

Memorandum



CITY OF DALLAS

DATE August 21, 2009

TO Members of the Transportation and Environment Committee:
Linda L. Koop (Chair), Sheffie Kadane (Vice Chair), Jerry Allen, Carolyn R. Davis, Tennell Atkins, Angela Hunt, Pauline Medrano, Delia Jasso and Ron Natinsky

SUBJECT Greenhouse Gas Emissions

Attached is the "Greenhouse Gas Emissions" briefing that will be presented to the Committee at the August 25, 2009 meeting.

Please contact me if you need additional information.

A handwritten signature in black ink, appearing to read "Jill Jordan".

Jill A. Jordan, P.E.
Assistant City Manager

c: The Honorable Mayor and Members of the Dallas City Council
Mary K. Suhm, City Manager
Thomas P. Perkins, Jr., City Attorney
Deborah Watkins, City Secretary
Craig Kinton, City Auditor
Judge C. Victor Lander, Administrative Judge
Ryan S. Evans, First Assistant City Manager
A.C. Gonzalez, Assistant City Manager
Forest Turner, Assistant City Manager
David Cook, Chief Financial Officer
Jeanne Chipperfield, Director, Budget and Management Services
Edward Scott, Director, Controller's Office
Helena Stevens-Thompson, Assistant to the City Manager – Council Office
Eric Griffin, Interim Director, Office of Environmental Quality

Greenhouse Gas Emissions

Presented to the
Transportation and Environment Committee
August 25, 2009





Presentation Overview

- Greenhouse gases and CO₂
- Projected Impacts/Trends of Greenhouse Gases and Climate Change
- City of Dallas Emissions Inventory
- Next Steps and Pending Federal Action

Greenhouse Gases and CO₂

- Gases that trap heat in the atmosphere are called greenhouse gases.
- Principal greenhouse gases include:
 - Carbon Dioxide
 - Methane
 - Nitrous Oxide
 - Fluorinated Gases
- Carbon dioxide is the by-product of activities including the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g. manufacture of cement).

(Source: Environmental Protection Agency)

Projected Impacts/Trends of Greenhouse Gases and Climate Change

- Levels of greenhouse gases are rising fast in the atmosphere. Emissions of key greenhouse gases have increased by 70% between 1970 and 2004.
- Effects on the environment:
 - Rising sea levels
 - Decreases in snow and ice extent
 - Changes in precipitation
 - Rising average temperatures

(Source: Intergovernmental Panel on Climate Change 2007)

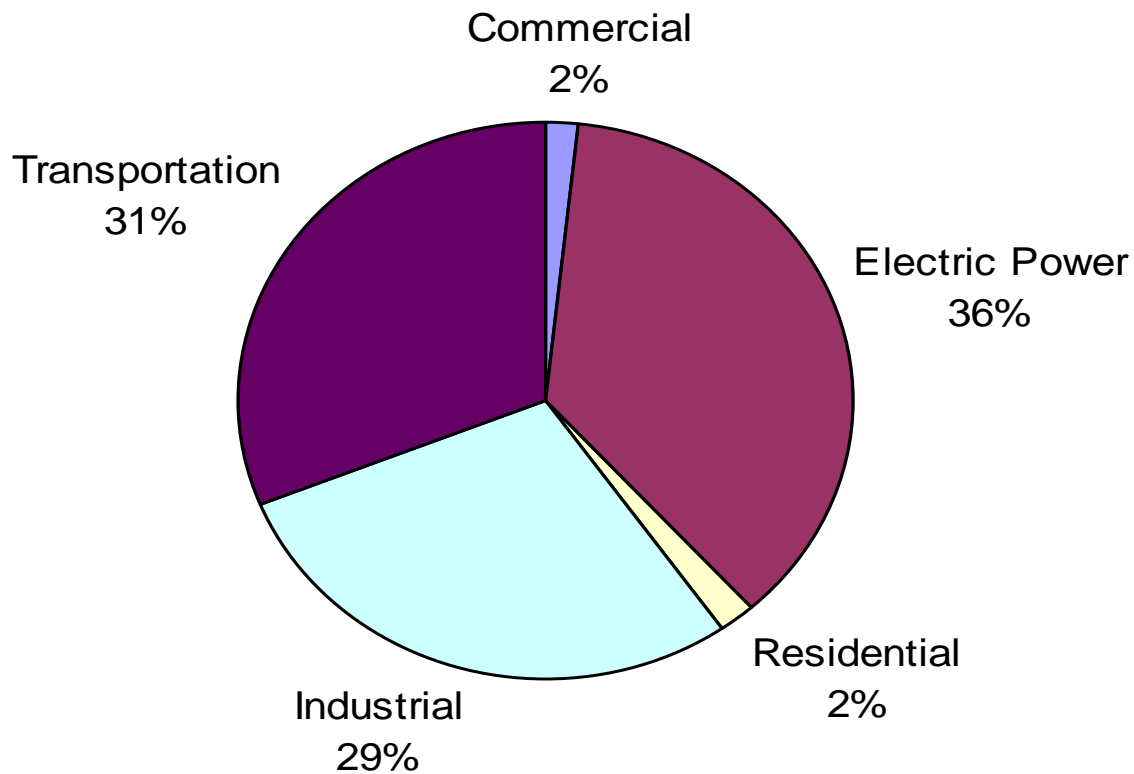
Kyoto Protocol

- International agreement signed by 37 industrialized countries and the European community in December 1997 that sets binding targets for reducing greenhouse gas emissions.
- U.S. did not sign the agreement; however, current administration is very interested in regulating and reducing greenhouse gases. Update on legislation for greenhouse gases will be presented in a future presentation.

Texas and Greenhouse Gases

- Greenhouse Gas Emissions in Texas are the highest in the nation
- 2005: Texas's greenhouse gas emissions = 625.2 Million Metric Tons of Carbon Dioxide compared to California's 395.5. (Source: Energy Information Association)
- If Texas was a country, it would rank seventh in the world in carbon dioxide emissions. (Source: Environmental Defense)

Texas and Greenhouse Gases: CO2 Emissions by Sector



Source: Energy Information Association (2005)

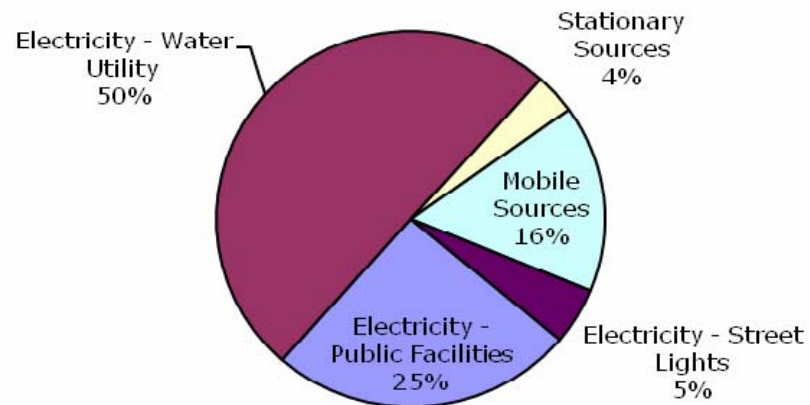
City of Dallas and Greenhouse Gases: Emissions Inventory

- In 2006, the Mayor of Dallas signed the U.S. Mayors Climate Change Agreement, a commitment by mayors around the country to reduce greenhouse gas emissions in their own cities and communities to 7% below 1990 levels by the year 2012.
- An emissions inventory helps determine the source and location of City of Dallas emissions and community-wide emissions.
- 2005 was the first year the City had comprehensive data for greenhouse gas analysis.

Emissions from City Operations

Source	2005 City Operations GHG Emissions		
	Metric tons per year	Metric tons per employee	Metric tons per sq. ft.
Electricity - Public Facilities	166,751	12.83	1.22E-02
Electricity - Water Utility	329,233	25.33	2.42E-02
Stationary Sources	22,881	1.76	1.68E-03
Mobile Sources	106,017	8.16	7.78E-03
Electricity - Street Lights	31,933	2.46	2.34E-03
City Operations Total	656,816	48.07	4.58E-02

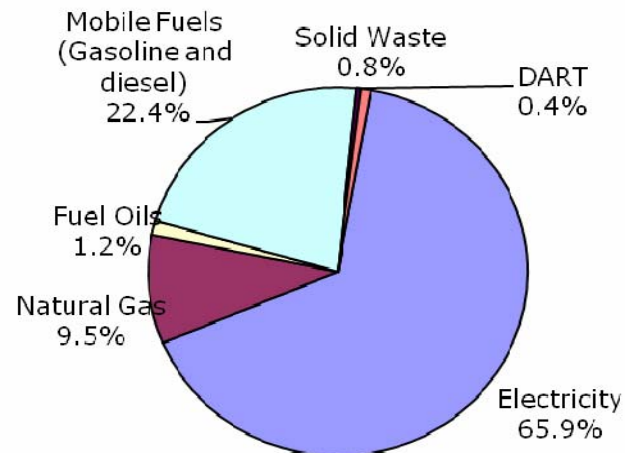
2005 Baseline: Percentage of GHG Emissions by Emissions Source for City Operations



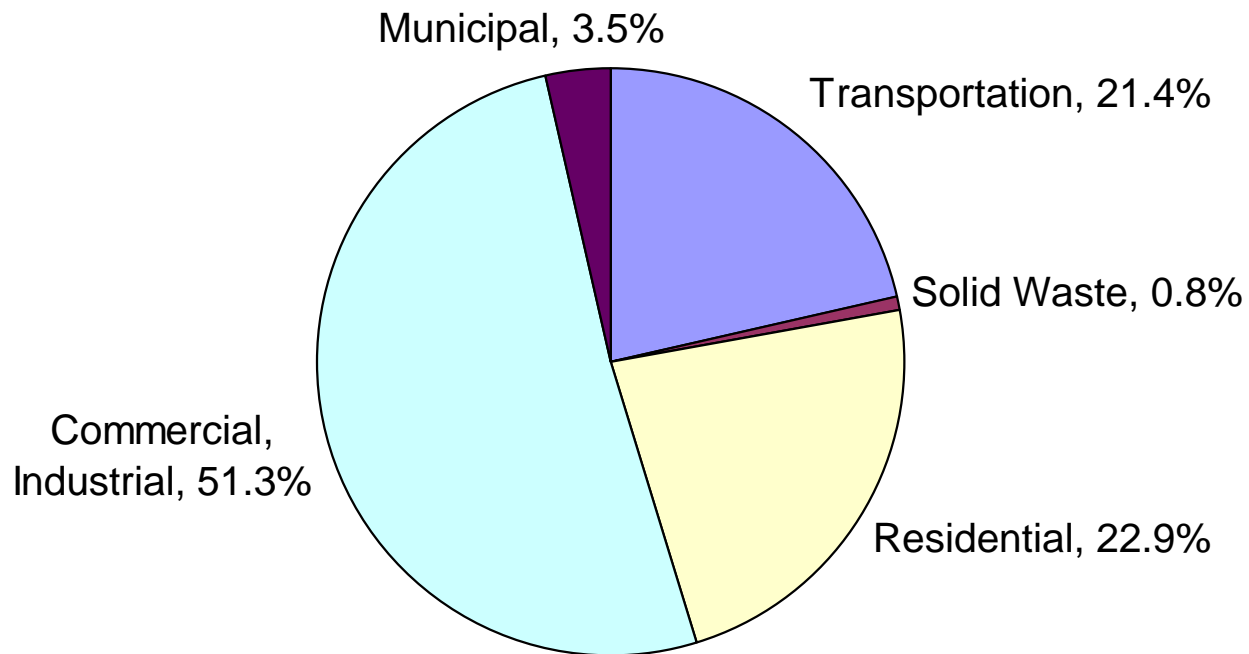
Emissions from Community Sources

Source	2005 Community-Wide GHG Emissions		
	Metric tons per year	Metric tons per capita	Metric tons per sq. mile
Electricity	12,043,444	9.46	35,112
Natural Gas	1,733,583	1.36	5,054
Fuel Oils	226,984	0.18	662
Transportation	4,042,346	3.18	11,785
DART - Public Transit	66,419	0.05	194
Solid Waste	152,937	0.12	446
Community Total	18,265,713	14.35	53,253

2005 Baseline: Percentage of GHG Emissions by Source Community-Wide



Percentage of GHG Emissions by Sector

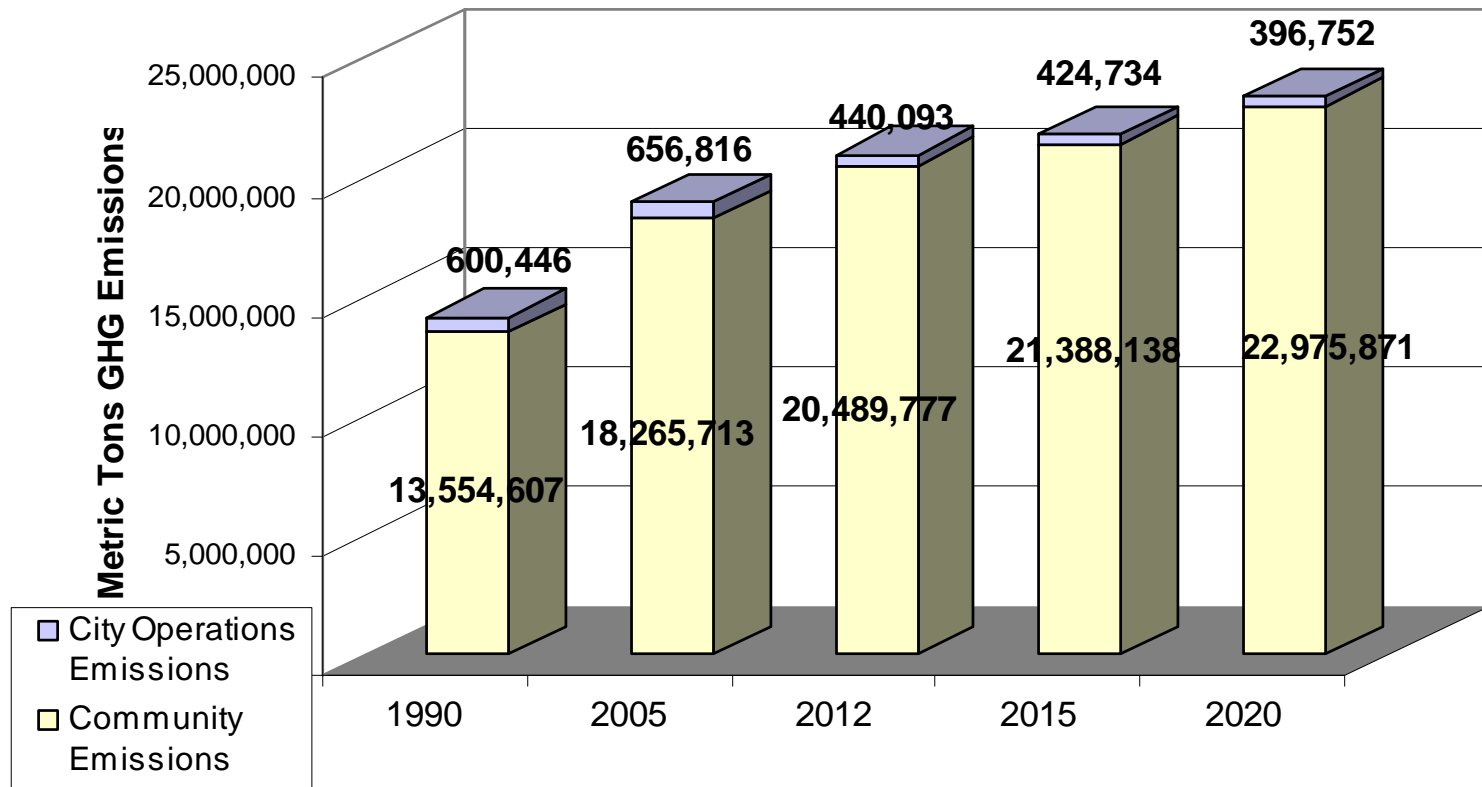


Meeting the U.S. Conference of Mayor's Climate Change Agreement

- No cities have 1990 data that is in a useable for this analysis. Thus, estimates of the 1990 emissions had to be done using the year 2005.
- To meet emission reduction targets of 7% below 1990 levels:
 - Reduction of 15%, or approximately 98K metric tons below 2005 levels will be necessary to meet City operations target if considered separate from community wide inventory.
 - Reduction of 30%, or approximately 5.7M metric tons below 2005 levels will be necessary to meet community wide target.

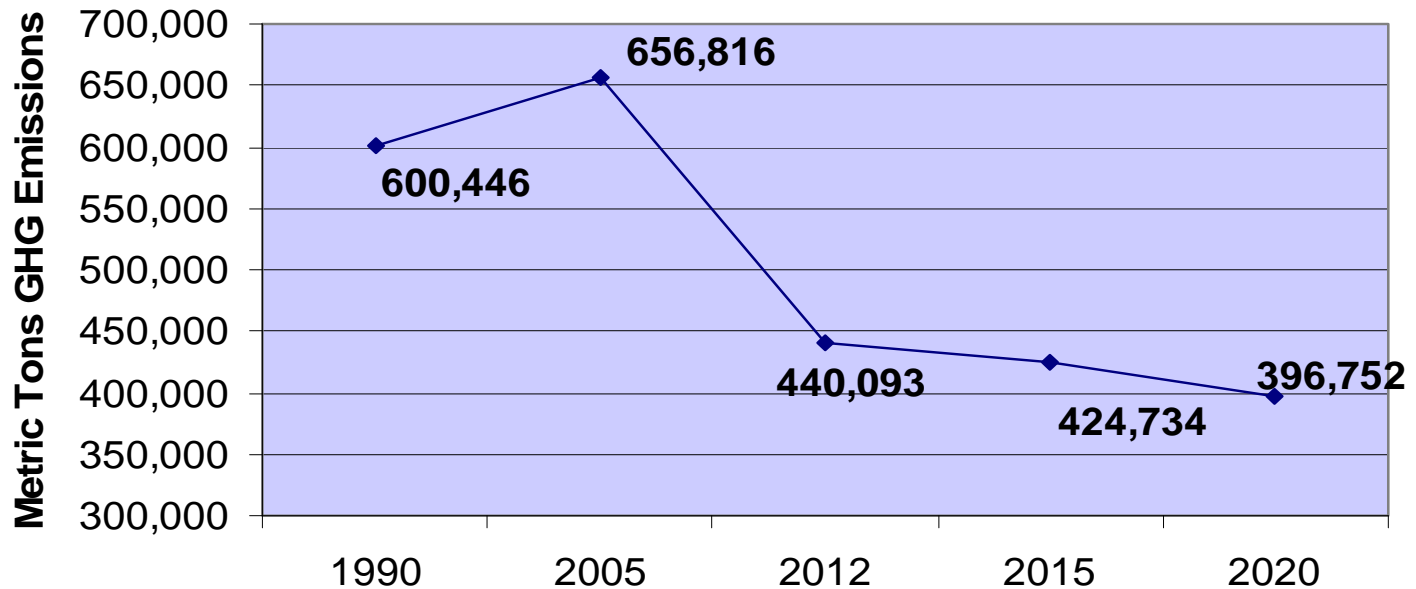
Forecasting Future Emissions

Dallas GHG Emissions Timeline: Business As Usual Scenario



Forecasting Future Emissions

GHG Emissions From City Operations



City of Dallas Initiatives for Reducing Greenhouse Gas Emissions

- Alternative Fuels: Convert fleet to run on alternative/cleaner fuels – 41% of the City's fleet is now alternative-fueled or hybrid.
- Idling Ordinance: City Ordinance prohibiting vehicle operators with a gross weight over 14,000 pounds to idle for more than 5 minutes.
- Capture Methane from Landfill - The McCommas Landfill captures 3-4 million cubic feet/day of methane gas which is converted into energy.
- Renewable Energy: In September 2007, the City Council authorized the largest procurement of renewable energy in the City's history. As of January 1, 2008, 40 % of the City's power comes from renewable energy, primarily from wind power.

City of Dallas Initiatives for Reducing Greenhouse Gas Emissions

- Green Buildings: In 2003, The City Council passed an ordinance that all facilities over 10,000 square feet must be designed and built to meet the Leadership in Energy and Environmental Design (LEED) silver standards. Since the ordinance passed 12 city facilities have earned LEED certifications. In 2007, Council passed a new green building ordinance for all new private construction in the City for buildings over 50,000 S.F.
- Energy Efficiency: The City has reduced energy usage at its existing facilities by almost 5% per year over the past five years, through such means as the purchase of energy efficient lighting and the installation of solar panels.

City of Dallas Initiatives for Reducing Greenhouse Gas Emissions

- Change Traffic Lights to Light-Emitting Diode (LED) Fixtures: LED lights have been installed in approximately 1,100 intersections saving 14.5 million kilowatt hours per year and 9,341.6 tons of CO₂ reductions per year.
- Performance Management Contracting at City Buildings: The City has conducted four comprehensive energy projects for its major buildings. For example, the contract for City Hall resulted in the replacement and upgrading of chillers, boilers, and lighting, and cooling towers; automated controls for HVAC and lighting and installations of solar panels. This project has resulted in a 5,790,165 kWh and 3,730.3 tons of CO₂ reduction. The project for the art museum resulted in a savings of approximately \$800,000 per year.

Next Steps

- Publish greenhouse gas inventory for City and community wide sources on Green Dallas website.
- Set City of Dallas goal (beyond Mayor's Climate Change Agreement) to reduce greenhouse gas emissions from City and community wide sources.
- Develop and implement a Sustainability Plan that includes inventories, targets, timelines, and mitigation techniques for city wide and community wide operations.



Pending Federal Action Update