2003 ANNUAL PROGRESS REPORT ON IMPLEMENTING THE REGIONAL AIR QUALITY STRATEGY FOR THE SAN DIEGO AIR BASIN

This report presents the status of the San Diego County Air Pollution Control District's efforts in 2003 to implement the Regional Air Quality Strategy (RAQS). The RAQS was developed pursuant to state law[1] and identifies emission control measures to provide expeditious progress in San Diego County toward attaining the state ambient air quality standard for ozone. Pollutants addressed are volatile organic compounds (VOC) and oxides of nitrogen (NOx), precursors to the photochemical formation of ozone. San Diego County does not yet attain the state ozone standard and is designated a serious ozone nonattainment area.

The District Board initially adopted the RAQS on June 30, 1992, and amended it on March 2, 1993, in response to California Air Resources Board (ARB) comments. Pursuant to state law, the District Board updated the RAQS with triennial revisions on December 12, 1995; June 17, 1998; and August 8, 2001. The next triennial revision is planned for 2004.

This 2003 annual progress report fulfills requirements of state law[2] and ARB policy guidance.[3] Specifically, it addresses the status of District control measures scheduled in the RAQS for adoption in 2003, and progress in implementing the Indirect Source Program and transportation control measures contained in the RAQS.

2003 CONTROL MEASURE ADOPTION STATUS

Summary Table

Table 1 summarizes the status of control measure development activities scheduled in the RAQS for 2003. A detailed discussion of status is presented after Table 1.

TABLE 1
STATUS OF 2001 RAQS CONTROL MEASURE DEVELOPMENT ACTIVITIES SCHEDULED FOR 2003

Rule Number	Control Measure	Pollutant	Rescheduled Adoption Date
61.3.1 & 61.4.1	Enhanced Vapor Recovery Program	VOC	2004
69.5	Further Control of Residential Water Heaters	NOx	2006 (or later, depending on feasibility)

[1] California Health and Safety Code (H&SC) Section 40911 et seq.
[2] H&SC Section 40924(a)
[3] "Guidance for Annual and Triennial Progress Reports Under the California Clean Air Act," ARB, August 1993.

Enhanced Vapor Recovery Program (Adopt New Rules 61.3.1 and 61.4.1)

Progress Update. The 2001 RAQS included a District commitment to amend Rule 61.3 (Transfer of VOC into Stationary Storage Tanks) and Rule 61.4 (Transfer of VOC into Vehicle Fuel Tanks) in 2002 as necessary and appropriate to implement feasible or mandatory elements of the ARB's Enhanced Vapor Recovery (EVR) regulations. That commitment was conditioned on timely ARB completion of a technology reevaluation. ARB's technology reevaluation was not completed until late 2002; consequently Rule 61.3 and 61.4 amendments were subsequently rescheduled for late 2003.

However, in light of ongoing revisions to ARB's EVR regulations and different compliance deadlines for new versus existing facilities, in the 2004 Triennial RAQS Revision the District will propose to (1) adopt, in 2004, two new rules (Rules 61.3.1 and 61.4.1) to address the EVR requirements for Phase I (bulk transfer) and Phase II (vehicle refueling) vapor recovery systems, respectively, as they become applicable, and (2) repeal existing District Rules 61.3 and 61.4 in the future, once all existing facilities are subject to all the requirements of EVR.

Current Status. Drafts of Rules 61.3.1 and 61.4.1 are currently under internal District review. A public workshop will be held in Spring 2004, and the comments will then be considered as the final proposed rules are developed for District Board consideration by late 2004.

Background. Vapor recovery systems have been used in California for nearly 30 years to control gasoline vapor emissions from gasoline service stations. Phase I vapor recovery systems address transfer of gasoline into underground storage tanks and Phase II systems address transfer of gasoline from underground storage tanks into vehicle fuel tanks.

ARB develops statewide regulations to control gasoline vapor emissions and certifies vapor recovery systems so that all systems meet minimum standards. Districts must adopt local rules that are consistent with the statewide regulations, issue permits to impose associated requirements, and conduct compliance inspections.

On March 23, 2000, ARB promulgated EVR regulations to improve the effectiveness of the vapor recovery program at gasoline service stations. The EVR regulations increase the stringency of existing standards for Phase I and Phase II systems and add several new standards for Phase II systems. The new Phase II standards include onboard refueling vapor recovery (ORVR) compatibility, unihose dispensers, liquid retention, nozzle spitting, dripless nozzles, and In-Station Diagnostics (ISD). These regulations have been amended several times by ARB since 2001 and are in the process of being amended again.

Since July 2001, new or modified gasoline stations have been required to install Phase I EVR systems, and some aspects of Phase II EVR systems (liquid retention and ORVR compatibility) have been phased in for those facilities between July 2001 and April 2003. The remaining portions of the EVR regulations are scheduled for implementation under a revised ARB timeline, promulgated in December 2003. Under this timeline, new or modified facilities constructed after April 2004 must install a Phase II EVR system (ISD is delayed for small throughput facilities until April 2005). Existing facilities must have a Phase I EVR system and specified aspects of Phase II EVR (ORVR and liquid retention) installed by April 2005, and a Phase II EVR system installed by April 2008 (except unihose dispensers and ISD for small throughput facilities). As

currently expected to be promulgated, the EVR regulations are estimated by ARB to result in maximum VOC emission reductions of about 600 tons per year (~2 tons per day) for San Diego County, with a cost-effectiveness of $1.80 per pound of VOC reduced. Actual emission reductions could be less, depending on future commercial availability and actual in-use performance of these technologies.

Issues. Some general issues that affect this rulemaking are:

1. The District is committed to adopt the EVR requirements as soon as practicable. However, ARB has continued to modify EVR requirements, definitions, test methods, and timelines, and is now behind the original schedule for adoption of the EVR regulations, especially for Phase II.

2. ARB is still in the process of certifying Phase II EVR systems, and no system is certified at this time. These yet-to-be certified systems might have different requirements, including inspection and maintenance procedures, that cannot be anticipated in the proposed new local rules. In addition, the lack of certified systems may cause further revisions to ARB's implementation timeline.

3. The rules must be sufficiently general to allow for any new vapor recovery systems that may be proposed in the future. However, major oil companies have encouraged the District to specify all requirements in the rules in detail, and have threatened or initiated permit appeals on the basis that certain permit conditions impose requirements not explicitly stated in existing vapor recovery rules. Thus, the new rules must balance the need for specificity with the need for future flexibility to accommodate yet-to-be certified vapor control systems.

4. ARB's existing EVR regulations do not address aboveground storage tanks, although ARB is currently developing regulations for aboveground storage tanks. This may delay repeal of existing District Rule 61.3, which regulates both aboveground and underground tanks. ARB's control requirements for aboveground tanks must first be developed, adopted, and implemented before existing local requirements in Rule 61.3 can be repealed.

5. The District is considering whether to submit the proposed new rules to the U.S. Environmental Protection Agency (EPA) for inclusion in the federally enforceable State Implementation Plan (SIP), which contains existing Rules 61.3 and 61.4. The fluid nature of ARB's EVR program could be addressed by District discretion in the new rules. However, based on past SIP rule approval actions, EPA would likely disapprove a rule incorporating such discretion. Conversely, if the new rules are not submitted to EPA for inclusion in the SIP, the existing SIP rules might not be able to be repealed (due to a perceived relaxation of the SIP) and conflicting local and federal requirements could result.

Further Control of Residential Water Heaters (Amend Rule 69.5)

Existing District Rule 69.5 (Natural Gas-Fired Water Heaters), adopted in 1998, limits emissions from new residential-type water heaters in San Diego County to 40 nanograms per Joule (ng/J)

of heat output. The 2001 RAQS included a District commitment to assess, in late 2002, the availability of natural gas-fired water heaters that meet a NOx emissions limit of 20 ng/J of heat output, consistent with South Coast Air Quality Management District (SCAQMD) Rule 1121. SCAQMD's Rule 1121 controls water heaters in two phases. First, it requires all new water heaters sold in the South Coast region on or after July 1, 2002, to meet the 20 ng/J NOx limit. It further requires that new units sold on or after July 1, 2005 (delayed to 2006 in a recent amendment proposed by SCAQMD), meet a 10 ng/J NOx limit.[1,2] In the 2001 RAQS, the District committed that if sufficient 20-ng/J units were found to be available and cost-effective as of late 2002, the District would then amend Rule 69.5 in 2003 to reduce the NOx emissions limit for new units sold in San Diego County from 40 ng/J to 20 ng/J.

SCAQMD's Rule 1121 includes a provision for water heater manufacturers to contribute $5,400 per ton of NOx to a mitigation fee program in lieu of meeting the interim requirement of 20 ng/J NOx emissions. To date, all manufacturers selling units in the South Coast region are relying on the mitigation fee option.[3] Consequently, units meeting the 20 ng/J limit are not available at this time. It appears that manufacturers are instead focusing on meeting SCAQMD's future 10 ng/J limit so that they can make a single change to their product lines rather than changing twice.

Because units complying with the 20 ng/J emissions limit are not available at this time, amendments to District Rule 69.5 were not developed for adoption in 2003. In the 2004 Triennial RAQS Revision, the District will commit to assessing the availability and cost-effectiveness of units complying with the 10 ng/J emissions limit of SCAQMD's rule in the year it becomes effective (2005 or 2006). If sufficient complying units are found to be available and cost-effective at that time, then the District will schedule associated amendments of Rule 69.5 in the subsequent year (2006 or 2007).

INDIRECT SOURCE PROGRAM STATUS

The District's Indirect Source Program, adopted by the District Board in December 1997, consists of ongoing outreach and assistance to local governments, land developers, and neighborhood groups to reduce vehicle trips and associated emissions through voluntary land use and street design improvements (i.e., "smart growth"). District efforts in 2003 included:

- Working with the San Diego Association of Governments (SANDAG) on policy and funding programs to encourage smart growth. These included the Regional Transportation Plan (Mobility 2030) and a Draft Regional Comprehensive Plan.

- Ongoing support and assistance to the City of San Diego in developing its "City of Villages" General Plan element, a 20-year smart growth blueprint.

[1] SCAQMD's Rule 1121 is technology forcing because it relies on an assumption that improving existing low-NOx burner technologies—or developing, testing, and commercializing new burner technologies—would be completed in time to implement the 2002 and 2005 emission standards.
[2] The 2001 RAQS did not include a commitment to adopt the future 10 ng/J standard for San Diego County because it has not yet been determined to be feasible, and because the implementation date (2005) was outside the planning cycle of the 2001 triennial RAQS revision (2001-2003).
[3] Andrew Lee, SCAQMD, personal communication, December 2003.

- Assistance to the City of San Diego in preparing grant applications for smart growth planning efforts in two neighborhoods (Normal Heights and North Park).

- Presentations to city planning staffs, traffic engineers, developers, merchant organizations, and neighborhood groups that are working on improving conditions for walking, bicycling, and transit.

- Distributing, and giving neighborhood presentations on, a traffic calming "best practices" manual developed by District staff to help communities provide a safe pedestrian and bike environment while reducing automobile traffic.

- Participation in, and assistance to, a pedestrian advocacy group, Walk San Diego, and coordination with the San Diego County Bicycle Coalition.

- Assistance in forming a new advocacy group, Move San Diego, promoting transportation projects to support smart growth.

- Participation in an ad hoc committee providing SANDAG with alternative language for a possible ballot measure to extend TransNet, the County's half-cent sales tax allotted for transportation, to support smart growth with appropriate transportation projects.

TRANSPORTATION CONTROL MEASURES STATUS

Implementation continues for the six Transportation Control Measures contained in the RAQS, consistent with program commitments made in the 2030 Regional Transportation Plan and the 2002 Regional Transportation Improvement Program adopted and implemented by SANDAG. These are: (1) Transit Improvements; (2) Vanpools; (3) High-Occupancy Vehicle (HOV) Lanes; (4) Park-and-Ride Facilities; (5) Bicycle Facilities; and (6) Traffic Signal Improvements.

- **Transit Improvement and Expansion Program.** The District's Vehicle Registration Funding Program and the state Carl Moyer Program (locally administered by the District) have been utilized to fund the incremental cost of replacing 324 diesel-fueled public transit buses with compressed natural gas (CNG) transit buses. Currently, 45% of all transit buses in the county are fueled by CNG. An additional 77 CNG buses are scheduled for delivery by 2004-2005, increasing the percentage to 56%. Four of the five transit providers in the San Diego region have chosen to adopt the alternative-fuel path of the ARB's Transit Bus Fleet Rule and will purchase CNG buses exclusively in the future.

  Additionally, bus revenue miles[1] in San Diego County have increased 100% since 1990 to a total of 28 million miles in 2003. Further, rail transit services, including the San Diego Trolley[2] and the Coaster express rail service,[3] have grown 75% since 1990 to reach 7 million revenue miles in 2003. Further, construction is underway on a 6-mile extension of the San

[1] Revenue miles are the total distance that a fleet travels while available for passenger service.
[2] The San Diego Trolley is a 48-mile light rail transit system serving southern San Diego County.
[3] The Coaster is a 42-mile passenger rail line between Oceanside and Downtown San Diego.

Diego Trolley from Qualcomm Stadium in Mission Valley to San Diego State University and on to La Mesa. Additionally, construction on the 22-mile Oceanside-Escondido Rail Line ("Sprinter") is anticipated to start in early 2004. Both rail projects are scheduled to begin service in 2005.

- **Vanpool Program.** SANDAG operates a Regional Vanpool Program, funded in part by the District's Vehicle Registration Fund. In late 2003, 302 vanpools were operating in the San Diego region, carrying 2,844 passengers, which is a 34% increase over 2002 levels. Additional vanpools are anticipated as funding becomes available.

- **HOV Lanes.** Currently, there are three freeways in the San Diego region with HOV lanes: (1) State Route (SR) 54 (South Bay Freeway); (2) Interstate (I) 5 (San Diego Freeway); and (3) I-15 (Escondido Freeway). Additional HOV lanes are planned for development as funding becomes available.

  The SR 54 HOV lanes (one lane eastbound and one lane westbound) extend 3.2 miles from I-805 to Briarwood Road and operate during morning and afternoon peak periods. The I-5 HOV lane (northbound only) extends 5.8 miles from the I-5/I-805 junction to Via de la Valle. The I-15 Express Lanes are a two-lane reversible HOV facility in the median of I-15, extending 7.5 miles from SR 163 to SR 56. Access is available only at the north and south ends. Vehicles with two or more occupants, buses, and motorcycles may use the I-15 Express Lanes for free, and solo drivers participating in the FasTrak Program may use the Express Lanes for a per-trip toll. Finally, it is also worth noting that there is a buses-only northbound lane on SR 163, extending 0.4 miles from A Street in downtown San Diego to I-5, enabling buses to bypass general-purpose traffic when entering SR 163.

  Metered Ramps. HOV preferential lanes are provided at 161 (59%) of the 271 metered ramps on the region's freeways. The HOV preferential lanes do not bypass the meters but they do have a shorter queue, reducing travel time.

  HOV Study. SANDAG completed the Regional HOV/Managed Lane Study in 2002. The goal of this long-range transportation study was to identify a cost-effective regional system of HOV/managed lane facilities that would accommodate existing and projected HOV demand, maximize the person-carrying capacity, and provide travel time savings and reliability to HOVs and transit. The study's findings and recommendations for 2020 and beyond also included short-term and interim improvements. The recommendations, which were incorporated into the 2030 Regional Transportation Plan, include:

  - Managed lane facilities on I-5, I-15, and I-805, with value pricing;[1]
  - One HOV lane in each direction on SR 54, SR 56, SR 94, and SR 125;
  - Two-lane HOV reversible facility on SR 52; and
  - HOV to HOV connectors.

  I-15 Managed Lanes. The region has committed over $300 million to the I-15 Managed Lanes project to ease traffic congestion in the I-15 corridor from SR 56 to Center City

[1] Variable tolls for solo drivers based on traffic congestion in the general lanes.

Parkway in Escondido. Construction began in November 2003 and is scheduled for completion in late 2007.

The project will include four lanes with a moveable barrier in the median of I-15 to accommodate two to three lanes in the peak direction and one to two lanes in the opposite direction. The Managed Lanes facility will provide priority to HOVs such as carpools and vanpools, regular transit services, and a Bus Rapid Transit (BRT) System. Excess capacity in these lanes will be "sold" to solo drivers for a fee, as is the case with the FasTrak program. The Managed Lanes will be separated from the general purpose lanes by a barrier with access provided at several locations through openings in the barrier.

- **Park-and-Ride Facilities.** Currently, there are 64 park-and-ride lots in the region, with 3,964 spaces available. More lots are anticipated as funding becomes available.

- **Bicycle Facilities.** The bikeway system currently includes 1,005 miles of bikeways in the San Diego region, consisting of Class I (exclusive bicycle path separated from roadway), Class II (striped on-street bicycle lane), and Class III (shared with motor vehicles) facilities. Additionally, front-mounted bike racks are available on nearly all transit buses.

- **Traffic Signal Improvements.** The 2002 Regional Transportation Improvement Program includes funding for 17 traffic signal improvement projects and reserves funding for additional projects in the future.