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MEMORANDUM

TO: **Linda Adams, Secretary**
California Environmental Protection Agency

FROM: **Scott Reid, Cabinet Secretary**

C/O: **David Knudsen**
Cabinet Affairs

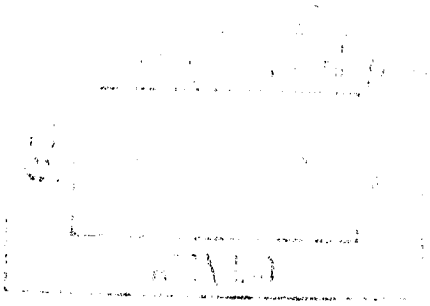
Date: 9/17/2010

Subj: Approval of 2009 Annual Report in the Air Resources Board Expenditure of Non-vehicular Source Fees for Fiscal Year 2008-2009

The attached Governor's Office Action Request is being returned to you APPROVED by Cabinet.

Review enclosed Department of Finance Memorandum.

Please call the Cabinet Office at (916)445-6131 if you have any questions or concerns. Thank you.



DEPARTMENT OF **INTERNAL MEMORANDUM**

FINANCE

Date: June 22, 2010

To: Fred Klass

From: Karen Finn

Subject: GOAR CalEPA 297: 2009 Annual Legislative Report on Air Resources Board Non-vehicular Source Fees Expenditures for Fiscal Year 2008-09

Recommendation: Approve the report for release to the Legislature.

Time Factor: Under existing law, this report was due to the Legislature January 1, 2010, and is overdue for release.

Summary: Health and Safety Code Section 39612 authorizes the Air Resources Board (Air Board) to collect fees from non-vehicular (i.e., stationary) air pollution sources, and requires an annual report to the Legislature providing information on the expenditure of the fees collected. The report summarizes the expenditure of $20 million in non-vehicular source fees in the 2008-09 fiscal year. This report does not include any policy or fiscal recommendations to the Legislature.

Discussion: The report reflects the expenditure of non-vehicular source fees in the program areas of enforcement, monitoring and laboratory work, research, technical support and planning, and rule development and oversight. The report includes information on the status of the following statutorily designated priority activities:

1. Identifying air quality-related indicators that may be used to measure or estimate progress in the attainment of state ambient air standards.
2. Establishing a uniform methodology for assessing exposure to air pollutants.
3. Updating the emission inventory including emissions that cause or contribute to the nonattainment of federal ambient air standards.
4. Identifying, assessing, and establishing the mitigation requirements for the effects of inter-basin transport of air pollutants.
5. Updating the state board's guidance to districts on ranking control measures for stationary sources based upon the cost-effectiveness of those measures in reducing air pollution.

Of the $20 million in fee revenues collected from non-vehicular sources in 2008-09, approximately 34 percent ($6.6 million) funded rule development and district oversight. Expenditures for technical support and air quality planning ($4.4 million), as well as air monitoring and laboratory analysis ($4.3 million) each represented 22 percent of the total. Enforcement ($2.3 million) and research ($2.4 million) each represented 11 percent of the expenditures addressed in this report.

Cal/EPA Report # 7105

PROCESSED BY CABINET
JUN 15 2010
CalEPA 297

GOVERNOR'S OFFICE ACTION REQUEST
REQUEST FOR REPORT APPROVAL

TO: Scott Reid
Cabinet Secretary

FROM: Linda S. Adams
Secretary for Environmental Protection
California Environmental Protection Agency

PREPARED BY: Mary D. Nichols
Chairman
Air Resources Board
Telephone: (916) 322-5840
Fax: (916) 327-5748
Email: mnichols@arb.ca.gov

DATE: June 3, 2010

SUBJECT: **APPROVAL OF 2009 ANNUAL REPORT ON THE AIR RESOURCES BOARD EXPENDITURE OF NONVEHICULAR SOURCE FEES FOR FISCAL YEAR 2008-2009**

DUE TO LEGISLATURE: On or before January 1 of each year.

REPORT PRIORITY: Routine

REPORT TITLE: 2009 Annual Report on the Air Resources Board (ARB) Expenditure of Nonvehicular Source Fees for Fiscal Year 2008-2009

AUTHORITY/MANDATE: Health and Safety Code Section 39612

FREQUENCY: Annually

POLICY ISSUES ADDRESSED: Section 39612 of the Health and Safety Code (H&SC), as amended in 2003, authorizes ARB to collect fees from nonvehicular (i.e., stationary) sources of air pollution, and requires an annual report to the Legislature on the expenditure of the fees. Section 39613 of the H&SC authorizes ARB to collect fees

SUBJECT: **APPROVAL OF 2009 ANNUAL REPORT ON THE AIR RESOURCES BOARD EXPENDITURE OF NONVEHICULAR SOURCE FEES FOR FISCAL YEAR 2008-2009**

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from manufacturers of consumer products and architectural coatings. The ARB, in 2003 and 2004, approved regulations that establish an administrative procedure to collect the amount authorized by the Legislature each fiscal year from stationary sources emitting 250 tons or more per year of any nonattainment pollutant or its precursors and from manufacturers of consumer products or architectural coatings whose total sales result in the emission of 250 or more tons per year of volatile organic compounds.

This 2009 annual report explains the expenditure of the $20 million in fees collected during fiscal year 2008-2009. In general, the fees are used to develop and enforce emission reduction strategies for nonvehicular sources (including consumer products and architectural coatings) and to develop the technical information and air quality plans necessary to address these sources. To reflect these program expenditures, the report discusses five major program areas: enforcement, monitoring and laboratory, research, technical support and planning, and rule development and oversight. In addition, the report discusses the status of activities related to five specific areas outlined in H&SC Section 39612.

REPORT RECOMMENDATIONS: This report is informational in nature. Therefore, this report does not contain recommendations for the Legislature.

SUBJECT: **APPROVAL OF 2009 ANNUAL REPORT ON THE AIR RESOURCES BOARD EXPENDITURE OF NONVEHICULAR SOURCE FEES FOR FISCAL YEAR 2008-2009**

APPROVED:

Director/Department — Date: April 13, 2010

Secretary/Agency — Date: 6/8/10

SUBJECT: **APPROVAL OF 2009 ANNUAL REPORT ON THE AIR RESOURCES BOARD EXPENDITURE OF NONVEHICULAR SOURCE FEES FOR FISCAL YEAR 2008-2009**

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bcc: Via email:

Carolyn Baker, Cal/EPA
Pam Oto, Cal/EPA
James N. Goldstene, EO
Bob Fletcher, EO
Lynn Terry, EO
Rob Oglesby, Legislative Office
Barbara Fry, SSD
Janette Brooks, SSD
Linda C. Murchison, PTSD
Richard Bode, PTSD
Gabe Ruiz, PTSD
Andy Delao, PTSD

Via hard copy:

CHAIR Chron
EO Chron
PTSD Chron
EIB Chron

EO Assignment #15307 PTSD #7591

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2009 Annual Report to the Legislature on the Air Resources Board Expenditure of Nonvehicular Source Fees for Fiscal Year 2008-2009

2009 Annual Report on the Air Resources Board Expenditure of Nonvehicular Source Fees for Fiscal Year 2008-2009

Introduction

Health and Safety Code (H&SC) sections 39612 and 39613 authorize the Air Resources Board (ARB or Board) to assess fees on nonvehicular sources in order to recover the costs of State programs related to these sources. In the fiscal year (FY) 2008-2009 budget, the Legislature authorized the ARB to collect $20 million in fees from facilities and the manufacturers of consumer products and architectural coatings. As required by H&SC section 39612(g), this report to the Governor and the Legislature provides information on the expenditure of the fees collected and a status report on the implementation of programs funded pursuant to H&SC section 39612(c).

Background

The Legislature enacted H&SC section 39612 as part of the California Clean Air Act of 1988 (the CCAA, chapter 1568, Statutes 1988). The Act requires attainment of State ambient air quality standards by the earliest practicable date. As part of that mandate, the CCAA requires the ARB and the air pollution control and air quality management districts (districts) to take various actions to reduce air pollution from motor vehicles, industrial facilities, and other sources of emissions.

As originally enacted, section 39612 empowered the ARB to assess fees on nonvehicular sources (i.e., facilities) that were authorized by district permits to emit 500 tons or more per year of any nonattainment pollutant or its precursors. In 1989, the Board approved the California Clean Air Act Nonvehicular Source Fee Regulation. The original regulation included the fee rate and amounts to be remitted to the ARB by the districts for the first year of the program, fiscal year 1989-90. In subsequent years, the Board approved amendments to the fee regulation identifying the amount of fees to be collected by each district for the following fiscal year. To streamline the process, in 1998 the Board approved amendments that established a process whereby the ARB Executive Officer assesses the fees administratively.

In 2003, the Legislature enacted Assembly Bill (AB) 10X (Chapter 1X, Statutes 2003), which amended section 39612 and added section 39613 to the H&SC. AB 10X made a number of changes to section 39612, including: (1) increasing the cap on stationary source permit fees from $3 million to $13 million for FY 2003-2004, and allowing the fees to be adjusted annually thereafter for inflation; (2) expanding the universe of facilities subject to the fees by specifying that the fees are to be collected from facilities authorized by district permits to emit 250 tons (instead of the previous 500 tons) or more per year of any nonattainment pollutant or its precursors; and (3) authorizing ARB to collect the fees directly from all sources subject to the fees. In addition, new section 39613 of the H&SC authorized ARB for the first time to assess fees on manufacturers of consumer products and architectural coatings sold in California. The fees are assessed on those manufacturers whose total sales of consumer products or architectural

coatings will result in the emission in California of 250 tons or more per year of volatile organic compounds (VOC). ARB must use these fees solely to mitigate or reduce air pollution in the State created by consumer products and architectural coatings. In July 2003, the Board approved a regulation to collect the fees authorized by AB 10X. The full text version of the regulation can be found on ARB's website at http://www.arb.ca.gov/regact/feereg03/feereg03.htm.

For FY 2003-2004, the Legislature authorized ARB to collect $17.4 million in fees from facilities and consumer product and architectural coating manufacturers. In 2004, the Legislature authorized the ARB to assess an additional $2.6 million in fees for a total of $20 million for FY 2004-2005. In November 2004, the Board approved amendments to the fee regulation adopted in July 2003 to establish a procedure to collect the additional $2.6 million for FY 2004-2005 from facilities. The amendments also provided for collection from facilities of any legislatively-approved fees in fiscal years beyond 2004-2005 that are in excess of $17.4 million. The full text of the revised regulation can be found on the ARB's website at http://www.arb.ca.gov/regact/feereg04/feereg04.htm.

H&SC section 39612(g) states: "On or before January 1 of each year, the Board shall report to the Governor and the Legislature on the expenditure of permit fees collected pursuant to this section and section 39613. The report shall include a status of the programs prioritized for funding pursuant to subdivision (c)." As required by section 39612(g), ARB staff has prepared this report to the Governor and the Legislature which describes the expenditures of the fees collected in FY 2008-2009.

Fiscal Year 2008-2009 Expenditures

The total fee expenditures in five major program categories for FY 2008-2009 are shown in Table 1 below. Following Table 1 are descriptions of the specific activities that were funded by the fees.

Table 1
Expenditure of Fees for Fiscal Year 2008-2009

Activity	Expenditure
Enforcement	$2,288,000
Air Monitoring and Laboratory Analysis	$4,348,000
Research	$2,368,000
Technical Support and Air Quality Planning	$4,359,000
Rule Development and District Oversight	$6,637,000
Total Expenditures	$20,000,000

Specific Activities Related to Consumer Products and Architectural Coatings

Enforcement

During FY 2008-2009, ARB staff conducted inspections statewide at a variety of retail stores, commercial businesses and internet sites, resulting in the collection

of approximately 1,660 samples of household and institutional consumer products. After an initial evaluation to determine compliance with the administrative requirements of the consumer product regulations, the samples were submitted for laboratory analysis to determine compliance with applicable VOC and reactivity limits.

The laboratory results for approximately 645 samples indicated that the products may have exceeded the VOC limits. Investigations were conducted to determine if a violation had occurred, identify the parties involved, and determine the magnitude of the violations. Other violations for failure to display the date of manufacture, submit requested reports, or obtain certification were pursued. As a result of these investigations, ARB issued 75 notices of violation during the fiscal year. After conducting office conferences, ARB staff worked to resolve the enforcement cases through administrative or civil actions. During this fiscal year, 37 cases were settled with over $1,657,150 in penalties collected, which helped to mitigate over 92 tons of excess emissions resulting from these violations.

Staff prepared an Enforcement Advisory to apprise manufacturers and distributors of upcoming effective dates for new or modified VOC limits, expired sell-through provisions, and the end of the sell-through period for several products containing methylene chloride, perchloroethylene, and trichloroethylene. Upon manufacturers' request, ARB staff conducted product evaluations to determine if their products were subject to requirements of the Consumer Products Regulations. In addition, staff made presentations to consumer product industry groups on enforcement activities involving ARB regulated consumer products.

Air Monitoring and Laboratory Analysis

ARB staff conducted laboratory analyses of products submitted for determination of compliance with applicable VOC and reactivity limits. When appropriate, test results were used to support follow up enforcement efforts. In response to several external inquiries/requests, laboratory staff conducted special studies involving: 1) evaluation of solvents with respect to low vapor pressure VOC criteria; 2) analysis of aerosol coating products to determine their product-weighted maximum incremental reactivity (MIR) values; and 3) evaluation of Method 310 applicability for analysis of several new and proposed categories of consumer products

Research

ARB staff managed several research contracts or projects listed below, some of which originated in previous fiscal years:

- University of California, Riverside (UC Riverside) submitted two draft interim reports in the first half of 2009 and a final report, "Development of the SAPRC-07 Chemical Mechanism and Updated Ozone Reactivity Scales," in

September 2009. This report provided updated reactivity scales that are the basis for proposed amendments to the MIR scale used in the Aerosol Coatings Regulation.

- California Polytechnic State University, San Luis Obispo (Cal Poly SLO) submitted a final report, "Development of an Improved VOC Analysis Method for Architectural Coatings," in February 2009. This method should facilitate the enforcement of regulations limiting the VOC content of architectural coatings.
- ARB staff have been involved with research sponsored by the Eastman Chemical Company to study the emissions of texanol™ from architectural coatings.
- ARB staff are participating in a three-year industry-agency project being conducted by UC Riverside titled "Paint and Coatings Environmental Study" that is investigating the overall environmental impact of coatings. As part of this effort, ARB staff is managing a contract, "Environmental Chamber Studies of Ozone Impacts of Coatings VOCs," with UC Riverside. This contract will include reactivity experiments on compounds found in architectural coatings and consumer products.
- A project by Dr. Deborah Bennett of the University of California, Davis, to evaluate industry-sponsored fragrance and other VOC fate studies for liquid fabric softeners was completed and the final report was received in June 2009. Conclusions reached from the recommendations in the report will inform future ARB regulatory efforts and statewide emissions inventory development.
- A UC Riverside project on secondary organic aerosol (SOA) formation from VOCs, "SOA Formation: Chamber Study and Model Development," is adapting the SAPRC-07 mechanism to model for formation of particulate matter, including experiments in the UC Riverside environmental chamber.
- A University of Texas project, "Development of an Updated Base Case Ambient VOC Mixture for Assessing Atmospheric Reactivity," will update the base VOC mixture using current ambient VOC data, thereby improving air pollution modeling accuracy.
- A Cal Poly SLO project, "Low-VOC, Stain Blocking Specialty Primer Coating," was approved by the Board in February 2009. However, in July 2009, this project was canceled due to the Governor's order to reduce contract funding. The objective was to develop well-performing stain-blocking primers with low VOC levels.

Other Activities:

ARB is developing a reactivity-based VOC emission inventory for major VOC emissions source categories. Completion of this project will allow ARB to more appropriately target source categories for emissions reductions efforts, and to confirm cost-effective chemical substitution possibilities for industrial reformulations.

Staff developed an exposure model to estimate Californians' potential exposures to 2-butoxy ethanol, conducted the initial exposure calculations for

Emissions Inventory Improvements

ARB staff continued to evaluate the 2003 Consumer and Commercial Products Survey (2003 Survey), the most comprehensive survey conducted to date covering about 250 consumer product categories. Over 940 responding companies provided sales and VOC content information for over 26,000 products. Staff also continued to review and evaluate manufacturers' requests for revisions to information submitted for the 2003 Survey. Where applicable, the revised 2003 sales and emissions data were used for fee determinations.

Staff worked to further refine the data from 2006 Consumer and Commercial Products Survey (2006 Survey). The 2006 Survey is part of ARB's effort to evaluate the feasibility of further reducing VOC and reactive organic compound emissions from consumer products and update our emissions inventory, covering more than 100 product categories. Over 500 companies responded, providing sales and VOC content information for over 10,000 products. Once the evaluation is completed, the 2006 sales and emissions will be used to support additional regulation development and fee determinations.

Staff also conducted the annual halogenated solvent use survey. This survey allows staff to track the use of these toxic solvents and identify additional consumer product categories where mitigation measures may be necessary to reduce the public's exposure to them.

Rule Development and District Oversight

As a follow up to the June 2008 rulemaking for amendments to the California Consumer Products Regulations, ARB staff prepared documents required to complete the rulemaking process, and posted a 15-day change notice. The Final Statement of Reasons for this rulemaking was prepared and filed with the Office of Administrative Law (OAL) in June 2009.

During FY 2008-2009, ARB initiated another rulemaking to amend the California Consumer Products Regulations. Data from the 2003 and 2006 Surveys were used to identify categories where additional VOC emission reductions were obtainable. Staff proposed new or lower VOC limits for three categories: double-phase aerosol air fresheners, multi-purpose solvents, and paint thinners. In accordance with the AB32 Scoping Plan, the proposed amendments also included a prohibition of compounds with Global Warming Potential. Staff held several Consumer Products Workgroup meetings to discuss these amendments. This rulemaking effort culminated with the release of a Staff Report (Initial Statement of Reasons) in August 2009 and a Public Hearing in September 2009.

Staff developed a proposal to amend the Tables of MIR Values used in the California Aerosol Coatings Regulation ARB, to be considered at a public hearing in November 2009. In the course of developing these amendments, ARB held two meetings of the Reactivity Research Advisory Committee in August 2007 and March 2009, a meeting of the Reactivity Scientific Advisory Committee in March

realistic, high exposure conditions, and developed inputs for additional scenarios that might be considered in subsequent modeling runs.

Staff participated in the Environmentally Preferable Products Task Force, which reviews and recommends product specifications for State procurement as part of the Governor's Green Action Team. Staff participated in the promulgation or revision of several Green Seal (GS) standards, including GS-11 (Paints and Coatings), GS-43 (Recycled Paints), and GS-47 (Stains and Finishes).

Staff served on the California Green Building Code Focus Group and provided substantive input on early versions of the draft proposed 2010 changes to the California Green Building Standards Code. ARB's input was targeted to ensure consistency between the Green Building Standards Code and ARB's consumer products regulations and architectural coatings suggested control measure (SCM).

As part of ARB's participation in the Leadership Council for the California Green Chemistry Initiative, staff provided input on the draft straw proposal "Safer Alternatives for Consumer Products" first released by the Department of Toxic Substances Control in the spring of 2009. This proposal is a stepping stone to the development of draft Safer Alternatives Regulations.

Indoor Air Quality: In October 2008, ARB updated a fact sheet entitled "Cleaning Products and Indoor Air Quality" to incorporate suggestions by industry stakeholders. The fact sheet is based on the results of an ARB-funded study of primary and secondary emissions from household cleaning products, and was first published in March 2007. It is available at http://www.arb.ca.gov/research/indoor/cleaning.htm.

VOC exemptions: ARB staff has been involved with applications to exempt three VOCs (*tert*-butyl acetate, dimethyl carbonate, and methyl formate) from regulation.

- For *tert*-butyl acetate, staff participated in discussions with representatives of the California Environmental Protection Agency's Office of Environmental Health Hazard Assessments (OEHHA), U.S. EPA, local districts and industry, in order to better understand toxicity concerns.
- For dimethyl carbonate, staff reviewed a petition requesting a VOC exemption and is reviewing the environmental assessment along with OEHHA.
- For methyl formate, ARB sent a letter to local air districts in May 2008 recommending that they consider methyl formate for exemption in their definition of VOC. ARB staff has continued to provide assistance to local air districts on this issue.

2009, and a public workshop in August 2009. In addition, four internationally respected scientists provided peer reviews for Dr. William Carter's (UC Riverside) mechanism and updated ozone reactivity scales in early 2009.

Staff also participated in consumer products workshops with agendas that included reactivity issues, and provided technical support for exploration of reactivity-based VOC control measures for aerosol coatings, consumer products, automotive refinishing products, and architectural coatings.

Staff reviewed and evaluated requests and applications for product determinations, charcoal lighter material certifications, alternative control plans and annual reports, and innovative product exemptions.

Staff responded informally and formally to numerous inquiries from manufacturers, consultants, product certification/labeling programs and other regulatory agencies (including federal, local, other states and Canadian air quality management/air pollution control agencies). Staff made presentations at several national and regional industry association meetings.

ARB staff assisted the air districts in finalizing a settlement for a statewide violation of local architectural coatings rules and developing rules to implement the 2007 Suggested Control Measure (SCM). Staff also explored reactivity-based standard approaches; conducted a technology assessment prior to the 2007 SCM VOC limits coming into effect; conducted the annual reporting required by 2000 SCM-based architectural coating rules; and conducted product determinations and rule interpretations.

General Activities for Nonvehicular Sources

Enforcement

ARB's enforcement activities include conducting inspections of stationary sources, investigating complaints, issuing notices of violations, evaluating district variances for compliance with regulatory requirements, obtaining and analyzing evidence to determine the date of onset, cause, and extent of violation of air pollution regulations, and reviewing district rules for enforceability. Enforcement programs include:

- **Stationary Source Investigations, Inspections, and Surveillance:** Conducting joint investigations of cross media environmental cases, and providing enforcement assistance to local air districts and other local and regional environmental agencies.
- **Complaint Investigations and Hotline:** Responding to air pollution complaints, conducting investigations, and referring them to other agencies when appropriate.
- **Variance Program:** Reviewing all district hearing board orders for compliance with H&SC requirements.

- **Air Facility System:** Collecting and conducting quality assurance on data received from 26 of the 35 air districts for federally required compliance, permitting, and violation status of major sources.
- **Continuous Emissions Monitoring Program:** Gathering and analyzing data from emission monitoring devices required by air districts at stationary sources.
- **Rule Review:** Reviewing air district rules for enforceability, compliance with state laws, clarity and accuracy.
- **Fuels Enforcement:** Conducting random inspections of fuel facilities, including refineries, distribution terminals, import vessels, and retail outlets by obtaining samples of motor vehicle fuel to evaluate compliance with the motor vehicle fuel regulations.
- **Enforcement Training:** Conducting and administering comprehensive educational courses in stationary source enforcement throughout the State on air pollution history; procedures required to properly evaluate emissions; analysis of industrial processes; theory and application of emission controls; and waste stream reduction.
- **Compliance Assistance**: Developing a variety of practical, rule-specific publications which describe source processes and emission control equipment; clarifying rule requirements; identifying compliance issues; and promoting self-regulation.

Air Monitoring and Laboratory Analysis

Activities include measuring ambient air levels of gaseous and particulate criteria and toxic air pollutants. These efforts are used in measuring progress towards attainment of the State and federal ambient air quality standards in various parts of the state, and in the identification and control of toxic air contaminants.

Research

Activities include investigating the reactivity of air pollutants and the atmospheric processes that contribute to ozone and particulate matter formation, conducting vulnerable populations and children's health studies, and research to support future updating of ambient air quality standards.

Technical Support and Air Quality Planning

Activities include developing, maintaining and updating emission inventories; evaluating air quality trends and indicators; and conducting sophisticated air quality modeling to determine progress towards health based air quality standards to support the development and implementation of air quality plans for ozone and particulate matter. Many of the technical support activities are identified as priority activities under H&SC section 39612(c), and are described in more detail later in this report.

Rule Development and District Oversight

Activities include managing a database of Best Available Control Technologies (BACT) to facilitate the transfer of technologies among districts facing growth from similar sources; helping districts comply with federal permit requirements; developing areawide emission inventories to better target district resources; providing guidance and technical resources to evaluate feasibility and effectiveness of regulatory actions; developing SCMs to assist districts in developing regulations; and evaluating, developing and implementing regulatory measures to reduce emissions.

Status of Efforts to Address Priority Activities

H&SC section 39612(c) gives priority for expenditure of nonvehicular source fees to five specified activities. ARB's efforts to address these activities are summarized below.

1. **Identifying air quality-related indicators that may be used to measure or estimate progress in the attainment of State ambient air quality standards**

   H&SC section 39607(f) requires that ARB, in consultation with air districts, evaluate air quality indicators that can be used to measure progress towards attainment of State standards. By July 1993, ARB was required to identify one or more indicators to be used by districts in assessing progress in their triennial State attainment plan updates required under H&SC section 40924.

   In 1993, ARB developed three air quality indicators for districts to use in assessing progress toward State standards: 1) expected peak day concentration, 2) population-weighted exposure, and 3) area-weighted exposure. Since their publication in July 1993, districts have used these indicators in assessing progress in their State ozone triennial plan updates. Every three years, ARB provides technical assistance and data to districts for the development of indicators to use in assessing progress toward attainment of the State 1-hour average ozone standard. In 2005, the Board adopted an 8-hour average ozone standard of 0.070 parts per million, designed to protect the public from chronic exposure. As a result, ARB now provides the 8-hour ozone indicators to districts for use in their triennial plan updates. ARB most recently provided technical assistance to districts in 2008.

   ARB has developed a new indicator consisting of air quality contour maps designed to assess spatial ozone air quality progress within an air basin or nonattainment area. These plots utilize air monitoring data to illustrate how ozone air quality differs across an air basin or county. These maps are helpful in evaluating how air quality has changed spatially in an area over time, and they have been used extensively in various reports and documents to help the public better understand progress made towards attainment of State and federal air quality standards.

In March 2009, ARB posted the California Almanac of Emissions and Air Quality (the Almanac), 2009 edition, on its website and made CD copies available to the public and districts at no charge. This document represents a comprehensive assessment of progress toward State standards from a statewide, as well as a regional perspective, over a twenty-year period. The Almanac includes numerous air quality statistics, updates the attainment status for State standards, and includes maps, graphs, and numerous data tables to illustrate progress. The peak indicator is provided for four pollutants (ozone, carbon monoxide, nitrogen dioxide, and sulfur dioxide) for all air districts and air basins in California. In addition, 1 and 8-hour average ozone population-weighted exposure estimates are provided for California's five largest urban areas. The 2009 Almanac also includes statewide maps and a characterization of how the number of unhealthy days above the State 8-hour average ozone and PM10 standards compares in different regions of California.

ARB also provides the public with easy access to air quality data and indicators through the annual Air Quality DVD as well as through numerous web pages dedicated to air quality data. ARB staff also developed and maintains a real-time air quality database, which is an important tool that allows the public and districts to continually track and measure progress.

H&SC section 39607(f) also requires that ARB continue to evaluate the prospective application of air quality indicators, and upon a finding that adequate air quality modeling capability exists, identify indicators which may be used by districts in lieu of the annual five percent emission reductions mandated by H&SC section 40914(a). Prospective indicators have not yet been developed because adequate air quality modeling capability for this application does not yet exist. However, ARB staff is continually evaluating and improving the models. Currently, ARB, in conjunction with some districts, has developed and applied state of the art modeling tools in the attainment demonstrations for the federal ozone and PM 2.5 air quality standards. It is expected that the additional information from this effort may contribute to further understanding of prospective air quality indicators

2. Establishing a uniform methodology for assessing population exposure to air pollutants

H&SC section 39607(g) required that, by July 1996, ARB establish a uniform method for use by districts in assessing population exposure to air pollution at levels above the standards. As discussed above, ARB established a population-weighted exposure indicator, which was documented in a 1993 report entitled "Guidance for Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards." ARB publishes population-weighted exposure to ozone for five air basins as part of the annual Almanac of Emissions and Air Quality. As shown in the 2009 Almanac, from 1990 to 2007 population exposure to unhealthy ozone levels above the State 8-hour ozone

standard has been reduced by an average of 68% percent in the five most populated air basins

3. **Updating the emission inventory including emissions that cause or contribute to the nonattainment of federal ambient air quality standards**

ARB compiles, maintains, and is constantly working to improve a very detailed and complex inventory of air pollution sources. Emission inventory improvement is an integral part of ARB's air quality planning and regulatory development processes. It is also an important ARB research category. ARB publishes the inventory for all California air basins annually as part of the Almanac. In FY 2008-2009, some of the major activities ARB completed related to emissions inventories include the following:

Preparation of PM2.5 Emission Inventories: In 2009, ARB and the local air districts began work on the development of State Implementation Plans (SIPs) for attainment of the federal PM2.5 air quality standard. ARB staff are leading the preparation of the emissions inventory that will be used in the air quality modeling to demonstrate attainment of the standard. This effort includes a quality assurance program with special emphasis on verification of local data for emission sources in each of the affected air districts. Numerous meetings were held with air district staff to discuss inventory and modeling needs. Other ongoing efforts to improve the emissions inventory include continuous refinements of ARB's methodologies for estimating area source emissions; improvements to size and speciation profiles; efforts to improve methods of forecasting future year emissions using economic and demographic growth factors; and regular review and updating of rule-specific control profiles as rules are promulgated and/or amended.

Training for District Staff: ARB provides training and guidance for district emission inventory staff. In FY 2008-2009, training by ARB consisted of one-on-one sessions between ARB's emission inventory staff and district staff for implementation of the California Emission Inventory Data and Reporting System (CEIDARS), and ongoing training on the "Hot Spots" Analysis and Reporting Program, a computer software package that performs database and risk assessment functions. ARB's emission forecasting team provided on-going instruction and guidance to district staff to support their local SIP elements. In addition, ARB hosted periodic Emission Inventory Technical Advisory Committee meetings and workshops to keep districts informed on its emission inventory program.

Web Accessibility: ARB maintains web-based tools that give districts direct access to their emission inventory data—these tools are augmented and enhanced on a continual basis. Extensive emission inventory reference and documentation is available on-line (www.arb.ca.gov/ei/ei.htm) for those who are creating and/or using emission inventories. These web tools allow districts and the general public to summarize emission inventory data in a number of ways. The primary emission data product available to the general

public is based on the annual publication of the Almanac of Emissions and Air Quality. In FY 2008-2009, the emissions data from the 2009 publication were posted for public access via ARB's emissions reporting web tools.

4. **Identifying, assessing, and mitigating the effects of interbasin transport of air pollutants**

H&SC section 39610 directs ARB to assess ozone transport, defined as the contribution of ozone and ozone precursors in upwind regions on ozone concentrations that violate the State ozone standard in downwind regions. ARB is specifically directed to (1) identify district transport couples, (2) assess the relative contribution of upwind emissions on downwind ozone concentrations, and (3) establish mitigation requirements commensurate with the level of contribution. Further, ARB, through its mobile source emission control program, provides the majority of emission reductions in both upwind and downwind regions, thereby providing the bulk of interbasin transport mitigation.

Assessments of Transport Couples: Since 1989, ARB has published several assessments of transport relationships between air basins and regions in California. The assessments identify transport couples consisting of an upwind area (source of transported emissions) and a corresponding downwind area (receptor of transported emissions). ARB also evaluates the magnitude of the contribution and determines whether the contribution is overwhelming, significant, inconsequential, or a combination thereof. ARB first identified transport couples in 1989 and 1990 and updated these assessments in 1993, 1996, and 2001. ARB reviews air quality data every three years and proposes changes to the transport identification regulation when warranted by the data. ARB also uses air quality models to account for transport in the development of air quality plans. Most recently, in 2007, 2008, and 2009, ARB summarized transport impacts on downwind areas as part of the Weight of Evidence assessment for several Ozone SIPs.

ARB adopted transport mitigation regulations for the districts in 1990 and amended them in 1993 and 2003. The 1990 regulations established mitigation requirements for upwind areas found to have either overwhelming or significant impacts on downwind areas. The primary mitigation requirement was application of best available retrofit control technology. In 1993, ARB amended the mitigation requirements to align them with the minimum permitting requirements of State law. In May 2003, ARB adopted amendments that strengthened the mitigation requirements to include a requirement that upwind districts adopt all feasible measures for the ozone-forming pollutants, independent of the upwind district's attainment status. In addition, they include a requirement that "no net increase" thresholds for new source review permitting programs in upwind areas be as stringent as those in downwind districts.

Transport Impacts: Beginning in the late 1990's with the Southern California Ozone Study (SCOS) and followed in the early 2000's by the Central

California Ozone Study (CCOS) programs, the State was split into two modeling domains, one for Southern California and one for Northern and Central California, respectively. Transport relationships between air districts within these large domains are implicitly captured within photochemical models. This is the mechanism ARB uses in its oversight role to ensure transport impacts on downwind areas are addressed for purposes of both State and federal air quality standards. Modeling attainment demonstrations take into account the shared responsibility for reducing emissions in regions where air pollution transport can at times be significant.

Mitigation Measures: A number of local air districts are currently updating their local control strategies to comply with the federal and California Clean Air Acts. ARB staff is working closely with local air district staff as they develop the required local source control strategies. A key element of ARB's assistance is to ensure that local air districts comply with the requirements for mitigation of transported air pollution. ARB's contribution to that effort is the development of new mobile source control strategies.

5. Ranking control measures for stationary sources based upon the cost-effectiveness of those measures in reducing air pollution

Since 1991, ARB has published a resource document that represents every feasible measure. This document identifies source categories and performance standards for which the districts can consider incorporating a measure. The list was generated by reviewing readily available source specific rules and guidance documents pertaining to a given source category to select those that contained the most effective performance standards. To keep the all feasible measures information current, ARB has developed a process that is implemented concurrent with the existing district rule review process. Each time a district adopts or amends a prohibitory rule for a source category, they notify ARB if modifications to the resource document are necessary. In cooperation with district staff, ARB staff updates the source category tables and any changes are reflected in the version of the resource document located on the ARB website.