

# **Bunker Hill Community College ACUPCC Inventory Report**

September 15, 2010

## **Overview**

In September of 2007, the President of Bunker Hill Community College joined several community colleges Presidents as a charter signatory of the American College & University Presidents' Climate Commitment (ACUPCC) that pledged BHCC to eliminate its contribution to global warming by the elimination of carbon emissions from the College campus over time.

The first element of this commitment was to establish a committee to develop and implement the college implementation plan. Members of the committee include representatives from the college administration, faculty, staff and students. The charter of the committee is to:

1. Oversee and guide the development and implementation of a plan to comply with the ACUPCC.
2. Evaluate measures that we can take to achieve no net greenhouse gas emissions.
3. Evaluate and recommend policies for developing action plans (e.g. reduce energy consumption) to reduce greenhouse gases.
4. Evaluate and recommend tangible action plans (e.g. only purchase energy star rated appliances) to be taken by BHCC to reduce greenhouse gases.
5. Prepare reports detailing the progress of the implemented action plans for public view.
6. Act as the liaison between the college community and the President and between the President and the Nationwide Council on ACUPCC matters.

Also as part of the commitment, BHCC submitted a comprehensive Greenhouse Gas Inventory on September 15, 2008. This inventory was used to develop a carbon neutral plan submitted on September 15, 2009.

## **Greenhouse Gas Inventory (GGI)**

The inventory has been a cumulative effort of college staff, faculty, and students. Data collection was obtained through collaboration with the Director of Institutional Effectiveness, Fiscal Affairs, Public Safety

Department, Registrar's Office, Human Resources, Facilities Management, Business Office, and the Director of Sustainability.

Based on the information entered into the Clean Air Cool Planet Calculator, we have been able to ascertain that BHCC generates approximately 7650 metric tons of CO2 per year\*, which is broken down as follows:

Scope	Tons Per Year	% of Total
1	4302	56%
2	2277**	29%
3	1071	15%
<b>Totals</b>	<b>7650</b>	<b>100.00%</b>

\*calculation for 2009

\*\*2009 Commuting MTeCO2 was projected using the amount calculated for 2008 using the 14% increase in student enrollments from 2008 to 2009

- The solid waste generated by BHCC is handled by Waste Management of Massachusetts and is sent to a landfill.

### **Implementation**

The greenhouse gas inventory continues to provide the college a benchmarked baseline for which to better comprehend the scale of campus emissions. The immediate goals for the future remain to:

- Interpretation of the inventory
- Audit of campus for further energy saving opportunities
- Develop a comprehensive plan for reducing our emissions

### **Process**

As recommended by the ACUPCC and the Massachusetts Executive Office of Energy and Environmental Affairs, BHCC chose to use the Clean Air Cool Planet Campus Carbon Calculator.

The BHCC contributions to greenhouse gases are:

1. Stationary combustion such as the use of natural gas and fuel oil
2. Purchased electricity
3. Transportation, including college vehicles, business travel, commuting by students and faculty and staff to and from the campus
4. Waste going to landfills

The following is a summary of collections for each subsection of the Clean Air Cool Planet Calculator for each element.

The **Director of Institutional effectiveness** was used as a source of institutional data, including numbers of students, faculty, and staff; operating budget; and total building square footage. The information was then broken down into categories of full-time, part-time, summer students, faculty, staff, etc.

Faculty commuting information and staff commuting information was combined and entered in the “Staff” column.

Purchased Electricity, Fuels for heating and cooling, and Fuel for the vehicles and equipment information was obtained and was confirmed for accuracy by the **Facilities Management Department**. In FY 2008 BHCC signed a multi-year contract to supply electricity with 100% renewal energy credits. By purchasing renewal energy credits to offset current dependence on fossil fuels we reduced our carbon emissions for purchased electricity by 67.8%.

**Air Travel** was determined by summarizing all travel procurement purchases and/or Purchase Orders to quantify the total amount spent on air travel for faculty, staff, and students. We then reviewed. An average cost per mile was calculated using documentation obtained from the Federal Bureau of Transportation Statistics for the twelve most common airlines. As of the summer of 2008, the average cost to travel by air was 13.6 cents per mile.

**Solid Waste** from the campus is picked up and sent off to a landfill. All the waste tonnage is tracked by the Sustainability Coordinator. **None of the** waste is used for building power.

33% of the waste is sent to a refuse derived fuel incinerator. This does not have methane recovery.

67% of the waste is sent to a landfill that has methane recovery and electric generation.

### **Commuting**

BHCC continues to refine the calculation of commuter miles. We were able to obtain a reasonable estimate for student data commuting (2008) using the state mandated Department of Environmental Protection Rideshare Survey combined with institutional data provided by the Department of Institutional Effectiveness.

To calculate an average distance of commute the top 10 locations of student commute origins were used (source: DEP survey). The majority of the students commute from locations within the City of Boston. To obtain an average commute in Boston the top ten city neighborhoods were used to obtain an average distance for the City of Boston residents. Distances to the main BHCC campus from city neighborhoods, towns, and cities were calculated using Google Maps. The DEP survey provided the percentage of students commuting by mass transit (subway, commuter rail and bus). Trips per day were provided by the survey as well. Using the hours spent on campus from the college fact book an average estimate of 3 days on spent on campus per student. Full time students typically spend more days on campus however; part time students make up the majority of the student population (67% in 2008). Note: Student information from the DEP survey consists solely of full time student responses (to meet state requirements). Improvements to future data collection will include surveys of part time students

Faculty and staff commuter data was calculated using the same methods and data sources as the students (BHCC fact book and the DEP survey (2008)).

## **Conclusion**

The inventory submitted on September 15, 2010 indicates that are indirect emissions form purchased electricity have reduced our total emissions by 67.8 %. We also have implemented strategies to reduce our emissions derived from the use of stationary fuels by using natural gas instead of oil for heating and cooling. This inventory continues to provide BHCC a means to relay to the college community our benchmarks, our contributions, and to measure the effectiveness of our strategies outlined in our climate action plan, GreenPACT, submitted on September 15, 2009.