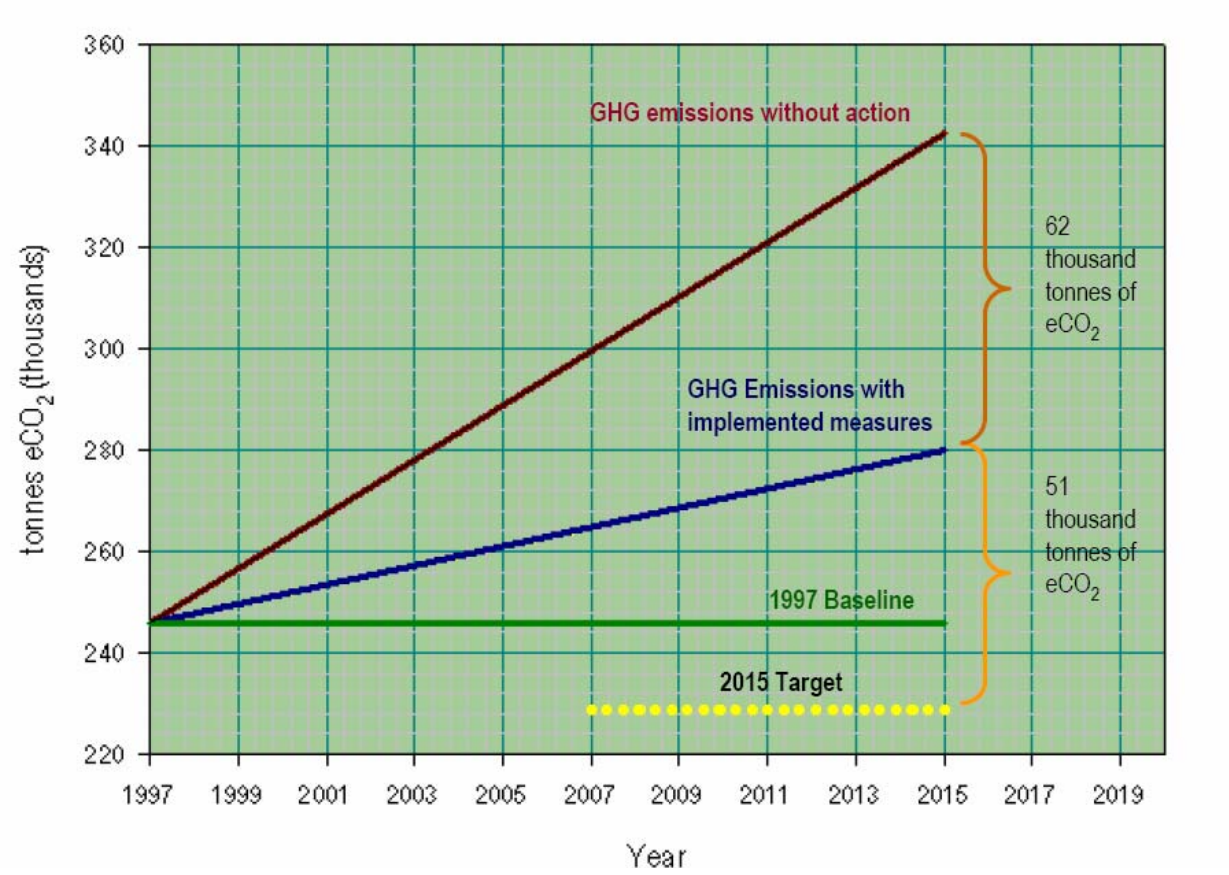


Figure 3. Broward County Government Operations Greenhouse Gas Emissions Analysis.