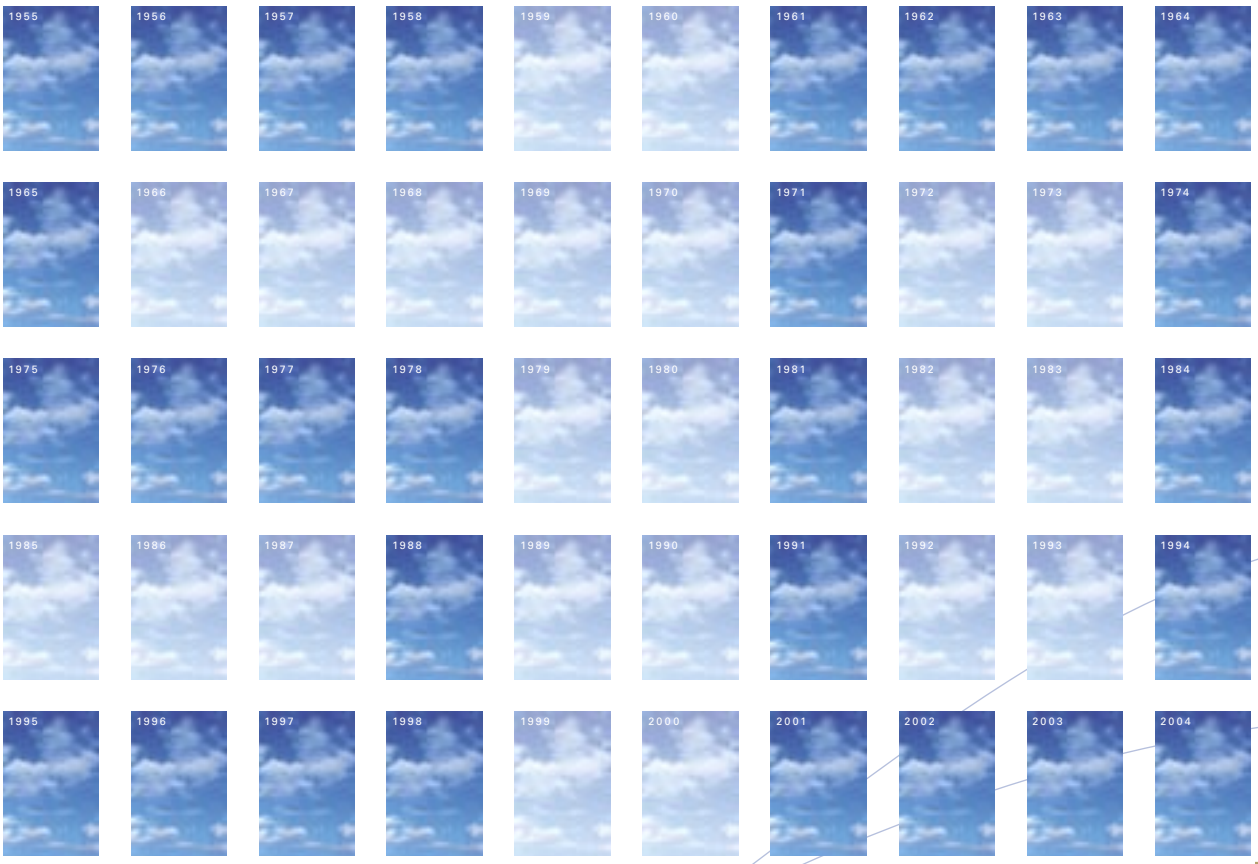
2005

2005 Annual Report - 50 Years of Progress

Bay Area Air Quality Management District

BAY AREA AIR QUALITY MANAGEMENT DISTRICT



50 YEARS of PROGRESS

The Bay Area Air Quality Management District (the Air District) is the public agency entrusted with regulating stationary sources of air pollution in the nine counties that surround San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties.

The Air District is governed by a 22-member Board of Directors composed of locally elected officials from each of the nine Bay Area counties. The number of board members from each county is proportionate to its population.

The Board oversees policies and adopts regulations for the control of air pollution within the district. The Board also appoints the Air District's Executive Officer/Air Pollution Control Officer, who implements Board policies and gives direction to staff, and the District Counsel, who manages the legal affairs of the agency.

The Air District consists of over 340 dedicated staff members, including engineers, inspectors, planners, scientists, and other professionals, who have dedicated their careers to protecting public health by improving air quality for the residents of the Bay Area.

The Air District is assisted by an Advisory Council that provides input to the Board and the Executive Officer on air quality matters. The Council is made up of 20 representatives from community, health, environmental, and other organizations.

An independent, quasi-judicial, five-member Hearing Board serves to adjudicate regulatory compliance issues that may arise between the Air District and local industries, and hears appeals of permitting decisions made by the Executive Officer.

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LETTER FROM THE EXECUTIVE OFFICER

The year 2005 was an historic year for the Air District.

Not only did it commemorate the 50th anniversary of our efforts to fight pollution and preserve public health in the Bay Area, marking a half-century of regional progress, but it brought significant air quality achievements in its own right.

In 2005, our Board of Directors demonstrated their foresight and leadership by adopting the first rule in the nation reducing flare emissions from refineries. This flare rule, which is a testimony to the hard work and technical expertise of our staff, followed closely on the heels of the equally pioneering flare monitoring rule of 2003, which had already reduced flare emissions in the Bay Area from eight tons per day to two. In 2005, the Board also passed an important Air Toxics New Source Review rule, updating and formalizing the guiding policies of our successful toxics program, which protects the public from toxic air pollution from new or modified emission sources at facilities throughout the region.

2005 was a year in which we celebrated the history of our local air quality efforts, and also stepped out onto a broader stage. In June, we hosted a 50th Anniversary Symposium on air quality in the Bay Area, featuring an array of notable speakers headed by former EPA Administrator and Governor of New Jersey Christine Todd Whitman. Also in June, the United Nations' *World Environment Day* was held for the first time in the United States, convening mayors from all over the world in San Francisco to discuss emerging environmental issues. The Air District participated by offering displays of equipment and technology, as well as a symposium in which staff presented the "Top Ten Ways to Reduce Air Pollution" to visiting delegates.

Our public profile may have been at an all-time high last year, as front-page features appeared in the *San Francisco Chronicle*, covering the first-ever Bay Area-wide *Spare the Air* free commute day, and the *Contra Costa Times*, memorializing our 50-year history.

Controlling air pollution requires resilience and flexibility, and in 2005 we continued to reinforce and enhance our core programs, while anticipating and beginning to develop creative solutions to future challenges. In June our Board adopted a landmark Climate Protection Resolution, signaling our support of local efforts to reduce greenhouse gas emissions, as well as our engagement with the process of mitigating the regional air quality impacts that are likely to accompany climate change.

In grappling with these more global concerns, however, we did not disregard the effects of air pollution in the smaller corners of our region. Last year, we continued to reach out to work with local communities in examining the more localized impacts of particulate pollution and toxics. We broke significant ground on our ambitious CARE program, which will provide a vastly improved analytical portrait of toxic emissions at the neighborhood level. In 2005, a number of workshops and public meetings were held in our communities to explain District policies, receive input on proposed rules and strategies, and address the concerns of our local residents. And Air District staff and community resource teams continued to spread the word about our incentive programs, which can help to alleviate the impacts of diesel pollution in disadvantaged neighborhoods.

The fact is, preserving air quality is essentially a shared responsibility. To do our jobs, we rely heavily on the support of the many residents of the Bay Area, and we want to thank you for your efforts. I think all of us feel fortunate to live in such a beautiful region, with its rolling hills, golden beaches, and gorgeous sunsets, and we want to assure you that the Air District will continue to work on your behalf to make sure there is fresh air to breathe in the years to come.

At the Air District, we're proud of our successful history, but even more proud of our ability to meet future challenges—for us, progress is continuing to build on last year's accomplishments as we work to clear the skies in the Bay Area. On behalf of the Air District's dedicated employees and our community partners, it is a pleasure to present our 2005 Annual Report.

Executive Management Staff

Brian C. Bunger
District Counsel

Jean Roggenkamp
Deputy Air Pollution Control Officer

Peter Hess
Deputy Air Pollution Control Officer

Michael Rich
Human Resources Officer

Mary Ann Goodley
Executive Office Manager

Jack P. Broadbent
Executive Officer / Air Pollution Control Officer

Division Directors

Brian Bateman
Engineering

Jack M. Colbourn
Outreach and Incentives

Henry Hilken
Planning, Rules and Research

Gary Kendall
Technical Services

Jeff McKay
Finance, Administration and Information Systems

Kelly Wee
Compliance and Enforcement

TL PROGRESS

1955–2005: FIFTY YEARS OF PROGRESS

For a half-century, the Air District has worked to clear the air in the Bay Area.

In 2005, the Air District celebrated its historic 50th anniversary. The California Legislature created the Air District in 1955 as the first regional air pollution control agency in the country, recognizing that air emissions overflow strict political boundaries. The nine counties of the San Francisco Bay Area form a regional air basin, sharing common geographical features and weather patterns—and therefore similar air pollution burdens, which cannot be addressed by individual cities or counties acting on their own.

In the early 1950s, the science of air pollution had been kick-started by the discovery that ground-level ozone was the main chemical ingredient in "smog," a conjunction of "smoke" and "fog" that was rapidly becoming a household word. Ozone was found to cause eye irritation and breathing problems, damage plants and crops, and corrode buildings and property. Local agriculture absorbed significant losses, and it was largely at the behest of organized efforts by Bay Area farmers and growers that the political will to establish the first regional air district was kindled.

The first official meeting of the Air District's Board of Directors was held on November 16, 1955, in San Francisco. Charged with regulating stationary sources of air emissions, the Air District quickly went to work, drafting its first two regulations by the end of the decade, which banned open burning at dumps and wrecking yards, and established controls on dust, droplets, and combustion gases from certain industrial sources.

Since that time, the agency has used its expertise to clear the skies and diminish air pollution levels throughout the Bay Area. Its actions, along with the concentrated efforts of a variety of public and private agencies and concerned individuals, have dramatically improved air quality, despite significant increases in traffic and population. But much remains to be done, as new challenges arise and the Air District enters its second half-century of stewardship of the air we breathe.

TIMELINE >

The timeline that appears throughout this report, at the side of each page, highlights key milestones in the Air District's 50 years of progress, from 1955 to 2005. The timeline provides more information about the images on this page, as well.

2005 > HYDROGEN FUEL CELL CAR

2004 > FREE MORNING COMMUTE PARTNERSHIP

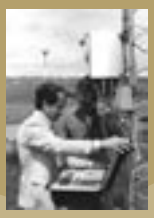
1997 > LAWNMOWER BUYBACK PROGRAM

1992 > TRANSPORTATION FUND FOR CLEAN AIR PROGRAM

1996 > VEHICLE BUYBACK PROGRAM

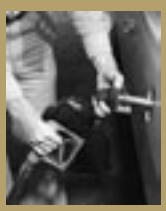
1991 > SPARE THE AIR PROGRAM

1984 > SMOG CHECK PROGRAM



1985 > METEOROLOGY STATION

1979 > MILTON FELDSTEIN, APCO 1979-1996



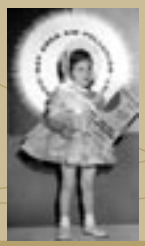
1973 > VAPOR RECOVERY CONTROL REGULATION

1975 > RADIO DISPATCH SYSTEM

1974 > PORTABLE OLFACTOMETER

1969 > 65 DAYS ABOVE NATIONAL OZONE STANDARD

1962 > MONITORING STATION



1961 > "MISS CLEAN AIR"

1955 > BOARD OF DIRECTORS

1958 > LABORATORY

2005 — 1995 — 1985 — 1975 — 1965 — 1955

01 UNDERSTANDING THE PROBLEM

Air is the most precious of resources—all of life depends on it.

Though words like "airy" can be used to convey something lofty but insubstantial, in reality air in our lower atmosphere is a dynamic, constantly shifting mixture of gases, droplets, and particles. It swirls and eddies around the globe like the water in an ocean, with winds and weather patterns resulting from this movement. Air isn't as light as it seems, either—a column of air one foot square and extending from sea level to the outer limit of the atmosphere would weigh nearly one ton.

And contrary to what one might expect, the air that we breathe in the lower atmosphere is *not* primarily composed of oxygen. Instead, it contains 78 percent nitrogen, 21 percent oxygen, and less than one percent gases like argon and carbon dioxide. Unfortunately—and this is where the need for agencies like the Air District comes into play—it also contains substances that are unhealthy for us to inhale.

In the Bay Area, as in the rest of California, a certain amount of pollution comes from stationary industrial sources, such as refineries and power plants. But the majority of air emissions comes from cars and trucks and other mobile sources. California has more cars per capita than any other state, along with a thriving economy and a continually expanding population, all of which contribute to the state's air quality problems.

1965

There are currently three major types of air pollutants that constitute a public health concern for the Bay Area: ozone, particulate matter, and toxic air contaminants.

Ozone (O_3)

Ozone is a colorless and odorless gas formed by a complex series of photochemical reactions involving sunlight and heat. It is not emitted directly into the air, but formed from interactions between other pollutants that are directly emitted: reactive organic compounds (from the evaporation of gasoline, paints, solvents, etc.) and oxides of nitrogen (from automobile exhaust and other combustion sources).

Ground-level ozone is the main ingredient in the pollution haze known as "smog." Ozone is corrosive to buildings and property, to crops and plants, and to your eyes, nose, throat, and lungs. It triggers asthma attacks, and aggravates chronic lung diseases such as emphysema and bronchitis. At higher concentrations, it can inflame and damage the lining of the lung.

1955 < 1955 The Bay Area Air Pollution Control District is established.

O_3

Ozone

Major Sources:
motor vehicles, off-highway mobile sources (construction, trains, ships), organic compounds evaporation (gasoline, solvents)

PM_{10}

Particulate Matter

Major Sources:
road dust, construction, wood burning

$PM_{2.5}$

Particulate Matter

Major Sources:
motor vehicles, off-highway mobile sources (construction, trains, ships), wood burning

TACs

Toxic Air Contaminants

Major Sources:
diesel vehicles and equipment, other motor vehicles, construction

2005
1995
1985
1975
1965
1955

1955 > The Air District's Board of Directors meets for the first time.

UNDERSTANDING THE PROBLEM > CONT.

It is important to note that ground-level ozone is distinct from ozone in the upper atmosphere, or stratospheric ozone, which forms through different processes and serves as a protective shield against the sun's damaging ultra-violet radiation.

Ground-level ozone is primarily a problem in the summertime, when high temperatures and longer days provide ideal conditions for it to form. Some of the region's ozone problems are created by emissions from stationary industrial facilities, but more than half of the ozone-producing pollution in the Bay Area is caused by cars, trucks, and buses.

Significant amounts of ozone are also produced by seemingly mundane everyday activities like painting, using lighter fluid for backyard barbecues, doing yard work with gas-powered lawn and garden equipment, or even applying aerosol household products like hair sprays and deodorants.

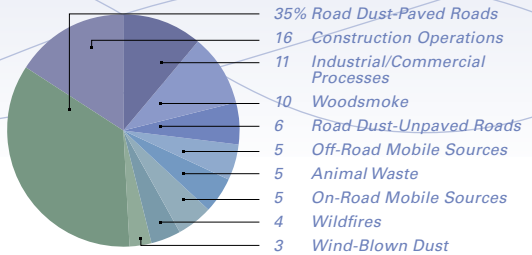
Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter (PM) refers to microscopically small solid particles and liquid droplets suspended in the air. There are two sizes of PM that are of concern as air pollution: PM_{10} and $PM_{2.5}$. PM_{10} refers to particles with diameters that are less than or equal to 10 microns in size (a micron is one-millionth of a meter), or about 1/7 the size of a human hair. $PM_{2.5}$ refers to particles with diameters that are less than or equal to 2.5 microns in size.

PM can come from a variety of sources, such as motor vehicles, industrial facilities, construction sites, tilled fields, unpaved roads, stone crushing, and wood burning. Most of the $PM_{2.5}$ found in the outdoor air comes from burning of fuels, such as gasoline, oil, diesel, or wood.

$PM_{2.5}$ is made up of particles that are emitted directly into the air, as well as particles that are formed from secondary reactions involving gaseous pollutants that combine as a result of atmospheric chemistry. Small particles can reside in the air for long periods of time and are the main contributors to reduced visibility.

Sources of Particulate Matter

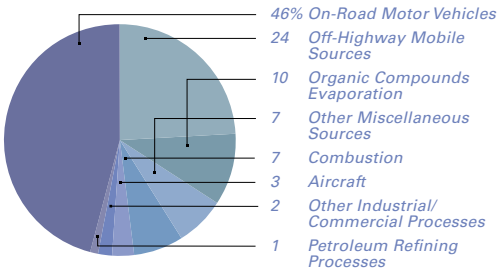


1965

< 1957 Open burning at dumps and wrecking yards is banned in the Bay Area.

1955

Sources of Ozone-Forming Emissions



When we breathe, PM smaller than 10 microns in diameter can be inhaled into our respiratory system. Smaller particles, specifically $PM_{2.5}$, travel more deeply into the lungs and can cause more serious health effects. PM pollution has been linked to an increase in asthma attacks, chronic bronchitis, and exacerbation of heart and lung disease. Exposure to high levels of PM is associated with increased physician and hospital visits, and a higher number of premature deaths. Children and the elderly, as well as those with pre-existing heart and lung disease, are most sensitive.

Particulate pollution is primarily a problem in the winter, when cold, still weather comes to the Bay Area. Peak PM concentrations typically occur in the evenings or in the middle of the night, with high levels also appearing in the morning. Seasonal wood burning in woodstoves and fireplaces contributes on average about a third of the PM on any given winter night, but this percentage can be much higher in certain areas on some evenings. Motor vehicles, however, remain the major source of particulate pollution throughout the year.

Toxic Air Contaminants (TACs)

Toxic Air Contaminants (TACs) are a group of pollutants that can cause serious health effects, such as cancer, in relatively small concentrations. The state of California has classified more than 240 TACs, which are emitted by mobile sources such as cars and trucks, large industrial plants such as refineries and power plants, and smaller facilities like gas stations and dry cleaners. PM from diesel exhaust is listed as a TAC by the state of California. In the Bay Area, diesel exhaust is estimated to contribute as much as 70 percent of the total cancer risk from toxic air pollution.

The Air District's engineering staff reviews permit applications from companies to assess the potential impacts from approximately 200 TACs, prepares health risk screening assessments, and reduces TAC emissions by requiring effective control technologies. The Air District's air monitoring network measures ambient air concentrations of 20 of the most hazardous TACs, and the Air District maintains an inventory of toxic emissions from all of its regulated sources.

PROGRESS: EXPANDING OUR UNDERSTANDING OF THE SCIENCE OF AIR QUALITY.

A CHEMIST IN THE AIR DISTRICT'S LABORATORY, HEMANT USES A SPECTROPHOTOMETER TO MEASURE THE AMOUNT OF LIGHT ABSORBED BY A SAMPLE. THE LAB TESTS AND ANALYZES THOUSANDS OF POLLUTANTS, FROM PARTICULATE MATTER TO ASBESTOS TO TOXICS.

TEC
Technical Services

NAME:
Hemant Amin

TITLE:
Air Quality Chemist

2005
1995
1985
1975
1965
1955

1958 > Regulation 2 is drafted, limiting industrial emissions.

02

MEASURING AIR QUALITY

There's more to air pollution than meets the eye—measuring what's in the air is the first step towards reducing emissions.

Monitoring Network

The Air District has been measuring air quality since 1962, when it established the first regional ambient air monitoring system in the nation. Today, that system has grown to be one of the most comprehensive air monitoring networks in the entire country, consisting of 28 monitoring stations operating 24 hours a day, seven days a week.

Data collected at the Air District's monitoring stations must meet federal standards for accurate and representative sampling. The network measures concentrations of pollutants for which health-based ambient air quality standards have been set by the federal Environmental Protection Agency (EPA), and by the California Air Resources Board (CARB). These pollutants include ozone, PM_{10} and $PM_{2.5}$, carbon monoxide, nitrogen dioxide, and sulfur dioxide. The network also measures concentrations of 20 toxic air contaminants in the ambient air, which are analyzed in the Air District's lab. Other instrumentation at these stations is used to provide further information to help develop and expand the understanding of local and regional air quality issues.

Throughout 2005, Air District staff performed ongoing assessments of the air monitoring network by conducting regular performance audits.

Meteorology

Weather plays an integral role in the development and duration of high-pollution episodes. The Air District employs a staff of meteorologists who analyze data collected from a network of meteorological towers located throughout the nine Bay Area counties. This data, combined with measurements from air monitoring stations, computer modeling, and satellite feeds from weather services, is used to track air quality trends over time, and to make daily air quality forecasts for the public. Air District planners use this information to develop atmospheric models and formulate air quality control strategies.

1965

1955

< 1958
The Air District's analytical laboratory becomes operational.

0.08 ppm O_3 8 Hour National Standard

180 µg/m³ O_3 1 Hour California Standard

180

0.07 ppm O_3 8 Hour California Standard

0.09 ppm O_3 1 Hour California Standard

20 µg/m³ PM_{10} Annual California Standard

137 µg/m³ O_3 8 Hour California Standard

50 µg/m³ PM_{10} Annual National Standard

12 µg/m³ $PM_{2.5}$ Annual California Standard

150 µg/m³ PM_{10} 24 Hour National Standard

65 µg/m³ $PM_{2.5}$ 24 Hour National Standard

15 µg/m³ $PM_{2.5}$ Annual National Standard

2005
1995
1985
1975
1965
1955

1962 >
Ambient air monitoring network becomes operational.

MEASURING AIR QUALITY > CONT.

The Air District prohibits open burning throughout the Bay Area, with the exception of a few types of fires (generally for agricultural or natural-resource management purposes) that are allowed on designated "burn" days during pre-established burn periods. The Air District's meteorological staff issues daily controlled-burn forecasts to local fire officials for planning these prescribed burning events.

Laboratory

The Air District operates an extensive laboratory with state of the art equipment for testing air quality samples collected from ambient monitors, from regularly scheduled source tests, or during accidental releases at permitted facilities. In 2005, the laboratory processed and analyzed 3,864 pollutant samples.

Also in 2005, the Air District's laboratory was audited by the National Institute of Standards and Technology (NIST) to determine compliance with the NIST/National Voluntary Laboratory Accreditation Program (NVLAP) requirements for accreditation in bulk asbestos analysis. The laboratory passed the on-site assessment and was granted continuing NVLAP accreditation by the NIST.

Community Air Risk Evaluation (CARE)

In 2005, the Air District continued to design and develop its pioneering multi-year Community Air Risk Evaluation (CARE) program. This complex and innovative project was undertaken to analyze the impact of toxic air pollutants, including diesel exhaust, on local Bay Area communities.

The program's goal is the development of a plotted grid, two kilometers square, of toxic emissions throughout the region's nine counties. Based on these results, the Air District can determine whether particular neighborhoods are disproportionately affected, in order to intervene more effectively through grant program funding or regulatory controls.

In 2005, a CARE Task Force was created, comprising 14 members with a wide array of expertise in community advocacy, public health, medicine, emissions characterization, and industrial operations. The Task Force met three times during the year to provide guidance and help shape the complex program parameters.

Special Studies

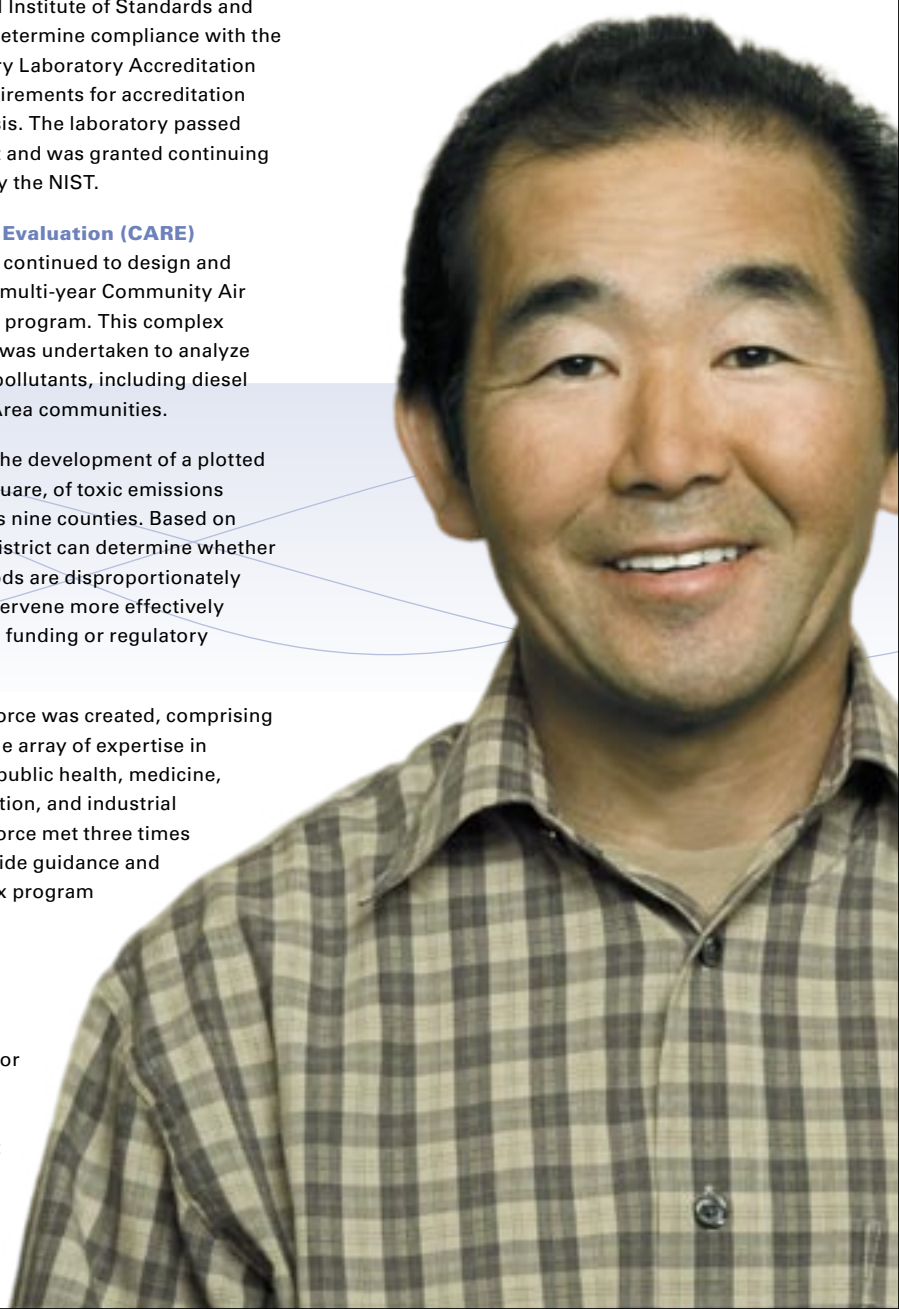
In 2005, the Air District continued to provide research and analysis for the Central California Ozone Study (CCOS), a comprehensive project involving field monitoring, data analysis, emissions data gathering, and atmospheric modeling. Staff successfully downloaded, installed, and applied a new meteorological model, the Weather Research and Forecast (WRF) model, for application to the CCOS study domain. This model was developed by the National Center for Atmospheric Research and is considered to be the most advanced meteorological model in the nation. When CCOS results are finalized, this study should provide an important view of ozone transport patterns throughout the central part of the state.

At the end of 2005, the Air District also initiated the Pilot Wood Smoke Data Collection Program, which will involve mobile monitoring of PM pollution on certain evenings in order to quantify the local impacts of wood burning in selected areas.

1975

1965

< 1967 Regulation 3 is adopted, controlling organic compounds from industrial emissions.



A SUPERVISOR IN THE AIR DISTRICT'S AIR MONITORING SECTION, STAN CHANGES A FILTER ON A $PM_{2.5}$ SAMPLER AT THE SAN FRANCISCO MONITORING STATION. AIR MONITORING STATIONS TELL US IF THE BAY AREA IS MEETING AIR QUALITY STANDARDS AND PROVIDE DATA FOR DAILY AIR POLLUTION FORECASTS AND MODELING.

collecting data to ensure that we meet clean air standards.

PROGRESS IS:

2005
1995
1985
1975
1965
1955

1968 > Agricultural burning is controlled with "burn/no burn" days.

TEC
Technical Services

NAME:
Stan Yamaichi

TITLE:
Supervising Air Quality Instrument Specialist

03

PLANNING TO MEET STANDARDS

When it comes to air quality, the Air District works hard to meet the highest standards.

Air Quality Standards

The Air District's programs and regulations are largely guided by a set of air quality standards that establish health-based concentration limits for certain pollutants.

As part of the Clean Air Act, the federal government established national ambient air quality standards for several categories of pollutants, including ozone, PM_{10}, and $PM_{2.5}$. The state of California sets its own standards for these pollutants, and these are generally stricter than the national ones.

Air districts are required to measure pollution concentrations and record exceedances of these standards. When an air district meets these standards, its region is considered to be in *attainment* for a given pollutant category. If it does not meet these standards, certain planning requirements may be legally imposed, requiring the air district to outline emission reduction measures designed to bring its region into attainment status.

In 2005, there were two significant changes to the operative air quality standards. First, the federal government revoked the long-standing one-hour average ozone standard, leaving the newer standard for ozone concentrations averaged over an eight-hour period as the official determinant of federal attainment status. The state of California also adopted a new eight-hour standard for ozone, which becomes effective in 2006.

Attainment Status

In 2005, the Air District recorded one excess of the federal eight-hour ozone standard, and nine exceedances of the more stringent state one-hour standard. This continues a trend in recent years toward lower ozone levels and healthier air quality. In 2005, the Bay Area was the cleanest of the five major urban California air basins.

Still, despite this improvement in air quality, the Bay Area is currently classified as marginally out of attainment of the national eight-hour average standard for ozone. It also fails to attain the state one-hour ozone standard.

In 2005, there were no exceedances of the federal PM_{10} and $PM_{2.5}$ standards, and six exceedances of the state 24-hour average PM_{10} standard. The region is in attainment of the national $PM_{2.5}$ standards. It attains the national annual PM_{10} standard, but remains unclassified for the national 24-hour average PM_{10} standard, although no exceedances of the national 24-hour PM_{10} standard have been recorded since 1991. The Bay Area is out of attainment of the state $PM_{2.5}$ and PM_{10} standards.

The Bay Area is currently in attainment of the national and state standards for carbon monoxide, lead, nitrogen dioxide, and sulfur dioxide.

Ozone Strategy

In 2005, Air District planning staff worked diligently to prepare the *Bay Area 2005 Ozone Strategy* for achieving the California one-hour ozone standard. Adopted by the Air District's Board of Directors just after the new year in 2006, it offers measures for reducing ozone-forming emissions from industry, commercial processes, motor vehicles, and other transportation sources. Many community meetings and workshops were held to solicit public input on the process.

Although the Bay Area is designated as marginally out of attainment of the national eight-hour ozone standard, it is not currently anticipated that marginal areas will be required to prepare attainment demonstrations for this standard. The Air District plans to address any and all requirements of the national eight-hour standard in future planning documents.

PM Implementation Schedule

The California Legislature enacted Senate Bill 656 in 2003 to expedite attainment of the state and national PM_{10} and $PM_{2.5}$ standards. SB 656 required CARB to develop a list of the most feasible and cost-effective PM control measures based on existing regulations and programs.

In 2005, Air District planners prepared a *PM Implementation Schedule.* This involved analysis of PM monitoring, evaluation of inventory data, and a comparison of each of the control measures on CARB's final list to existing Air District rules, regulations, and programs in order to determine how additional PM emission reductions could be achieved. This evaluation showed that many of the measures on CARB's list are already being implemented in the Bay Area.

In the end, two measures were proposed for future rulemaking: a new rule limiting emissions from commercial charbroiling, and amendments to existing rules reducing emissions from stationary and portable internal combustion engines. The Air District also began to enhance its wood smoke reduction programs.

A public workshop was held in October, and the *PM Implementation Schedule* was approved by the Air District's Board of Directors on November 16, 2005.

1975

< 1969 The Air District records 65 days of "unhealthful" air, the highest ever in the Bay Area.

1965

ATTAINMENT

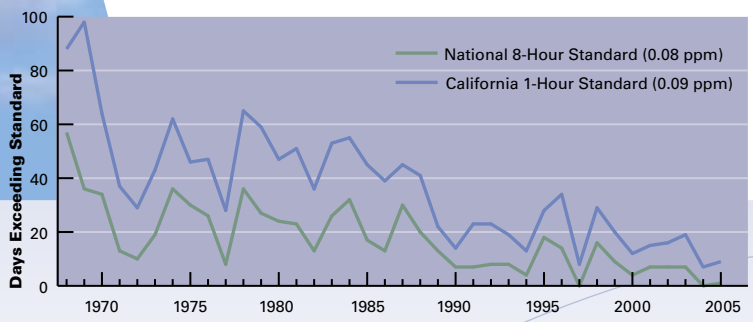
Bay Area "In Attainment" Status

NATIONAL STANDARD	STATE STANDARD
CO Carbon Monoxide	CO Carbon Monoxide
NO_2 Nitrogen Dioxide	NO_2 Nitrogen Dioxide
Pb Lead	Pb Lead
SO_2 Sulfur Dioxide	SO_2 Sulfur Dioxide
$PM_{2.5}$ Particulate Matter	
PM_{10}* Particulate Matter	

* The Bay Area is in attainment of the National Annual Arithmetic Mean PM_{10} Standard, but is unclassified for the National 24-Hour PM_{10} Standard, although no exceedances have been recorded since 1991.

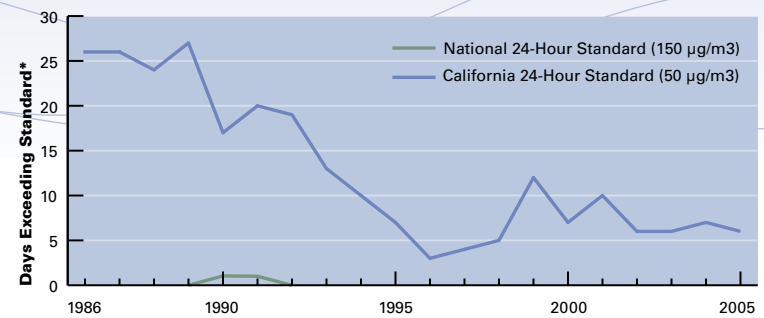
O_3 Ozone

Bay Area Historical Exceedences



PM_{10} Particulate Matter

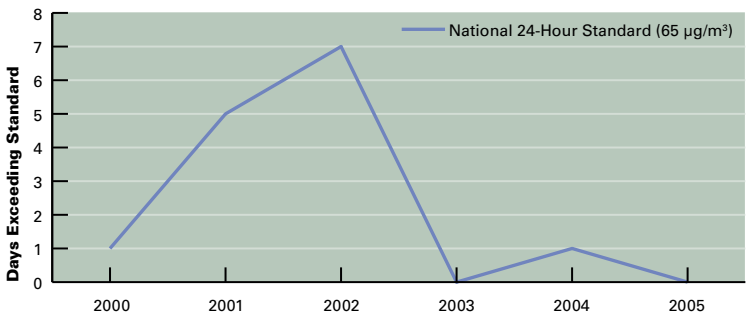
Bay Area Historical Exceedences



* PM_{10} exceedance figures are based on sampling that takes place every six days.

$PM_{2.5}$ Particulate Matter

Bay Area Historical Exceedences



2005
1995
1985
1975
1965
1955

1970 > The Air District bans backyard burning throughout the Bay Area.

04 MAKING THE RULES

Clean air is a work in progress—the Air District continually updates its rules and regulations to protect public health and preserve the environment.

Rule Development

The Air District adopted its first regulation in 1957 to ban open burning of refuse in dumps and wrecking yards, and has since added a comprehensive series of air quality regulations to safeguard the health and welfare of Bay Area residents.

Rule development is an ongoing process: the Air District is constantly strengthening and refining its rules and regulations to improve air quality. Some guiding principles include meeting environmental goals in the most efficient and effective manner; identifying all stakeholders and respecting all points of view in the development process; and providing businesses with the flexibility to meet air quality goals in ways that make financial sense.

The Air District's rule development process involves public participation at several key steps along the way. Before drafting a new rule, the Air District conducts meetings with affected businesses, community groups, and other interested parties to discuss issues and exchange information. In consultation with these stakeholders, the Air District develops a draft rule, and conducts one or more public workshops in which all affected parties have an opportunity to make comments. A California Environmental Quality Act (CEQA) analysis is undertaken to determine whether a rule might have any unanticipated adverse environmental impacts, and a socioeconomic impact analysis is prepared, describing the emission benefits and financial costs associated with the rule. Finally, staff present the rule to the Air District's Board of Directors at one of the Board's regularly scheduled meetings, which are open for public comment.

A full list of the Air District's rules and regulations is available on the Air District's website at www.baaqmd.gov.

Flare Rule

In 2005, the Air District amended a number of its pre-existing regulations, and added one new landmark rule: *Regulation 12, Rule 12, Flares at Petroleum Refineries.* This is the very first rule in the nation to reduce the amount of flaring at petroleum refineries, and a successful demonstration of the Air District's regulatory foresight and leadership.

Flares are used as safety devices to burn off gases produced during process unit startups and shutdowns, maintenance activities, and emergencies. Some flares are used as a control device to destroy excess or recovered gases that cannot be used, due to their quality or composition, for fuel in process operations.

The new rule applies to 21 flares located at the five Bay Area refineries, which together constitute nearly 40 percent of California's refining capacity. Under the rule, each refinery is required to develop an extensive Flare Minimization Plan, which will include a technical description of each flare with its feeder equipment and processes, an inventory of all currently existing flare-reduction equipment and procedures, an evaluation of potentially feasible flare prevention measures, and a schedule for their implementation. The new rule also tightens notification requirements for each flaring event. Each Flare Minimization Plan must be updated annually.

The 2005 rule built on the Air District's flare monitoring regulation, also the first-of-its-kind, which was passed in 2003 to improve measurement of the volume and composition of flare gases. As a result of controls installed and procedures implemented since then, it is estimated that emissions of organic compounds from refinery flares in the Bay Area have already dropped from 8 tons per day to 2 tons per day.

Air Toxics New Source Review Rule

Another significant rule adopted by the Air District in 2005 was *Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants.* This regulation codifies the policies and procedures under which the Air District had previously administered its Air Toxics New Source Review (NSR) Program, and includes updates and enhancements to key provisions. The NSR program requires companies to undergo a permit review procedure before constructing new facilities or modifying existing ones, in order to prevent significant increases in public health risk that might ensue from projects involving toxic air contaminants. The program also requires facilities to update existing controls when they modify or replace older, more highly polluting sources of TACs.

Under Air Toxics NSR, facilities with emissions above specified levels are subject to a health risk screening analysis to determine potential health impacts on surrounding areas. The new Air Toxics NSR rule establishes health risk trigger levels for each emission source, which, when exceeded, generate requirements for abatement equipment or process changes. The new rule also sets overall health risk limits for projects.

1975

< 1971 The Air District adopts emission standards for lead.

< 1971 Napa, Solano, and Sonoma counties become active members of the Air District.

1965

A KEY MEMBER OF THE AIR DISTRICT'S RULEMAKING STAFF, ALEX HELPED DEVELOP THE AIR DISTRICT'S PIONEERING FLARE REGULATION, THE FIRST RULE IN THE THE NATION AIMED AT REDUCING EMISSIONS FROM FLARING AT PETROLEUM REFINERIES.

NAME: Alex Ezersky

TITLE: Principal Air Quality Specialist

PRP

Planning, Rules and Research

PROGRESS IS developing cutting-edge rules to improve air quality.

1974 > The Air District adopts the first gasoline vapor recovery program in California.

1972 > The Air District adopts the first odor regulation in the nation. The "smog phone" for daily air quality forecasts is introduced.

2005
1995
1985
1975
1965
1955

05 CONTROLLING EMISSION SOURCES

Stopping pollution at the source is the key to improving air quality.

For the last 30 years, the Air District has administered a permit system to evaluate and control the installation, use, and modification of industrial equipment or processes that cause air pollution.

Permits

An air quality permit is a document that lists a facility's requirements for compliance with air pollution laws and regulations, including the Air District's own series of rules. Permits are issued and annually renewed for all equipment that emits air pollution at industrial facilities in the region.

In 2005, there were five refineries, 2,608 gasoline-dispensing stations, 97 major industrial facilities, and another 6,333 smaller industrial facilities operating under permit in the Bay Area. In 2005, there were 2,523 permit applications received and processed for new or modified facilities (1,007 of these were for gasoline-dispensing facilities).

The figures above include the major industrial facilities that are issued operating permits under the federally mandated Title V program. Also known by the Air District as the Major Facility Review Program, this program requires the District to issue comprehensive operating permits to facilities with significant emissions. In 2005, the Air District completed processing for the issuance of three Title V original permits, ten renewals, and 20 revisions. These revisions included amendments to the Title V permits for the five major Bay Area petroleum refineries, in order to account for operational changes and to bring these permits up to date with changes in applicable requirements.

The Air District continued its ongoing efforts to streamline the permit process. Most permits take less than 35 working days to process, the shortest air quality permit review period in the state.

In 2005, the Air District also hired contractors to complete a Cost Recovery Study to analyze the District's fee revenue and regulatory program activity costs.

Emissions Banking

The Air District's Emissions Banking program, established in 1984, allows companies to "deposit" emission reductions which may occur, among other things, as they shut down old sources or voluntarily add new control equipment to existing sources. New controls must be permanent and go beyond required levels. Facilities may use banked emission credits as offsets for emission increases from new projects that are subject to Air District permit requirements, or they may be traded or sold to other companies.

Controlling Toxic Air Contaminants (TACs)

The Air District's Air Toxics Program integrates federal and state air toxics laws and regulations with the Air District's own permit program and objectives. The program consists of three main elements:

Air Pollution Control Measures

The Air District must ensure that its permit program adheres to certain toxics control measures designed to reduce emissions from specific source categories of TACs. These include National Emission Standards for Hazardous Air Pollutants (NESHAPs) promulgated pursuant to the federal Clean Air Act, statewide Airborne Toxic Control Measures (ATCMs) originating from the California Toxic Air Contaminant Act (AB 1807), and the Air District's own rules and regulations (such as Regulation 11, Hazardous Pollutants).

In 2005, Air District staff began implementing a plan for incorporating the state ATCM for Stationary Compression Ignition Engines. This ATCM requires facilities to reduce diesel PM emissions by either limiting hours of engine operation or by installing PM controls.

Air Toxics "Hot Spots" Program

In 1987, the California Legislature passed AB 2588—the Air Toxics "Hot Spots" Information and Assessment Act. This required air districts to inventory industrial sources of air toxics and to prepare health risk assessments showing impacts to nearby residents. Facilities above certain thresholds were required to notify local communities. The Air District was the first district in the state to complete the process and to begin an aggressive air toxics reduction program. At that time, there were 30 facilities on the list required to notify their neighbors; today, there are no facilities on the list.

Air Toxics New Source Review

The Air District has included an air toxics health risk screening for all new projects as part of its permit process since 1987. In July of 2005, previous policies and procedures governing this Air Toxics New Source Review Program were codified and updated into *Regulation 2, Rule 5.* Under this rule, proposed projects are reviewed for potential health impacts, and significant new or modified sources are required to use the mitigation equipment or processes specified as Best Available Control Technology to minimize TAC emissions. Overall toxic risk limits for projects were also established.

In 2005, 369 health risk assessments were performed for 333 facilities in the Bay Area.

1985

1975 < 1975 The first regional air quality ozone model in the nation is completed by the Air District.

progress is: helping businesses comply with clean air regulations.

AS AN INSPECTOR IN THE AIR DISTRICT'S COMPLIANCE AND ENFORCEMENT DIVISION, MELISSA REGULARLY INSPECTS BAY AREA GASOLINE STATIONS TO MAKE SURE THEIR EQUIPMENT IS FUNCTIONING PROPERLY. AIR QUALITY INSPECTORS ARE ON THE FRONT LINES OF REGULATORY ENFORCEMENT, PERFORMING OVER 10,000 INSPECTIONS EACH YEAR AT SITES ALL OVER THE REGION.

2005
1995
1985
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1955

1978 > The Air District's name is changed to the Bay Area Air Quality Management District.

ENF
Compliance and Enforcement

NAME:
Melissa O'Malley

TITLE:
Air Quality Inspector

06 ENSURING COMPLIANCE

For air quality rules to be effective, they must be understood and enforced.

The Air District's comprehensive Compliance and Enforcement program provides companies with assistance in conforming with air quality rules, oversees enforcement of regulations and permit conditions, and provides deterrence for non-compliance.

Compliance Assistance

Compliance assistance resources for regulated businesses include a full range of educational and technical assistance programs, such as a compliance phone and e-mail hotline, a speakers bureau, courtesy facility reviews, compliance schools, and the publication of policy and procedure guidelines that can provide a basis for self-inspection programs for industry. The Air District works with individual companies, industry groups, trade associations, and small business assistance programs to promote compliance with air regulations.

The Air District also works with county Green Business programs and performs reviews of Green Business applicants to confirm compliance with air quality regulatory requirements.

Inspection and Enforcement

The Air District relies on established working relationships with regulated sources, as well as enforcement actions, to maintain compliance with air quality regulations. Some 106 staff members—including 78 field inspectors, supervisors, and managers—conduct inspections of air pollution sources, verify compliance, investigate breakdowns, document violations, respond to accidental releases of air contaminants, and investigate citizen complaints about air pollution.

Inspection field staff are deployed throughout the nine Bay Area counties where the Air District has jurisdiction. They are responsible for all of the permitted sources and inspection activities within that area. In addition, there are several specialized inspection groups that handle petroleum refineries, autobody shops and dry cleaners, gas stations, and asbestos demolition and renovation activities. There were 15,721 compliance inspections conducted in 2005.

Air District inspectors also respond to air quality complaints and accidental releases of air pollution. When a call is made to the Air District's toll-free complaint line, 1-800-334-ODOR, during regular business hours, an inspector is dispatched to the site as soon as possible. The complaint program includes multi-lingual translation capacity. There were 3,194 air pollution complaints investigated in 2005.

1985

< 1979 The New Source Review regulation is adopted, allowing for a system of emissions banking.

1975

There were 728 violations of air quality regulations cited in 2005, and one abatement order was issued by the Air District's Hearing Board, at District staff's request, to require adherence to emissions standards.

In 2005, the Air District's legal staff collected over $3.5 million in civil penalties for violations of air quality rules.

Source Testing

Source test engineers and instrument specialists monitor emissions from facilities that have stationary pollution sources. They collect samples, sometimes by climbing tall stacks, which can usually be analyzed on-site using instrumentation in specially outfitted vans. Source test staff can typically make an immediate determination as to whether or not emissions are in compliance with Air District regulations and permit conditions. Vapor recovery equipment at gas stations and bulk transfer facilities is also tested for compliance with hydrocarbon pollutant emissions standards.

In 2005, a total of 8,542 source tests were conducted in the Bay Area, and 211 violations were found, for a compliance rate of 97.5 percent. Of these source tests, 419 were performed at the five Bay Area refineries, with a refinery compliance rate of 96.4 percent.

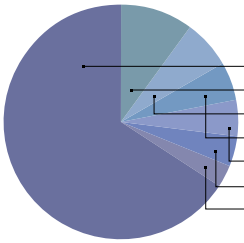
There were 726 tests conducted at Title V facilities, 399 tests conducted on gasoline cargo tanks, a total of 7,245 tests conducted at gasoline dispensing facilities, and 172 tests conducted at miscellaneous other facilities.

Laboratory Analysis

The Air District's lab is staffed by chemists and technicians who analyze and evaluate a variety of pollutant samples to determine their chemical makeup, often an important compliance consideration. Particulate matter and whole air

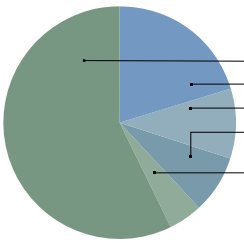
PROGRESS IS: ACCURAT

samples from monitoring stations are routinely brought to the lab for analysis, as are samples collected by staff inspectors and source test engineers. Samples are also collected when the Air District conducts mobile air quality monitoring in response to accidental pollution releases at refineries and other facilities.



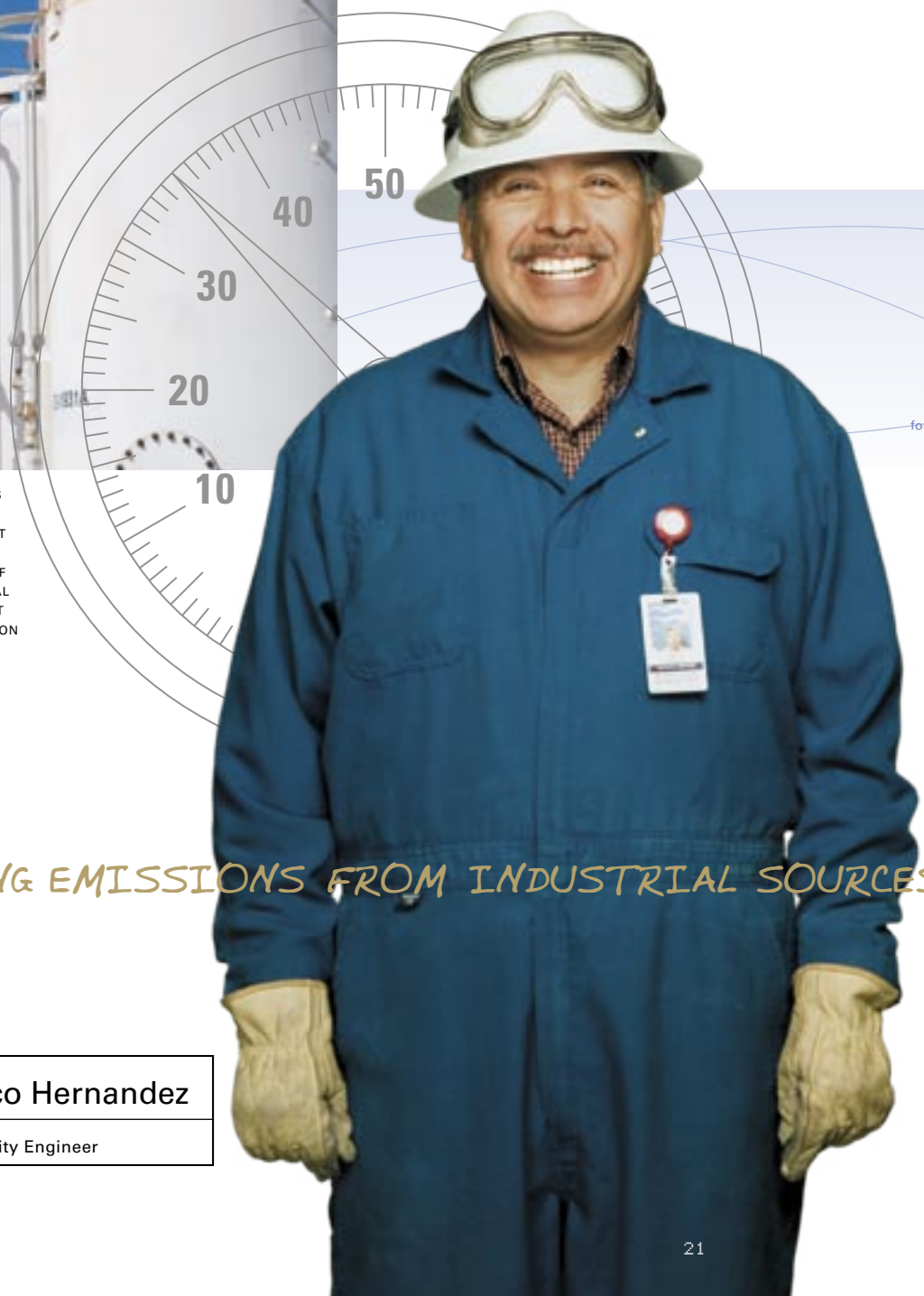
Air Pollution Complaint Categories

66%	Odor
10	Dust
6.5	Fires
5.5	Asbestos
5	Smoke
4	Gas Stations
3	Other



Inspection Categories

57.4%	9,018	Source Inspections
20.3	3,194	Complaints
9.6	1,508	Asbestos Inspections
8.1	1,280	Gasoline Dispensing Facility Inspections
4.6	721	Reportable Compliance Activities
	15,721	Total Inspections



AN ENGINEER IN THE AIR DISTRICT'S SOURCE TEST SECTION, MARCO INSTALLS MONITORING EQUIPMENT AT A GASOLINE DISTRIBUTION TERMINAL. DIRECT MONITORING OF INDUSTRIAL EMISSIONS IS CRITICAL TO THE ENFORCEMENT OF DISTRICT REGULATIONS AND THE PREPARATION OF NEW AIR QUALITY RULES.

2005

1995

1985

1980 > The Air District unveils its proposal for a "Smog Check" program.

1975

1965

1955

ELY MEASURING EMISSIONS FROM INDUSTRIAL SOURCES.

TEC Technical Services

NAME: Marco Hernandez

TITLE: Air Quality Engineer

07 PROVIDING INCENTIVES

1985

< 1982
The California legislature enacts the Smog Check Program.

1975

Air pollution control requires a flexible, "carrot and stick" policy —with enforceable regulations on the one hand, and financial incentives on the other.

For a half century, the Air District has been endowed with the authority to regulate stationary sources of air pollution in the Bay Area. But mobile sources actually contribute most of the air pollution in the region.

Although local air districts have no regulatory authority over mobile sources, the 1988 California Clean Air Act empowered them to initiate transportation control measures (TCMs) and mobile source measures (MSMs) to minimize pollution from cars, trucks, and other mobile sources. These TCMs and MSMs can be implemented, among other means, through grant programs administered by the Air District.

Transportation Fund for Clean Air

The California Legislature passed Assembly Bill 434 in 1991, which authorized the Air District to levy a surcharge on all motor vehicles registered in the Bay Area in order to reduce emissions from these vehicles. To receive and allocate these revenues, the Air District established the Transportation Fund for Clean Air (TFCA).

TFCA revenues are distributed through two main channels. About 40 percent of the TFCA revenues is allocated directly to the region's nine county congestion management agencies for disbursement to eligible projects, as the TFCA County Program Manager Fund. The Air District distributes most of the remaining 60 percent, known as the TFCA Regional Fund, to eligible projects and programs that reduce motor vehicle emissions. A portion of the 60 percent of the TFCA Regional Fund revenues is also used to fund several mobile-source emission-reduction programs directly administered by the Air District.

PROGRESS IS: *funding projects that make the air healthier for children.*

A PLANNER IN THE AIR DISTRICT'S OUTREACH AND INCENTIVES DIVISION, ANDREA IDENTIFIES GRANT PROJECTS THAT WILL REDUCE MOTOR VEHICLE EMISSIONS IN OUR COMMUNITIES. MOTOR VEHICLES ARE THE MAJOR SOURCE OF AIR POLLUTION IN THE BAY AREA.

010
Outreach and Incentives

NAME:
Andrea Gordon

TITLE:
Senior Environmental Planner

2005
1995
1985
1983 > The Air District adopts the first controls in the nation on semiconductor manufacturing.
1975
1965
1955

PROVIDING INCENTIVES > CONT.

In November 2005, the Air District's Board of Directors approved grant awards for a total of $18.1 million from the TFCA Regional Fund. These funds were allocated to 56 projects and programs, designed, among other things, to reduce diesel emissions, to enable the purchase of clean air vehicles, to provide shuttle and feeder bus service to train stations, to encourage ride-sharing, and to construct bicycle paths or racks.

Programs administered by the Air District that are funded by TFCA revenues include the following:

The Vehicle Buy Back Program

The Vehicle Buy Back (VBB) Program pays owners $650 to turn in a 1985 or older light-duty vehicle for scrapping. Older vehicles have outdated technology and emission controls, and they tend to pollute much more than newer cars. Since its inception in June 1996 through April 30, 2006, the VBB Program has purchased and scrapped 29,828 vehicles. A total of 6,315 cars were scrapped in 2005. Total emission reductions through fiscal year 2004/05 are estimated to be 3,849 tons: including 2,394 tons of reactive organic gases (ROG), 1,203 tons of oxides of nitrogen (NOx), and 252 tons of particulate matter (PM).

1995

1985 < 1985 Ambient air toxics monitoring begins at five sites.

The Vehicle Incentive Program

The Vehicle Incentive Program (VIP) provides incentives to public agencies to defray the cost of purchasing light-duty alternative-fuel vehicles (with a gross weight of 10,000 pounds or less). The Air District awarded 30 VIP grants in 2005, totaling $499,000. The total estimated emissions reduction for these grants is 20.4 tons of air pollution (ozone precursors and PM).

Solid Waste Collection Vehicles Incentive Program

In partnership with the Metropolitan Transportation Commission (MTC), the Air District developed and implemented this one-time only program, which provided, on a first-come first-served basis, incentive funds to both public and private solid waste collection vehicle fleets for installing control technology to reduce NOx emissions. Grants were awarded to 20 cities in April 2005, totaling over $3 million to pay for the incremental cost of 20 new natural gas refuse trucks and the installation of diesel emission control systems on 218 refuse trucks. These emission control systems reduce PM by at least 85 percent and NOx by at least 25 percent.

The Carl Moyer Program

The Carl Moyer Program is a state-funded incentive program created by the California Legislature in 1998 to reduce emissions from heavy-duty diesel engines. Managed locally by the Air District, the Carl Moyer Program provides grants for installing new cleaner engines or emission-control devices in heavy-duty equipment, such as trucks and buses, marine vessels, construction equipment, locomotives, and agricultural irrigation pumps.

In 2005, the Air District awarded $1.65 million in Carl Moyer Program funds to nine projects. Carl Moyer Program grants awarded in 2005 funded the replacement of old engines in seven earth-moving machines used in heavy construction, four tugboats, four agricultural pumps, and one locomotive.

Other Motor Vehicle Incentive Programs

The **Lower-Emission School Bus Program** provides financial incentives for school districts and their contractors to replace or retrofit older diesel-fueled school buses. Replacing older buses that have dirtier engines reduces the exposure of school children to harmful emissions of diesel PM, and also reduces emissions of NOx and non-methane hydrocarbons that contribute to smog. In 2005, approximately $1.2 million was awarded to five Bay Area school districts and one private contractor for the purchase of eight new school buses and the retrofit of 36 additional buses.

In the past few years, the Air District developed a program for the **retrofit of heavy-duty diesel engines** operated by Bay Area government fleets. This program provided funding on a first-come first-served basis to cover the installation of CARB-approved emission control devices. Since inception of the program, all $2 million dollars have been allocated for the implementation of 21 projects.

Miscellaneous Incentive Programs

In addition to its substantial lineup of grant programs designed to reduce emissions from motor vehicles, the Air District offers two smaller-scale incentive programs to reduce pollution from household activities.

Lawn Mower Buyback Program

The Lawn Mower Buyback program offers the public the opportunity to scrap an old gasoline mower and purchase an electric mower at a substantial discount. In the spring and summer, gasoline-powered lawn mowers create an estimated nine tons of air pollution every day in the Bay Area. In May of 2005, lawn mower exchange events were held in Alameda, Contra Costa, and Santa Clara counties. A $100 rebate was offered and 500 mowers were exchanged.

Woodstove Rebate Program

The Air District's Santa Clara Woodstove Rebate Program, sponsored by Silicon Valley Power to mitigate emissions from its electrical power generating facility, offers rebates to Santa Clara County residents who convert their wood-burning fireplaces and woodstoves to natural gas models. Wood smoke creates up to one-third of the PM pollution in winter months. In 2005, almost 700 woodstoves and fireplaces were converted to natural gas by participants in this program.

2005

1995

1989 > The Air District adopts the first regulations in the nation limiting emissions from commercial bakeries and marine vessel loading.

1985

1975

1965

1955

08 PROMOTING CLEAN AIR CHOICES

1995

1985

< 1990
The Air District adopts the first rule in the nation limiting emissions from aerosol spray products.

< 1991
The Bay Area 1991 Clean Air Plan is the first state-mandated ozone reduction plan adopted in California. The "Spare the Air" program is launched.

Air quality is essentially a product of individual actions.

Everyday activities, such as driving, painting, mowing the lawn, burning wood in the fireplace—and even using aerosol hairsprays and deodorants—add substantial amounts of pollution to the air we all breathe.

Many of these activities fall outside the Air District's regulatory jurisdiction. Instead, to encourage Bay Area residents to "spare the air," the Air District promotes individual clean air choices through advertising and public relations campaigns as well as public meetings and events.

Spare the Air

Since its inception in 1991, the *Spare the Air* program has been one of the Air District's most effective and widely recognized public outreach campaigns. During the summer months, the Air District issues *Spare the Air* advisories on days when ozone pollution is forecast to become a problem. On these *Spare the Air* days, the Air District urges residents to cut back on any activities that cause pollution. People sensitive to pollution, such as children and the elderly, are cautioned to limit outdoor exposure.

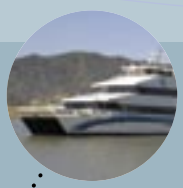
Spare the Air advisories and daily air quality forecasts are posted on the www.sparetheair.org website, recorded on the 1 (800) HELP AIR telephone line, announced in local newspapers, and broadcast on local TV and radio stations. Bay Area residents can also sign up on the website to be notified by automatic e-mail AirAlerts.

By the end of the summer of 2005, an all-time high of 31,200 residents had signed up for AirAlerts, a 30 percent increase from the previous year. In addition, some 578 schools receive AirAlert e-mails. More than 1,925 businesses take part in an employer *Spare the Air* program and receive free tools to help them educate almost one million employees about pollution prevention.

Surveys conducted in 2005 indicated that over 80 percent of Bay Area residents are aware of the *Spare the Air* program, with 80 percent of these respondents having a favorable opinion. Public recognition has been growing year by year.

In the summer of 2005 the Air District teamed up with the Metropolitan Transportation Commission (MTC), Bay Area Rapid Transit (BART), and—for the first time—19 other local transit agencies to offer free morning commutes for the first five weekday *Spare the Air* days. According to MTC, the estimated vehicle miles reduced by commuters taking advantage of the free morning commute offered on July 26 was about 64,270 miles.

As part of the free commute program, 15 buses and seven BART cars were covered in colorful *Spare the Air* wraps. Media coverage ensuing from the July 26 *Spare the Air* day was among the heaviest the Air District has received, and included a front-page feature article in the *San Francisco Chronicle.*



1992 > The Transportation Fund for Clean Air is authorized by AB 434.

1992 > The Air District's Compliance Assistance Program is established to help small businesses.

2005
1995
1985
1975
1965
1955

PROMOTING CLEAN AIR CHOICES > CONT.

1995

< 1993 The Air District adopts the first Title V permit program in the nation for major facilities.

1985

Spare the Air Tonight

The *Spare the Air Tonight* program operates during the winter, when particulate pollution from woodstoves and fireplaces is a major health concern. The Air District issues *Spare the Air Tonight* advisories when winter air quality reaches unhealthy levels, and asks residents to forego wood burning on those evenings. Tips for reducing wood smoke are available in printed form and on the www.sparetheair.org website.

Air District staff participated in the filming of several TV segments that aired during the 2005 winter season. These included a CBS Channel 5 Health Watch episode concerning the dangers of wood smoke, an episode of "Encuentro en la Bahia" on Univision, and an interview about wintertime pollution on Chinese KTSF 26.

SPARE AIR TONIGHT

Model Wood Smoke Ordinance

In 1998, the District developed a model wood smoke ordinance for adoption by cities and counties wishing to regulate residential fireplace and woodstove pollution. In 2005, six cities and two counties adopted some version of the ordinance, bringing the total to 41 cities and eight counties in the greater Bay Area.

Smoking Vehicle Program

The Air District initiated its Smoking Vehicle Program in 1992 to decrease the number of vehicles spewing visible tailpipe exhaust on the region's roads and highways. Residents who spot a smoking vehicle can report the license plate by phone to 1-800-EXHAUST or online at www.800exhaust.org. Vehicle owners will be notified that any car, truck, or bus emitting visible exhaust for more than 10 seconds may be cited and fined by local or state law enforcement. Owners will be encouraged to have their vehicles checked and, if necessary, tuned or repaired. In 2005, a total of 21,543 smoking vehicles were reported.

Clean Air Champions Awards

Each year, the Air District honors a few outstanding citizens who demonstrate a consistent and inspirational commitment to improving air quality. The winners in 2005 were **Steven Moss**, founder of the San Francisco Power Cooperative; **Jannat A. Muhammad**, a longtime volunteer and community health activist in Richmond; **Joan Spencer**, a Gilroy respiratory therapist and clean air advocate; and **Maria Luz Torre**, whose Asthma Relief for Kids (ARK) team worked with the San Francisco School Board to set clean air standards for the school district's 250 school buses.

Special Occasions

50th Anniversary

In 2005, the Air District celebrated its 50th Anniversary with a series of commemorative outreach materials and events. A ten-minute video, "Sparing the Air for a Healthier Future," was developed and streamed from the Air District's www.baaqmd.gov website, which also featured an extensive "50th Anniversary Historical Timeline" section with archival photos. The District developed a publication entitled *The Clean Air Journey*, and on November 16 the *Contra Costa Times* ran a front-page article about the Air District's history.

On June 20, the Air District celebrated its 50th Anniversary with a formal Air Quality Symposium, featuring an illustrious array of speakers including former U.S. EPA Administrator, Christine Todd Whitman; ex-San Francisco Mayor Willie L. Brown, Jr.; California Business, Transportation, and Housing Secretary Sunne McPeak; and world-renowed climate change researcher, Dr. Stephen Schneider of Stanford University.

World Environment Day

The Air District also participated in the first United Nations World Environment Day celebration held in the United States, which took place on June 1 in San Francisco. On that day, the Air District organized an event featuring a press conference, demonstrations of fuel-cell car technologies and air quality monitoring equipment, and a series of talks entitled the "Top Ten Ways to Reduce Air Pollution," illustrating various Air District programs.

Legislative Achievements

Many significant air quality measures were introduced in the California Legislature in 2005, and the Air District took positions on 28 of them.

It was a very successful year, considering that most bills that were bad for air quality failed to be enacted into law. The Air District took "oppose" or "oppose unless amended" positions on seven bills and expressed concerns with an additional three measures. Of these ten measures, nine failed to pass out of the Legislature, and the last was signed into law, but only after the District successfully negotiated amendments that removed its opposition.

The Air District sponsored one bill: AB 694 (Chan). The statutory language governing the region's Transportation Fund for Clean Air (TFCA) had begun to limit the effectiveness of the program, and the District's primary legislative goal for the year was to improve this language. Governor Schwarzenegger signed the bill into law October 6.

Last year, a number of measures supported by the Air District that would have improved air quality were defeated, primarily in the Assembly. Still, a number of measures the District supported did become law. These included:

- SB 771 (Simitian), which bans ship incineration within 3 miles of shore;
- AB 1229 (Nation), which adds greenhouse gas emissions data to new car air pollution labels; and
- AB 721, which provides loan guarantees to small-business chrome platers to cut emissions

09 WORKING WITH OUR COMMUNITIES

2005

1995

< 1996 The Air District initiates its Vehicle Buyback Program to buy and scrap older model automobiles.

Reaching out to the Bay Area's many diverse communities is one of the Air District's primary tasks.

The Air District is committed to adopting rules and policies that are fair and equitable to all Bay Area residents. The District recognizes that each of the Bay Area's nine counties is made up of smaller neighborhoods and communities, each with unique air quality concerns. It is the District's job to ensure that community-level air pollution problems are not overshadowed by larger-scale policy issues.

Community Outreach

As part of our community outreach program, the Air District facilitates meetings for local residents to share and receive information about air quality-related topics. In these community meetings, the Air District might ask for input on impending regulations, clean air plans and strategies, or other issues of interest to a particular community.

In 2005, community meetings were held to gather input on the *2005 Ozone Strategy* and *PM Implementation Schedule*, and to share ideas about reducing diesel PM pollution in West Oakland. Four workshops were held to publicize and solicit applications for the Carl Moyer Grant Program—in San Francisco, West Oakland, Vallejo, and San Jose. Public workshops were held to discuss several proposed new rules, including those relating to wastewater treatment systems, marine vessel loading, and pressure relief devices.

Air District staff also interact directly with residents by participating in public events around the Bay Area, such as county and community fairs. The Air District's speakers bureau is available to provide air quality presentations to various civic, educational, or community groups. In addition, the District sends informational materials to schools, libraries, civic and neighborhood groups around the Bay Area. Many of these materials have been translated into Spanish, Cantonese, or other languages spoken in the local community.

In 2005, the Air District held 11 community meetings on air quality topics and participated in 52 fairs and community-sponsored events.

Community Resource Teams

The Air District also sponsors special "resource teams" made up of representatives from the public and private sectors. These operate at a grass-roots level to increase awareness of air quality problems and to engender potential solutions in the communities they serve.

In 2005, the six Bay Area *Spare the Air* Resource Teams engaged in a variety of projects, such as working to reduce traffic congestion at schools, offering incentives for employers who wish to start carpools to their worksites, and developing car-free tourism projects in Napa and San Francisco. In 2005, the first *Great Race for Clean Air* encouraged Bay Area residents to use four modes of alternative transportation in four weeks.

The Air District also reaches out to economically disadvantaged Bay Area communities through its two Environmental Justice (EJ) Resource Teams. These EJ resource teams analyze local air quality issues and develop solutions. Most importantly, they foster a positive, productive working relationship between concerned citizens, local government, and the Air District.

In 2005, the West Contra Costa County Air Quality Resource Team and the East Palo Alto Resource Team met every other month to work on air quality improvement projects. These included holding a Diesel PM Retrofit workshop in Richmond to encourage refuse haulers and railroads to apply for Carl Moyer Program funds, and meeting with the Laidlaw Bus Company to discuss the need to retrofit diesel buses in the North Richmond School District.

Youth Outreach

The Air District believes delivering the clean air message to future generations is a vital responsibility. In 2005, the Air District presented 114 performances of *Smogzilla*, an entertaining theatrical production about the causes and effects of air pollution. Six Clean Air Challenge Curriculum educational workshops were also held to train 130 classroom teachers.

Port of Oakland

In 2005, the environmental impacts of goods movement activities on communities near ports and railroad stations became a major state and local

PROGRESS IS: WORKING

concern. The Air District participated in a series of initiatives designed to mitigate pollution in the Port of Oakland's neighboring West Oakland community. Air District staff were integrally involved in efforts to enforce the state's new anti-idling rules for diesel trucks that service the Port. Several workshops were held to explain these new regulations to local residents.

CARE Program

In 2005, the CARE Program continued to focus the technical expertise of Air District staff on an analysis of toxic emissions, including diesel PM, in communities across the Bay Area. Significant progress was made in 2005, but it is anticipated that this sophisticated investigation of the impacts of toxics on a neighborhood scale will take several years to complete.

2005

1998 > The Model Wood-Smoke Ordinance regulates installation of woodburning appliances to reduce particulate emissions.

1995

1985

1975

1965

1955

AS THE AIR DISTRICT'S COMMUNITY OUTREACH COORDINATOR, DARRELL ACTS AS A LIAISON BETWEEN THE DISTRICT AND THE VARIOUS COMMUNITIES IT SERVES. COMMUNITY PARTICIPATION IS CRUCIAL TO PROTECTING PUBLIC HEALTH AND PROMOTING A HEALTHY ENVIRONMENT.

WITH COMMUNITIES TO ADDRESS THEIR AIR QUALITY CONCERNS.

NAME: Darrell Waller

TITLE: Public Information Officer

09 Outreach and Incentives

10 ANTICIPATING THE FUTURE

2005

1995

< 1999
The Air District begins monitoring $PM_{2.5}$ at several monitoring stations in the Bay Area.

< 1999
The Air District begins taking grant applications under the Carl Moyer Program to reduce diesel PM.

When it comes to air quality, the future is now.

In 2005, the Air District's 50th Anniversary provided an opportunity for the agency to reflect on its past, celebrate its accomplishments, and, most importantly, begin to address future air quality challenges.

Air is substantially cleaner than it was 50 years ago. In 2005, the Bay Area met federal standards for ground-level ozone on all but one day and met federal PM standards throughout the year. Last year, the Bay Area had the best air quality record of all of California's major urban areas.

But serious challenges lie ahead. Consolidating and advancing our air quality gains will be critical. Although tremendous progress has been made, the region still remains officially out of attainment of the federal and state ozone standards, as well as the state PM standards. Reducing diesel emissions is an overriding concern for our local communities.

Over half of the smog-forming emissions in the Bay Area come from mobile sources like cars, trucks, buses, and construction equipment, and these numbers are expected to rise considerably with population growth. The Bay Area's population is forecast to increase 29 percent by the year 2030, to 8.8 million. Even with anticipated gains in transit ridership, the region is projected to experience a minimum of 35 percent—or 7.5 million—more vehicle trips a year.

Climate Change

In the years to come, the Bay Area's continually increasing population will have to contend with the local effects of global climate change. Temperatures on the Earth's surface and in the ocean are rising, and most scientists acknowledge that man-made emissions of greenhouse gases, such as carbon dioxide, are at least partly to blame. Warmer temperatures will also cause an increase in harmful air emissions, as more fuel will evaporate, engines will work harder, and higher demand for electricity for cooling will result in increased pollution from power plants.

On June 1, 2005, the Air District's Board of Directors chose to meet these problems head-on by adopting a resolution establishing the Air District's Climate Protection Program. A central element of the program involves the integration of climate protection activities into the Air District's roster of existing programs, many of which address greenhouse gases alongside traditional pollutants. The Climate Protection Program will also feature outreach and education, data collection and analysis, technical assistance to local governments and other stakeholders, and support for local efforts to reduce greenhouse gas emissions.

2005

2001 > The Air District rolls out its Lower-Emission School Bus Program.

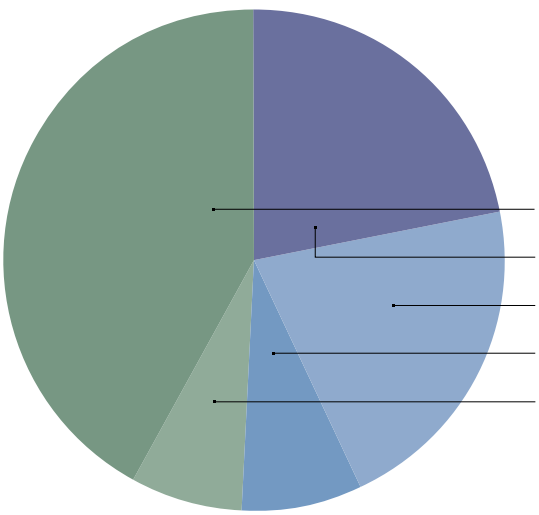
1995

1985

1975

1965

1955



California Sources of Greenhouse Gases

Source: California Energy Commission 2005

42% Trasportation

22 Industrial

21 Electric Power

8 Commercial and Residential

7 Agriculture and Forestry

ANTICIPATING THE FUTURE > CONT.

2005

< 2004
The Air District embarks on an ambitious Community Air Risk Evaluation (CARE) Program to analyze the cumulative impacts of toxic air pollutants.

< 2004
The year ends as the cleanest on record for air quality in the Bay Area since 1962.

1995

In 2005, the Air District participated in Sustainable Silicon Valley, a collaborative effort on the part of local government, businesses, and non-governmental entities to identify and address resources for counteracting the effects of climate change in the Valley. The Air District also joined the California Climate Action Registry, developed an in-house emissions inventory, and supported an effort to compile a greenhouse gas emission inventory in Sonoma County, which has set ambitious climate change mitigation goals.

Throughout the year, the Air District offered public support for climate protection efforts. The District co-sponsored the annual California Climate Change Registry conference in Berkeley between April 18-20. At this event, the Air District's Executive Officer moderated a panel discussion on Bay Area climate change activities. As part of the World Environment Day opening ceremonies, the District co-sponsored an announcement by Governor Schwarzenegger establishing a statewide climate change initiative. And the Air District's 50th Anniversary Symposium featured extensive discussion of the potential air quality consequences of climate change in the Bay Area.

In coming years, the Air District plans to address climate change in a number of innovative ways. In 2006, the agency will host a Bay Area-wide Climate Protection Summit. The District is developing a Bay Area greenhouse-gas emission inventory, and will fund a comprehensive study and evaluation of greenhouse-gas emission-control technologies. The *2005 Ozone Strategy* included control measures that will be implemented to promote energy efficiency, and the Air District will evaluate and adopt measures to reduce electricity and fuel consumption associated with its internal activities. The agency will also work with schools to identify their typical sources of greenhouse gas emissions, develop strategies to reduce their carbon footprints, and provide students with educational opportunities to learn about climate protection.

Clean Air Choices

Cars and other motor vehicles are not only the largest contributors of greenhouse gases in the Bay Area, they are the largest source of smog-forming emissions as well. While there is still work to be done to reduce commercial and industrial emissions, government agencies like the Air District cannot make continued air quality progress unless individual members of the public actively participate in efforts to fight pollution.

The Air District's outreach programs will continue to develop and refine messages aimed at individual consumers. There are a number of things that Bay Area residents can do to reduce air pollution. Most of these take little effort, and collectively can make a big impact on energy consumption and air quality, such as using public transportation, buying the cleanest car, or purchasing "green" appliances that use less power.

Alternative Fuels

The Air District actively encourages the use of advanced technology, low-emission vehicles. Grant programs that help fund the purchase of alternative-fuel light and heavy-duty vehicles are expected to expand over the next few years, both in terms of the amount of funding available and the availability of incentives to the private sector. In 2005, the Air District took part in an alternative-fuel demonstration project by adding two Daimler Chrysler hydrogen fuel-cell cars to its fleet to gather data on their performance. The Air District is also supporting a hydrogen-fueled bus demonstration project involving several local transit agencies.

Bay Area Communities

As the Air District succeeds in diminishing the broader regional impacts of pollutants like ozone, new opportunities will arise for the agency to focus on air quality conditions in local communities. The Air District's CARE program has at its core an effort to determine the impacts of toxic emissions in communities throughout the Bay Area. And the District will continue to promote its grant programs as a valuable resource for communities working to reduce diesel exhaust and other mobile source emissions. Additional resources will also be devoted to addressing the impacts of $PM_{2.5}$ and wood smoke pollution—in some areas, wood burning can make up the bulk of particulate emissions fouling the air on winter evenings.

Asthma is another growing public health concern for communities across the Bay Area. Nearly 12 percent of Californians have asthma, with the greatest incidence experienced by children 12 to 17 years old. Asthma is affected not only by outdoor pollution—with exposure to freeway traffic a possible link to increased asthma rates—but also by air pollution inside people's houses. Pollutants released indoors are 1,000 times more likely to be inhaled than if they were released outdoors, and most people spend the vast majority of their time inside—with California adults on average spending 87 percent of their time indoors and children only slightly less. Many sources of indoor air pollution are known to trigger asthma and cause additional health problems, sources such as cigarette smoke, improperly vented gas stoves, off-gassing building materials and furnishings, mold, and asbestos. In the years to come, indoor air pollution will become an increasingly urgent issue for air agencies all over California.

Looking ahead, the Air District envisions a beautiful, vibrant, and healthy Bay Area. But there are significant challenges to be met. Energy consumption and driving miles will increase substantially with population and economic growth. And when these factors are combined with the local effects of climate change, there is potential for a tremendous upsurge in air pollution. The region's ability to avoid such a decline in air quality will be largely dependent on a major shift in public perception, toward a widespread acceptance of personal responsibility for clean air.

The Air District is working relentlessly to ensure that Bay Area residents have healthy air to breathe, well into the future. But we cannot succeed without the full participation of all the diverse communities in our nine counties. Everyone who lives in the Bay Area has a stake in preserving our quality of life.

As the saying goes, on a clear day you can see forever. With your help, we can make sure that in another 50 years there will be more clear days than ever.

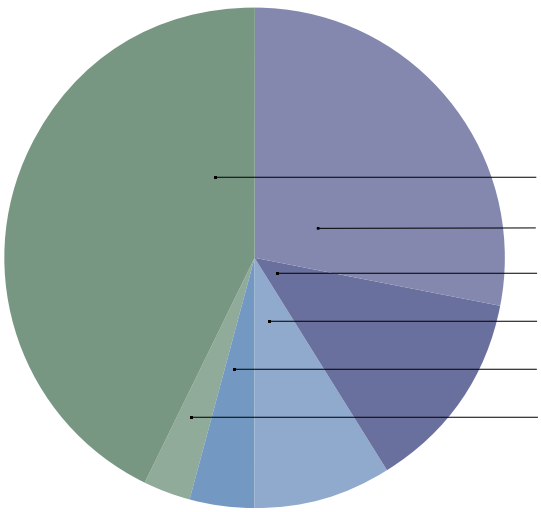
2005 > Free morning commute offered on Bay Area transit on Spare the Air days.

2005 > The Air District adopts the first regulation in the nation limiting emissions from refinery flares.

2005
1995
1985
1975
1965
1955

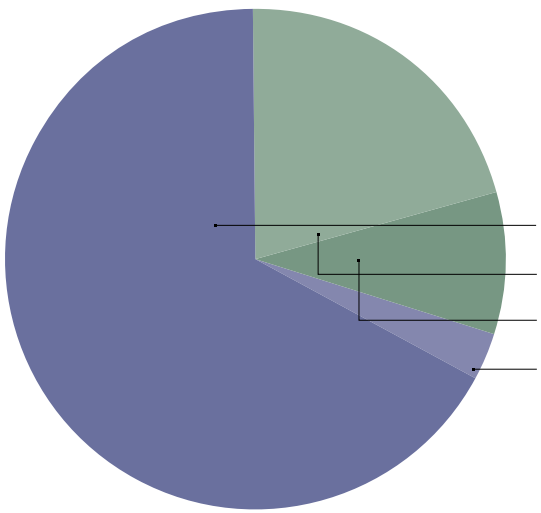
FUNDING OUR PROGRAMS

The Air District's budget is based on funding the operations and programs needed to attain and maintain specific clean air goals.



Revenues and Transfers

43% Permit-related Revenue
28 County Property Taxes
13 Transportation Fund for Clean Air
9 Federal Grants
4 State & Other Grants
3 Transfers & Other Revenue



Program Expenditures

67% Salaries & Related Costs
21 Professional Services
9 Supplies
3 Capital Projects

Board of Directors - 2005

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Nate Miley
Shelia Young

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Technical Services

Jeff McKay
Finance, Administration and Information Systems

Kelly Wee
Compliance and Enforcement

Contact Information

Websites	www.baaqmd.gov www.spareheair.org
Public Information	(415) 749-4900
General Business	(415) 771-6000
Compliance Assistance	(415) 749-4999
Engineering Services	(415) 749-4990
Vehicle Buy Back Program	1 (888) 690-2274
Daily Air Quality Forecasts - Spare the Air Advisories - Agricultural Burn Days - Informational Materials	1 (800) HELP AIR (435-7247)
Report Smoking Vehicles	1 (800) EXHAUST (394-2878) www.800exhaust.org
Air Pollution Complaints	1 (800) 334-ODOR (6367)

Director, Outreach and Incentives	Jack M. Colbourn
Writer/Editor	Aaron Richardson
Project Coordinator	Ralph Borrmann
Design	Gee + Chung Design, San Francisco
Photography	Sharon Beals
Printer	ColorGraphics, San Francisco

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