

## Air Pollution and Health

### Air Pollution and Children

The ten-year Children's Health Study funded by the California Air Resources Board (ARB) ended recently. The study has provided compelling evidence that air pollution harms the development of children's lungs, plays a role in causing asthma, impacts lung health in children who already have asthma, and contributes to increases in school absences.

The study found increased effects in children who spend more time outdoors, and different impacts in boys and girls. On a more positive note, the study found that even small decreases in air pollution levels could result in improved lung health in children.

The \$18 million study by researchers from the University of Southern California followed more than 5500 children at 52 schools in twelve Southern California communities. The majority of children enrolled in the program as fourth-graders, and were followed through high school. Children at schools in Lompoc and Santa Maria were part of the study. These locations were selected to

compare results with much more heavily polluted areas in the South Coast Air Basin, including Riverside, which has extremely high levels of ozone. Ozone is a principal component of smog; it is produced through a chemical



reaction of nitrogen oxides (NOx) and volatile organic compounds in the presence of sunlight.

Outdoor pollution monitoring tracked levels of ozone, NOx, acid vapor and particulate matter (PM) over the 10-year period. Some indoor pollution measurements were also taken at schools and in homes. Every spring, the lung function of each child was tested, and annual questionnaires collected information about respiratory symptoms and diseases, physical activity, time spent outdoors, and factors such as parental smoking, mold and pets in the household.

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### Air Pollution and Heart Conditions

In June, the American Heart Association (AHA) for the first time issued an official statement concluding that air pollution contributes to the development of heart diseases. Dr. Robert D. Brooke, the lead author, noted,

However, the experts also noted that even levels of PM 2.5 that are within the current standards were associated with adverse health impacts, and urged the USEPA to consider more stringent PM2.5 standards to protect public health.

The panel's conclusions included the following:

- ❖ Prolonged exposure to elevated PM levels can play a role in reducing overall life expectancy by a few years.
- ❖ Short-term exposure to elevated PM levels is associated with the increased risk of cardiac-related deaths.

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## Inside...

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-  **Pollution Prevention in Hospitals**
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-  **Flex Your Power at the Pump**

**Summer is smog season.**

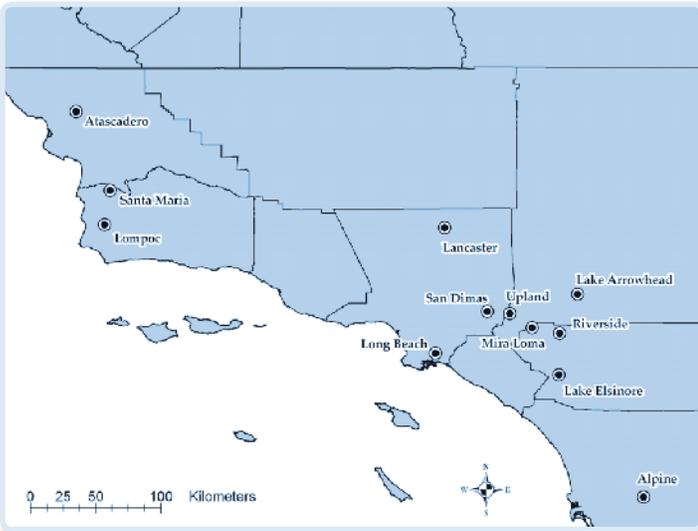
Check out our air quality and ozone readings, updated hourly, at [www.sbcapcd.org](http://www.sbcapcd.org)

## Air Pollution and Children (cont'd)

Major findings of the study include the following:

- ❖ Children living in high ozone communities, who are especially active, are up to three times more likely to develop asthma.

- ❖ Significant lung function development problems are most closely associated with exposure to NO<sub>x</sub>, atmospheric acidity, and PM less than 2.5 microns in diameter, or less than 10 microns in diameter (PM<sub>2.5</sub> and PM<sub>10</sub>).



- ❖ Children living near roadways with high traffic are more likely to have been diagnosed as asthmatic.

- ❖ Children who move to cleaner communities with lower levels of PM show improvements in lung function growth rates.

- ❖ Air pollution effects are stronger overall in children who spend more time outdoors.

- ❖ Boys in general are more likely than girls to experience lung symptoms and asthma outcomes associated with pollution levels, while girls are more likely to have effects on lung development.

This decreased lung development may have permanent adverse effects in adulthood.

- ❖ Short-term exposures to elevated ozone levels are associated with a significant increase (up to 1.3 million per year) in school absences from both upper and lower respiratory illnesses, including asthma attacks.

*For more information on the study, which was co-sponsored by the U.S. Environmental Protection Agency, South Coast Air Quality Management District and other local air pollution control districts, see this page: [www.arb.ca.gov/research/chs/chs.htm](http://www.arb.ca.gov/research/chs/chs.htm)*

*Coming in our next issue: Learn how data from the Children's Health Study is helping us to prioritize control measures for implementation of SB 656.*

## Air Pollution and Heart Conditions (cont'd)

- ❖ Hospital admissions for several cardiovascular and pulmonary diseases are increased in response to higher concentrations of PM.

The experts noted in the statement, "Despite many past limitations, there has been a strong consistency in the findings among the array of assorted studies. A reasonable argument can now be made that the 'real' effects are likely to be even stronger than previously estimated."

The many studies referenced in the AHA statement included a 2002 study by L. Clancy and others of six years of data that showed that a ban on burning coal in the city of Dublin, Ireland, produced lower air pollution levels, and resulted in a 10.3 percent decrease in the number of deaths from heart conditions; an estimated 243 fewer cardiovascular deaths per year.

The panel recommended that people with heart disease or heart system risk factors, diabetes, or lung disease limit outdoor activities when pollution is high, and encouraged the AHA to work to educate the public and policymakers about the effects of air pollution on the heart.

Said Brook, "The increase in relative risk for heart disease due to air pollution for an individual is small compared with the impact of the established cardiovascular risk factors such as high blood pressure or high cholesterol. However, this is a serious public health problem due to the enormous number of people affected and because exposure to air pollution occurs over an entire lifetime."

*For more information, see [www.americanheart.org](http://www.americanheart.org).*

## New State Ozone Standard Proposed

**A** draft staff report issued by two state agencies in June recommends setting a California 8-hour ozone standard of 0.070 parts per million - a level that is stricter than the federal 8-hour ozone standard of 0.085 ppm. The report recommended also retaining the current state 1-hour ozone standard.

The report from the state Air Resources Board and the state Office of Environmental Health Hazard Assessment followed a review of the standards in place required by the Children's Environmental Health Protection

Act of 1999. The agencies concluded in December of 2000 that ozone levels at or near the existing state 1-hour ozone standard may still result in significant harmful health effects in both children and adults.

The proposed new standard, which is based on an 8-hour average of ozone levels, will be discussed at public workshops and in peer review sessions over the summer and fall.

*Additional information is available here: [www.arb.ca.gov](http://www.arb.ca.gov).*

## APCD Organizational Updates

### APCD Board Roundup

Following are the highlights of the May and June Board meetings.

#### May

- Reappointed Sydney Minnerly to the APCD Hearing Board
- Received and filed Draft APCD Budget for FY 2004/2005, held a public hearing to accept comments, and set a second hearing for June 17, 2004 to consider adoption

#### June

- Approved participation in the fiscal year 2003/2004 Carl Moyer Program, certifying that APCD will provide up to \$125,000 in matching funds to qualify for a \$250,000 grant.
- Adopted the APCD Budget for FY 2004-2005.

APCD recently made some organizational changes, including internal promotions and a new hire. The Major Source Division and General Source Division have been consolidated into one division, now called the Engineering and Compliance Division, headed by Peter Cante as Manager. Cante previously headed the General Source Division. (Terry Dressler, the current APCD Director, previously headed the Major Source Division.)

Tom Murphy, previously APCD Planning and Technology Supervisor, has been promoted to the position of Technology and Environmental Assessment Division Manager. This position has been vacant since Kathy

Patton's retirement last year. Murphy, who has a Bachelors degree in Geography from UCSB and a Masters degree in Geography from Cal State Northridge, started with the APCD in 1987 and has supervised Clean Air Plan development and the Innovative Technologies Group program.

Dr. Ron Tan has been promoted to be the Planning and Technology Supervisor. Dr. Tan, who has a Masters in Engineering from UC Berkeley and a doctorate in Environmental Science and Engineering from UCLA, has been with the APCD since 1988, and has worked on a range of projects associated with California Environmental Quality Act (CEQA) review of

permitting of major facilities, and transportation and air quality issues.

Don Kendig, CPA has been hired as the APCD Business Manager. A Certified Public Accountant since 1999, Kendig was previously a Financial Systems Analyst with the County Auditor-Controller's Office. He has also worked for the Superior Court and the County Administrator's Office, and serves as a trustee on the Board of the Santa Barbara County Employee's Retirement System.

## Fine Particles, Smoke, and Our Health

Fine particles in our air, known as particulate matter (PM), can affect our hearts and lungs. These particles vary greatly in shape, size, and chemical composition, and can be made up of different materials, such as metals, soot, soil and dust. The U.S. Environmental Protection Agency, and the state Air Resources Board, have issued health-based standards for levels of particles less than 10 microns in diameter (PM10) and particles less than 2.5 microns in diameter (PM2.5). Our Santa Barbara County air meets the federal PM10 standard, but does not meet the state PM10 standard. As additional data on PM2.5 levels in the county are gathered, a determination will be made about the PM2.5 standards.

Exposure to higher levels of PM10 and PM2.5 in the air can

cause a range of symptoms, including coughing and wheezing, worsening of asthma symptoms, decreased lung function, airway inflammation, heart rate variability, and heart attacks. Some groups are more at risk for health impacts, including people with existing heart or lung disease, children, and older adults.

Fine particles can be emitted directly into the air, or formed in the air from gases. Some particles include toxic compounds that can produce cancer and non-cancer health effects. Diesel exhaust particulate is highly toxic, and is considered the number one airborne carcinogen in California. Sources of fine particles in addition to diesel engines include cars and trucks, mineral quarries, agricultural tilling, wood-burning stoves and fireplaces, off-road vehicles, power plants and

industrial sources, and unpaved roads and construction.

As we head into another fire season, it's important to note that fires produce very high levels of fine particles and air toxics. When smoke from forest fires impacts our region, APCD issues a health advisory to urge people to stay indoors, and to recommend that schools not hold exercise classes or sports practices outdoors if there is smoke in the area. Regions affected by smoke vary by wind patterns, so APCD recommends people use common sense in making these decisions.

If the air is smoky, in addition to staying indoors, it's a good idea to try to keep the indoor air as clean as possible by keeping windows and doors closed – unless it's extremely hot outside. People who have air conditioners should

run them with the outdoor air intake closed, and with a clean filter.

When smoke is heavy for a prolonged period of time, fine particles can build up indoors even though they may not be visible. The best solution, especially for people with heart or lung conditions, may be to leave the area.

*For more information on smoke impacts, see [www.airquality.org/smokeimpact](http://www.airquality.org/smokeimpact), a web page developed for the public by the California Air Pollution Control Officer's Association Public Outreach Committee. For more information on fine particles, and other pollutants, see [www.sbapcd.org/sbc/pollut.htm](http://www.sbapcd.org/sbc/pollut.htm).*



# APCD Board Calendar

## Board of Directors

Supervisor Naomi Schwartz

*First District*

*Santa Barbara County*

Supervisor Susan Rose

*Second District*

*Santa Barbara County*

Supervisor Gail Marshall

*Third District*

*Santa Barbara County*

Supervisor Joni Gray

*Fourth District*

*Santa Barbara County*

Supervisor Joe Centeno

*Fifth District*

*Santa Barbara County*

Mayor Bill Traylor

*City of Buellton*

Mayor Dick Weinberg

*City of Carpinteria*

Mayor Cynthia Brock

*City of Goleta*

Councilmember Carlos Aguilera

*City of Guadalupe*

Councilmember DeWayne Holmdahl

*City of Lompoc*

Councilmember Dan Secord

*City of Santa Barbara*

Councilmember Marty Mariscal

*City of Santa Maria*

Mayor David Smyser

*City of Solvang*

*All meetings start at 2 p.m. For final meeting agendas, call the APCD Board Clerk, 961-8853.*

### August 19

Board of Supervisors  
Hearing Room  
105 East Anapamu Street  
Santa Barbara, CA 93101

### October 21

Board of Supervisors  
Hearing Room  
105 East Anapamu Street  
Santa Barbara, CA 93101

### December 16

Board of Supervisors  
Hearing Room  
105 East Anapamu Street  
Santa Barbara, CA 93101

## Community Advisory Council

The APCD Community Advisory Council meets the second Wednesday of every month at the Days Motor Inn in Buellton. (For September only, the meeting will be held on the third Wednesday.) The public is welcome. For more information, call Linda Beard, 961-8853.

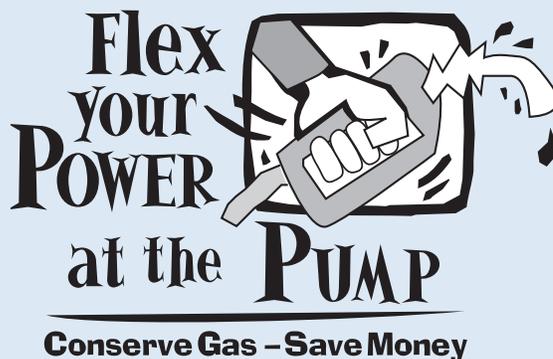
## Flex Your Power at the Pump

Gasoline and diesel prices in California rose 44% between December 2003 and May 2004. California's more than 18 million automobiles consume over 14 billion gallons of gasoline each year – enough gasoline to fill a line of tanker trucks stretched bumper to bumper from San Francisco to San Diego and back.

Flex Your Power at the Pump, a state initiative supported by many organizations and agencies, including APCD, suggests several no-cost actions to reduce gas consumption (which will also reduce air pollution). Just doing the first three could reduce your gas consumption by up to 15 percent.

- Keep tires properly inflated to the recommended pressure.
- Use the car's air conditioner selectively.
- Observe the posted speed limits.
- Accelerate smoothly and brake gradually.
- Maintain your vehicle properly, replacing oil and air filters.

You can also try to make your next car a fuel-efficient, low-emission one. And of course, Drive Less. For more info and links, see our website at [www.sbcapcd.org](http://www.sbcapcd.org).



### Main Office

260 N. San Antonio Rd. Suite A  
Santa Barbara, CA 93110-1315

### Business Assistance

(805) 961-8868

### Daily Air Quality Report

[www.sbcapcd.org](http://www.sbcapcd.org)

### Complaints/Public Information

(805) 961-8800

### World Wide Web

[www.sbcapcd.org](http://www.sbcapcd.org)

### E-Mail

[apcd@sbcapcd.org](mailto:apcd@sbcapcd.org)

**On the Air** is a quarterly newsletter published by the Community Programs Section of the Santa Barbara County Air Pollution Control District. For further information on items in this newsletter, or to be added to our subscription list, please call Bobbie Bratz, 961-8890 or Email [bratzb@sbcapcd.org](mailto:bratzb@sbcapcd.org).



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Our Vision  Clean Air

## Agriculture, Air Pollution, and Permits

In the past, California state law provided exemptions for agricultural sources of air pollution and they have not had to meet state and federal air pollution rules and requirements, or obtain permits from local air agencies.

This changed in September of 2003, when state Senate Bill 700 (SB 700) was signed into law, repealing the permit exemption for agriculture. This was something the state was required to do under terms of a settlement with the U.S. Environmental Protection Agency. That settlement also required local air agencies like APCD to apply local rules to agricultural sources of air pollution.

Agricultural businesses, including farms, vineyards, nurseries, dairy facilities, horse breeding farms,

and more, typically produce air pollution through use of farm equipment, such as water pumps, generators, fuel storage, and other types of equipment. The waste from cattle and cows also contributes to air pollution. The number of businesses that will be covered by permit requirements in California will vary from region to region by the amount of pollution produced, and the severity of the area's air quality problems.

Santa Barbara County agricultural businesses will benefit from the fact that the county was recently classified as an attainment area for ozone under the federal standard. Ozone is a principal component of smog. This attainment classification means that initially many fewer

agricultural businesses in Santa Barbara County will potentially be covered by the SB 700 changes. Areas with more severe air quality problems and nonattainment classifications will be required to apply rules to sources that produce lower levels of air pollution from the outset.

In addition, for many years, APCD has had a voluntary program for county farmers, helping them reduce their air emissions by providing funding to replace older, more polluting diesel water pump engines and water boilers with newer engines and boilers.

APCD has been working for several months with a group of agricultural leaders on how best to reach out to the agricultural

community. With their assistance, the APCD is developing an interactive tool for our website designed to help agricultural businesses determine if and how the new law may apply to them, and specifically if agricultural facilities in the County will need to obtain permits from the APCD. The web-based tool is expected to be on the APCD's website around October 1st. The APCD also plans to host workshops in the near future.

APCD will be phasing in the implementation of the state law. The first phase is focused on the larger sources of air pollution that may require a federal operating permit. If it is determined that a federal operating permit is required

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## Clean Air Plan Update

An update to APCD's state Clean Air Plan, showing how we are working to meet the state one-hour ozone standard, is underway. (This will not replace the federal 2001 Clean Air Plan, which addresses federal requirements.) A draft will be released soon for review, with final adoption of the plan scheduled to go before the APCD Board in December or later.

The APCD Community Advisory Council has been reviewing draft chapters for several months now, and a subcommittee is discussing a new element in the plan known as indirect source review. This

would address indirect sources of air pollution, for example, housing or commercial developments that have the potential to increase pollution from cars in a particular area. The committee is discussing a range of options. One could involve assessing a fee for new developments to fund pollution reductions. Another could involve developing a rule that could, for example, require design of developments to incorporate elements that will reduce pollution impacts.

In the process of updating emission inventories for the plan

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Emission inventories for the Clean Air Plan update show that large ships traveling through the Santa Barbara Channel may be producing even more air pollution than was previously calculated. APCD is working on cooperative efforts to reduce these emissions. For more information, see [www.sbapcd.org/itg/shipemissions.htm](http://www.sbapcd.org/itg/shipemissions.htm)

## Helping Medical Facilities Prevent Pollution

**A** free training for regional medical staff on how to reduce mercury use and prevent pollution will be held in September, sponsored by Marian Medical Center, the Tri-County Pollution Prevention Committee, the California Department of Health Services, and the California Department of Toxic

Substances Control. The training will include information on the Mercury Elimination Leadership Program (HELP) and the Universal Waste Rule. The training will be Thursday September 23 from 10 a.m. to 1 p.m., with lunch provided, at Marian Medical Center at 1400 East Church Street in Santa Maria.

Marian Medical Center received a 1999 Green Award from the county's Green Award Consortium for outstanding efforts in reducing waste. The Center also received a 2002 WRAP (Waste Reduction Awards Program) Award from the state Integrated Waste Management Board for achievements in waste

reduction. Marian Medical Center was one of only ten businesses statewide that were recognized in 2002 under that awards program.

*For more information, and to sign up to participate, contact Kim Smith at (800) 700-5854 or [ksmith1@dtsc.ca.gov](mailto:ksmith1@dtsc.ca.gov).*

## Clean Air Plan Update (cont'd)

update, APCD has found that the contribution of emissions from large ships traveling through the Santa Barbara Channel is even larger than previously calculated. Emissions offshore do not have the same direct impact on the air we breathe as emissions onshore. However, the magnitude of air pollution involved is concerning from an ozone planning perspective.

Said Tom Murphy, APCD Technology and Environmental Assessment Manager, "We prepare these plan updates to

document and evaluate what our programs are achieving – and this plan shows we are being effective in reducing emissions from onshore sources. It's becoming even more evident now that we need to continue to raise the red flag about the need for the U.S. and the world to get more involved in addressing pollution from marine shipping activities."

*For more information on the Clean Air Plan, and to view the draft Plan update when it is available, check out our website at [www.sbapcd.org](http://www.sbapcd.org).*

## Agriculture... (cont'd)

for an agricultural facility, a permit application must be submitted to the APCD by December 31, 2004. If a farming operation uses internal combustion engines to irrigate 2000 or more contiguous acres, it is likely it will have to meet the December 31, 2004 deadline for submitting an application.

Notes APCD Director Terry Dressler: "We're committed to working with leaders in our local agricultural industry to make sure that all of the agricultural sources in our county know about the

timelines and requirements of this new state law. Our goal is to develop a fair and consistent permitting program; to ensure the new requirements are easy to understand; and to make sure that everyone knows their responsibilities. APCD staff is ready to provide assistance at every step of the way."

*For more information, contact Frances Gilliland at 961-8838 or [gillilandf@sbapcd.org](mailto:gillilandf@sbapcd.org).*

## September is for Pollution Prevention!

**Pollution Prevention Week is September 20-26 this year, and APCD will be working with a coalition of Santa Barbara County agencies and organizations known as [greendifference.org](http://greendifference.org) to help people make a green difference - at work and at home. The Green Award winners, businesses or organizations taking extraordinary steps to protect or improve the environment in our county, will be announced during Pollution Prevention Week.**



**greendifference.org**

a coalition of Santa Barbara County organizations helping people make a green difference... at work... and at home.

**Check out [www.greendifference.org](http://www.greendifference.org) for all the info, and to find out what you can do to prevent pollution.**