

Introduction

The City Council of West Sacramento set as a high priority in their 2008 Policy Agenda the requirement for development of a Green and Sustainable Community Strategy. Commitment to require development of a strategy is a strong message that the Council believes natural resources are limited and that their use should be managed so they are available for future generations. A Green and Sustainable Community Strategy is one that looks at the needs of the community, services provided and the delivery system utilized. Taking a close look at these components will allow Council to balance the economic and environmental effects of City-provided services.

Any strategy on sustainability will look at the production of Greenhouse gases (GHG). Greenhouse gases (GHG) are gases that trap heat in the atmosphere. Some GHG, such as carbon dioxide occur naturally and are emitted to the atmosphere through not only natural processes but also human activities. Others are created and emitted solely through human activities (principally burning fossil fuels.) A greenhouse gas inventory is an accounting of the amount of greenhouse gases emitted to or removed from the atmosphere over a specific period of time.

In 2007, the California Legislature enacted AB 32 (Nunez)- The Global Warming Solutions Act of 2006. The act states that global warming poses a threat to California's health, economy, public health, natural resources and the environment. The act charges the California Air Resources Board (ARB) as the state agency responsible for monitoring and regulating sources of GHG emissions and implementing AB 32. The goals of AB 32 are:

- By 2010 reduce GHG emissions to 2000 levels
- By 2020 reduce GHG emissions to 1990 levels
- By 2050 reduce GHG emissions to 80% Below 1990 levels

Current CARB estimates:

- 1990: 427 Million Metric Tons (MMT0 CO₂ eq.)
- 2008: 495 MMT CO₂ (A 14% Reduction needed from EVERYONE)
- 2020 IF BUSINESS AS USUAL: 600 495 MMT CO₂ (29%Reduction Needed)

By January 1, 2009 the ARB will have a scoping plan prepared to make recommendations on direct emission reduction measures, alternative compliance mechanisms, market based mechanisms, and incentives.

Background

In August 2007, the City of West Sacramento joined the International Council for Local Environment Issues (ICLEI), an international associations of local governments and national and regional local government organizations that have made a commitment to sustainable development. One of the many benefits included in membership is use of their Clean Air and Climate Protection Software (CACPS) program that converts certain operations into measurements of Greenhouse Gas Emissions (GHG) in terms of CO₂ produced in tons. We can use this program to:

1. Establish a baseline
2. Set reduction targets; and
3. Measure progress

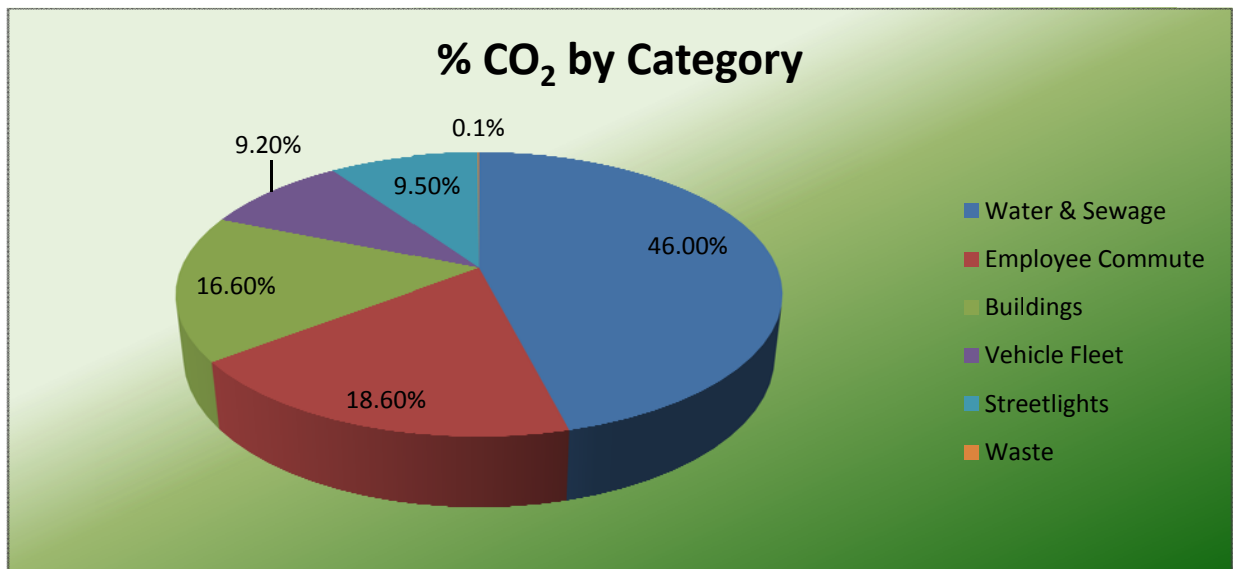
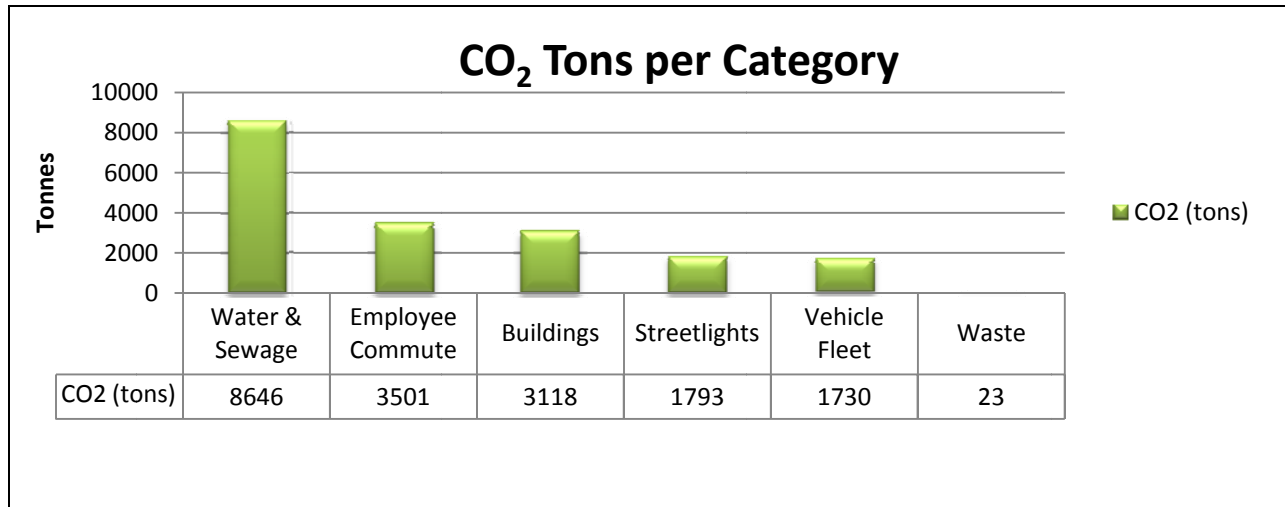
As a first step, the City is using the model to measure the GHG produced from our internal operations within the following categories:

1. Electricity
2. Natural Gas
3. Solid Waste
4. Vehicle fuel

Baseline Inventory Methodology

To calculate the GHG emissions from City operations, staff gleaned information about electricity and gas used in City facilities; water production and refuse and recycling generated within City operations. In addition the amount of fuel used in City vehicles as well as commute habits of City employees was inventoried. To establish a uniform baseline a twelve month period was used and any data available for less than a twelve month period was extrapolated to construct time-line comparisons.

Our preliminary findings, depicted in the following chart(s), show both the CO₂ tons by major categories followed by the relationship by percentage of those categories to the total City CO₂ use.



Water/Sewage

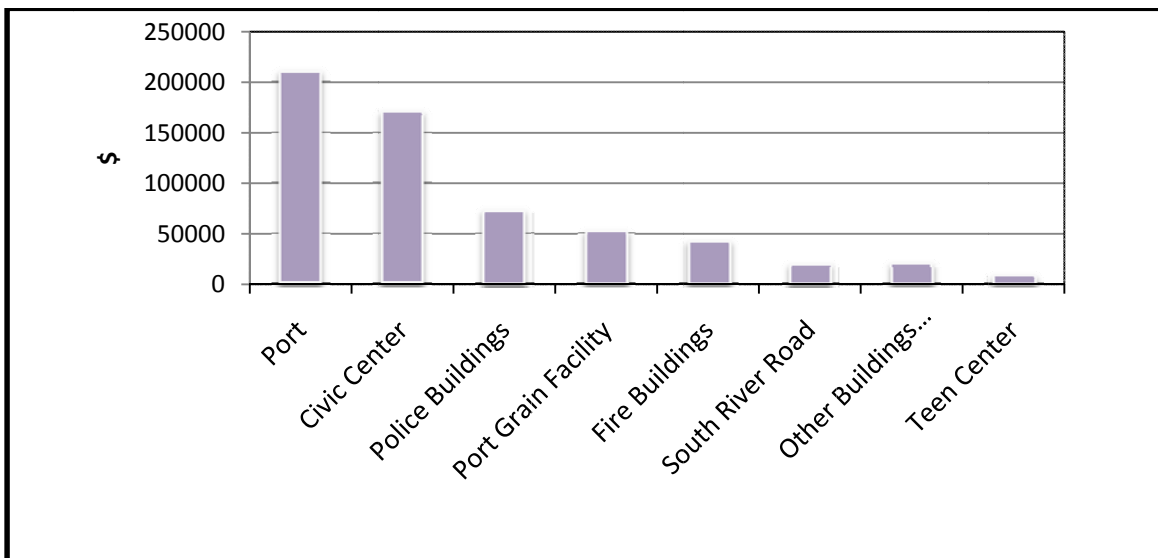
Energy used in the delivery of water to the community and the treatment of wastewater is by far the City's largest operational contributor to CO₂ emissions. While this operation could also be considered as part of the community inventory, it is included in this category as a major operation of city service. Water and sewage operations directly relate to the needs of the community and are a necessary operation in which service; therefore, emissions have the potential to increase with the population and/or habits of the population. The calculations for the water and sewage category were obtained using information from the PG&E bills for the same time period. The building at the water treatment plant itself is not included in the building inventory and is instead included in this category. A significant change in City operations is also the waste water treatment plant which was converted to the Lower Northwest Interceptor in October 2007 and therefore comparisons for future years will show a marked reduction as that

facility goes off-line. Below is a breakdown of some common water/sewage utilities for the one year period reviewed:

FACILITY	kWh	Cost	CO ₂ (tons)
Bryte Ave Sewer Pump Station	296,800	\$40,614	223
Bryte Bend Water Treatment Plant	5,458,658	\$574,062	4112
Iron Triangle Sewer Pump	4014	\$718	3
Pump Station-Stone Blvd	125,560	\$17,250	94
Field Irrigation Pump	6465	\$ 1290	5

Buildings

Information in this category came from PG&E bills that were aggregated per meter for one year September 1, 2006-August, 31, 2007. The ICLEI database allows entries for electricity, gas and costs associated. The total cost for this time period was well over \$588,000. Below is a chart of the costs associated with our current buildings for utilities through PG & E. The significant contributors were called out, while the *Other Buildings*, category is a grouping of smaller, limited electrical or gas users. The South River Road facility does not include the wastewater treatment facility.



Employee Commute

Staff surveyed employees and their commute patterns in December 2007. The response rate for this survey was over 95%. Employees that drive City issued vehicles were calculated in the Vehicle Fleet Category. The survey information was collected from a representative in each department and employees were asked:

- Weekly average commute (to/from work and typical meetings resulting from work if a personal vehicle was used)
- Type of Vehicle Driven (compact, SUV, heavy truck, compact, etc)

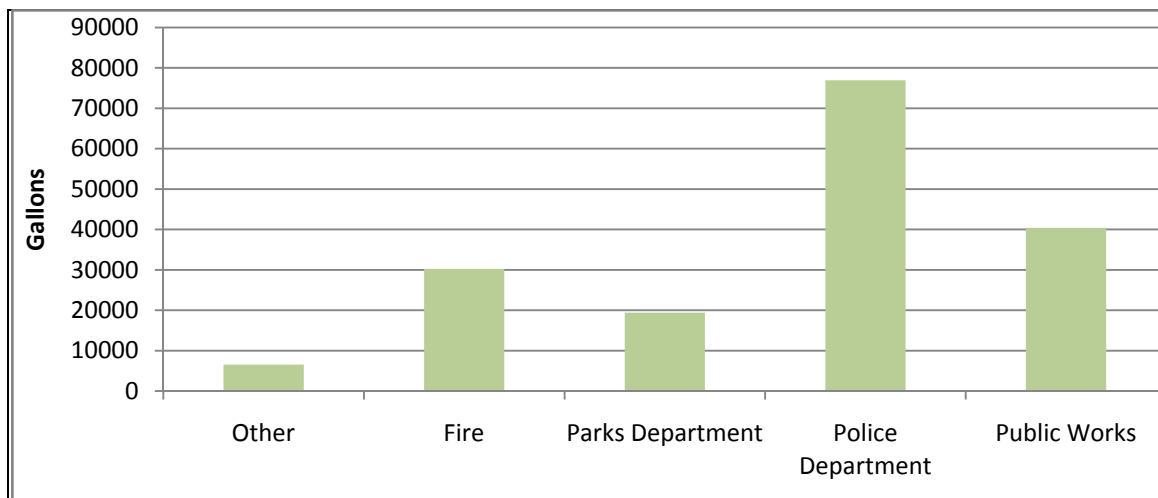
The information was then aggregated by vehicle type and entered into the ICLEI Database which calculated that a 18.6% contribution to overall CO₂ is from employee commute - our second largest category.

The information below is based upon the answers of 346 employees:

- 3,491,640 annual miles are driven by employees in their personal vehicles
- Average of 10,091 miles per employee annually or 201 miles/week
- Vehicle Type
 - 57 Compact Cars (16%)
 - 12 Full Size Cars (3%)
 - 82 Midsize Vehicle (24%)
 - 42 Heavy Trucks (12%)
 - 4 Passenger Vehicles (1%)
 - 7 Motorcycle/Other (2%)
 - 132 SUV/Light truck/Pick-up (38%)
 - 10 use alternative transportation as sole source (3%)
- Mileage Driven Weekly
 - < 100 miles 156 employees
 - 101-200 miles 74 employees
 - 201-300 miles 40 employees
 - 301-400 miles 30 employees
 - 401-500 miles 10 employees
 - 501-600 miles 8 employees
 - 601-700 miles 9 employees
 - 701-800 miles 7 employees
 - 800 + miles 12 employees

Vehicle Fleet

Vehicle Fleet information was gleaned from fuel used through City-issued fuel cards allocated to registered vehicles.



Streetlights

The CO₂ produced from streetlights in West Sacramento for a one year period of time is 1793 tons. The category for streetlights contains streetlights, street signals, and flashing beacons. Staff is working on an inventory of number of streetlights in West Sacramento, type of bulb utilized, typical wattage, hours of operations, etc.

Waste

The amount of waste that is derived from City operations was determined based on the annual volume of waster collected at all facilities. That data was then used to convert the volume of tons based on industry standards and as established in baselines reported to the California Integrated Waste Management Board. An estimate of the type of waste: paper products, food, organic materials, etc was determined using the standards supported in required annual reports. Hazardous waste was excluded from calculations.

Next Steps

The next step of the process is to further analyze this data to determine how it relates to existing policies and programs, providing a context for preparing a Sustainability in Government Plan to be considered by the Council. The plan will allow Council to set targets and direct policy for reduction in GHG and in turn, direct staff to prepare programs that demonstrate Council commitment to the sustainable stewardship of City operations. This plan is now being developed as a collaborative effort with City staff from each department and/or division represented.