



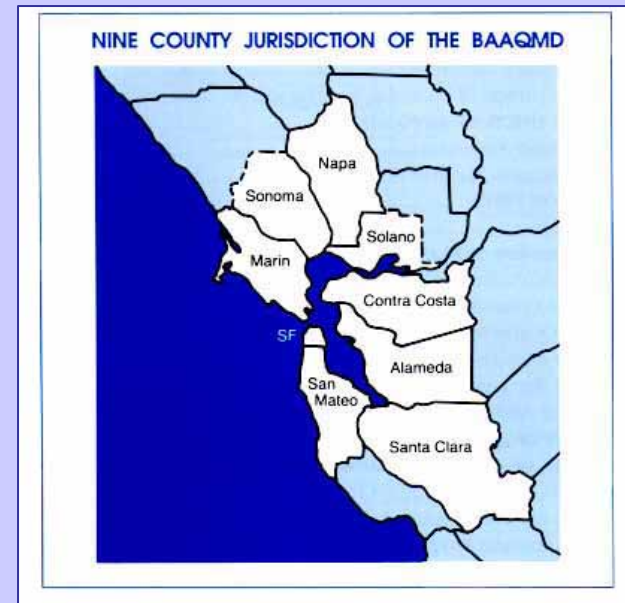
Bay Area Air Quality Management District Climate Protection Program

NACAA Annual Meeting
June 11 & 12, 2008

Kelly Wee
Director of Enforcement
Compliance & Enforcement Division

Bay Area Air District Overview

- Jurisdiction over air quality in **9** Bay Area counties, including **101 cities**
- Governed by a **22-member** Board of Directors
- Total Bay Area population over **7 million**
- Approximately **170 million** vehicle miles traveled per day





Current Core District Initiatives

1. **Integrate** – Climate Change into every District program
2. **Collaborate** – Work together with key stakeholders
3. **Bay Area GHG Emission Inventory**
4. **Air District Carbon Neutral and Energy Efficient** – Reduce District energy use, offset carbon footprint
5. **GHG Stationary Source Mitigation Study**
6. **\$3 million Climate Protection Grant Program**
Providing important seed \$ for innovations
7. **GHG Fee for Stationary Sources**
8. **Educate and Catalyze K-12 Curriculum**
Development





1. Integrate

NOW, THEREFORE, BE IT RESOLVED that the Bay Area Air Quality Management District Board of Directors establishes a Bay Area Climate Protection Program to address climate change and climate protection through District activities including outreach and education campaigns, data collection and analysis, technical assistance, hosting a regional conference on climate protection, and support and leadership for local efforts in the Bay Area to reduce emissions that contribute to climate change.

BAAQMD, Board of Directors, San Francisco, 6/1/05

- **Incorporating climate protection programs and focus in the activities of every District program.**
- **Regulations** - GHG reductions as existing rules are amended
- **BOD Committee on Climate Protection**
- **Air District programs provide co-benefits of GHG, criteria, and toxic air pollutant reductions.**



2. Collaborate



ARB and other State agencies – technical workgroups



CAPCOA Climate Protection Committee – CEQA White Paper, Resource for addressing GHGs in CEQA



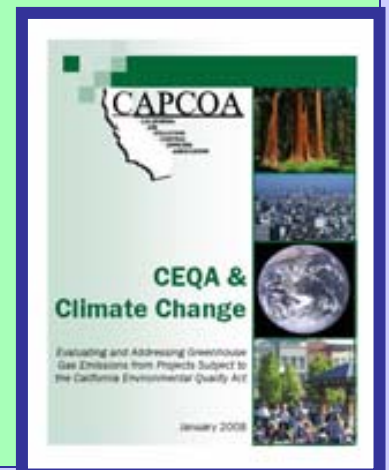
Joint Policy Committee (ABAG, MTC, BCDC, BAAQMD)



Data Partnership with ICLEI, Counties, Cities, PG & E



Workshops for local government staff on community-wide inventory development





3. Bay Area GHG Emission Inventory

- Total 85.4 Million Metric Tons of GHG
- Being updated to 2005 base year
- Inventory was compiled using a “bottom-up” approach, based on detailed process and materials usage information provided by Bay Area facilities

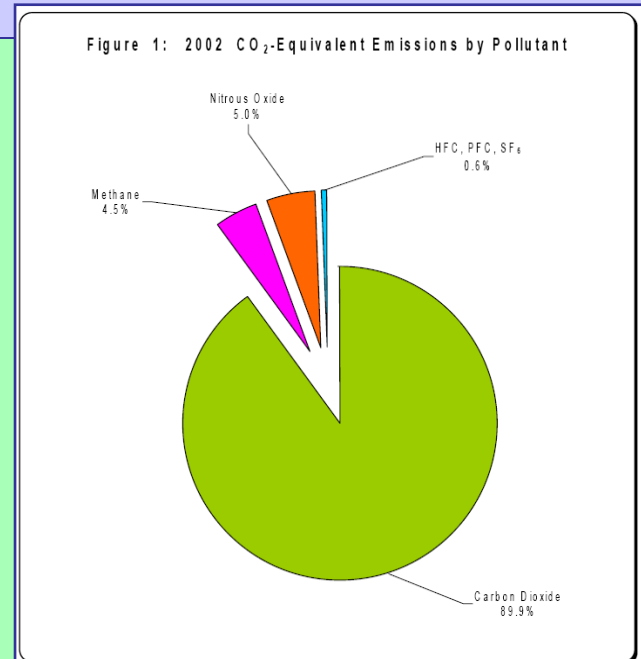
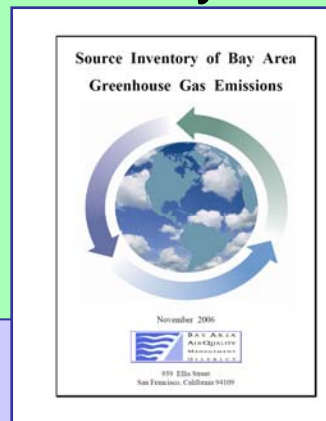


Table D: 2002 CO₂-Equivalent Emissions by Pollutant

Pollutant	Percentage	CO ₂ -Equivalent (Million Tons/Year)
Carbon Dioxide	89.9%	76.79
Methane	4.5%	3.83
Nitrous Oxide	5.0%	4.26
HFC, PFC, SF ₆	0.6%	0.51
Total	100%	85.4



Bay Area GHG Emissions (2002)

Figure 2: 2002 Emissions by Major Categories

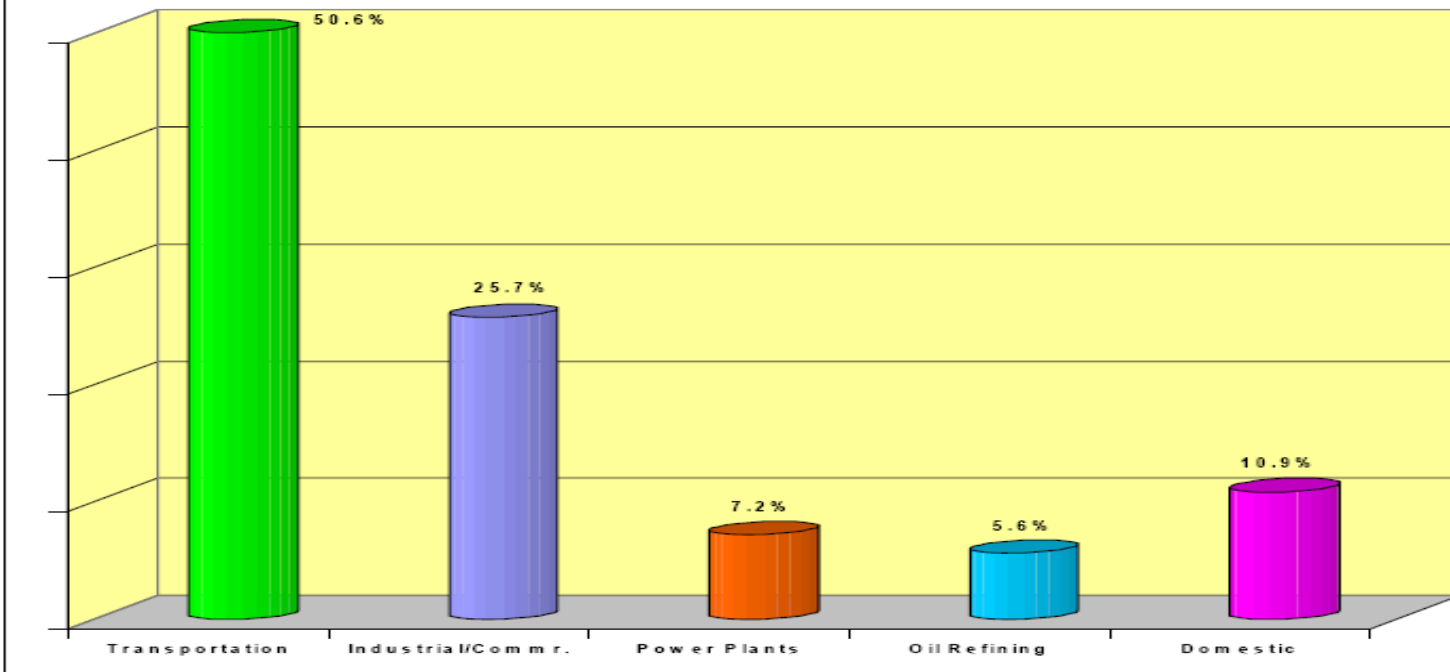


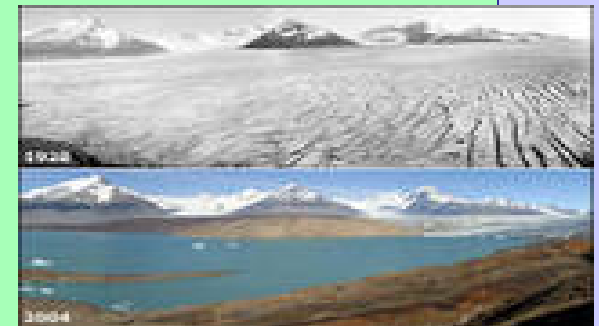
Table E: 2002 Emissions by Major Categories

Pollutant	Percent	CO ₂ -Equivalent (Million Tons/Year)
Transportation	50.6%	43.2
Industrial/Commercial	25.7 %	22.0
Power Plants	7.2%	6.1
Oil Refining	5.6%	4.8
Domestic	10.9%	9.3
Total	100%	85.4



4. Air District Carbon Neutral & Energy Efficient

- All 1,645 tCO₂ emissions offset
- Use of fuel cell, hybrid and CNG vehicles in the Air District fleet;
- An employee commuter benefits program which garnered the U.S. Department of Transportation's Best Workplaces award;
- A 9-day, 80-hour flexible work schedule that reduces commute travel by 10 percent; and
- Green purchasing practices
- Energy efficiency and conservation



Annual Emissions Report

Report Date: 05/14/2008 03:01 pm PT



Legend	
Blue	= required
Orange	= optional

Bay Area Air Quality Management District

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 San Francisco, CA 94109 United States
 www.baaqmd.gov
 415-749-4651
 tmangat@baaqmd.gov

Contact: Tirlochan Mangat
 Industry Type: Government – Municipal/County
 NAIC Code: 9241-Administration of Environmental Quality Programs
 SIC Code:
 Description:

The Bay Area Air Quality Management District - the state's first regional agency dealing with air pollution - was created by the California Legislature in 1955. The District's jurisdiction encompasses all of seven counties: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Napa, and portions of two others - Southwestern Solano County and Southern Sonoma County.

Primary Calculation
 Methodologies:

CERTIFIED EMISSIONS INFORMATION

Reporting Year: 2006
 Reporting Scope: CA
 Reporting Protocol: General Reporting Protocol, Version 2.2 (March 2007)
 Baseline Year (Direct Emissions): 2004
 Baseline Year (Indirect Emissions): 2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	502.65	502.65	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	151.82	151.82	0.00	0.00	0.00	0.00	0.00	metric ton
Process Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Fugitive Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL DIRECT	654.47	654.47	0.00	0.00	0.00	0.00	0.00	metric ton

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

Indirect Emissions	CO2e	CO2	CH4	N2O	Unit
Purchased Electricity	687.88	687.88	0.00	0.00	metric ton
Purchased Steam	0.00	0.00	0.00	0.00	-
Purchased Heating and Cooling	0.00	0.00	0.00	0.00	-
TOTAL INDIRECT	687.88	687.88	0.00	0.00	metric ton

CERTIFICATION INFORMATION

Certification Company: SGS North America, Inc., Trade Assurance Services Division

“Local agencies must lead by example—by implementing this policy the Air District is signaling its full commitment to climate protection in the Bay Area.” *Jack Broadbent, APCO, BAAQMD*

CCAR Registered Member
Total District Certified Emissions 2006 =
654.47 Direct CO2e
687.88 Indirect CO2e
 SGS North America, Inc
Emissions offset through 30 MW Wind Farm





5. GHG Mitigation Study



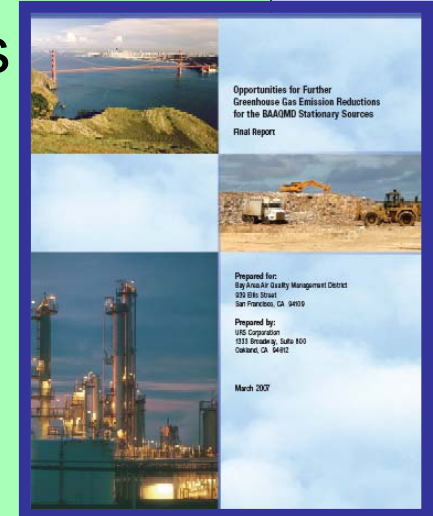
- **Phase I**, opportunities for GHG reductions at stationary sources – complete!



- **Phase II**, landfills, boilers, process heaters, steam generators



- **Criteria for mitigation included:**
 - Magnitude of GHG reduction possible
 - Capital Investments required
 - Cost effectiveness in \$/ton GHG reduced
 - Abatement challenges and uncertainties





6. Climate Protection Grants

Goal: To achieve meaningful reductions in greenhouse gas emissions through implementation of long-term solutions throughout the region.

- Reductions in GHGs
- Long-term – sustainable reductions
- Regional – through replication or potential

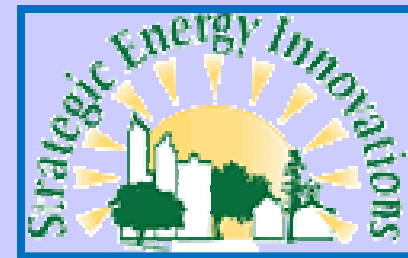




Climate Protection Grants



- **\$3 Million in Grants Awarded**
 - 53 grants awarded throughout 9 counties
 - Innovative and self-sustaining concepts
 - Local governments, non-profit organizations
 - Climate Action Planning, General Plan updates, Municipal Energy Officers, Youth outreach





7. GHG Fee for Stationary Sources

- First such regulation in U.S.!
- Adopted by BOD on May 21, 2008!
- District has legal authority to recover costs
- 4.4 cents/metric ton of GHG's in effect 7/1/08
- Solely applies to permitted sources
- Helps defray costs of climate protection work, i.e. environ. review, regs, inventory
- Expected to collect about \$1.2 million annually



**“Bay Area air regulators
approve global warming fees”**

Contra Costa Times, 5/21/08



GHG Fees for Stationary Sources

REGULATION 3-334 Greenhouse Gas Fees

- Any permitted facility with greenhouse gas emissions shall:
- pay a fee based on Schedule T (\$0.044/metric ton). This fee is in addition to permit and other fees otherwise authorized to be collected from such facilities, and shall be included as part of the annual permit renewal fees.

DRAFT May 12, 2008

SCHEDULE T GREENHOUSE GAS FEES

For each permitted facility emitting greenhouse gases, the fee shall be based on the following:
1. Carbon Dioxide Equivalent (CO₂e) Emissions \$0.044 per metric ton

Emissions calculated by the AQCD shall be based on the data reported for the most recent 12-month period prior to billing. The annual emissions of each greenhouse gas (GHG) listed below shall be determined by the AQCD for each permitted (i.e., non-exempt) source. For each emitted GHG, the CO₂e emissions shall be determined by multiplying the annual GHG emissions by the applicable Global Warming Potential (GWP) value. The GHG fee for each facility shall be based on the sum of the CO₂e emissions for all GHGs emitted by the facility, except that no fee shall be assessed for emissions of biogenic carbon dioxide.

Direct Global Warming Potential Relative to Carbon Dioxide*

GHG	GWP**
Carbon Dioxide	1
Methane	21
Nitrous Oxide	310
HFC-22	1,500
HFC-125	50
HFC-134a	470
HFC-152a	1,500
HFC-188	11,700
HFC-227a	550
HFC-236fa	4,500
HFC-245fa	1,500
HFC-254ea	3,500
HFC-266fa	150
HFC-327a	2,500
HFC-328a	5,500
HFC-43-1ma	5,500
PFC-113	5,500
PFC-115	5,500
PFC-116	7,000
PFC-118	5,500
PFC-119	7,000
PFC-121	7,000
PFC-123	7,500
SO ₂ Hexafluoride	23,500

* Source: Intergovernmental Panel on Climate Change (Second Assessment Report: Climate Change 1995).

** GWPs compare the integrated radiative forcing over a specified period (i.e., 100 years) from a unit mass pulse emission to compare the potential climate change associated with emissions of different GHGs.



8. Educate & Catalyze

• 4th and 5th Grade Curriculum



- 16 science-based lessons



- Teacher training and materials tool kit

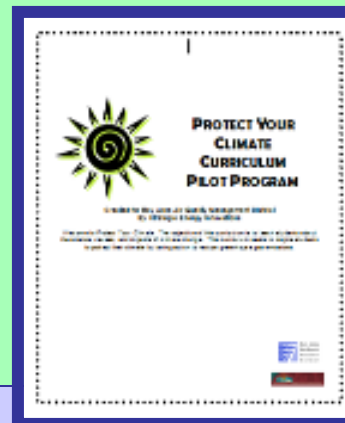


2007-2008 Pilot in 13 classrooms in 5 counties



- 2008-2009 Expand to 40 classrooms

in 9 counties



4th and 5th Grade Teacher Opportunity!
Protect Your Climate
science-based lesson plans on climate change for 4th and 5th grade

The Bay Area Air Quality Management District is recruiting 4th and 5th grade teachers to teach *Protect Your Climate* in the 2008-2009 school year.

Protect Your Climate will help you:

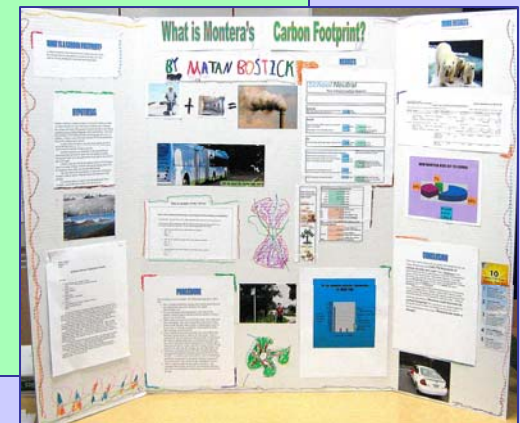
- Connect your teaching to current events by investigating the science, causes, and impacts of climate change and how to take action to protect our climate.
- Use hands-on activities to explore air quality, energy, waste, and transportation issues related to climate change.
- Address Science and other State Content Standards for 4th and 5th grade.

To sign up, or for any questions, contact Digalle Michael at the Air District: smichael@baaqmd.gov and 415-749-4683. **Space is limited. Please sign up by May 30, 2008.**

The curriculum program includes:

- Curriculum training session with lesson modeling
- Tool kit with teacher manual, visual materials, and supplies for experiments
- Ongoing support including help with: planning, additional activities to meet multiple teaching goals, and a one year membership to Community Resources for Science (a support service for science teaching)
- Stipend

Bay Area Air Quality Management District is responsible for maintaining air quality in the San Francisco Bay Area. As part of its climate protection program, the Air District developed the *Protect Your Climate* curriculum to offer climate protection education to elementary school grade levels.





Role of Compliance & Enforcement Division

- Over 100 on staff, Including 70+ field inspectors
“Eyes, ears, and voice of the Air District”
- Compliance assistance, outreach, communicate GHG requirements
- Potential verification of GHG inventory calculations
 - Review 3rd party verification reports
 - Provide hands-on verification for involved state agencies, i.e. ARB, CEC, CCAR,
 - On-site auditing

