

**2005 Annual Report on the Air Resources Board  
Expenditure of Nonvehicular Source Fees  
for Fiscal Year 2004-2005**

**Introduction**

For fiscal year (FY) 2004-2005, the Legislature authorized the Air Resources Board (ARB or Board) to collect \$20 million in fees from facilities and manufacturers of consumer products and architectural coatings. As required by Health and Safety Code (H&SC) section 39612(g), this report discusses the expenditure of these fees.

**Background**

The California Clean Air Act of 1988 (the "Act", Statutes 1988, chapter 1568) requires attainment of State ambient air quality standards by the earliest practicable date. As part of that mandate, the Act 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.

In 2003, the Legislature enacted Assembly Bill (AB) 10X (Statutes 2003, chapter 1X), 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 the ARB for the first time to assess fees on manufacturers of consumer products and architectural coatings. 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). The 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 regulations to collect the fees authorized by AB 10X. The regulations assess uniform fees (on a dollar per ton basis) on large nonvehicular sources (facilities) and large manufacturers of consumer products and architectural coatings. The full text version of the regulations can be found on the ARB's website at <http://www.arb.ca.gov/regact/feereq03/feereq03.htm>.

For FY 2003-2004, the Legislature authorized the ARB to collect \$17.4 million in fees from facilities and consumer product and architectural coating manufacturers.

In 2004, the Legislature, through the State budget process, 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 regulations 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 version of the revised regulations 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)." This report is in response to this mandate.

**Fiscal Year 2004-2005 Expenditures of Nonvehicular Source, Consumer Products, and Architectural Coatings Fees**

The total fee expenditures in five major program categories for FY 2004-2005 are shown in Table 1 below. Following Table 1 are descriptions of the activities that are funded by the fees.

**Table 1**

**Expenditure of Fees for Fiscal Year 2004-2005**

<b>Activity</b>	<b>Expenditure</b>
Enforcement	\$2,256,000
Monitoring and Laboratory	\$4,298,000
Research	\$2,342,000
Technical Support and Planning	\$4,416,000
Rule Development and District Oversight	\$6,688,000
<b>Total Expenditures</b>	<b>\$20,000,000</b>

**General Division Activities for Consumer Products and Architectural Coatings**

ARB performs monitoring, emission inventory development and maintenance, research, modeling, and other activities in support of understanding the contribution of consumer products and architectural coatings to California's air quality problems. In addition, several divisions of the ARB perform other activities to understand, regulate, and enforce rules for the pollution coming from these sources. These divisions include the Stationary Source, Enforcement, Monitoring and Laboratory, Research, and Planning and Technical Support Divisions. Collectively, these efforts are an integral and necessary part of mitigating and reducing the emissions from these products.

**Stationary Source Division:** The Stationary Source Division (SSD) is responsible for: 1) conducting surveys to determine the VOC emissions from consumer products and architectural coatings; 2) developing regulations to reduce the VOC emissions from consumer products, and suggested control measures (SCM) to reduce the VOC emissions from architectural coatings; 3) developing new consumer product elements for the State Implementation Plan (SIP) for ozone; and 4) implementing statewide regulations for consumer products, and implementing a statewide averaging program for architectural coatings in 2003 and 2004.

To implement the consumer products regulations, SSD staff: 1) performs technology assessments for upcoming standards; 2) issues product determinations; 3) reviews and approves innovative product exemptions; 4) reviews and approves alternative control plans; 5) reviews and approves variance applications; 6) develops and submits SIP amendments to the United States Environmental Protection Agency (U.S. EPA) for approval; and 7) works with the Enforcement Division (ED), Monitoring and Laboratory Division (MLD), and Office of Legal Affairs (OLA) to enforce the regulations. SSD staff also works with the Research Division (RD) staff to conduct reactivity research and other research related to VOC emissions, and to determine the potential impacts of exempting compounds from the VOC definitions for consumer products and architectural coatings.

To implement the 2000 SCM for architectural coatings, SSD staff: 1) assists districts to adopt the SCM (19 districts have adopted the SCM to date); 2) reviews and approves district rules and submits them to the U.S. EPA for approval; 3) performs technology assessments of upcoming standards; 4) reviewed and approved statewide averaging plans in 2003 and 2004 for architectural coating rules; and 5) works with the ED, MLD, and the OLA to enforce the statewide averaging program. In 2003 and 2004, the ARB implemented the statewide averaging provision in the 2000 SCM at the request of the districts. The ARB plans to update the 2000 SCM when we complete our evaluation of the feasibility of achieving further VOC reductions through mass-based or reactivity-based control strategies. This update is expected to be a major undertaking that will require considerable ARB resources.

**Enforcement Division:** The ED provides support to the consumer products and architectural coatings programs by: 1) collecting products for laboratory analysis to determine compliance with the consumer products regulations and the averaging provision of district architectural coatings rules; 2) writing advisories to interpret the regulations; 3) working with SSD on surveys; and 4) working with ARB's OLA to issue notices of violation to manufacturers that do not comply with the consumer products regulations.

**Monitoring and Laboratory Division:** The MLD provides support to the consumer products and architectural coatings programs by: 1) developing test methods to measure the VOC content of consumer products, and to measure the reactivity of aerosol coatings; 2) testing consumer products to determine compliance with VOC limits; 3) testing aerosol coatings to determine compliance with reactivity limits; and

4) testing architectural coatings to determine compliance with the averaging provision in district rules. These efforts are in addition to MLD staff conducting ambient air monitoring to determine which areas of the State are nonattainment for the State and federal ozone and particulate matter air quality standards.

**Research Division:** The RD provides support to the consumer products and architectural coatings programs by: 1) funding and managing research to measure emissions and the actual exposure individuals may experience when using these products; 2) estimating the impact that exposure to emissions may have on health; and 3) exploring the viability of alternative products or control technologies to reduce emissions and exposure through the Innovative Clean Air Technology Program (ICAT) and other research. The Indoor Exposure Assessment Section of RD also develops fact sheets and guidelines for the public that identify ways to reduce exposure to pollutants associated with consumer products, coatings, and other indoor sources.

**Planning and Technical Support Division:** The PTSD provides support to the consumer products and architectural coatings programs by: 1) maintaining and updating the emissions inventories for these sources for incorporation into the SIP; SIPs are air quality plans that are updated frequently to reflect the latest advances in science and control technologies and are required to show how nonattainment areas will attain ambient air quality standards; and 2) conducting air quality modeling to determine the population exposure to ozone and particulate matter, and to determine the effectiveness of ozone and particulate matter attainment strategies for SIP development and implementation.

### **Specific Activities Related to Consumer Products and Architectural Coatings in Fiscal Year 2004-2005**

#### ***Enforcement***

ED staff collected over 2000 samples of consumer products during FY 2004-2005 from a variety of retail stores and commercial businesses that sell to household and institutional consumers throughout the State and over the internet. The samples were evaluated to determine compliance with the administrative requirements of the consumer product regulations and submitted for laboratory analysis to determine compliance with the VOC limits.

The laboratory results for approximately 450 samples indicated that the products exceeded the VOC limits (including method tolerance), and further investigations were initiated to determine if a violation had occurred. These investigations determined the magnitude of violations and the parties that caused them, and resulted in the issuance of 56 notices of violation. After conducting office conferences, ED staff worked with the OLA to resolve the enforcement cases through administrative, civil, or criminal actions. During this fiscal year, 36 cases were settled with over \$1,010,000 in penalties collected, which helped to mitigate over 228 tons of excess emissions resulting from these violations.

ED staff also prepared several enforcement advisories to apprise manufacturers and distributors of products of upcoming effective dates for new or modified requirements and for categories where sell-through periods had expired. ED staff, along with staff in the SSD, conducted product category determinations at the request of manufacturers, to evaluate if the product is subject to requirements of the Consumer Products Regulations. After an initial evaluation, staff from both divisions and OLA provides comments on and concurrent approval of the category determination.

### ***Monitoring and Laboratory***

Products were routinely submitted for laboratory analysis and samples processed. Test results were evaluated and, when appropriate, used to support follow up enforcement efforts. In response to several external inquiries/requests, laboratory staff in the MLD conducted special studies involving: 1) methanol as a VOC hydrolysis/contaminant product; 2) evaluation of whether aminomethyl propanol meets the Low Vapor Pressure-VOC definition; and 3) a modification/alternative method to Method 310 for two-part reactive adhesives.

### ***Research***

ARB funded or co-funded and monitored several studies. A multi-year automotive cleaning products study had a program goal to field test and demonstrate low-VOC and water-based auto parts cleaners for general auto parts cleaning, brake cleaning, carburetor and fuel injector cleaning, and engine degreasing applications at auto repair shops. RD staff managed the study and, with SSD staff, reviewed the final report entitled, "Alternatives to Automotive Consumer Products that Use Volatile Organic Compounds and/or Chlorinated Organic Solvents."

In a study of household cleaning products, investigators examined emissions of toxic air contaminants during simulated cleaning scenarios. The study also measured the reaction of ozone with terpenes (fragrance compounds such as limonene and pinene) from the cleaning products and the production of secondary pollutants as a result of terpene-ozone interactions. RD and SSD staff provided input on study design, reviewed and commented on draft and final reports, and commented on submittals to peer-reviewed scientific journals.

RD staff managed a VOC reactivity project and, along with SSD staff, reviewed the final report, entitled "Evaluation of Atmospheric Impacts of Selected Coatings VOC Emissions." RD and SSD staff also provided technical support for another VOC reactivity project, entitled "Environmental Chamber Studies of VOC Species in Architectural Coatings and Mobile Source Emissions," funded by South Coast Air Quality Management District (SCAQMD).

RD staff managed another architectural coatings study and, along with SSD staff, reviewed the final report, entitled "Correlation between Solids Content and Hiding as it Relates to Calculation of VOC Content in Architectural Coatings." In addition, RD staff

is managing, with SSD staff input, another architectural coatings project, entitled "Development of an Improved VOC Analysis Method for Architectural Coatings." RD and SSD staff are also involved with research sponsored by the Eastman Chemical Company to study the emissions of Texanol® from architectural coatings.

RD staff prepared a report entitled "Report to the California Legislature: Indoor Air Pollution in California," which was approved by the Board in March 2005 and submitted to the Legislature in July 2005. The report included information that indicated the use of some products can contribute to harmful indoor air quality. Users are often in close proximity to the release of chemicals during use, and not all consumer products are regulated. Consumer products were ranked in the medium priority category for action due to the success of ARB's regulations to date in promoting alternative, low VOC reformulations, restricting VOC content limits for 112 product categories, and prohibiting the use of certain toxic air contaminants in specific product categories. Architectural coatings were also ranked in the medium priority category because reductions have been achieved from this source category due to local air district rules.

RD staff with support from SSD, PTSD, Office of Environmental Health Hazard Assessment, State Water Resources Control Board, and DTSC completed a report entitled "Environmental Impact Assessment of Tertiary-Butyl Acetate" that evaluated a VOC exemption petition for tertiary-butyl acetate. Staff also started to evaluate other VOC exemption requests.

RD staff also participated in consumer products workshops with agendas that included reactivity issues, and provided technical support for exploring reactivity-based VOC control measures for aerosol coatings, consumer products, and architectural coatings.

### ***Technical Support and Planning***

SSD staff worked with Emission Inventory staff in the PTSD to evaluate the emissions inventory impact of updated sales information obtained with the 2001 Consumer and Commercial Products Survey (2001 Survey). The 2001 Survey was a targeted survey covering about 40 categories that was conducted in FY 2002-2003 and reviewed and evaluated through FY 2004-2005. In addition to updated sales and emissions data, staff derived control factors to update the statewide emissions inventory for consumer product categories affected by new VOC limits approved with the 2004 Consumer Products Amendments. Additionally, staff evaluated manufacturers' requests for revisions to information submitted for the 1997 Consumer Products and Commercial Products Survey. Where applicable, revised emissions were used for fee determinations and to update the statewide emissions inventory.

In FY 2004-2005, SSD staff initiated its 2005 survey of architectural coatings sold into California and began collecting and entering the data into a database. Work on the survey continues into FY 2005-2006, and it will be used to update the statewide architectural coatings emissions inventory and to revise the 2000 SCM. To date, close to 200 responding companies have provided sales and VOC content information for almost 17,000 products. SSD staff also worked with PTSD staff to investigate

emissions inventory improvements with regard to architectural coatings, and to review fee emission determinations. In addition, SSD staff developed a revised methodology to account for the thinning and clean up emissions associated with the use of architectural coatings.

### ***Rule Development and District Oversight***

The Board approved the 2004 amendments to the Consumer Products Regulations (at a June 2004 public hearing). SSD staff then prepared the documents required to complete the rulemaking process, including a public notice for the approved modifications and the Final Statement of Reasons.

SSD staff with the assistance and input of ED staff developed and conducted a 2003 Consumer and Commercial Products Survey (2003 Survey), the most comprehensive survey conducted by ARB staff to date covering about 250 consumer product categories. Over 900 responding companies provided sales and VOC content information for over 26,000 products. Staff review and evaluation of the 2003 Survey continues into FY 2005-2006 which will lead to a new rulemaking effort. The 2003 Survey will be used to identify categories where VOC emission reductions can be obtained to meet current SIP control measure commitments, update the statewide emissions inventory, and develop new commitments for future SIPs.

Staff conducted technical assessments of certain consumer product categories; a research and development efforts survey of aerosol adhesives reformulation; and a halogenated solvent use survey.

Staff reviewed and evaluated requests and applications for product determinations; charcoal lighter material certifications; two variances; alternative control plans and annual reports; innovative product exemptions, and review of fee emission determinations. These activities often involved coordination of input and the concurrence of staff from ED, MLD, PTSD, and OLA.

Staff responded informally and formally to numerous inquiries from manufacturers, consultants, product certification/labeling programs, and other regulatory agencies (including federal, local, and other states' air quality management/air pollution control agencies and from other countries, including Canada and Hong Kong). Staff made presentations at several national and regional industry association meetings, and at coatings courses at California Polytechnic State University, San Luis Obispo.

SSD staff also assisted local air districts with regard to architectural coatings by: working on a settlement for a statewide violation of local architectural coatings rules; advising the districts as to the results of our field study of coatings being sold under districts' averaging provisions; collecting and reporting the data required by local districts' rules for annual reporting; assisting districts with rule development, especially the SCAQMD and the Imperial County Air Pollution Control District; conducting product determinations; and undertaking a reactivity analysis of coatings based on the 2001 Survey of architectural coatings.

## **General Activities for Nonvehicular Sources**

During FY 2004-2005, ARB used the fees collected from nonvehicular sources to develop and enforce emission reduction strategies for nonvehicular sources. In addition, ARB used the fees to develop the technical information and air quality plans necessary to address these sources.

- Enforcement – These 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.
- Monitoring and Laboratory – These activities include measuring ambient air levels of gaseous and particulate criteria and toxic air pollutants. These efforts are used in determining which areas of the State are nonattainment for the State and federal ambient air quality standards. They are used for statewide ambient air toxic monitoring to facilitate the identification of and control of air toxic contaminants in California.
- Research – These 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 reviewing/updating ambient air quality standards based on research results.
- Technical Support and Planning – These activities include maintaining and updating emission inventories, conducting air quality monitoring to determine the population exposure to ozone and particulate matter, and developing and implementing air quality plans for ozone and particulate matter.
- Rule Development and District Oversight – These 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 area wide emission inventories to better target district resources, providing guidance and technical resources to evaluate feasibility and effectiveness of regulatory actions, developing suggested control measures to assist districts in developing regulations, and evaluating, developing and implementing regulatory measures to reduce emissions.

## **Status of Efforts to Address Priority Activities**

In addition, 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 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 in their triennial plans. The first is the expected peak day concentration, which is also termed the peak indicator. This indicator tracks progress at locations where concentrations are the highest; these are also the locations where the potential for acute health effects are the greatest. The other two indicators, population-weighted exposure and area-weighted exposure, indicate the potential for chronic health effects. In contrast to the peak indicator, which is based on data for peak exposures at individual monitors, the two exposure indicators are based on data for all monitors and reflect the "average" exposures within a district. The population-weighted exposure indicator represents the average of all personal exposures in the area, while the area-weighted exposure indicator represents the average exposure across all locations in the area. All three indicators have been used for ozone. With the adoption of a State particulate matter 2.5 microns or less (PM 2.5) standard, we now report peak values for PM 2.5 and are developing the data needed to report the two exposure indicators in the future.

ARB published the indicators in July 1993, and in September 1993 published a guidance document for how to use these indicators in assessing progress; this report is titled "Guidance for Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards." Since then, districts have used these indicators in assessing progress in their State ozone triennial plan updates. Every three years, ARB calculates and provides the indicators to each of the districts for use in assessing progress made over the last three years toward attainment of the State ozone standard and for incorporation in their triennial plan updates. ARB last provided updated indicators to districts in summer 2002 for their 2003 plan updates. ARB will update the indicators again in 2006 for those districts that will be doing 2006 ozone plan updates. In addition, ARB staff will provide indicators for the State 8-hour ozone standard recently adopted by the Board, once the regulation has been approved by the Office of Administrative Law.

ARB also published the 2005 "California Almanac of Emissions and Air Quality" (the Almanac). 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 and ozone population exposure estimates are provided for California's five largest urban areas.

In addition, ARB updated and published maps that show the attainment status for each State standard in 2005; these maps provide a snapshot of year-to-year progress in air quality improvement. Finally, ARB staff 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, is developing and applying state of the art modeling tools needed to develop attainment demonstrations for the federal ozone and PM 2.5 air quality standards. It is expected that the additional information from this effort will 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 reports population-weighted exposure information to the districts for use in their triennial progress assessments and plan updates, and publishes population-weighted exposure to ozone for five air basins as part of the annual Almanac of Emissions and Air Quality. As reported in the 2005 edition of the Almanac, from 1993 to 2003, population exposure to unhealthy ozone levels above the State standard has been reduced by a statewide average of over 50 percent.

## **3. Updating the emission inventory pursuant to section 39607.3, including emissions that cause or contribute to the nonattainment of federal ambient air 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. Pursuant to H&SC section 39607.3, ARB staff periodically updates the inventory and brings it to the Board for approval either as a stand-alone item or as part of the Board's approval of air quality plans. ARB also

publishes the inventory for all California air basins annually as part of the Almanac. In FY 2004-2005, some of the major activities ARB completed related to emissions inventories include the following:

**Preparing for the 8-hour Ozone SIP** - ARB is directed by federal law to prepare a State Implementation Plan (SIP) for the attainment of ambient air quality standards. To prepare for the upcoming SIP for the national 8-hour ozone standard, ARB will be performing extensive air quality modeling using its emission inventory. ARB continues to work with districts to perform quality assurance on the emission inventory that will be used for the modeling. This quality assurance program includes special emphasis on verification of local data for point sources, verification of emissions from large power plants, and on verification and correction of stack data. Improvements to the ARB's methodologies for estimating area source emissions are continually being refined. Efforts to improve methods of forecasting future year emissions using economic and demographic growth factors are in progress. Control factors that are based on activities that result in emission reductions are regularly reviewed.

**Training for District Staff** - ARB has provided training and guidance for district emission inventory staff. In FY 2004-2005, training by ARB included a conference on emission inventory forecasting, an educational seminar on emission inventory, and ongoing training on the "Hot Spots" Analysis and Reporting Program, a computer software package that performs database and risk assessment functions. ARB also hosts bimonthly Emission Inventory Technical Advisory Committee meetings to keep districts informed on its emission inventory program.

**Web Accessibility** - ARB has developed web-based tools that give districts direct access to their emission inventory data. Extensive emission inventory reference and documentation is available on the ARB website for those who are creating emission inventories. ARB has also created a number of web tools that allow districts and the general public to summarize emission inventory data in a number of ways. One of these tools, the Community Health Air Pollution Information System, is a geographic information system that graphically shows air pollution sources at a community level and allows users to view emission inventory summary data for a geographic region, letting them "drill down" to increasingly greater levels of source category detail.

#### **4. Identifying, assessing, and establishing the mitigation requirements for 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.

**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 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.

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. These amendments now include a new 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 new 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** – Since 2003, ARB staff continued working with the districts in Northern California to further the understanding of inter-district transport and transport impacts. ARB staff work included extensive analysis of ozone and meteorological data and the ongoing continued development of state-of-the-art air quality modeling tools. These tools will enable ARB and local air districts to better evaluate which emission control measures can mitigate the impacts of transported pollutants.

The technical work on the evaluation of pollution transport will play a significant role in enabling districts to attain the new federal 8-hour ozone standard. Attainment plans, or SIPs, for this standard are required to be submitted to U.S. EPA in 2007.

**Mitigation Measures** – In 2003, ARB began reviewing triennial updates to local district attainment plans for the State's one-hour ozone standard. ARB continued to review these plans as they were submitted. California law requires those districts that the Board determines to be upwind contributors of pollutants to address mitigation of this contribution in their State plan. A key element of State law is the requirement for upwind contributing districts to adopt all feasible measures for pollution sources in their districts. These are measures deemed to be feasible by the district taking into consideration economic, environmental, technical, legal, and other factors. A key element of ARB's plan review is to determine whether a district has complied with this requirement for transport mitigation purposes.

ARB has jurisdiction of some of the most significant source of pollutants in the State—on and off road motor vehicles. All control measures to reduce emissions from these

sources result in pollutant reductions throughout the State. Therefore, mobile source controls not only directly improve the air quality in regions in which the vehicles reside, they also reduce pollutants that are transported from upwind areas. As such, these statewide measures are integral to mitigating the impacts of pollution transport in addition to measures on other emission categories for which ARB has jurisdiction, such as consumer products.

**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**

During the FY 2003-2004, ARB worked with districts to develop cost effective control strategies for inclusion in comprehensive updates to SIPs adopted for the SCAQMD and the San Joaquin Valley Air Pollution Control District. These measures also help the regions make progress towards the State's ozone and particulate matter standards.

H&SC section 39614 required ARB, in consultation with the districts, to develop and adopt a list of the most readily available, feasible, and cost-effective control measures that could be employed by the districts to reduce particulate matter 10 microns or less (PM 10) and PM 2.5 (collectively referred to as PM). The measures were to be based on rules, regulations, and programs existing in California as of January 1, 2004. On November 18, 2004, ARB adopted a comprehensive list of air measures. H&SC section 39614 also required districts to adopt implementation schedules by July 1, 2005, for a subset of appropriate measures selected based on a local assessment of the nature and severity of the PM problem in each area, feasibility, and cost effectiveness. Development of district measures will take place from 2006 through 2009.

As a starting point for district analysis, ARB compiled the available cost-effectiveness information for each measure. As an additional resource for districts, ARB is developing a clearinghouse of the staff reports and cost-effectiveness evaluations prepared by the districts in support of adopting the rules contained in the list of district measures. Finally, to assist districts in evaluating the nature of their PM problem, ARB prepared an evaluation of PM in each area of the State. This assessment evaluates the role of PM 2.5 versus PM 10, the magnitude of the PM problem, seasonal variations, significant sources of directly emitted PM, and the contribution of secondary PM.